



13 January 2024

Our Ref: JC/MC/KW/N74028/24/tt

The EIA Ordinance Register Office,  
27th floor, Southorn Centre,  
130 Hennessy Road,  
Wan Chai, Hong Kong

Attn: Ms. Trista Lau

Dear Sirs,

Contract No. EP/SP/77/15  
North-East New Territories Landfill Extension (NENTX)  
**NENTX – Submission of Annual EM&A Report (No. 1) – December 2022 to 2023**

In accordance with requirements of the EM&A Manual for the North East New Territories (NENT) Landfill Extension Project (the Project), we are now submitting 2 hard copies and one electronic copy (in CD-ROM format) of the Annual EM&A Report (No. 1) – December 2022 to 2023 dated 12 January 2024 together with ET's certification letter and IEC's verification for your perusal.

If you have any questions, please contact our Matt Choy at 2902 5261.

Yours faithfully  
For and on behalf of  
**VEOLIA HONG KONG HOLDING LIMITED**

Colin Mitchell  
Project Manager

Encl.

cc. EPD – Davy Lau / Nikita Chan (by email only)  
Arup – Anson Cheung (1 copy & email)  
MIEL – Steve Kok / Claudine Lee (email only)  
Aurecon – Fredrick Leong (1 copy & email)  
VHK – JC / MC / KW

**Agreement No. CE  
20/2004(EP) North  
East New  
Territories (NENT)  
Landfill Extension**

Annual Environmental  
Monitoring and Audit Report  
(No. 1) – December 2022 to  
2023

2024-01-12

Our Ref.: CL/91823/0981-VES  
Date: 12 January 2024

**By Email**

Veolia Hong Kong Holding Limited  
40/F, One Taikoo Place  
979 King's Road  
Quarry Bay  
Hong Kong

Attn.: Mr. Colin Mitchell

**Meinhardt Infrastructure and  
Environment Ltd**  
邁進基建環保工程顧問有限公司

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Dear Sir

Re: Contract No. EP/SP/77/15  
North-East New Territories Landfill Extension (NENTX)  
Annual Environmental Monitoring and Audit Report (No.1) –  
December 2022 to 2023

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I refer to Section 2.6 to 2.11 and Section 12.3 of the Environmental Monitoring and Audit Manual, regarding the submission of an annual Environmental Monitoring and Audit report. I hereby verify the captioned "Annual Environmental Monitoring and Audit Report (No.1) – December 2022 to 2023" dated 12 January 2024.

Should you have any queries, please do not hesitate to contact the undersigned at 2859 5409.

Yours faithfully  
MEINHARDT INFRASTRUCTURE AND ENVIRONMENT LTD



Claudine Lee  
Independent Environmental Checker

**Aurecon Hong Kong Limited**  
Unit 1608, 16/F, Tower B,  
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The Aurecon logo features a small green square above the letter 'a' in the word 'aurecon', which is written in a bold, black, sans-serif font.

Ref: P521530-0000-REP-NN-0081

12 January 2024

**By Email**

**Meinhardt Infrastructure & Environment Ltd.**  
**10/F Genesis**  
**33-35 Wong Chuk Hand Road**  
**Hong Kong**

**Attn: Ms. Claudine Lee.**

Dear Claudine,

**Re: Contract No. EP/SP/77/15**  
**Northeast New Territories Landfill Extension**  
**Annual Environmental Monitoring and Audit Report (No. 1) – December 2022 to 2023**

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In accordance with the requirement specified in Section 2.6 to 2.10 & Section 12.3 of Environmental Monitoring and Audit (EM&A) Manual, we are pleased to submit the certified “Annual Environmental Monitoring and Audit Report (No. 1) – December 2022 to 2023” dated 12 January 2024 for your verification.

Should you require any further information or clarification, please do not hesitate to contact the undersigned or our Mr. Keith Chau on 3664 6788.

Yours faithfully,  
For and on behalf of  
Aurecon Hong Kong Limited

A handwritten signature in blue ink, appearing to read 'Fredrick Leong', is positioned above the printed name and title.

Fredrick Leong  
Environmental Team Leader

Encl.

1. Annual Environmental Monitoring and Audit Report (No. 1) – December 2022 to 2023

cc.

1. IEC - Ms. Claudine Lee (By email: claudinelee@meinhardt.com.hk)
2. IEC Representative – Ms. Echo Hung (By email: echohung@meinhardt.com.hk)

# Document Control Record

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<b>Report title</b>		Annual Environmental Monitoring and Audit Report (No. 1) – December 2022 to 2023					
<b>Document ID</b>			<b>Project number</b>				
<b>File path</b>							
<b>Client</b>		Veolia Hong Kong Holding Ltd.					
<b>Client contact</b>			<b>Client reference</b>				
Rev	Date	Revision details/status	Author	Reviewer	Verifier (if required)	Approver	
0	7 January 2024	Submit to IEC	J Man	K.Chau		FL	
1	10 January 2024	Submit to IEC	J Man	K.Chau		FL	
2	12 January 2024	Submit to IEC	J Man	K.Chau		FL	
<b>Current revision</b>		<b>2</b>					

Approval			
Reviewer's signature		Approver's signature	
Name	Keith Chau	Name	Fredrick Leong
Title	Associate, Environmental	Title	Environmental Team Leader

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## Executive Summary

Aurecon Hong Kong Limited (Aurecon) was appointed to undertake the role of Environmental Team (ET) and carry out Environmental Monitoring and Audit for the North East New Territories (NENT) Landfill Extension.

The construction phase and EM&A programme of the Project commenced on 1 December 2022.

This 1<sup>st</sup> Annual EM&A Report presents the EM&A works conducted from 1 December 2022 to 31 December 2023 in accordance with the EM&A Manual.

### Summary of Construction Works undertaken during Report Period

The major construction works undertaken during the reporting period include:

Construction Activities Undertaken	Reporting Month			
	Dec 2022 to Jan 2023	Feb to Aug 2023	Sep to Nov 2023	Dec 2023
- Material loading and unloading site traffic	✓	✓	✓	✓
- Permanent site office foundation works with pouring of concrete		✓		
- Construction of site buildings			✓	✓
- Site clearance	✓	✓	✓	✓
- Installation of permanent fencing	✓	✓	✓	✓
- Site formation	✓	✓	✓	✓
- Tree felling	✓	✓	✓	✓
Shotcreting (Permanent and Temporary)			✓	✓
Soil Nail Installation				✓

### Environmental Exceedance

#### Air Quality (1-hr TSP)

No Action / Limit Level exceedance for 1-hr TSP impact monitoring at AM1, AM2 & AM3 was recorded during the reporting period.

#### Air Quality (24-hr TSP)

2 Action Level Exceedance and 3 Limit Level Exceedance for 24-hr TSP monitoring at AM1 was recorded during the reporting period. The exceedance was considered likely caused by external sources such as the high level of background air quality in Hong Kong during the monitoring period etc and not project related.

No Action / Limit Level exceedance for 24-hr TSP monitoring at AM2 was recorded during the period.

4 Action Level Exceedance and 3 Limit Level Exceedance for 24-hr TSP monitoring at AM3 was recorded during the reporting period. The exceedance was considered likely caused by external sources such as the high level of background air quality in Hong Kong during the monitoring period etc and not project related.

#### Noise & Landfill Gas Monitoring

No exceedance of the Action and Limit Levels were recorded at designated monitoring stations during the reporting period.

#### Surface Water Quality Monitoring

No exceedance of Action and Limit Levels of surface water monitoring was recorded from December 2022 to March 2023.

No exceedance of Action Levels of surface water monitoring was recorded from April to June 2023.

No exceedance of Limit Level of surface water monitoring at WM1 was recorded from April to June 2023.

1 turbidity exceedance of Limit Levels of surface water quality at WM2 was recorded from April to June 2023. After the investigation, the exceedance may involve the construction runoff of the project. The rectification actions are conducted by the contractor in progress. The rectification works should be achieved minimization the potential risk of causing high concentration of construction runoff, enhancement of maintenance of Temporary Surface Water Drainage System (TSWDS), enhancement of the effectiveness and treatment capacity of the TSWDS & enhancement of temporary landscape treatment as green cover and minimization the potential risk of causing high concentration of construction runoff.

No exceedance of the Action and Levels was recorded at designated monitoring stations in July 2023.

1 DO exceedance of the Action Level at WM1 was recorded in August 2023. In summary of the investigation, the DO exceedance in Action Level at WM1 may involve the vary of temperature under the hot weather. Therefore, the exceedance is not related to project. No exceedance of Limit Level at WM1 was recorded in August 2023.

No exceedance of the Action and Limit Levels at WM2 were recorded in August 2023.

No exceedance of the Action and Levels at designated monitoring stations was recorded from September to December 2023.

#### **Environmental Non-conformance/Complaint/Summons and Prosecution**

1 warning regarding suspected non-compliance event with Condition 1.7 and 2.15(a) of the EP & Condition 1.7 and 2.13(a) of the FEP-01 & FEP-02 was recorded during the reporting period. The related rectified actions are being taken in progress by the contractor.

6 complaints (1 complaint regarding air quality and 5 complaints regarding water quality) were recorded during the reporting period. The related rectified actions are conducted by the contractor as soon as possible.

No summons/prosecutions were recorded and received in this reporting period.



## 1. Introduction

### 1.1. Background

- 1.1.1. The North East New Territories Landfill Extension (the NENTX Project) is located adjacent to the existing North East New Territories (NENT) Landfill at Ta Kwu Ling. The extension site is located in a valley covering mainly the existing NENT Landfill Stockpile and Borrow Area that was formed to the east of the existing landfill as part of the original site development of the landfill, and layout plan shown in **Figure 1**.
- 1.1.2. The NENTX is a designated project. The Environmental Impact Assessment (EIA) Report (AEIAR-111/2007) and an Environmental Monitoring and Audit Manual were approved on 20 September 2007. The project is governed by an Environmental Permit (EP) (EP-292/2007) which was granted on 26 November 2007. A further of EP (FEP) was applied and the FEP (FEP-01/292/2007) was subsequently granted on 28 April 2022. Another further of EP (FEP-02/292/2007) was subsequently granted on 23 August 2023.
- 1.1.3. In accordance with the requirements specified in Section 2.6 to 2.10 and Section 12.3 of the approved Environmental Monitoring and Audit (EM&A) Manual, Annual EM&A report should be submitted to the Director of Environmental Protection (DEP) within 10 working days after the end of the reporting year. The submissions shall be certified by the Environmental Team (ET) Leader and verified by the Independent Environmental Checker (IEC).
- 1.1.4. The construction phase and EM&A programme of the Project commenced on 1 December 2022.

### 1.2. Nature, Scale and Scope of the captioned Designated Project

- 1.2.1 The Nature, Scale and Scope of the captioned Designated Project is presented in **Table 1-1**.

**Table 1-1 Nature, Scale and Scope of the captioned Designated Project**

Item(s)	Content
Nature of Designated Project	Construction and operation of a landfill for waste as defined in the “Waste Disposal Ordinance” (Cap. 354)
Scale and Scope of Designated Project	<p>The Project mainly consists of the followings: -</p> <p>Construction and operation of a landfill extension of about 70 hectares with a target void space of at least 19 million cubic metres on the eastern side of the existing NENT Landfill, including the followings: -</p> <ul style="list-style-type: none"> <li>i. Site formation and preparation;</li> <li>ii. Installation of liner system;</li> <li>iii. Installation of leachate collection, treatment and disposal facilities;</li> <li>iv. Installation of gas collection, utilization and management facilities;</li> <li>v. Utilities provisions and drainage diversion;</li> <li>vi. Landfilling operation;</li> <li>vii. Restoration and aftercare in subsequent stages; and</li> <li>viii. Measures to mitigate environmental impacts as well as environmental monitoring and auditing to be implemented.</li> </ul>

### **1.3. Purpose of this Report**

- 1.3.1. This is the 1<sup>st</sup> Annual EM&A Report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from 01 December 2022 to 31 December 2023.

### **1.4. Structure of the Report**

- 1.4.1. The structure of the report is as follows:

Section 1 – Introduction

- details the background, purpose and structure of the report.

Section 2 – Project Information

- summarises background and scope of the Project, site description, project organization and contact details, construction programme, the construction works undertaken and the status of Environmental Permit(s)/License(s) during the reporting period.

Section 3 – Air Quality Monitoring

- Construction Dust

Section 4 – Noise Monitoring

Section 5 – Water Quality Monitoring

- Groundwater Monitoring
- Surface Water Monitoring

Section 6 – Waste Management

Section 7 – Landfill Gas Monitoring

Section 8 – Landscape and Visual

Section 9 – Cultural Heritage

Section 10 – Ecological Monitoring

Section 11 – Site Inspection and Audit

Section 12 – Environmental Non-Conformance

Section 13 – Implementation Status on Environmental Mitigation Measures

Section 14 – Conclusion

## 2. Project Information

### 2.1. Construction Activities

2.1.1. A summary of the major construction activities undertaken in this reporting period is shown in **Table 2-1**. Construction programme is illustrated in **Appendix A**. Detailed construction activities are summarized in **Appendix B**.

**Table 2-1 Major Construction Activities Undertaken in the Reporting Period**

Construction Activities Undertaken	Reporting Month			
	Dec 2022 to Jan 2023	Feb to Aug 2023	Sep to Nov 2023	Dec 2023
- Material loading and unloading site traffic	✓	✓	✓	✓
- Permanent site office foundation works with pouring of concrete		✓		
- Construction of site buildings			✓	✓
- Site clearance	✓	✓	✓	✓
- Installation of permanent fencing	✓	✓	✓	✓
- Site formation	✓	✓	✓	✓
- Tree felling	✓	✓	✓	✓
Shotcreting (Permanent and Temporary)			✓	✓
Soil Nail Installation				✓

### 2.2. Project Organization & Management Structure

2.2.1. The Project Organization Chart & Management Structure are shown in **Appendix C**. The key personnel contact information is summarized in **Table 2-2**.

**Table 2-2 Contact Information of Key Personnel**

Party	Name	Contact Number
Contractor (Veolia Hong Kong Holding Ltd.)	Mr. Matt Choy	2902 5296
Independent Environmental Checker (IEC) (Meinhardt Infrastructure and Environment Ltd.)	Ms. Claudine Lee	2859 5409
Environmental Team Leader (ETL) (Aurecon Hong Kong Limited)	Mr. Fredrick Leong	3664 6888

## 2.3. Status of Submission required under the FEP & EP during reporting period

2.3.1. The status of statutory environmental compliance with the EP conditions under the EIAO, submission status under the FEP & EP during reporting period are presented in **Table 2-3**. The detail status of statutory environmental compliance with the EP conditions under the EIAO, submission status under the FEP & EP for NENTX project are shown in **Appendix D**.

**Table 2-3 Status of Submissions required under the FEP & EP during reporting period**

FEP Condition	EP Condition	Submission / Measures	Status
2.1	2.3	Management Organization of Main Construction Companies	Submitted
2.2	2.4	Setting up of Community Liaison Group	Community Liaison Group was set up.
2.3	2.5	Submission of EM&A Manual	Submitted
2.5	2.7	Submission of Vegetation Survey (Transplantation Proposal)	Submitted
2.6	2.8	Submission of translocation proposal	Submitted
2.7	2.9	Submission of Transplantation Report and Post-Transplantation Monitoring	Submitted
2.8	2.10	Submission of Translocation Report and Post-Translocation Monitoring	Translocation was carried out and the report submitted.
2.9	2.11	Submission of Detailed Landfill Gas Hazard Assessment Report	Submitted
2.10	2.12	Submission of Waste Management Plan	Submitted
3.2	3.2	Submission of Baseline Monitoring Report	Submitted
3.3	3.3	Submission of Monthly EM&A Report	Submitted

## 2.4. Status of Environmental Approval Document

2.4.1. A summary of the relevant valid permits, licences, and/or notifications on environmental protection for this Project since the granting of the EP is presented in **Table 2-4**.

**Table 2-4 Summary of the relevant valid permits, licences, and/or notifications on environmental protection**

Permit / Licenses / Notification	Reference	Expiry Date	Remark
Environmental Permit (EP)	EP-292/2007	Throughout the Contract	Permit granted on 26 November 2007
Further Environmental Permit (FEP)	FEP-01/292/2007	Throughout the Contract	Permit granted on 28 April 2022
	FEP-02/292/2007	Throughout the Contract	Permit granted on 23 August 2023
Notification of Construction Works as required under Air Pollution Control (Construction Dust) Regulation	479809	Throughout the Construction Phase	Notified on 13 May 2022
Registration of Waste Producer under Waste Disposal Ordinance	7043692	Throughout the Contract	Registered on 13 April 2022
Registration as Chemical Waste Producer	5213-642-P1034-18	Throughout the Contract	Registered on 11 July 2022
Construction Noise Permit	GW-RN1151-22	28 February 2023	Approved on 29 November 2022 (cancelled with effect from 14 February 2023)
	GW-RN0131-23	13 May 2023	Approved on 9 February 2023 (Cancelled with effect from 23 March 2023)
	GW-RN0299-23	22 June 2023	Approved on 21 March 2023
	GW-RN0619-23	22 September 2023	Permit granted on 16 June 2023
	GW-RN1012-23	22 December 2023	Permit granted on 22 September 2023 (Replaced CNP No. GW-RN0619-23)
Effluent Discharge License under Water Pollution Control Ordinance	WT00042301-2022	31 October 2027	Permit granted on 18 October 2022 Variation of Licence (Permit granted on 7 February 2023)

### 3. Air Quality Monitoring

#### 3.1 Construction Dust

##### 3.1.1 Monitoring Requirement

3.1.1.1 In accordance with the EM&A Manual, 1-hr & 24-hr Total Suspended Particulates (TSP) levels should be measured at the designated air quality monitoring stations in every 6 days to ensure that any deteriorating air quality could be readily detected, and timely action shall be undertaken to rectify such situation. For 1-hr TSP monitoring, the sampling frequency of at least three times in every six-days should be undertaken when the highest dust impact occurs. The specific time to start and stop the 24- hr TSP monitoring shall be clearly defined for each location.

##### 3.1.2 Monitoring Parameters, Frequency and Location

3.1.2.1 According to the EM&A Manual, three monitoring stations namely AM(D)1, AM(D)2 and AM(D)3 are selected for the impact monitoring.

3.1.2.2 A baseline monitoring plan has been submitted to IEC and EPD on 31 May 2022 including the proposal with justification of change of monitoring locations. Due to limited access to the original monitoring locations at AM(D)1, AM(D)2 and AM(D)3, the adjusted stations at AM1, AM2 and AM3 were agreed with IEC prior to the baseline and impact monitoring. The locations of adjusted dust monitoring locations are shown in **Figure 2**.

3.1.2.3 The locations of dust monitoring stations are shown in **Table 3-1**. The monitoring parameters, frequency and duration are shown in **Table 3-2**.

**Table 3-1 Locations of Dust Monitoring Stations**

Monitoring Station	Representative for	Monitoring Parameters
AM1	Tung Lo Hang	1-hr and 24-hr TSP
AM2	Heung Yuen Wai	1-hr and 24-hr TSP
AM3	Wo Keng Shan Tsuen	1-hr and 24-hr TSP

**Remarks:**

The contractor passed correspondence including original monitoring locations specified on the Approved EM&A Manual to the village representatives on 26 April 2022. After a meeting with Ta Kwu Ling District Rural Committee (RC) Chairman, representative from the RC and a few villagers on 1 May 2022, all the Village Heads of Wo Keng Shan Tsuen, Heung Yuen Wai and Lin Ma Hang verbally refused to accept our proposal for installation of dust and / or noise monitoring equipment within or next to their villages, for the baseline & impact monitoring.

AM(D)1 Tung Lo Hang, AM(D)2 Heung Yuen Wai, AM(D)3 Wo Keng Shan Tsuen are the air monitoring stations for the construction phase EM&A programme as identified in the approved EM&A Manual for the Project. The access to Tung Lo Hang, Heung Yuen Wai and Wo Keng Shan Tsuen were denied. A search for alternative air monitoring locations (AM1, AM2 & AM3) was carried out during the site visit.

The Baseline Monitoring Plan has been submitted to IEC and EPD including the proposal of change of monitoring locations on 31 May 2022. This arrangement was conducted between baseline and impact monitoring and has been agreed by the Independent Environmental Checker (IEC) and no comment received from EPD.

Due to the adjustment of the location of AM(D)1, AM(D)2 & AM(D)3 to AM1, AM2 & AM3, the measured air quality levels at AM1, AM2 & AM3 would represent the air quality levels at AM(D)1, AM(D)2 & AM(D)3.

**Table 3-2 Dust Impact Monitoring Parameters, Frequency and Duration**

Monitoring Station	Parameter	Frequency and Duration
AM1, AM2, AM3	1-hr TSP	At least 3 times per 6 days
	24-hr TSP	1 time per 6 days

### 3.1.3 Monitoring Results

3.1.3.1 The impact dust monitoring results are summarized in **Table 3-3** and **Table 3-4**. The graphical presentations of monitoring data are presented in **Appendix E**.

**Table 3-3 Summary of Impact 1-hr TSP Monitoring Results**

Month	Average 1-hr TSP Concentration, $\mu\text{g}/\text{m}^3$ (Range)		
	Dust Monitoring Station		
	AM1	AM2	AM3
Dec 2022	54 (44 – 65)	54 (45 – 61)	63 (57 – 68)
Jan 2023	49 (34 – 60)	42 (32 – 53)	52 (39 – 67)
Feb 2023	27 (18 – 41)	28 (20 – 43)	33 (21 – 51)
Mar 2023	45 (22 – 67)	49 (31 – 65)	47 (15 – 68)
Apr 2023	35 (19 – 55)	42 (31 – 76)	40 (23 – 54)
May 2023	23 (15 – 40)	30 (15 – 43)	35 (26 – 49)
Jun 2023	28 (15 – 38)	31 (21 – 45)	33 (21 – 45)
Jul 2023	35 (21 – 46)	34 (21 – 48)	32 (21 – 44)
Aug 2023	33 (20 – 40)	35 (29 – 40)	39 (29 – 50)
Sep 2023	44 (36 – 54)	39 (36 – 42)	45 (36 – 53)
Oct 2023	31 (21 – 40)	42 (34 – 52)	46 (32 – 60)
Nov 2023	28 (22 – 36)	34 (30 – 39)	37 (30 – 43)
Dec 2023	29 (26 – 34)	37 (23 – 59)	51 (40 – 67)
<b>Action Level</b>	<b>&gt;285</b>	<b>&gt;279</b>	<b>&gt;285</b>
<b>Limit Level</b>	<b>&gt;500</b>		

**Table 3-4 Summary of Impact 24-hr TSP Monitoring Results**

Month	Average 24-hr TSP Concentration, $\mu\text{g}/\text{m}^3$ (Range)		
	Dust Monitoring Station		
	AM1	AM2	AM3
Dec 2022	114 (88 – 147)	65 (43 – 92)	140 (126 – 157)
Jan 2023	98 (60 – 133)	53 (21 – 79)	85 (56 – 134)
Feb 2023	145 (62 – 286)	89 (61 – 126)	181 (93 – 284)
Mar 2023	184 (30 – 490)	78 (29 – 152)	162 (35 – 337)
Apr 2023	60 (34 – 112)	63 (37 – 111)	70 (40 – 151)
May 2023	62 (28 – 106)	73 (53 – 87)	93 (29 – 121)
Jun 2023	47 (28 – 95)	41 (32 – 54)	82 (43 – 130)
Jul 2023	36 (17 – 60)	34 (25 – 48)	30 (22 – 40)
Aug 2023	29 (19 – 37)	33 (27 – 43)	40 (27 – 63)
Sep 2023	40 (32 – 48)	41 (30 – 53)	51 (36 – 67)
Oct 2023	70 (62 – 77)	55 (43 – 77)	70 (61 – 78)
Nov 2023	112 (101 – 128)	89 (70 – 110)	101 (88 – 117)
Dec 2023	97 (71 – 108)	81 (65 – 119)	91 (70 – 122)
<b>Action Level</b>	<b>&gt;164</b>	<b>&gt;152</b>	<b>&gt;163</b>
<b>Limit Level</b>	<b>&gt;260</b>		

3.1.3.2 The Summary of Impact 1-hr & 24-hr TSP Exceedance are shown in **Table 3-5**.



**Table 3-5 Summary of Impact 1-hr & 24-hr TSP Exceedance**

Dust Monitoring Station		AM1		AM2		AM3	
Level Exceedance		Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level
Parameters		Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level
1-hr TSP	Exceedance Date	-	-	-	-	-	-
	Exceedance Count	0	0	0	0	0	0
24-hr TSP	Exceedance Date	1 Mar 23*	24 Feb 23*	-	-	18 Feb 23*	24 Feb 23*
		3 Mar 23*	2 Mar 23*			3 Mar 23*	1 Mar 23*
			4 Mar 23*			4 Mar 23*	2 Mar 23*
						8 Mar 23*	
	Exceedance Count	2	3	0	0	4	3

Remarks: \* equal to non-project related

3.1.3.3 No Action / Limit Level exceedance for 1-hr TSP impact monitoring at AM1, AM2 & AM3 was recorded during the reporting period.

3.1.3.4 2 Action Level Exceedance and 3 Limit Level Exceedance for 24-hr TSP monitoring at AM1 was recorded during the reporting period. The exceedance was considered likely caused by external sources such as the high level of background air quality in Hong Kong during the monitoring period etc and not project related. The Notification of Environmental Quality Limits Exceedances are presented in **Appendix F**.

3.1.3.5 No Action / Limit Level exceedance for 24-hr TSP monitoring at AM2 was recorded during the period.

3.1.3.6 4 Action Level Exceedance and 3 Limit Level Exceedance for 24-hr TSP monitoring at AM3 was recorded during the reporting period. The exceedance was considered likely caused by external sources such as the high level of background air quality in Hong Kong during the monitoring period etc and not project related. The Notification of Environmental Quality Limits Exceedances are presented in **Appendix F**.

### 3.1.4 Recommended Mitigation Measures

3.1.4.1 The recommended dust mitigation measures from EIA report are listed as followed:

- The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation.
- Dust emission from construction vehicle movement is confined within the worksites area.
- Watering facilities will be provided at every designated vehicular exit point.
- Good site practice is recommended during construction phase.

### 3.1.5 Event and Action Plan

3.1.5.1 Should non-compliance of the criteria occur, action in accordance with the action plan in **Table 3-6** shall be carried out.

**Table 3-6 Event and Action Plan for dust impact**

Event	ET	IEC	Contractor
Exceedance of Action Level			
Exceedance for one sample	<ul style="list-style-type: none"> <li>• Identify source</li> <li>• Prepare Notification of Exceedance</li> <li>• Inform IEC and Contractor</li> <li>• Repeat measurement to confirm findings</li> <li>• Increase monitoring frequency to daily if exceedance is due to the Project and continue until the monitoring results reduce to below action level</li> </ul>	<ul style="list-style-type: none"> <li>• Verify the Notification of Exceedance</li> <li>• Check monitoring data submitted by ET and Contractor's working methods</li> <li>• Discuss with ET and Contractor on proposed remedial measures</li> </ul>	<ul style="list-style-type: none"> <li>• Rectify any unacceptable practice</li> <li>• Amend working methods if appropriate</li> </ul>
Exceedance for two or more consecutive samples	<ul style="list-style-type: none"> <li>• Identify source</li> <li>• Prepare Notification of Exceedance</li> <li>• Inform Contractor and IEC</li> <li>• Repeat measurements to confirm findings</li> <li>• Increase monitoring frequency to daily if exceedance is due to the Project and continue until the monitoring results reduce to below action level</li> <li>• Discuss with IEC for remedial action required</li> <li>• Ensure remedial measures are properly implemented</li> <li>• Continue monitoring at daily intervals if exceedance is due to the Project</li> <li>• If no exceedance for 3 consecutive days, cease additional monitoring</li> </ul>	<ul style="list-style-type: none"> <li>• Verify the Notification of Exceedance</li> <li>• Check monitoring data submitted by ET and Contractor's working methods</li> <li>• Discuss with ET and Contractor on proposed remedial measures</li> <li>• Review with analysed results submitted by ET</li> <li>• Review the proposed remedial measures by Contractor</li> <li>• Supervise the implementation of remedial measures</li> </ul>	<ul style="list-style-type: none"> <li>• Submit proposals for remedial actions to IEC within 3 working days of notification</li> <li>• Implement the agreed proposals</li> <li>• Amend proposal if appropriate</li> </ul>

Event	ET	IEC	Contractor
Exceedance of Limit Level			
Exceedance for one sample	<ul style="list-style-type: none"> <li>• Identify source</li> <li>• Prepare Notification of Exceedance</li> <li>• Inform IEC and Contractor</li> <li>• Repeat measurement to confirm findings</li> <li>• Increase monitoring frequency to daily if exceedance is due to the Project and continue until the monitoring results reduce to below limit level</li> <li>• Assess effectiveness of Contractor's remedial actions and keep EPD and IEC informed of the results</li> </ul>	<ul style="list-style-type: none"> <li>• Verify the Notification of Exceedance</li> <li>• Check monitoring data submitted by ET and Contractor's working methods</li> <li>• Discuss with ET and Contractor potential remedial actions</li> <li>• Supervise the implementation of remedial measures</li> </ul>	<ul style="list-style-type: none"> <li>• Take immediate action to avoid further exceedance</li> <li>• Submit proposals for remedial actions to IEC within 3 working days of notification</li> <li>• Implement the agreed proposals</li> <li>• Amend proposal if appropriate</li> </ul>
Exceedance for two or more consecutive samples	<ul style="list-style-type: none"> <li>• Identify source</li> <li>• Prepare Notification of Exceedance</li> <li>• Inform IEC and EPD the causes and actions taken for the exceedances</li> <li>• Discuss with IEC for remedial action required</li> <li>• Ensure remedial measures are properly implemented</li> <li>• Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and informed of the results</li> <li>• Increase monitoring frequency to confirm findings</li> <li>• If exceedance stops, cease additional monitoring</li> </ul>	<ul style="list-style-type: none"> <li>• Verify the Notification of Exceedance</li> <li>• Check monitoring data submitted by ET and Contractor's working methods</li> <li>• Discuss amongst ET and Contractor on the potential remedial actions.</li> <li>• Review Contractor's remedial actions whenever necessary to assure their effectiveness</li> <li>• Supervise the implementation of remedial measures</li> </ul>	<ul style="list-style-type: none"> <li>• Take immediate action to avoid further exceedance</li> <li>• Submit proposals for remedial actions to IEC of notification</li> <li>• Implement the agreed proposals</li> <li>• Resubmit proposals if problem still not under control</li> <li>• Stop the relevant activity of works until the exceedance is abated</li> </ul>

## 4 Noise Monitoring

### 4.1 Monitoring Requirement

4.1.1 In accordance with the EM&A manual, noise impact monitoring shall be carried out at 2 monitoring stations NM1 and NM2 once a week during normal construction working hour (0700-1900 Monday to Saturday). The minimum logging interval shall be 30 minutes with average of 6 consecutive Leq 5 mins. L10 and L90 shall also be measured at 5 mins intervals.

### 4.2 Monitoring Locations, Parameters and Frequency

4.2.1 According to the EM&A Manual, two monitoring stations namely NM1 and NM2 are selected for the impact monitoring.

4.2.2 A baseline monitoring plan has been submitted to IEC and EPD on 31 May 2022 including the proposal with justification of change of monitoring locations. Due to limited access to the original monitoring locations at NM1 and NM2, the adjusted stations at NM1a and NM2a were agreed with IEC prior to the baseline and impact monitoring. The noise monitoring locations are summarized in **Table 4-1** and shown in **Figure 2**. The frequency and duration are shown in **Table 4-2**.

**Table 4-1 Noise Monitoring Locations**

Monitoring Station	Representative for	Type of Measurement
NM1a	Wo Keng Shan Tsuen	Free field
NM2a	Lin Ma Hang	Free field

Remarks:

The contractor passed correspondence including original monitoring locations specified on the Approved EM&A Manual to the village representatives on 26 April 2022. After a meeting with Ta Kwu Ling District Rural Committee (RC) Chairman, representative from the RC and a few villagers on 1 May 2022, all the Village Heads of Wo Keng Shan Tsuen, Heung Yuen Wai and Lin Ma Hang verbally refused to accept our proposal for installation of dust and / or noise monitoring equipment within or next to their villages, for the baseline & impact monitoring.

NM1 Wo Keng Shan Tsuen & NM2 Lin Ma Hang are the noise monitoring stations for the construction phase EM&A programme as identified in the approved EM&A Manual for the Project. The access to Tung Lo Hang, Heung Yuen Wai and Wo Keng Shan Tsuen were denied. A search for alternative noise monitoring locations (NM1a & NM2a) was carried out during the site visit.

The Baseline Monitoring Plan has been submitted to IEC and EPD including the proposal of change of monitoring locations on 31 May 2022. This arrangement was conducted between baseline and impact monitoring and has been agreed by the Independent Environmental Checker (IEC) and no comments received from EPD. Noise measurement at NM1a & NM2a will be considered as free-field and a correction of +3dB(A) would be made to the noise monitoring results.

Due to the adjustment of the location of NM1 & NM2 to NM1a & NM2a, the measured noise levels at NM1 & NM2 would represent the noise levels at NM1 & NM2.

**Table 4-2 Noise Monitoring Parameters, Frequency and Duration**

Monitoring Station	Parameter	Frequency and Duration
NM1a and NM2a	$L_{Aeq}$ (30mins) average of 6 consecutive $L_{eq}$ (5min); L10 (5min) & L90 (5min)	Once a week during normal construction working hour (0700-1900 Monday to Saturday)

### 4.3 Monitoring Results

4.3.1 The impact noise monitoring results are summarized in **Table 4-3**. The graphical presentations of monitoring data are presented in **Appendix E**.

**Table 4-3 Summary of Noise Monitoring Results during normal working hours (07:00-19:00, Monday to Saturday)**

Month	Average Leq, 30min, dB(A) (Range)	
	Noise Monitoring Station	
	NM1a	NM2a
Dec 2022	51.1 (48.2 – 54.0)	48.1 (47.6 – 50.0)
Jan 2023	53.6 (51.1 – 56.1)	49.8 (48.9 – 51.2)
Feb 2023	52.8 (47.0 – 54.9)	50.2 (46.2 – 54.5)
Mar 2023	58.0 (53.1 – 62.3)	57.1 (42.3 – 62.1)
Apr 2023	56.8 (53.7 – 58.4)	60.1 (52.8 – 65.4)
May 2023	57.4 (47.6 – 61.0)	55.8 (48.4 – 58.0)
Jun 2023	58.6 (53.5 – 61.5)	53.9 (48.5 – 57.7)
Jul 2023	62.1 (61.0 – 63.7)	56.3 (54.2 – 58.2)
Aug 2023	52.5 (51.3 – 53.1)	51.1 (47.3 – 54.5)
Sep 2023	58.3 (56.6 – 59.3)	53.6 (49.8 – 54.7)
Oct 2023	63.1 (59.6 – 64.8)	55.2 (53.8 – 56.3)
Nov 2023	60.0 (52.2 – 63.3)	49.1 (47.7 – 49.8)
Dec 2023	61.9 (57.7 – 64.1)	53.5 (49.6 – 54.9)
<b>Action Level</b>	<b>When one documented complaint is received</b>	
<b>Limit Level</b>	<b>&gt;75dB(A)</b>	

Remark:

- (1) \* A correction of +3 dB(A) was made to the free field measurements
- (2) If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.

4.3.2 No particular observations are identified near the monitoring stations during the monitoring period.

4.3.3 The Summary of Impact Noise Exceedance are shown in **Table 4-4**.

**Table 4-4 Summary of Impact Noise Exceedance during the reporting period**

Noise Monitoring Station		NM1(a)		NM2(a)	
Level Exceedance		Action Level	Limit Level	Action Level	Limit Level
Parameters					
LA <sub>eq</sub> (30mins)	Exceedance Date	-	-	-	-
	Exceedance Count	0	0	0	0

Remarks: \* equal to non-project related

4.3.4 No exceedance of Action and Limit Levels of construction noise was recorded during the reporting period. Therefore, there was no record of Notification of Environmental Quality Limits Exceedance in the **Appendix F**.

## 4.4 Recommended Mitigation Measures

4.4.1 The recommended noise mitigation measures from EIA report are listed as followed:

1. Use of good site practices to limit noise emissions by considering the following:
  - Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme;
  - Machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;
  - Plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs;
  - Silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works;
  - Mobile plant should be sited as far away from NSRs as possible and practicable;
  - Material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.
2. Select “Quiet plants” which comply with the BS 5228 Part 1 or TM standards.

## 4.5 Event and Action Plan

4.5.1 Should non-compliance of the criteria occurs, action in accordance with the action plan in **Table 4-5** shall be carried out.

**Table 4-5 Event and action plan for construction noise monitoring**

Event	ET	IEC	Contractor
Exceedance of Action Level	<ul style="list-style-type: none"> <li>Identify source, investigate the causes of exceedance</li> <li>Prepare Notification of Exceedance</li> <li>Inform IEC and Contractor</li> <li>Report the results of investigation to IEC, and Contractor</li> <li>Discuss with Contractor and IEC for formulate remedial measures</li> <li>Ensure remedial measures are properly implemented</li> <li>Have additional monitoring if exceedance is due to the Project. If exceedance stops, cease additional monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Verify the Notification of Exceedance</li> <li>Review the analysed results submitted by ET</li> <li>Discuss with ET, and Contractor on the potential remedial actions</li> <li>Review the proposed remedial measures</li> <li>Supervise the implementation of remedial measures</li> </ul>	<ul style="list-style-type: none"> <li>Submit noise mitigation proposals to IEC</li> <li>Implement the agreed noise mitigation proposals</li> </ul>
Exceedance of Limit Level	<ul style="list-style-type: none"> <li>Identify source, investigate the causes of exceedance</li> <li>Prepare Notification of Exceedance</li> <li>Inform IEC and Contractor</li> <li>Repeat measurements to confirm findings</li> <li>Discuss with Contractor and IEC for remedial measures</li> <li>Ensure remedial measures are properly implemented</li> <li>Assess effectiveness of Contractor's remedial actions and keep IEC and EPD informed of the results</li> <li>Have additional monitoring if exceedance is due to the Project. If exceedance stops, cease additional monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Verify the Notification of Exceedance</li> <li>Review the analysed results submitted by ET</li> <li>Discuss with ET, and Contractor on the potential remedial actions</li> <li>Review the proposed remedial measures</li> <li>Supervise the implementation of remedial measures</li> </ul>	<ul style="list-style-type: none"> <li>Take immediate action to avoid further exceedance</li> <li>Submit proposals for remedial actions to IEC of notification</li> <li>Implement the agreed proposals</li> <li>Resubmit proposals if problem still not under control</li> <li>Stop the relevant portion of works as determined by project proponent until the exceedance is abated.</li> </ul>

## 5 Water Quality Monitoring

### 5.1 Groundwater Monitoring

#### 5.1.1 Monitoring Requirement

5.1.1.1 In accordance with the EM&A manual, groundwater quality monitoring shall be carried out at least once per month at the 35 designated groundwater monitoring locations (i.e ED1 to ED35). Based on the existing construction programme, site clearance and site formation works for future landfilling area are in progress. The groundwater monitoring locations ED1 to ED35 will be installed after the site formation work of the landfilling area. No groundwater monitoring is required before the completion of site formation work of the landfilling area.

### 5.2 Surface Water Monitoring

#### 5.2.1 Monitoring Requirement

5.2.1.1 In accordance with the EM&A manual, impact surface water quality monitoring was carried out at the two designated surface water discharge points (i.e WM1 and WM2) for once per month from commencement of construction works of the Project.

#### 5.2.2 Monitoring Locations, Parameters and Frequency

5.2.2.1 Impact surface water monitoring was carried out at WM1 and WM2. Additional surface water monitoring was carried out at WM2 and GR3 (EPD Monitoring Location) on 28 September 2023. The monitoring locations are indicated in **Table 5-1** and **Figure 2**.

5.2.2.2 The monitoring parameters, frequency and duration of surface water quality monitoring are summarized in **Table 5-2**. The additional parameters, frequency and duration of surface water quality monitoring are summarized in **Table 5-3**.

**Table 5-1 Surface water quality monitoring locations**

Monitoring Station	Location	Coordinates (HK Grid)	
		Easting	Northing
WM1	Upstream of Lin Ma Hang River	836665	845020
WM2	Ping Yuen River	835592	844186
GR3*	Ping Yuen River	835361	844134

Remarks:

\*\*\* The monitoring location only conducted based on the environmental complaint.



**Table 5-2 Surface water quality monitoring Parameters, Frequency and Duration**

Parameter	Frequency
pH, Electrical conductivity, DO, Turbidity, SS, Alkalinity, COD, BOD <sub>5</sub> , TOC, Ammonia-nitrogen, TKN, Nitrate, Sulphate, Sulphite, Phosphate, Chloride, Sodium, Mg, Ca, K, Fe, Ni, Zn, Mn, Cu, Pb, Cd, Coliform Count, Oil and Grease	Once per month

**Table 5-3 Additional surface water quality monitoring Parameters, Frequency and Duration**

Parameter	Frequency
pH, Electrical conductivity, DO, Turbidity, SS, COD, BOD <sub>5</sub> , Ammonia-nitrogen, Chloride, Fe, Zn, and Coliform Count	Based on the case of Environmental Complaint

### 5.2.3 Monitoring Results

5.2.3.1 The summary of monitoring results is presented in **Table 5-4**, **Table 5-5** & **Table 5-6**. Detailed graphical presentations at each monitoring station of surface water quality (DO, SS and Turbidity) at the monitoring stations are given in **Appendix E**.

**Table 5-4 Summary of Impact Surface Water Monitoring Results at WM1**

Monitoring Parameter(s)	Monitoring Station WM1					
	Monitoring Results				Action Level	Limit Level
	Dec 2022	Jan 2023	Feb 2023	Mar 2023		
pH	7.4	7.1	7.4	7.1	>7.7	>7.8
DO in mg/L	10.8	10.5	7.7	7.6	<7.4	<4
Turbidity in NTU	8.6	6.6	5.0	6.3	>9.2	>9.5
Electrical Conductivity in $\mu$ S/cm	58	51	83	63	---	---
SS in mg/L	3.4	7.1	3.4	2.1	>9.7	>11.4
Alkalinity in mg/L	16	16	16	14	---	---
COD in mg/L	<5	5.0	<5	6		
BOD <sub>5</sub> in mg/L	<2	<2	<2	<2		
TOC in mg/L	3	3	3	2		
Ammonia-nitrogen in mg/L	0.02	0.02	0.11	0.06		
TKN in mg/L	0.2	0.1	0.4	0.3		
Nitrate in mg/L	0.01	0.02	0.02	0.01		
Sulphate in mg/L	3	3	5	7		
Sulphite in mg/L	<2	<2	<2	<2		
Phosphorus as P in mg/L	0.01	<0.01	<0.01	0.02		
Chloride in mg/L	6	5	6	6		
Sodium in $\mu$ g/L	8540	7830	8390	7960		
Mg in $\mu$ g/L	410	440	420	440		
Ca in $\mu$ g/L	3180	3030	3100	3280		
K in $\mu$ g/L	290	290	550	400		
Fe in $\mu$ g/L	660	660	490	1310		
Ni in $\mu$ g/L	<1	<1	3.0	<1		
Zn in $\mu$ g/L	<10	<10	11.0	<10		
Mn in $\mu$ g/L	42	55	57	106		
Cu in $\mu$ g/L	<1	<1	1.0	<1		
Pb in $\mu$ g/L	<1	<1	<1	<1		
Cd in $\mu$ g/L	<0.2	<0.2	<0.2	<0.2		
Coliform Count in CFU/100mL	Not detected	26	24	Not Detected		
Oil and Grease in mg/L	<5	<5	<5	<5		

Monitoring Parameter(s)	Monitoring Station WM1				
	Monitoring Results			Action Level	Limit Level
	Apr 2023	May 2023	Jun 2023		
pH	7.1	6.9	7.1	>7.7	>7.8
DO in mg/L	7.8	7.9	7.6	<7.4	<4
Turbidity in NTU	0.4	3.1	5.7	>9.2	>9.5
Electrical Conductivity in $\mu$ S/cm	64	69	73	---	---
SS in mg/L	3.2	3.3	6.6	>9.7	>11.4
Alkalinity in mg/L	13	18	15	---	---
COD in mg/L	17	10	9		
BOD <sub>5</sub> in mg/L	<2	<2	<2		
TOC in mg/L	2	3	2		
Ammonia-nitrogen in mg/L	0.22	0.06	<0.01		
TKN in mg/L	0.4	0.4	0.6		
Nitrate in mg/L	0.03	<0.01	0.06		
Sulphate in mg/L	7	4	2		
Sulphite in mg/L	<2	<2	<2		
Phosphorus as P in mg/L	0.0	0.0	0.01		
Chloride in mg/L	8	7	6		
Sodium in $\mu$ g/L	9170	8590	6750		
Mg in $\mu$ g/L	500	470	540		
Ca in $\mu$ g/L	3720	3460	3340		
K in $\mu$ g/L	720	570	830		
Fe in $\mu$ g/L	480	660	570		
Ni in $\mu$ g/L	<1	<1	<1		
Zn in $\mu$ g/L	19	<10	13		
Mn in $\mu$ g/L	70	84	34		
Cu in $\mu$ g/L	2.0	2.0	1		
Pb in $\mu$ g/L	<1	<1	1		
Cd in $\mu$ g/L	<0.2	<0.2	<0.2		
Coliform Count in CFU/100mL	420	40000	220		
Oil and Grease in mg/L	<5	<5	<5		

Monitoring Parameter(s)	Monitoring Station WM1				
	Monitoring Results			Action Level	Limit Level
	Jul 2023	Aug 2023	Sep 2023		
pH	7.2	6.7	7.2	>7.7	>7.8
DO in mg/L	7.5	6.5	7.8	<7.4	<4
Turbidity in NTU	6.1	7.4	4.3	>9.2	>9.5
Electrical Conductivity in $\mu$ S/cm	99	68	47	---	---
SS in mg/L	2.0	7.2	3.0	>9.7	>11.4
Alkalinity in mg/L	18	19	11	---	
COD in mg/L	12	6	9		
BOD <sub>5</sub> in mg/L	<2	<2	<2		
TOC in mg/L	3	<1	2		
Ammonia-nitrogen in mg/L	0.03	0.02	0.04		
TKN in mg/L	0.4	0.2	0.4		
Nitrate in mg/L	0.53	0.05	0.05		
Sulphate in mg/L	7	2	4		
Sulphite in mg/L	<2	<2	<2		
Phosphorus as P in mg/L	0.01	<0.01	0.02		
Chloride in mg/L	7	5	6		
Sodium in $\mu$ g/L	8350	7740	6340		
Mg in $\mu$ g/L	660	560	430		
Ca in $\mu$ g/L	19400	3740	<0.2		
K in $\mu$ g/L	690	460	680		
Fe in $\mu$ g/L	780	780	270		
Ni in $\mu$ g/L	<1	<1	<1		
Zn in $\mu$ g/L	72	15	14		
Mn in $\mu$ g/L	72	46	32		
Cu in $\mu$ g/L	2.0	<1	1		
Pb in $\mu$ g/L	<1	<1	<1		
Cd in $\mu$ g/L	<0.2	<0.2	<0.2		
Coliform Count in CFU/100mL	56	68	240		
Oil and Grease in mg/L	<5	<5	<5		

Monitoring Parameter(s)	Monitoring Station WM1				
	Monitoring Results			Action Level	Limit Level
	Oct 2023	Nov 2023	Dec 2023		
pH	7.4	7.6	7.6	>7.7	>7.8
DO in mg/L	7.9	7.5	7.6	<7.4	<4
Turbidity in NTU	6.6	5.1	5.8	>9.2	>9.5
Electrical Conductivity in $\mu$ S/cm	51	59	95	---	---
SS in mg/L	4.0	2.5	9.5	>9.7	>11.4
Alkalinity in mg/L	14	17	16	---	
COD in mg/L	21	7	7		
BOD <sub>5</sub> in mg/L	<2	<2	<2		
TOC in mg/L	2	2	<1		
Ammonia-nitrogen in mg/L	0.08	0.07	0.03		
TKN in mg/L	0.3	0.5	0.2		
Nitrate in mg/L	0.06	0.05	0.03		
Sulphate in mg/L	<1	<1	3		
Sulphite in mg/L	<2	<2	<2		
Phosphorus as P in mg/L	0.01	0.0	0.0		
Chloride in mg/L	6	6	6		
Sodium in $\mu$ g/L	6790	8120	8380		
Mg in $\mu$ g/L	450	480	500		
Ca in $\mu$ g/L	2850	3330	3290		
K in $\mu$ g/L	530	600	400		
Fe in $\mu$ g/L	330	420	930		
Ni in $\mu$ g/L	<1	<1	1.0		
Zn in $\mu$ g/L	10	13	<10		
Mn in $\mu$ g/L	28	41	57		
Cu in $\mu$ g/L	<1	2.0	<1		
Pb in $\mu$ g/L	<1	<1	<1		
Cd in $\mu$ g/L	<0.2	<0.2	<0.2		
Coliform Count in CFU/100mL	1600	25	No detected		
Oil and Grease in mg/L	<5	<5	<5		

**Table 5-5 Summary of Impact Surface Water Monitoring Results at WM2**

Monitoring Parameter(s)	Monitoring Station WM2					
	Monitoring Results				Action Level	Limit Level
	Dec 2022	Jan 2023	Feb 2023	Mar 2023		
pH	7.5	7.3	7.2	7.0	>7.6	>7.7
DO in mg/L	6.5	6.9	7.5	7.9	<5	<4
Turbidity in NTU	23.3	4.1	8.6	13.7	>108.3	>108.9
Electrical Conductivity in $\mu\text{S}/\text{cm}$	114	120	124	124	---	---
SS in mg/L	25.6	20.4	9.1	12.0	>94.5	>94.7
Alkalinity in mg/L	35	38	42	36	---	---
COD in mg/L	<5	6	7	<5		
BOD <sub>5</sub> in mg/L	<2	<2	<2	<2		
TOC in mg/L	3	2	5	3		
Ammonia-nitrogen in mg/L	0.18	0.16	0.29	0.33		
TKN in mg/L	0.4	0.3	0.4	0.5		
Nitrate in mg/L	0.10	0.10	0.01	0.05		
Sulphate in mg/L	8	7	5	5		
Sulphite in mg/L	<2	<2	<2	<2		
Phosphorus as P in mg/L	<0.01	<0.01	<0.01	<0.01		
Chloride in mg/L	6	7	6	6		
Sodium in $\mu\text{g}/\text{L}$	6710	6400	5710	5810		
Mg in $\mu\text{g}/\text{L}$	1140	1020	720	690		
Ca in $\mu\text{g}/\text{L}$	12100	11200	7390	7020		
K in $\mu\text{g}/\text{L}$	2310	1680	1130	1050		
Fe in $\mu\text{g}/\text{L}$	6040	6040	10700	10600		
Ni in $\mu\text{g}/\text{L}$	<1	<1	<1	<1		
Zn in $\mu\text{g}/\text{L}$	21	31	34	20		
Mn in $\mu\text{g}/\text{L}$	2150	2100	2910	3070		
Cu in $\mu\text{g}/\text{L}$	2	2	1	1		
Pb in $\mu\text{g}/\text{L}$	2	1	<1	<1		
Cd in $\mu\text{g}/\text{L}$	<0.2	<0.2	<0.2	<0.2		
Coliform Count in CFU/100mL	320	21	4200	14		
Oil and Grease in mg/L	<5	<5	<5	<5		

Monitoring Parameter(s)	Monitoring Station WM2				
	Monitoring Results			Action Level	Limit Level
	Apr 2023	May 2023	Jun 2023		
pH	7.3	7.3	7.2	>7.6	>7.7
DO in mg/L	6.7	8.1	6.8	<5	<4
Turbidity in NTU	64.3	30.6	142.5	>108.3	>108.9
Electrical Conductivity in $\mu$ S/cm	147	212	142	---	---
SS in mg/L	48.1	34.2	83.2	>94.5	>94.7
Alkalinity in mg/L	48	58	35	---	---
COD in mg/L	15	13	14		
BOD <sub>5</sub> in mg/L	2.0	3.0	<2		
TOC in mg/L	2	5	2		
Ammonia-nitrogen in mg/L	<0.01	0.39	0.14		
TKN in mg/L	0.7	0.8	0.8		
Nitrate in mg/L	0.14	0.03	0.32		
Sulphate in mg/L	9	8	17		
Sulphite in mg/L	<2	<2	<2		
Phosphorus as P in mg/L	<0.01	<0.01	<0.01		
Chloride in mg/L	7	15	11		
Sodium in $\mu$ g/L	7890	11800	6830		
Mg in $\mu$ g/L	1370	1420	1560		
Ca in $\mu$ g/L	15400	18600	18600		
K in $\mu$ g/L	3410	3900	3050		
Fe in $\mu$ g/L	9240	8990	3850		
Ni in $\mu$ g/L	2	1	12.0		
Zn in $\mu$ g/L	35	26	51		
Mn in $\mu$ g/L	2220	2370	509		
Cu in $\mu$ g/L	4	3	6		
Pb in $\mu$ g/L	4	3	11		
Cd in $\mu$ g/L	<0.2	<0.2	<0.2		
Coliform Count in CFU/100mL	330	1500	4200		
Oil and Grease in mg/L	<5	<5	<5		

Monitoring Parameter(s)	Monitoring Station WM2				
	Monitoring Results			Action Level	Limit Level
	Jul 2023	Aug 2023	Sep 2023		
pH	7.1	6.8	7.2	>7.6	>7.7
DO in mg/L	7.3	7.0	7.6	<5	<4
Turbidity in NTU	50.2	32.2	12	>108.3	>108.9
Electrical Conductivity in $\mu$ S/cm	137	133	125	---	---
SS in mg/L	16.8	30.8	7.6	>94.5	>94.7
Alkalinity in mg/L	38	35	31	---	---
COD in mg/L	9	7	6		
BOD <sub>5</sub> in mg/L	<2	<2	<2		
TOC in mg/L	2	<1	2		
Ammonia-nitrogen in mg/L	0.07	0.08	0.13		
TKN in mg/L	0.3	0.4	0.3		
Nitrate in mg/L	0.26	0.24	0.24		
Sulphate in mg/L	13	17	20		
Sulphite in mg/L	<2	<2	<2		
Phosphorus as P in mg/L	<0.01	<0.01	<0.01		
Chloride in mg/L	7	6	4		
Sodium in $\mu$ g/L	6120	5840	4680		
Mg in $\mu$ g/L	1330	1480	1290		
Ca in $\mu$ g/L	15600	16100	<0.2		
K in $\mu$ g/L	2130	2140	1450		
Fe in $\mu$ g/L	2370	2710	670		
Ni in $\mu$ g/L	2.0	4	<1		
Zn in $\mu$ g/L	26	68	10		
Mn in $\mu$ g/L	757	1160	563		
Cu in $\mu$ g/L	2	2	<1		
Pb in $\mu$ g/L	3	4	1		
Cd in $\mu$ g/L	<0.2	<0.2	<0.2		
Coliform Count in CFU/100mL	850	290	290		
Oil and Grease in mg/L	<5	<5	<5		



Monitoring Parameter(s)	Monitoring Station WM2				
	Monitoring Results			Action Level	Limit Level
	Oct 2023	Nov 2023	Dec 2023		
pH	7.6	7.5	7.5	>7.6	>7.7
DO in mg/L	7.5	6.5	5.6	<5	<4
Turbidity in NTU	43.2	20.8	60.2	>108.3	>108.9
Electrical Conductivity in $\mu$ S/cm	148	159	191	---	---
SS in mg/L	19.4	10.0	44.6	>94.5	>94.7
Alkalinity in mg/L	36	44	54	---	---
COD in mg/L	<5	<5	7		
BOD <sub>5</sub> in mg/L	<2	<2	<2		
TOC in mg/L	2	2	2		
Ammonia-nitrogen in mg/L	0.11	0.06	0.26		
TKN in mg/L	0.2	0.1	0.5		
Nitrate in mg/L	0.25	0.19	0.15		
Sulphate in mg/L	18	24	22		
Sulphite in mg/L	<2	<2	<2		
Phosphorus as P in mg/L	<0.01	<0.01	<0.01		
Chloride in mg/L	5	6	8		
Sodium in $\mu$ g/L	5190	6010	7770		
Mg in $\mu$ g/L	1320	1470	1970		
Ca in $\mu$ g/L	16500	19400	23800		
K in $\mu$ g/L	2470	2010	2480		
Fe in $\mu$ g/L	1780	1340	3080		
Ni in $\mu$ g/L	1.0	2	2		
Zn in $\mu$ g/L	13	20	26		
Mn in $\mu$ g/L	703	1350	2540		
Cu in $\mu$ g/L	1	1	3		
Pb in $\mu$ g/L	5	1	4		
Cd in $\mu$ g/L	<0.2	<0.2	<0.2		
Coliform Count in CFU/100mL	1000	56	10		
Oil and Grease in mg/L	<5	<5	<5		

**Table 5-6 Summary of Additional Impact Surface Water Monitoring Results on 28 September 2023**

Monitoring Parameter(s)	Monitoring Station			
	WM2			GR3 (EPD Monitoring Location)
	Monitoring Results	Action Level	Limit Level	Monitoring Results
pH	7.5	>7.6	>7.7	7.4
DO in mg/L	7.8	<5	<4	7.6
Turbidity in NTU	8.8	>108.3	>108.9	13.1
Electrical Conductivity in $\mu$ S/cm	71	---	---	108
SS in mg/L	5.5	>94.5	>94.7	4.9
COD in mg/L	<5			6
BOD <sub>5</sub> in mg/L	<2			<2
Ammonia-nitrogen in mg/L	2			2
Chloride in mg/L	0.12			0.10
Iron in $\mu$ g/L	910			670
Zinc in $\mu$ g/L	13			20
Coliform Count in CFU/100mL	3400			380

5.2.3.2 The Summary of Impact Surface Water Quality Exceedance are shown in **Table 5-7**.

**Table 5-7 Summary of Impact Surface Water Quality Exceedance during the reporting period**

Surface Water Quality Monitoring Station		WM1		WM2	
Parameters	Level Exceedance	Action Level	Limit Level	Action Level	Limit Level
	pH	Exceedance Date	-	-	-
Exceedance Count		0	0	0	0
DO	Exceedance Date	4 Aug 23*	-	-	-
	Exceedance Count	1	0	0	0
Turbidity	Exceedance Date	-	-	-	21 Jun 23
	Exceedance Count	0	0	0	1
SS	Exceedance Date	-	-	-	-
	Exceedance Count	0	0	0	0

Remarks: \* equal to non-project related

5.2.3.3 No exceedance of Action and Limit Levels of surface water monitoring was recorded from December 2022 to March 2023

5.2.3.4 No exceedance of Action Levels of surface water monitoring was recorded from April to June 2023. 1 turbidity exceedance of Limit Levels of surface water quality at WM2 was recorded from April to June 2023. After the investigation, the exceedance may involve the construction runoff of the project. The rectification actions are conducted by the contractor in progress. The rectification works should be achieved minimization the potential risk of causing high

concentration of construction runoff, enhancement of maintenance of Temporary Surface Water Drainage System (TSWDS), enhancement of the effectiveness and treatment capacity of the TSWDS & Enhancement of temporary landscape treatment as green cover and Minimization the potential risk of causing high concentration of construction runoff.

5.2.3.5 No exceedance of Action Levels of surface water monitoring was recorded in July 2023.

5.2.3.6 One DO exceedance of Action Level of surface water quality at WM1 was recorded in August 2023. The Notification of Environmental Quality Limits Exceedance is presented in **Appendix G**. In summary of the investigation, the DO exceedance in Action Level of Surface Water Quality at WM1 may involve the vary of temperature under the hot weather. Therefore, the exceedance is not related to project. No exceedance of Limit Level of surface water monitoring at WM1 was recorded in August 2023. No exceedance of Action Levels and Limit Level of surface water monitoring at WM2 were recorded in August 2023.

5.2.3.7 No exceedance of Action and Limit Levels of surface water monitoring was recorded from September to December 2023.

## 5.2.4 Recommended Mitigation Measure

5.2.4.1 The recommended surface water mitigation measures from EIA report are listed as followed:

- Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities.
- The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows.
- 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 silts and sediment traps should be 5 minutes under maximum flow conditions.
- All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads.
- Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts.
- Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.

## 5.2.5 Event and Action Plan

5.2.5.1 Should non-compliance of the criteria occurs, action in accordance with the action plan in **Table 5-8** shall be carried out.

**Table 5-8 Event and Action Plan for Water Quality**

Event	ET	IEC	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>• Prepare Notification of Exceedance</li> <li>• Inform IEC and Contractor</li> <li>• Check monitoring data, all plant, equipment and Contractor's working methods</li> <li>• Repeat measurement on next day of exceedance</li> </ul>	<ul style="list-style-type: none"> <li>• Verify Notification of Exceedance</li> <li>• Check monitoring data and Contractor's working methods</li> </ul>	<ul style="list-style-type: none"> <li>• Rectify unacceptable practice</li> <li>• Amend working methods if appropriate</li> </ul>
Action level being exceeded by two or more 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>• Prepare Notification of Exceedance</li> <li>• Inform IEC and Contractor</li> <li>• Check monitoring data, all plant, equipment and Contractor's working methods</li> <li>• Discuss with Contractor and IEC for remedial measures</li> <li>• Ensure mitigation measures are implemented</li> <li>• Increase the monitoring frequency to daily until no exceedance of Action level</li> <li>• Repeat measurement on next day of exceedance</li> </ul>	<ul style="list-style-type: none"> <li>• Verify Notification of Exceedance</li> <li>• Check monitoring data and Contractor's working method</li> <li>• Discuss with ET and Contractor on possible remedial actions</li> <li>• Review the proposed mitigation measures</li> <li>• Supervise the implementation of mitigation measures</li> </ul>	<ul style="list-style-type: none"> <li>• Submit proposal of additional mitigation measures to IEC of notification</li> <li>• Implement the agreed mitigation measures</li> <li>• Amend proposal if appropriate</li> </ul>

Event	ET	IEC	Contractor
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>• Prepare Notification of Exceedance</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 measure are implemented</li> </ul>	<ul style="list-style-type: none"> <li>• Verify Notification of Exceedance</li> <li>• Check monitoring data submitted By ET and Contractor's working method</li> <li>• Discuss with ET and Contractor on possible remedial actions</li> <li>• Review the proposed mitigation measures</li> <li>• Supervise the implementation of mitigation measures</li> </ul>	<ul style="list-style-type: none"> <li>• Critically review the working method</li> <li>• Rectify unacceptable practice</li> <li>• Take immediate corrective actions to avoid further exceedance</li> <li>• Submit proposal of mitigation measures to IEC</li> <li>• Implement the agreed mitigation measures</li> </ul>
Limit level being exceeded by two or more 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>• Prepare Notification of Exceedance</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 and Contractor</li> <li>• Ensure mitigation measure are implemented</li> </ul>	<ul style="list-style-type: none"> <li>• Verify Notification of Exceedance</li> <li>• Check monitoring data submitted by ET and Contractor's working method</li> <li>• Discuss with ET and Contractor on possible remedial actions</li> <li>• Review the proposed mitigation measures</li> <li>• Supervise the implementation of mitigation measures</li> </ul>	<ul style="list-style-type: none"> <li>• Critically review the working method</li> <li>• Rectify unacceptable practice</li> <li>• Take immediate corrective actions to avoid further exceedance</li> <li>• Submit proposal of mitigation measures to IEC</li> <li>• Implement the agreed mitigation measures</li> <li>• Resubmit proposals if problem still not under control</li> <li>• Slow down or to stop relevant activity until exceedance is abated</li> </ul>

## 6 Waste Management

- 6.1** Wastes generated from this Project include inert construction and demolition (C&D) materials and non-inert C&D materials. Non-inert C&D materials were made up of general refuse, steels and paper/cardboard packaging materials. Steel materials generated from the Project were also grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. With reference to relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting month are summarised in **Appendix G**.
- 6.2** The recommended waste management mitigation measures from EIA report are listed as followed:
- Implement a trip-ticket system to ensure that the movement of C&D materials are properly documented and verified in accordance with DEVB TC(W) No. 6/2010.
  - Concrete and masonry should be used as general fill and steel reinforcement bars can be used by scrap steel mills.
  - Proper areas should be designated for waste segregation and storage wherever site conditions permit.
  - Maximise the use of reusable steel formwork to reduce the amount of C&D material.
  - Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement.
  - On-site sorting and segregation facility of all type of wastes is considered as one of the best practice in waste management and hence, should be implemented in all projects generating construction waste.
  - The sorted public fill and C&D waste should be properly reused.
  - Excavated slope, stockpiled material and bund walls should be covered by tarpaulin until used in order to prevent wind-blown dust during dry weather, and to reduce muddy runoff during wet weather.

## 7 Landfill Gas Monitoring

### 7.1 Monitoring Requirement during Construction

#### *Monitoring for Construction Works*

- 7.1.1 Intrinsically safe portable gas detectors should be used during excavation or when working in any confined spaces, which have the potential for presence of LFG and risk of explosion or asphyxiation. The monitoring equipment should alarm, both audibly and visually, when the concentrations of the following gases were exceeded:
- CH<sub>4</sub>: >10% Lower Explosion Limit (LEL);
  - CO<sub>2</sub>: >0.5%; and
  - O<sub>2</sub>: <18% by volume.

### 7.2 Monitoring Location

- 7.2.1 During the construction works within the NENT Landfill Extension site with excavation of 1m deep or more, LFG concentrations should be monitored before entry and periodically during the progress of works. If drilling is required, the procedures for safety management and working procedures as stipulated in EPD's Landfill Gas Hazard Assessment – Guidance Note should be strictly adopted.
- 7.2.2 The monitoring frequency and areas to be monitored should be set down prior to commencement of groundworks by the Safety Officer. All measurements in excavations should be made with the monitoring tube located not more than 10mm from the exposed ground surface. Monitoring of excavations should be undertaken as follows:
- 7.2.3 For excavation works deeper than 1m, measurements should be made:
- at ground surface prior to excavation;
  - immediately before any worker enters the excavation;
  - at the beginning of each working day for the entire period the excavation remains open; and
  - periodically through the working day whilst workers are in the excavation.
- 7.2.4 For excavation between 300mm and 1m deep, measurements should be made:
- directly after the excavation has been completed; and
  - periodically whilst the excavation remains open.
- 7.2.5 For excavations less than 300mm deep, monitoring may be omitted, at the discretion of the Safety Officer.
- 7.2.6 The locations of LFG monitoring locations during reporting period are shown in **Table 7-1**. The Site formation layout plan is shown in **Figure 2** and the Layout of LFG monitoring locations is presented in **Figure 3**.

**Table 7-1 Locations of LFG Monitoring during reporting period**

Monitoring Period	Monitoring Location	Type of works
Dec 2022	Portion A +55 mpD Platform	Excavation Works
Jan to Feb 2023	Portion A +58 mpD,+55 mpD Platform	
Mar to Jun 2023	Portion A +55 mpD to 70 mpD Platform	
Jul to Dec 2023	Portion A +50 mpD to 70 mpD Platform	



## 7.3 Monitoring Results

7.3.1 The LFG monitoring was conducted at designated location of Portion A (Conducted on working days) during the reporting period. The LFG monitoring results are summarized in **Table 7-2**.

**Table 7-2 Summary of LFG Monitoring Results**

LFG Monitoring Station	Monitoring Date	Monitoring Parameter(s)			
		CH <sub>4</sub> in %	LEL in %/v	CO <sub>2</sub> in %	O <sub>2</sub> in %
		Average Monitoring Results (Range)			
Portion A +55 mpD Platform	Dec 2022	0	0	0	20.4 (20.1 – 20.8)
Portion A +58 mpD,+55 mpD Platform	Jan 2023	0	0	0	20.3 (20.1 – 20.6)
	Feb 2023	0	0	0	20.4 (20.1 – 20.6)
Portion A +55 mpD to 70 mpD Platform	Mar 2023	0	0	0	20.4 (20.2 – 20.8)
	Apr 2023	0	0	0	20.2 (20.1 – 20.4)
	May 2023	0	0	0	20.2 (20.1 – 20.3)
	Jun 2023	0	0	0	20.2 (20.1 – 20.3)
Portion A +50 mpD to 70 mpD Platform	Jul 2023	0	0	0	20.1 (20.0 – 20.2)
	Aug 2023	0	0	0	20.2 (20.1 – 20.4)
	Sep 2023	0	0	0	20.2 (20.1 – 20.2)
	Oct 2023	0	0	0	20.2 (20.1 – 20.3)
	Nov 2023	0	0	0	20.1 (20.0 – 20.2)
	Dec 2023	0	0	0	20.1 (20.0 – 20.2)
<b>Action Level</b>		>10% LEL	---	>0.5%** CO <sub>2</sub>	<19%
<b>Limit Level</b>		>20% LEL	---	>1.5% CO <sub>2</sub>	<18%

\* LEL: Lower Explosive Limit - concentrations in air below which there is not enough fuel to continue an explosion.

\*\* This Limit Level of CO<sub>2</sub> at 0.5% is set for reference only, assuming no CO<sub>2</sub> emission from a particular location.

7.3.2 The Summary of Landfill Gas Exceedance are shown in Table 7-3.

**Table 7-3 Summary of Landfill Gas Exceedance during the reporting period**

Landfill Gas Monitoring Station		Portion A +55 mpD Platform		Portion A +58 mpD,+55 mpD Platform		Portion A +55 mpD to 70 mpD Platform		Portion A +50 mpD to 70 mpD Platform	
		Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level
CH <sub>4</sub>	Exceedance Date	-	-	-	-	-	-	-	-
	Exceedance Count	0	0	0	0	0	0	0	0
CO <sub>2</sub>	Exceedance Date	-	-	-	-	-	-	-	-
	Exceedance Count	0	0	0	0	0	0	0	0
O <sub>2</sub>	Exceedance Date	-	-	-	-	-	-	-	-
	Exceedance Count	0	0	0	0	0	0	0	0

Remarks: \* equal to non-project related

7.3.3 No exceedance of Action and Limit Levels of LFG was recorded during the reporting period. Therefore, there was no record of Notification of Environmental Quality Limits Exceedance in the **Appendix F**.

7.3.4 No effect that arose from the other special phenomena and work progress of the concerned site was noted during the current monitoring month.

## 7.4 Recommended Mitigation Measures

7.4.1 The recommended landfill gas mitigation measures from EIA report are listed as followed:

- Special LFG precautions should be taken due to close proximity of NENT landfill extension site to existing landfill to avoid potential hazards of LFG exposure (ignition, explosion, asphyxiation, toxicity).
- Prominent safety warning signs should be erected on-site to alert all personnel and visitors of LFG hazards during excavation works.
- No smoking or burning should be permitted on-site.
- Prominent 'No smoking' and 'No Naked Flames' signs should be erected on-site.
- No worker should be allowed to work alone at any time in excavated trenches or confined areas on-site.
- Adequate fire fighting equipment should be provided on-site.
- Construction equipment should be equipped with vertical exhaust at least 0.6m above ground installed with spark arrestors.
- Electrical motors and extension cords should be explosion-proof and intrinsically safe for use on-site.
- 'Permit to Work' system should be implemented.

- Welding, flame-cutting or other hot works should be conducted only under 'Permit to Work' system following clear safety requirements, gas monitoring procedures and presence of qualified persons to supervise the works.

## 7.5 Event and Action Plan (EAP)

7.5.1 Should non-compliance of the criteria occur, action in accordance with the action plan in **Table 7-4** shall be carried out.

**Table 7-4 Action Plan for the monitoring during construction phase**

Parameter	Monitoring Result	Action
Oxygen (O <sub>2</sub> )	Action Level <19% O <sub>2</sub>	Ventilate trench/void to restore O <sub>2</sub> to >19%
	Limit Level <18% O <sub>2</sub>	Stop works Evacuate personnel/prohibit entry Increase ventilation to restore O <sub>2</sub> to >19%
Methane (CH <sub>4</sub> )	Action Level >10% LEL*	Prohibit hot works Increase ventilation to restore CH <sub>4</sub> to <10% LEL
	Limit Level >20% LEL*	Stop works Evacuate personnel/prohibit entry Increase ventilation to restore CH <sub>4</sub> to <10% LEL
Carbon dioxide (CO <sub>2</sub> )	Action Level** >0.5%** CO <sub>2</sub>	Ventilate to restore CO <sub>2</sub> to <0.5%
	Limit Level >1.5% CO <sub>2</sub>	Stop works Evacuate personnel / prohibit entry Increase ventilation to restore CO <sub>2</sub> to <0.5%

\* LEL: Lower Explosive Limit - concentrations in air below which there is not enough fuel to continue an explosion.

\*\* This Action Level of CO<sub>2</sub> at 0.5% is set for reference only, assuming no CO<sub>2</sub> emission from a particular location.

Depending on the baseline CO<sub>2</sub> levels, the Action Level at a particular location will be changed.

## 8 Landscape and Visual

### 8.1 Monitoring Requirement

- 8.1.1 In order to monitor the landscape and visual impact after providing mitigation measures effectively, all the specified and affected LCAs, LRs and VSRs should be monitored. Implementation of the mitigation measures during construction phase of the Project has been monitored through the regular site inspection/audit.
- 8.1.2 All relevant environmental mitigation measures listed in the approved EIA Report and the EM&A Manual, and their implementation status are summarised in **Appendix H**.

### 8.2 Result and Observation

- 8.2.1 Measures to mitigate the landscape and visual impacts during the construction phase has been checked to ensure compliance with the intended aims of the measures within the reporting period. The progress of the engineering works are regularly reviewed on site to identify the earliest practical opportunities for the landscape works to be undertaken.
- 8.2.2 In order to monitor the landscape and visual impact after providing mitigation measures effectively, all the specified and affected LCAs, LRs and VSRs should be monitored. Implementation of the mitigation measures during construction phase of the Project has been monitored through the regular site inspection/audit.

## 9 Cultural Heritage

- 9.1.1 The Mitigation measures for preservation of the cultural landscape feature located within the project area was conducted before commencement of construction of the project based on the requirement of Survey Report and Mapping Records for Boulder Paths BP1 & 2 & Conditions of G2, G4, G5 G6, G7, G8, G14, G15, G25, G26 and G27 within NENTX.
- 9.1.2 The survey and mapping works carried out on 25 April 2022 and the verification works carried out on 23 August 22 confirmed that both 2 boulder paths BP1 and BP2 are fall outside the site boundary and the Project area.
- 9.1.3 All the affected graves within the waste boundary have been removed in accordance with section 119(1) of the Public Health and Municipal Services Ordinance (Cap 132). Removal of the graves as shown on Figure 2 attached to the FEP was proven by the visit of graves on 22 August 2022. All the graves as shown on Figure 2 attached to the FEP were abandoned and removed and no mitigation or preservation measures is necessary.
- 9.1.4 The Survey Report and Mapping Records for Boulder Paths BP1 & 2 was certified by ET on 10 Oct 2022, was verified by IEC and submitted to EPD on 12 Oct 2022. The Conditions of G2, G4, G5 G6, G7, G8, G14, G15, G25, G26 and G27 within NENTX was certified by ET, was verified by IEC and submitted to EPD on 15 Oct 2022. No later than four weeks before commencement of construction of the project in accordance with Condition 2.4 of the FEP-01/292/2007.
- 9.1.5 Implementation of the mitigation measures such as permanent fencing to protect the boulder path and setting up warning notices during construction phase of the Project has been monitored through the regular site inspection/audit. The permanent fencing locations are shown in **Appendix I**. In case of any presence of undiscovered grave during construction phase, AMO will be informed as soon as possible.

## 10 Ecological Monitoring

- 10.1.1 The post-transplantation monitoring was conducted based on the requirement of the approved Transplantation Proposal for Plant Species of Conservation Importance (Rev.1). The 1<sup>st</sup> to 15<sup>th</sup> Post-transplantation Monitoring and Audit Reports (24<sup>th</sup> November 2022 to 13<sup>th</sup> October 2023) present the details of requirements, monitoring results and site inspection with photos. During the reporting period, the numbers, measurements, and health conditions of the transplanted plant species are recorded. The post-transplantation monitoring had been completed in October 2023. No further post-transplantation monitoring will be conducted in accordance with the requirement of the approved Transplantation Proposal for Plant Species of Conservation Importance (Rev.1).
- 10.1.2 In the reporting period, the post-translocation monitoring for the Endemic Freshwater Crab *Somanniathelphusa zanklon* was conducted based on the requirement of the approved Revised Translocation Proposal for the Endemic Freshwater Crab *Somanniathelphusa zanklon*. The 1<sup>st</sup> to 12<sup>th</sup> Post-Translocation Monitoring Reports (November 2022 to July 2023) present the details of requirements, monitoring results and site inspection with photos. During the reporting period, no *S. zanklon* individual is identified. The post-translocation monitoring had been completed in July 2023. No further post-translocation monitoring will be conducted in accordance with the requirements of the Revised Translocation Proposal for the Endemic Freshwater Crab *Somanniathelphusa zanklon*.
- 10.1.3 The details of requirements, monitoring results and site inspection with photos for the post-translocation monitoring and post-transplantation monitoring would be reported separately.
- 10.1.4 The milestone of the ecological monitoring is presented in **Table 10-1**. The softcopies of the submissions are provided in <https://www.nentx-ema.com/ep-submissions/>.

**Table 10-1 Milestone of the Ecological Monitoring**

Type of Monitoring	Monitoring Event No.	Monitoring Date
Post-transplantation Monitoring	1 <sup>st</sup>	24 Nov 2022
	2 <sup>nd</sup>	9 Dec 2022
	3 <sup>rd</sup>	21 Dec 2022
	4 <sup>th</sup>	13 Jan 2023
	5 <sup>th</sup>	26 Jan 2023
	6 <sup>th</sup>	8 Feb 2023
	7 <sup>th</sup>	24 Feb 2023
	8 <sup>th</sup>	20 Mar 2023
	9 <sup>th</sup>	21 Apr 2023
	10 <sup>th</sup>	12 May 2023
	11 <sup>th</sup>	16 Jun 2023
	12 <sup>th</sup>	18 Jul 2023
	13 <sup>th</sup>	11 Aug 2023
	14 <sup>th</sup>	15 Sep 2023
	15 <sup>th</sup>	13 Oct 2023
Post-translocation Monitoring	1 <sup>st</sup> (Aug 2022)	29 Aug 2022
	2 <sup>nd</sup> (Sep 2022)	28 Sep 2022
	3 <sup>rd</sup> (Oct 2022)	28 Oct 2022
	4 <sup>th</sup> (Nov 2022)	22 Nov 2022
	5 <sup>th</sup> (Dec 2022)	29 Dec 2022
	6 <sup>th</sup> (Jan 2023)	30 Jan 2023
	7 <sup>th</sup> (Feb 2023)	24 Feb 2023
	8 <sup>th</sup> (Mar 2023)	20 Mar 2023
	9 <sup>th</sup> (Apr 2023)	19 Apr 2023
	10 <sup>th</sup> (May 2023)	17 May 2023
	11 <sup>th</sup> (Jun 2023)	7 Jun 2023
	12 <sup>th</sup> (Jul 2023)	12 Jul 2023

## 11 Site Inspection and Audit

- 11.1.1 Site Inspection and audits were carried out by ET on weekly basis to monitor the implementation of proper environmental management practices and mitigation measures in the Project Site.
- 11.1.2 Total 56 weekly environmental site inspections were conducted during the reporting period. 13 of them were the joint environmental site inspections with the representatives of ER, Contractor, IEC and ET. There was no noncompliance recorded during the site inspections.
- 11.1.3 Details of observations and recommendations are summarized in **Table 11-1**.

**Table 11-1 Observations and Recommendations of Site Audit**

Parameter	Date	Observation and Reminders	Follow-up Action Taken
Air Quality	12 Dec 2022	<b>Reminder:</b> The vehicle exit road shall be kept clear of dusty materials.	The Contractor was reminded to schedule watering for the vehicle exist road.
	28 Dec 2022	<b>Observation:</b> The vehicle road is covered with dusty materials in Portion A.	The vehicle entrance shall be kept clear of dusty materials.
	28 Dec 2022	<b>Observation:</b> The work area is dry and fugitive dust is observed from loading and unloading activity in Portion D.	The Contractor has been recommended to schedule watering for work area and to spray with water during loading and unloading activities.
	3 Jan 2023	<b>Observation:</b> The work area was dry and fugitive dust was observed from loading and unloading activity in Portion A and Portion D.	The Contractor has been recommended to schedule watering for the work area.
	9 Jan 2023	<b>Observation:</b> The work area in SBA was observed dry and fugitive dust was observed.	The Contractor has been recommended to schedule watering for work area in SBA area.
	16 Jan 2023	<b>Reminder:</b> The vehicle entrance was not maintained properly in Portion A.	The Contractor has been reminded to repave the road section between the washing facilities and the exit point.
	16 Jan 2023	<b>Reminder:</b> Open stockpile was observed in Portion D.	The Contractor has been reminded to cover the open stockpile with impervious sheets.
	27 Jan 2023	<b>Observation:</b> Dusty stockpiles were observed in SBA.	The contractor was recommended that dusty stockpile shall be covered with impervious sheet to prevent dust dispersion.
	27 Jan 2023	<b>Reminder:</b> The exposed earth was dry and dusty in Portion D.	The Contractor has been reminded to cover the exposed earth with impervious sheets or other means to prevent dust dispersion.



Parameter	Date	Observation and Reminders	Follow-up Action Taken
Air Quality	1 Feb 2023	<b>Observation:</b> Vehicle washing was implemented in SBA.	The Contractor has been recommended to provide vehicle washing facility at the exit of SBA.
	1 Feb 2023	<b>Reminder:</b> The unpaved area in Portion D was dry and dusty. Dry and fugitive dust was observed in the work area in Portion A.	The Contractor has been reminded to increase the frequency of watering to the unpaved area in Portion D and work area in Portion A.
	1 Feb 2023	<b>Reminder:</b> The open stockpiles in SBA were not covered with impervious sheets.	The Contractor has been reminded to cover the stockpile with impervious sheets.
	6 Feb 2023	<b>Observation:</b> Fugitive dust was observed in Portion A and D.	The Contractor has been recommended to increase the frequency of watering unpaved area and work area or other dust suppression method in Portion A and D to minimize dust dispersion.
	13 Feb 2023	<b>Reminder:</b> The Contractor was reminded that the frequently of watering unpaved area and work area or other dust suppression method in Portion A is reminded should be increased.	The frequently of watering unpaved area and work area or other dust suppression method in Portion A was increased.
	20 Feb 2023	<b>Observation:</b> The fugitive dust was observed in Portion A.	The Contractor was recommended to increase the frequency of watering to the unpaved area and work area in Portion A.
	20 Feb 2023	<b>Observation:</b> The lack of NRMN Label was observed in the generator at SBA.	The Contractor was recommended to label the NRMN Label on the generator at SBA.
	27 Feb 2023	<b>Observation:</b> The site area in SBA was dry and fugitive dust was observed.	The Contractor has been recommended to schedule watering and to increase the frequency of watering if necessary in SBA.
	27 Feb 2023	<b>Observation:</b> Vehicle washing shall be implemented in SBA.	The Contractor has been recommended to implement vehicle washing at the exit of Portion.
	27 Feb 2023	<b>Observation:</b> More than 20 bags of cement were not covered entirely by impervious sheets in SBA.	The Contractor has been recommended to cover the cement bags entirely.
	27 Feb 2023	<b>Reminder:</b> The Contractor has been reminded to schedule watering for Portion D.	The Contractor has been reminded to schedule watering and to increase the frequency of watering if necessary in Portion D.

Parameter	Date	Observation and Reminders	Follow-up Action Taken
Air Quality	6 Mar 2023	<b>Reminder:</b> The Contractor was reminded to increase the frequency of watering at unpaved road and works area of SBA and Portion D.	The frequency of watering at unpaved road and works area of SBA and Portion D should be increased.
	13 Mar 2023	<b>Observation:</b> Fugitive dust was observed from the breaking and excavation works in Portion E3-1. 1.	The Contractor has been reminded to spray water on surface or the dusty material during breaking and excavation works.
	13 Mar 2023	<b>Reminder:</b> The Contractor was reminded to increase the frequency of watering at unpaved road and works area of Portion A.	The frequency of watering at unpaved road and works area of Portion A should be increased.
	20 Mar 2023	<b>Observation:</b> Stockpiles of dusty material are not covered with impervious sheets.	The Contractor has been reminded to fully cover the stockpiles of dusty material with impervious sheets.
	20 Mar 2023	<b>Reminder:</b> The Contractor was reminded to increase the frequency of watering in construction site to prevent dust dispersion.	Frequency of watering in the construction site should be increased to prevent dust dispersion.
	27 Mar 2023	<b>Observation:</b> Sand and silt were observed at the vehicle entrance in SBA.	The contractor has been recommended that the vehicle entrance shall be kept clear.
	17 Apr 2023	<b>Reminder:</b> The Contractor was reminded to spray water on the surface of dusty material in SBA to prevent dust dispersion.	The Contractor was reminded that dusty material shall be sprayed with water to prevent generation of dust.
	2 May 2023	<b>Observation:</b> Sand and silt were observed at the road leading to SBA.	The contractor was recommended that road surface shall be kept clear of sand and silt.
	2 May 2023	<b>Reminder:</b> Dust suppression measure shall be enhanced to cover all work area and dusty stockpiles in SBA.	The contractor was reminded to ensure the implementation of dust suppression measure for the dry work area and dusty stockpile.
	15 May 2023	<b>Observation:</b> The accumulate of the uprooting of trees without covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides were found at the work area at SBA.	The contractor was recommended that the demolished trees should be covered by impervious sheeting or placed in an area sheltered on the top and the 3 sides.

Parameter	Date	Observation and Reminders	Follow-up Action Taken
Air Quality	22 May 2023	<b>Observation:</b> The unrooting trees at Portion A was not covered by impervious sheeting and or placed in an area sheltered on the top and the 3 sides within a day of demolition.	The contractor was recommended that all demolished items (including trees) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides within a day of demolition.
	29 May 2023	<b>Observation:</b> Portion of road leading to Portion A and Portion B2 shall be kept clear of dusty and muddy materials.	The Contractor was reminded to clear dusty and muddy material on the portion of road leading to Portion A and Portion B2.
	29 May 2023	<b>Observation:</b> The accumulated uprooting trees is found behind the silt removal facilities in Portion B2.	The accumulated uprooting trees shall be covered with impervious sheets, placed in an area sheltered on the top and the 3 sides or disposed properly.
	12 Jun 2023	<b>Observation:</b> Watering shall be scheduled in Portion A under hot weather.	The Contractor was recommended to schedule watering in Portion A.
	26 Jun 2023	Reminder: The unpaved assess road was dry.	The contractor was reminded to increase the frequency of watering at the Portion A.
	3 Jul 2023	<b>Observation:</b> Dusty stockpiles in Portion A shall be covered with impervious sheets when they are not in used.	The Contractor was reminded to cover the dusty stockpile with impervious sheets.
	31 Jul 2023	<b>Observation:</b> The slope surface at the Portion E4 shall be covered by impervious sheet.	The contractor was recommended that the exposed slope at the Portion E4 should be covered by impervious sheet. The exposed slope at the Portion E4 should be treated with shotcrete for long term.
	31 Jul 2023	<b>Observation:</b> The assess road at the Portion E4 was dry.	The contractor was advised that the assess road at the Portion E4 should be sprayed with water when the assess road is dry to minimize the dust suppression. The water sprinkler should be considered to establish at the assess road of the Portion E4.
	28 Aug 2023	<b>Observation:</b> The work area in Portion A was dry and dusty.	The contractor was advised to schedule watering in the work area and review the coverage of the water sprinkler.
	4 Sep 2023	<b>Observation:</b> Dust drift was found at the assess road of Portion A when vehicle moving.	The contractor was advised to increase the frequency of water spraying at the assess road of Portion A.

Parameter	Date	Observation and Reminders	Follow-up Action Taken
Air Quality	11 Sep 2023	<b>Observation:</b> The dusty stockpile in SBA should be covered with impervious sheet when the rainfall is forecast.	The Contractor was advised to cover the stockpiles with impervious sheet when they are idle.
	18 Sep 2023	<b>Observation:</b> The demolished tree, shrub or vegetation in Portion B2 should be covered with impervious sheets or placed within a shelter.	The Contractor was reminded to cover the demolished tree, shrub or vegetation with impervious sheets or placed within a shelter.
	18 Sep 2023	<b>Observation:</b> The dry PFA in Portion B2 should be covered entirely with impervious sheets.	The Contractor was reminded to cover dry PFA entirely with impervious sheets.
	18 Sep 2023	<b>Observation:</b> The metal plate at the vehicle entrance in Portion B2 should cover unpaved road surface in Portion B2.	Vehicle entrance should be paved with concrete, bituminous materials, hardcore or metal plates, and kept clear of dusty materials.
	18 Sep 2023	<b>Observation:</b> The main haul road in Portion E4 was dry and dusty.	The Contractor was advised to schedule watering and recommended to install water sprinklers or mist spray in long term.
	25 Sep 2023	<b>Observation:</b> The main haul road and work site should be wetted regularly to minimize the dust dispersion.	The Contractor was reminded to switch on the water sprinklers along the haul road in SBA and to schedule watering for unpaved haul road and work area. The Contractor has been advised to increase the frequency of watering if necessary under the hot weather condition to minimize dust dispersion.
	16 Oct 2023	<b>Reminder:</b> The contractor was reminded to provide regular water spraying to the haul road to control the dust level.	The contractor was reminded to provide regular water spraying to the haul road to control the dust level.
	24 Oct 2023	<b>Reminder:</b> The contractor was reminded to increase the water spraying at the unpaved area and assess road.	The contractor was reminded to increase the water spraying at the unpaved area and assess road.
	6 Nov 2023	<b>Observation:</b> The outside surrounding of the scaffolding without dust screen, sheeting or netting was found at the Portion D.	The contractor was advised that the effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy provided from the first-floor level up to the highest level of the scaffolding.

Parameter	Date	Observation and Reminders	Follow-up Action Taken
Air Quality	13 Nov 2023	<b>Observation:</b> The loaded dump truck without covering impervious sheet was found at the assess road between Portion A and E4.	The contractor was recommended to ensure all of loaded dump trucks should be covered by impervious sheeting.
	27 Nov 2023	<b>Reminder:</b> The contractor was reminded that water spraying shall be provided regularly for dust control.	The contractor was reminded that water spraying shall be provided regularly for dust control.
	4 Dec 2023	<b>Observation:</b> The dust dispersion was observed in the site.	The contractor was advised to regularly water the works area and provide enough sprayers to dampen the surface of construction materials and the site, especially during the work process, to minimize dust dispersion.
	11 Dec 2023	<b>Observation:</b> The accumulated uprooting of trees at portion E4 was observed.	The contractor was advised to regularly water the uprooted trees to prevent dust dispersion and arrange for regular disposal to avoid accumulation.
	18 Dec 2023	<b>Observation:</b> Stockpiling of dusty material without covered by impervious sheet at Portion D was observed.	The contractor was reminded that stockpiling of dusty material should be covered by impervious sheet at Portion D to prevent dust dispersion.
	18 Dec 2023	<b>Reminder:</b> The contractor was recommended that the exposed slope surface at SBA should be covered by an impervious sheet in the short term and should be shotcrete or other measurements for long-term surface protection.	The contractor was recommended that the exposed slope surface at SBA should be covered by an impervious sheet in the short term and should be shotcrete or other measurements for long-term surface protection.
	27 Dec 2023	<b>Observation:</b> Assess road was dry and fugitive dust was observed, especially at portion E4.	The contractor was recommended to arrange watering and provide enough sprayers to minimize dust dispersion at all assess road.
	27 Dec 2023	<b>Observation:</b> Exposed slope surface without covered by tarpaulin sheets at portion E4 was observed.	The contractor was advised that the exposed slope surface at portion E4 should be covered by tarpaulin sheets or other measurement like shotcrete or hydroseeding for long term slope surface protection.
	27 Dec 2023	<b>Observation:</b> Dusty materials without covered by impervious sheet at portion E4 was observed.	The contractor was reminded that the dusty materials should be covered with impervious sheet to prevent dust suppression.
Noise	No specific observation was identified in the reporting period.		

Parameter	Date	Observation and Reminders	Follow-up Action Taken
Water Quality	5 Dec 2022	<b>Reminder:</b> Open cut slope shall be covered with impervious sheeting.	The Contractor was reminded to cover the exposed slopes with impervious sheet to minimize dust dispersion.
	12 Dec 2022	<b>Reminder:</b> The Contractor was reminded to cover the exposed slope with impervious sheet for upcoming rainfall in this week.	All exposed slopes shall be covered with impervious sheets during rainfall.
	19 Dec 2022	<b>Observation:</b> Sediments are accumulated in the channel at the vehicle wash bay.	The Contractor was recommended to remove the sediments at least on a weekly basis.
	3 Jan 2023	<b>Observation:</b> Rotten leaves and sediments were observed in the channel at Portion D.	The Contractor has been recommended to clean up the channel at Portion D.
	16 Jan 2023	<b>Reminder:</b> The vehicle entrance was not maintained properly in Portion A.	Earth bund shall be provided at the vehicle washing entrance to prevent leakage of the run-off.
	16 Jan 2023	<b>Reminder:</b> Sand and silt were accumulated in the channel of the vehicle washing.	The Contractor has been reminded to remove the sand and silt in the channel regularly.
	6 Feb 2023	<b>Observation:</b> Sand and silt shall be regularly removed from the sump pit in the vehicle washing bay in Portion A.	The Contractor has been recommended to remove sand and silt in the sump pit and the channel at the vehicle washing bay regularly.
	27 Feb 2023	<b>Observation:</b> Construction runoff in the lower area at Portion D shall be collected and divided to silt removal facilities.	The Contractor has been recommended to ensure construction runoff shall be divided into silt removal facilities.
	3 Apr 2023	<b>Observation:</b> The exposed surface in Portion E3-1 shall be covered with impervious sheets to minimize surface runoff into the stream.	The contractor was recommended that surface protection shall be implemented on the exposed slope to minimize surface runoff.
	3 Apr 2023	<b>Reminder:</b> The Contractor was reminded to maintain surface protection work in Portion A.	The contractor was reminded that surface protection shall be implemented on the exposed slope to minimize surface runoff.
3 Apr 2023	<b>Reminder:</b> The contractor was reminded to ensure the silt removal facilities functioning properly before the holidays.	The contractor was reminded silt removal facilities shall be maintained regularly.	



Parameter	Date	Observation and Reminders	Follow-up Action Taken
Water Quality	11 Apr 2023	<b>Observation:</b> The entrance of Portion A was observed muddy. The entrance shall be kept clear of dusty and muddy material.	The Contractor was recommended to repave the surface of entrance to prevent accumulation of sand and silt.
	11 Apr 2023	<b>Observation:</b> Surface protection shall be applied on the exposed slope behind the WetSep to minimize the surface runoff into the channel.	The contractor was recommended that the exposed slope shall be covered with impervious sheets to prevent any surface runoff into the channel.
	17 Apr 2023	<b>Reminder:</b> The Contractor was reminded to ensure all silt removal facilities functioning properly for the upcoming rainfall.	The Contractor was reminded that silt removal facilities shall be maintained properly.
	24 Apr 2023	<b>Observation:</b> The channels at the entrance of SBA are accumulated with rotten leaves, sand and silt.	The contractor was recommended that regular cleaning of channel shall be conducted to prevent any clogging.
	24 Apr 2023	<b>Reminder:</b> Surface protection works in Portion A shall be maintained properly.	The contractor was recommended that earth bunds and exposed slopes shall be paved to control the surface runoff.
	24 Apr 2023	<b>Reminder:</b> The Contractor has been reminded to ensure all silt removal facilities functioning properly for the upcoming rainfall in this week.	Silt removal facilities shall be maintained properly and checked if they can function properly.
	8 May 2023	<b>Observation:</b> Accumulated sand and silt shall be cleared off in the wheel washing bay in SBA.	The contractor was recommended to conduct regularly cleaning work for the wheel washing bay and to ensure the implementation of vehicle washing in SBA.
	8 May 2023	<b>Reminder:</b> The contractor was reminded to ensure all silt removal facilities functioning properly for the upcoming rainfall and the discharged wastewater shall comply with WPCO requirement.	The construction and surface runoff shall be directed to silt removal facilities and treated wastewater shall fulfil WPCO requirement.
	15 May 2023	<b>Observation:</b> The accumulate water was found at the lower area at the Portion D.	The contractor was recommended that the surface water should be collected to silt removal facilities.

Parameter	Date	Observation and Reminders	Follow-up Action Taken
Water Quality	22 May 2023	<b>Observation:</b> The sand and soil near the channel at Portion E3-1 were found.	The contractor was recommended to avoid the untreated surface runoff contaminated with related materials discharged to channel directly. All construction runoffs should be collected to silt removal facilities for treatment.
	29 May 2023	<b>Observation:</b> Slope protection work in Portion A shall be maintained properly to minimize dust dispersion and surface runoff.	The Contractor was recommended to apply surface protection on the exposed slope in Portion A.
	5 Jun 2023	<b>Reminder:</b> The contractor was reminded that the particular attention should be paid to the control of silty surface runoff during storm event in accordance with Appendix A2 of ProPECC PN 1/94.	The contractor was reminded that the particular attention should be paid to the control of silty surface runoff during storm event in accordance with Appendix A2 of ProPECC PN 1/94.
	12 Jun 2023	<b>Reminder:</b> The Contractor was reminded to ensure channel and silt removal facilities shall be functioning properly for the upcoming rainfall.	Silt removal facility and channel shall be maintained properly.
	19 Jun 2023	<b>Reminder:</b> The Contractor was reminded to ensure silt removal facilities shall be functioning properly for the upcoming rainfall. Silt removal facility shall be functioning properly to ensure sufficient treatment for all wastewater before discharging to comply with WPCO.	The Contractor was reminded to ensure silt removal facilities shall be functioning properly for the upcoming rainfall. Silt removal facility shall be functioning properly to ensure sufficient treatment for all wastewater before discharging to comply with WPCO.
	19 Jun 2023	<b>Reminder:</b> The Contractor was reminded that the bunding along the slope edge shall be properly maintained to prevent surface runoff during heavy rainfall at Portion A. Earth bund in Portion A shall be properly maintained.	The Contractor was reminded that the bunding along the slope edge shall be properly maintained to prevent surface runoff during heavy rainfall at Portion A. Earth bund in Portion A shall be properly maintained.
	26 Jun 2023	<b>Observation:</b> The sediment at the drainage system and site boundary, especially at the lower elevations should be kept cleaning regularly. (Most of sediment was found at the lower elevations of Portion A). The contractor should ensure no untreated construction runoff discharging directly outside the site boundary of the project.	The contractor was recommended that the sediment at the drainage system and site boundary, especially at the lower elevations should be kept cleaning regularly.



Parameter	Date	Observation and Reminders	Follow-up Action Taken
Water Quality	3 Jul 2023	<b>Observation:</b> Muddy water was observed at the vehicular entrance in Portion A.	The Contractor was reminded to clear the muddy water and divert the muddy water to wastewater treatment facility.
	12 Jul 2023	<b>Observation:</b> The stagnant water, floating leaves, deposited silt and grit were found at the sedimentation basin near the wheel washing facilities at the Portion B1.	The contractor was recommended that the stagnant water should be collected to silt removal facilities for treatment before reusing for wheel washing. The floating leaves, deposited silt and grit should be removed regularly.
	12 Jul 2023	<b>Observation:</b> The exposed slope surfaces were not covered by tarpaulin sheets or treated with shotcrete at the Portion E3-1.	The contractor was recommended to implement the cover works of exposed slope surfaces by tarpaulin sheets or shotcrete at the Portion E3-1 to minimise the potential high concentration construction runoff to silt removal facilities.
	18 Jul 2023	<b>Observation:</b> The earth bund along the edge of the slope in Portion A was collapsed. The earth bund along the edge of the slope in Portion A should be reconstructed to prevent surface runoff flowing outside the site boundary.	The Contractor was reminded to review the height of the earth bund to ensure the surface runoff should not flow outside the site boundary.
	24 Jul 2023	<b>Observation:</b> Dusty materials was entering in the exist channel in Portion A.	Earth bund or sand barriers shall be provided along the existing channels in Portion A.
	24 Jul 2023	<b>Observation:</b> Earth bund shall be constructed at the edge of the slope to prevent surface runoff flowing outside the site in Portion A.	The contractor was recommended to construction earth bund along the edge of the slope in Portion A.
	24 Jul 2023	<b>Observation:</b> The accumulated silt and grit were found near the sandbags barriers of the Portion E3-1 silt removal facilities.	The contractor was advised that the silt and grit should be removed near the sandbags barriers of the Portion E3-1 silt removal facilities after heavy rain.
	24 Jul 2023	<b>Reminder:</b> The accumulated silt in sedimentation basin Portion E3 shall be removed regularly.	The Contractor was reminded to clear up the accumulated silt regularly to ensure the proper function of the sedimentation basin.
	24 Jul 2023	<b>Observation:</b> The accumulated silt and grit were found near the sandbags barriers of the Portion E3-1 silt removal facilities.	The contractor was advised that the silt and grit should be removed near the sandbags barriers of the Portion E3-1 silt removal facilities after heavy rain.

Parameter	Date	Observation and Reminders	Follow-up Action Taken
Water Quality	24 Jul 2023	<b>Reminder:</b> The accumulated silt in sedimentation basin Portion E3 shall be removed regularly.	The Contractor was reminded to clear up the accumulated silt regularly to ensure the proper function of the sedimentation basin.
	31 Jul 2023	<b>Reminder:</b> The contractor was reminded that the particular attention should be paid to the control of silty surface runoff during upcoming storm event in accordance with Appendix A2 of ProPECC PN/94.	The contractor was reminded that the particular attention should be paid to the control of silty surface runoff during upcoming storm event in accordance with Appendix A2 of ProPECC PN/94.
	31 Jul 2023	<b>Observation:</b> Earth bunds and ditches should be established at the boundary of the +52 mpd Platform of the Portion A.	The contractor was advised that the earth bunds and ditches should be constructed at the boundary of the +52 mpd Platform of the Portion A. The sandbags barriers or other control of surface runoff measures should be provided at the boundary in short term to avoid the surface runoff flow to the earth bunds at the boundary of the +38 mpd platform directly.
	07 Aug 2023	<b>Reminder:</b> Earth bunds, sand barriers or alternative shall be provided to prevent sand or silt entering the existing channel through the gaps in Portion A.	The contractor was advised to set up barriers or other measures to prevent sand and silt getting into the channel.
	07 Aug 2023	<b>Reminder:</b> The contractor was reminded to ensure the silt removal facility functioning properly in Portion A.	The contractor was reminded that silt removal facility should be checked to ensure that they can function properly.
	07 Aug 2023	<b>Observation:</b> Flocs and fine particles are floating on the water surface in sedimentation tank of the silt removal facility while sand and silt were accumulated in the outlet in Portion E3.	The Contractor was advised to schedule cleaning works for the silt removal facility in Portion E3.
	14 Aug 2023	<b>Observation:</b> The accumulated surface runoff at the lower elevation in Portion D should be diverted to the silt removal facility for wastewater treatment after the rainfall.	The contractor was advised to pump out the accumulated surface runoff and divert to silt removal facility.
	14 Aug 2023	<b>Observation:</b> Silt was observed in the existing channel at Portion A. The existing channel should be kept away from sand, silt and surface runoff.	The contractor was recommended to construct earth bund with shotcrete along the existing channel in order to prevent surface runoff entering the channel in Portion A.

Parameter	Date	Observation and Reminders	Follow-up Action Taken
Water Quality	14 Aug 2023	<b>Observation:</b> The mixture of silt, sand, rotten leaves and stagnant water in the drip tray should be cleared off after the rainfall.	The contractor was reminded to clear the drip trays after the rainfall.
	14 Aug 2023	<b>Observation:</b> The accumulated silt near the fencing in Portion A should be cleared off before and after rainstorm.	The contractor was advised to clear the accumulated silt near the fencing in Portion A and sedimentation basin in Portion E3 before and after rainstorm.
	14 Aug 2023	<b>Observation:</b> The accumulated silt in the sedimentation basin at Portion E3 should be regularly removed, especially before and after the rainstorm.	The contractor was advised to clear the accumulated silt near the fencing in Portion A and sedimentation basin in Portion E3 before and after rainstorm.
	14 Aug 2023	<b>Observation:</b> The mixture of silt, sand, rotten leaves and stagnant water in the drip tray should be cleared off after the rainfall.	The contractor was reminded to clear the drip trays after the rainfall.
	14 Aug 2023	<b>Observation:</b> The silt removal facility was malfunctioned in Portion E3 and flocs are observed on the surface of silt removal facility in both Portion A and Portion E3. The collected wastewater should undergo sufficient mixing to ensure the discharged wastewater should comply with the requirement of WPCO license.	The Contractor has been advised to stop the discharge of wastewater from the malfunctioned silt removal facility immediately. The wastewater should be stored or treated by another silt removal facility temporarily before the original silt removal facility is functioning properly. The Contractor should ensure the discharged wastewater to comply with the requirement of WPCO license.
	14 Aug 2023	<b>Observation:</b> The untreated wastewater was leaked into the channel at Portion E3. The channel should be kept away from untreated wastewater and general waste.	The contractor was also recommended to increase the number of silt removal facility so as to increase the capacity of wastewater treatment for long term.
	14 Aug 2023	<b>Reminder:</b> The Contractor was reminded to check silt removal facilities, channels and manholes to ensure that they can function properly for the upcoming rainfall in this week.	The contractor was advised to seal the leakage point(s) and place sandbag barriers along the channel to stop the discharge of untreated wastewater in the channel immediately. The accumulated silt and general waste in the channel should be removed. The Contractor has been recommended to review the design of the sedimentation basin to prevent this situation from happening again in the future.

Parameter	Date	Observation and Reminders	Follow-up Action Taken
Water Quality	21 Aug 2023	<b>Observation:</b> Earth bund shall be constructed at the edge of the slope to prevent surface runoff flowing outside the site in Portion A.	The contractor was recommended to construction earth bund along the edge of the slope in Portion A.
	28 Aug 2023	<b>Observation:</b> Dusty materials was entering in the exist channel in Portion A.	Earth bund or sand barriers shall be provided along the existing channels in Portion A.
	4 Sep 2023	<b>Observation:</b> Surface runoff should be intercepted to avoid direct discharge into the channel at Portion E3.	The Contractor should review the effectiveness of setting up sandbag barriers and modify measures to prevent the discharge of surface runoff in both short term and long term. The Contractor was advised to stop the discharge of surface runoff to channel immediately by using any mitigation measures they found appropriate. In long term, the Contractor has been recommended to construct earth bund along the channel to prevent this situation happening again.
	4 Sep 2023	<b>Observation:</b> The condition of silt fence in SBA should be reviewed after the heavy rainfall over the few days and should be replaced when it is broken.	The broken or collapsed silt fence should be replaced and properly set up after the heavy rainfall from last week.
	25 Sep 2023	<b>Observation:</b> The exposed slope surface along the channel should be paved to reduce SS level in the wastewater.	The Contractor was recommended to shotcrete the exposed slope surface along the channel to reduce SS level in the wastewater.
	25 Sep 2023	<b>Observation:</b> The accumulated sand or silt in the outlet of the silt removal facility at Portion A should be removed.	The Contractor was advised to clear the accumulated sand or silt in the outlet of the silt removal facility at Portion A.
	3 Oct 2023	<b>Observation:</b> The accumulated silt in the channel at Portion E3 should be regularly removed.	The contractor was advised to conduct regularly cleaning works to remove the accumulated silt in the channel.
	3 Oct 2023	<b>Observation:</b> The accumulated surface runoff in Portion E3 should be divided to the silt removal facility for wastewater treatment.	The contractor was advised to divide the surface runoff to the silt removal facility for proper wastewater treatment.
	11 Oct 2023	<b>Observation:</b> The slope surface protection should be enhanced at Portion E4 near entrance and assess road.	The contractor was recommended that the exposed slope should be covered with impervious sheet in the short term and the shotcrete for slope surface should be conducted in the long term.

Parameter	Date	Observation and Reminders	Follow-up Action Taken
Water Quality	11 Oct 2023	<b>Observation:</b> The exposed slope should be covered with impervious sheet at the SBA and Portion E4.	The contractor was recommended that the exposed slope should be covered with impervious sheet in the short term and the shotcrete for slope surface should be conducted in the long term.
	16 Oct 2023	<b>Reminder:</b> The contractor was reminded to provide regular water spraying to the haul road to control the dust level.	The contractor was reminded to provide regular water spraying to the haul road to control the dust level.
	6 Nov 2023	<b>Observation:</b> The muddy water which is caused from the water spraying by the water sprinkler at the Portion A was found. The deposited silt and grit are found under the tower crane at the Portion A.	The contractor was recommended that the sandbag barriers or bunds should be provided and established along the water safety barriers at the Portion A. The muddy water should be collected from the proper channel, final to the silt removal facility for treatment. The deposited silt and grit under the tower crane at the Portion A should be removed.
	6 Nov 2023	<b>Observation:</b> The slope surface at the Portion E4 should be covered by impervious sheet properly.	The contractor was advised to cover the exposed slope surface by impervious sheet properly.
	20 Nov 2023	<b>Observation:</b> The slope surface at SBA without covering impervious sheets properly was found.	The contractor was recommended that the exposed slope should be covered by impervious sheet.
	4 Dec 2023	<b>Observation:</b> The muddy water which is caused from the watering at the Portion D was found. The deposited silt and grit were found under the construction materials at the Portion D	The contractor was reminded that the muddy water should be collected from the proper channel and final to the silt removal facility for treatment. The deposited silt and grit under the construction materials at the Portion D should be removed.
	18 Dec 2023	<b>Observation:</b> Insufficient silt fence around the stockpile area at SBA was observed.	The contractor was advised to provide and maintain sufficient silt fence around the stockpile area in each layer, ensuring that each layer effectively prevents sediment from entering the surface water drainage system.
	18 Dec 2023	<b>Reminder:</b> The contractor was recommended that the exposed slope surface at SBA should be covered by an impervious sheet in the short term and should be shotcrete or other measurements for long-term surface protection.	The contractor was recommended that the exposed slope surface at SBA should be covered by an impervious sheet in the short term and should be shotcrete or other measurements for long-term surface protection.

Parameter	Date	Observation and Reminders	Follow-up Action Taken
Water Quality	27 Dec 2023	<b>Observation:</b> Dusty materials without covered by impervious sheet at portion E4 was observed.	The contractor was reminded that the dusty materials should be covered with impervious sheet to prevent dust suppression.
Waste and Chemical Management	5 Dec 2022	<b>Observation:</b> The accumulated waste shall be disposed regularly.	The Contractor was recommended to increase the frequency of waste disposal to avoid accumulate waste.
	12 Dec 2022	<b>Observation:</b> The accumulated waste is observed.	The Contractor was recommended to increase the frequency of waste disposal to avoid accumulation of waste.
	28 Dec 2022	<b>Reminder:</b> Latex paint drums are observed without drip trays in Portion A.	Drip tray shall be provided for latex paint drums
	9 Jan 2023	<b>Reminder:</b> Plant equipment was placed on the ground without impervious sheets in SBA.	The Contractor has been reminded to place the maintenance parts and equipment on impervious sheet to prevent land contamination.
	27 Jan 2023	<b>Observation:</b> Oil stains were observed under the excavator in Portion D.	The contractor was recommended that Oil stains shall be cleared and disposed of as chemical waste.
	1 Feb 2023	<b>Reminder:</b> The plant equipment in SBA was placed on the ground without impervious sheets.	Plant equipment shall be placed on the impervious sheets.
	13 Mar 2023	<b>Observation:</b> Paint containers were observed without drip tray.	Drip tray shall be provided to the paint containers.
	20 Mar 2023	<b>Observation:</b> Chemical containers in SBA were observed without drip tray.	Drip tray shall be provided to all chemical containers.
	27 Mar 2023	<b>Observation:</b> Chemical containers were observed in the open area and some of them were not placed inside the drip tray.	The Contractor has been recommended to storage chemical containers properly and chemical container shall be placed inside the drip tray when it is in outdoor.
	11 Apr 2023	<b>Observation:</b> The drip tray was filled with water.	The Contractor was recommended to clear the drip tray and to minimize the number of chemical containers in the outdoor environment.
	17 Apr 2023	<b>Observation:</b> The drip tray in SBA was filled with water.	The Contractor was recommended to clear the drip tray.
	2 May 2023	<b>Observation:</b> Water in the drip tray shall be cleared off at Portion A.	The contractor was recommended to collect and dispose of any stagnant water accumulated in the drip trays and handle them as chemical waste.



Parameter	Date	Observation and Reminders	Follow-up Action Taken
Waste and Chemical Management	8 May 2023	<b>Reminder:</b> The contractor was reminded to cover the waste skip with impervious sheets during and rainfall, to avoid accumulation of waste and to implement waste sorting.	The contractor was reminded to cover the waste skip with impervious sheets during and rainfall, to avoid accumulation of waste and to implement waste sorting.
	15 May 2023	<b>Observation:</b> Accumulate water in drip tray was observed at Portion D.	The contractor was recommended to keep cleaning the accumulated water in drip tray to minimize the large amount of potential chemical waste when the chemical leakage was found.
	05 Jun 2023	<b>Observation:</b> The accumulate water was found the drip tray at Portion D.	The contractor was recommended that the accumulate water in drip tray should be cleared regularly and after rainy to minimize the potential chemical waste.
	12 Jun 2023	<b>Observation:</b> The stagnant water and silt in the drip trays shall be clear off in Portion B2 and SBA.	The Contractor was recommended to clear drip trays.
	26 Jun 2023	<b>Observation:</b> The accumulate water at the drip tray near Portion E2 was found.	The contractor was recommended that the accumulate water at the drip tray near Portion E2 should be cleaned after the rainy to minimize the potential chemical waste.
	3 Jul 2023	<b>Observation:</b> Chemical containers in SBA shall be stored properly to prevent any potential of chemical leakage and generation of chemical waste.	The contractor has been reminded to provide proper chemical storage area on site.
	12 Jul 2023	<b>Observation:</b> Full loading of the rubbish skips for general waste at the Portion D and lack of waste separation were found.	The contractor was recommended that accumulation of waste should be avoid, the waste should be disposed regularly & the general waste should be collected properly by using the waste separation facilities for paper, aluminium cans and plastic bottles etc.
	12 Jul 2023	<b>Observation:</b> The high amount of deposited silt was found at the silt removal facilities at the Portion E3-1.	The contractor was advised that the deposited silt should be removed and regularly and increase the checking frequency of it, and the silt removal facilities should be maintained at good condition to maintain the high effectiveness of it.

Parameter	Date	Observation and Reminders	Follow-up Action Taken
Waste and Chemical Management	18 Jul 2023	<b>Observation:</b> The stagnant water in the drip trays should be cleared off in Portion A.	The Contractor was reminded to clear the drip tray after the rainfall.
	07 Aug 2023	<b>Observation:</b> The mixture of silt and stagnant water in the drip tray should be cleared off in Portion E3.	The contractor was recommended to clear the drip tray.
	14 Aug 2023	<b>Observation:</b> Oil drums in SBA are observed without drip tray.	Drip tray should be provided to the oil drums and all chemical container in the site.
	21 Aug 2023	<b>Observation:</b> The mixture of silt and stagnant water in the drip tray should be cleared off in Portion E3.	The contractor was reminded to clear the drip tray.
	21 Aug 2023	<b>Observation:</b> Enclosed bins or compaction units should be provided to separate general waste with chemical waste and construction waste in Portion A.	The contractor was recommended to provide enclosed bins or compaction units in Portion A.
	21 Aug 2023	<b>Observation:</b> Chemical containers should be placed within the drip trays in Portion E4.	The contractor was reminded to provide drip tray for all chemical containers.
	4 Sep 2023	<b>Observation:</b> Over loading of accumulated waste was found at the waste skip of Portion D.	The contractor was recommended to increase the frequency of waste collection and the amount of waste skip to avoid over loading condition of waste skip at Portion D.
	18 Sep 2023	<b>Observation:</b> General refuse and non-inert waste should be stored in enclosed bins or compaction unit.	General waste generated on-site should be stored in enclosed bins or compaction units separately from the construction and chemical wastes.
	18 Sep 2023	<b>Observation:</b> Empty chemical containers in Portion E3 should be properly stored before the disposal.	The Contractor was reminded to properly store empty chemical container before disposal.
	25 Sep 2023	<b>Observation:</b> Chemical spillage was observed at Portion E4 and chemical containers should be placed on the drip tray.	The Contractor was reminded to dispose chemical waste and provide drip tray for all chemical containers.
3 Oct 2023	<b>Observation:</b> The stagnant water in drip tray should be cleared of in Portion E4.	The contractor was reminded to clear the stagnant water in the drip tray.	



Parameter	Date	Observation and Reminders	Follow-up Action Taken
Waste and Chemical Management	11 Oct 2023	<b>Observation:</b> The accumulated water was found at waste skip of Portion A.	The contractor was advised to clear the accumulated water at the waste skip and the waste skip should be covered with impervious sheet when rainstorm is forecast.
	11 Oct 2023	<b>Observation:</b> The drip tray should be placed under the chemical container at Portion E4.	The contractor was recommended that the drip tray should be placed under the chemical container at Portion E4.
	11 Oct 2023	<b>Observation:</b> The accumulated water was found at the drip tray of SBA.	The contractor was advised to clear the accumulated water at the drip tray of SBA.
	16 Oct 2023	<b>Observation:</b> The overloading of enclosed bin at Portion A was found.	The contractor was recommended to provide enough enclosed bins for collection of general waste at Portion A and the frequency for collection of general waste should be increased.
	16 Oct 2023	<b>Observation:</b> The chemical labelling should be provided for lots of chemicals at SBA and oil drum at Portion E3-1.	The chemicals at SBA should be placed at the proper location for storage. The contractor was advised that the suitable chemical label should be placed on the chemical containers. The chemicals should be placed in the proper location for storage.
	24 Oct 2023	<b>Observation:</b> The chemical containers were not placed on the drip tray at Portion E3-1.	The contractor was recommended that the chemical containers should be placed on the drip tray at Portion E3-1.
	24 Oct 2023	<b>Observation:</b> The general waste was found at the floor of Portion E3-1.	The contractor was advised that the enclosed bins should be placed at the proper area of Portion E3-1.
	30 Oct 2023	<b>Observation:</b> The storage area of chemical containers at Portion E3-1 was without drip tray and other properly setup etc. to prevent the chemicals rainfall entering and reduce heat from sunlight and avoid the risk of land contamination.	The contractor was recommended to provide the properly storage area for chemicals and chemical waste including chemical containers to prevent the chemicals rainfall entering and reduce heat from sunlight and avoid the risk of land contamination.
	6 Nov 2023	<b>Observation:</b> The food waste was found at the waste skip of SBA. The general waste should be stored in the enclosed bins.	The contractor was advised that the additional enclosed bin should be increased at the SBA. The “type of waste” label should be labelled at the surrounding of the enclosed bins or waste skip for easily identify for on-site workers.

Parameter	Date	Observation and Reminders	Follow-up Action Taken
Waste and Chemical Management	20 Nov 2023	<b>Observation:</b> The general waste at the waste skip of SBA was found. The contractor was reminded that the general waste includes food waste should be stored at the enclosed bins.	The enclosed bin with clear label should be provided at SBA near the waste skip.
	20 Nov 2023	<b>Observation:</b> The overloading of accumulated waste at portion A was found.	The contractor was advised that the enough waste skip should be provided, and the waste should be clean regularly at portion A to prevent and avoid accumulated waste place on the floor.
	4 Dec 2023	<b>Observation:</b> The general waste shall be removed and disposed in the enclosed bin at Portion D.	The contractor was recommended to clean up the site regularly and provide enough enclosed bin on-site to keep the site clean and tidy.
Landscape and Visual Impact	No specific observation was identified in the reporting period.		
Permit / Licenses	No specific observation was identified in the reporting period.		

- 11.1.4 Ten general site inspection on 23 December 2022, 18 January, 12 June, 31 July, 4 & 21 August, 7 & 13 September, 27 November 2023 and 11 December 2023 were conducted by Environmental Protection Department-Regional Office (North) (EPD-RNG). 1 additional site inspection on 21 June 2023 for the Environmental Complaint received on 14 June 2023 & 15 June 2023 was conducted with EPD-RNG, ER, IC, IEC, ET & Contractor.

## 12 Environmental Non-conformance

### 12.1 Summary of Monitoring Exceedance

#### 1-hr TSP Monitoring

- 3.1.3.7 No Action / Limit Level exceedance for 1-hr TSP impact monitoring at AM1, AM2 & AM3 was recorded during the reporting period.

#### 24-hr TSP Monitoring

- 12.1.1 2 Action Level Exceedance and 3 Limit Level Exceedance for 24-hr TSP monitoring at AM1 was recorded during the reporting period. The exceedance was considered likely caused by external sources such as the high level of background air quality in Hong Kong during the monitoring period etc and not project related.
- 12.1.2 No Action / Limit Level exceedance for 24-hr TSP monitoring at AM2 was recorded during the period.
- 12.1.3 4 Action Level Exceedance and 3 Limit Level Exceedance for 24-hr TSP monitoring at AM3 was recorded during the reporting period. The exceedance was considered likely caused by external sources such as the high level of background air quality in Hong Kong during the monitoring period etc and not project related.
- 12.1.4 The Summary of Impact 1-hr & 24-hr TSP Exceedance are shown in **Table 12-1**.

**Table 12-1 Summary of Impact 1-hr & 24-hr TSP Exceedance during the reporting period**

Dust Monitoring Station		AM1		AM2		AM3	
Parameters	Level Exceedance	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level
	1-hr TSP	Exceedance Date	-	-	-	-	-
Exceedance Count		0	0	0	0	0	0
24-hr TSP	Exceedance Date	1 Mar 23*	24 Feb 23*	-	-	18 Feb 23*	24 Feb 23*
		3 Mar 23*	2 Mar 23*			3 Mar 23*	1 Mar 23*
			4 Mar 23*			4 Mar 23*	2 Mar 23*
						8 Mar 23*	
	Exceedance Count	2	3	0	0	4	3

Remarks: \* equal to non-project related

#### Noise Monitoring

- 12.1.5 No exceedance of the Action and Limit Levels for was recorded at designated monitoring stations during the reporting period. The Summary of Impact Noise Exceedance are shown in **Table 12-2**.

**Table 12-2 Summary of Impact Noise Exceedance during the reporting period**

Noise Monitoring Station		NM1(a)		NM2(a)	
Level Exceedance		Action Level	Limit Level	Action Level	Limit Level
Parameters					
LA <sub>eq</sub> (30mins)	Exceedance Date	-	-	-	-
	Exceedance Count	0	0	0	0

Remarks: \* equal to non-project related

#### Surface Water Quality Monitoring

- 12.1.6 No exceedance of Action and Limit Levels of surface water monitoring was recorded from December 2022 to March 2023
- 12.1.7 No exceedance of Action Levels of surface water monitoring was recorded from April to June 2023. 1 turbidity exceedance of Limit Levels of surface water quality at WM2 was recorded from April to June 2023. After the investigation, the exceedance may involve the construction runoff of the project. The rectification actions are conducted by the contractor in progress. The rectification works should be achieved minimization the potential risk of causing high concentration of construction runoff, enhancement of maintenance of Temporary Surface Water Drainage System (TSWDS), enhancement of the effectiveness and treatment capacity of the TSWDS & Enhancement of temporary landscape treatment as green cover and Minimization the potential risk of causing high concentration of construction runoff.
- 12.1.8 No exceedance of Action Levels of surface water monitoring was recorded in July 2023.
- 12.1.9 One DO exceedance of Action Level of surface water quality at WM1 was recorded in August 2023. The Notification of Environmental Quality Limits Exceedance is presented in Appendix G. In summary of the investigation, the DO exceedance in Action Level of Surface Water Quality at WM1 may involve the vary of temperature under the hot weather. Therefore, the exceedance is not related to project. No exceedance of Limit Level of surface water monitoring at WM1 was recorded in August 2023. No exceedance of Action Levels and Limit Level of surface water monitoring at WM2 were recorded in August 2023.
- 12.1.10 No exceedance of Action and Limit Levels of surface water monitoring was recorded from September to December 2023.
- 12.1.11 The Summary of Impact Surface Water Quality Exceedance are shown in **Table 12-3**.

**Table 12-3 Summary of Impact Surface Water Quality Exceedance during the reporting period**

Surface Water Quality Monitoring Station		WM1		WM2	
Level Exceedance		Action Level	Limit Level	Action Level	Limit Level
Parameters					
pH	Exceedance Date	-	-	-	-
	Exceedance Count	0	0	0	0
DO	Exceedance Date	4 Aug 23*	-	-	-
	Exceedance Count	1	0	0	0
Turbidity	Exceedance Date	-	-	-	21 Jun 23
	Exceedance Count	0	0	0	1
SS	Exceedance Date	-	-	-	-
	Exceedance Count	0	0	0	0

Remarks: \* equal to non-project related

### Landfill Gas Monitoring

12.1.12 No exceedance of the Limit Level for was recorded at designated monitoring stations during the reporting period. The Summary of Landfill Gas Exceedance are shown in **Table 12-4**.

**Table 12-4 Summary of Landfill Gas Exceedance during the reporting period**

Landfill Gas Monitoring Station		Portion A +55 mpD Platform		Portion A +58 mpD,+55 mpD Platform		Portion A +55 mpD to 70 mpD Platform		Portion A +50 mpD to 70 mpD Platform	
		Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level
CH <sub>4</sub>	Exceedance Date	-	-	-	-	-	-	-	-
	Exceedance Count	0	0	0	0	0	0	0	0
CO <sub>2</sub>	Exceedance Date	-	-	-	-	-	-	-	-
	Exceedance Count	0	0	0	0	0	0	0	0
O <sub>2</sub>	Exceedance Date	-	-	-	-	-	-	-	-
	Exceedance Count	0	0	0	0	0	0	0	0

Remarks: \* equal to non-project related

## 12.2 Summary of Environmental Non-compliance

12.2.1 One warning regarding suspected non-compliance event with Condition 1.7 and 2.15(a) of the EP & Condition 1.7 and 2.13(a) of the FEP-01 & FEP-02 was recorded on 14 September 2023. The related rectified actions are being taken in progress by the contractor.

## 12.3 Summary of Environmental Complaint

12.3.1 The cumulative statistics on environmental complaints are presented in **Table 12-3**.

**Table 12-3 Cumulative Statistics on Environmental Complaints**

Reporting Period		Environmental Aspects				
		Air Quality	Noise	Water Quality	Waste	Ecology
Dec 2022	Complaint Date	21 Dec 22*	-	-	-	-
	No. of Complaint	1	0	0	0	0
Jan 2023	Complaint Date	-	-	-	-	-
	No. of Complaint	0	0	0	0	0
Feb 2023	Complaint Date	-	-	-	-	-
	No. of Complaint	0	0	0	0	0
Mar 2023	Complaint Date	-	-	-	-	-
	No. of Complaint	0	0	0	0	0
Apr 2023	Complaint Date	-	-	-	-	-
	No. of Complaint	0	0	0	0	0
May 2023	Complaint Date	-	-	-	-	-
	No. of Complaint	0	0	0	0	0
Jun 2023	Complaint Date	-	-	14 Jun 23* 15 Jun 23	-	-
	No. of Complaint	0	0	2	0	0
Jul 2023	Complaint Date	-	-	-	-	-
	No. of Complaint	0	0	0	0	0
Aug 2023	Complaint Date	-	-	3 Aug 23 18 Aug 23	-	-
	No. of Complaint	0	0	2	0	0
Sep 2023	Complaint Date	-	-	14 Sep 23	-	-
	No. of Complaint	0	0	1	0	0
Oct 2023	Complaint Date	-	-	-	-	-
	No. of Complaint	0	0	0	0	0
Nov 2023	Complaint Date	-	-	-	-	-
	No. of Complaint	0	0	0	0	0
Dec 2023	Complaint Date	-	-	-	-	-
	No. of Complaint	0	0	0	0	0
Annual Total		1	0	5	0	0
Accumulate of project		1	0	5	0	0

Remarks: \* equal to non-project related after the investigation.

12.3.2 Six complaints (One complaint regarding air quality and Five complaints regarding water quality) were recorded during the reporting period. The details of environmental complaints during the reporting period are described below:

Environmental Complaint on 20 December 2022

12.3.3 One complaint on 20 December 2022 was received by the public relations officer of the Contractor during the reporting period. The complaint lodged regarding presenting much dusty materials at roundabout at Wo Keng Shan Road & dusty flying problem at Kowloon-bound traffic at Lung Shan Tunnel. After Investigation, it was found that no dusty materials or wastes were transported out from the NENTX site during the complaint period in accordance with the construction record. In addition, it was observed that the wheel washing facilities with high

pressure water jet have been provided at all sites exit of NENTX (i.e. Portion A and D) and all vehicles were cleaned before allowing them to leave the construction site to ensure that no mud or debris would be brought to the public area. All site vehicles of NENTX are also required to go through the auto wheel washing facility, which is managed by the operator of the NENT landfill, before entering the public area. The road section between the washing facilities and the exit point was paved with concrete, or bituminous materials were implemented in all site entrances/exits. No mud generated from vehicles under the NENTX project after exiting the site entrance were observed. Therefore, there is no direct evidence showing that the complaint is likely related to NENTX.

12.3.4 No environmental complaint was recorded from January to May 2023.

Environmental Complaint on 14 June 2023

12.3.5 Two complaints received from EPD-RNG on 14 & 15 June 2023 were recorded in June 2023. The complaint lodged regarding the muddy water was observed at Lin MA Hang International Bridge. In summary of the investigation, the pollutant water appeared crimson colour with bubbles by the LMH-OP01 (Monitoring Point from EPD). The colour and pattern of pollutant water is different from the runoff at surface WQM monitoring location WM1. Hence, the project is not the major source causing the pollutant water. To minimise the potential impact of the project, the enhancement of mitigation measures at north boundary were advised to implement by contractor.

Environmental Complaint on 15 June 2023

12.3.6 The complaint lodged regarding the muddy water was observed at River Ganges (GR3) (Water Quality Monitoring Location from EPD). In summary of the investigation, the muddy water caused from multi-potential sources while the runoff from the box culvert under the Wo Keng Shan Road is the major source including runoff from Existing channel near Portion E3-1, discharge water from the silt removal facilities at Portion E3-1 of the project, runoff from branch near the entrance of Portion E3-1, runoff from weighting plaza of NENT Landfill & natural stream near Wo Keng Shan & Shui Ngau Tso etc.. Hence, the project is a part of factor causing the high turbidity muddy water. To minimise the potential impact of construction runoff from the project, the further mitigation measures and enhancement of the temporary surface water drainage system were advised to implement by contractor.

Environmental Complaint on 19 July 2023

12.3.7 The complaint about the water aspect was received by ET on 3 August 2023 at 17:45 via EPD-RNG email. The main content of the complaint mentioned the muddy water was observed at River Ganges (GR3) (Water Quality Monitoring Point from EPD). In summary of the investigation, the muddy water caused from multi-potential sources while the runoff from the box culvert under the Wo Keng Shan Road is the major source including runoff from Existing channel near Portion E3-1, discharge water from the silt removal facilities at Portion E3-1 of the project, runoff from branch near the entrance of Portion E3-1, runoff from weighting plaza of NENT Landfill & natural stream near Wo Keng Shan & Shui Ngau Tso etc.. Hence, the project is a part of factor causing the high turbidity muddy water. To minimise the potential impact of construction runoff from the project, the further mitigation measures and enhancement of the temporary surface water drainage system were advised to implement by contractor.

Environmental Complaint on 18 August 2023

12.3.8 The complaint about the water aspect was received by ET on 18 August 2023 at 16:51 via EPD-RNG email. The main content of the complaint mentioned the muddy water was observed at River Ganges (GR3) (Water Quality Monitoring Point from EPD). In summary of the investigation, the complaint is project related. It viewed that muddy water arising from wheel washing water from the site entrance at Portion E4 & Runoff from Existing Channel near Portion

E3-1 & discharge water from the silt removal facilities at Portion E3-1 eventually flows into the box culvert under Wo Keng Shan Road, WM2 and ultimately to GR3. The related rectified actions should be conducted by the contractor as soon as possible.

#### Environmental Complaint on 14 September 2023

12.3.9 The complaint about the water aspect was received by ET on 14 September 2023 at 17:17 via EPD-RNG email. The main content of the complaint mentioned the muddy water was observed at River Ganges (GR3) (Water Quality Monitoring Point from EPD). In summary of the investigation, the complaint is project related. It viewed that muddy water arising from wheel washing water from the site entrance at Portion E4 & Runoff from Existing Channel near Portion E3-1 & discharge water from the silt removal facilities at Portion E3-1 eventually flows into the box culvert under Wo Keng Shan Road, WM2 and ultimately to GR3. The related rectified actions should be conducted by the contractor as soon as possible.

12.3.10 No environmental complaint was recorded from October to December 2023.

12.3.11 Cumulative complaint / enquiry log, Summaries of complaints and enquiries are presented in **Appendix J**.

## **12.4 Summary of Environmental Summons and Successful Prosecution**

12.4.1 No summons and prosecution were received during the reporting period.



## 13 Implementation Status on Environmental Mitigation Measures

13.1.1 The Contractor has generally implemented part of environmental mitigation measures and requirements as stated in the EIA Report, the EP and EM&A Manual and the contract documents. The implemented mitigation measures are considered effective. The implementation status during the reporting period is summarized in **Appendix H**.

## 14 Review of the validity of EIA predictions and identification of shortcomings in EIA recommendations

### 14.1 Air Quality

#### 1-hr TSP

14.1.1 The 1-hr TSP average monitoring results are compared with the EIA predictions as summarized in **Table 14-1**.

**Table 14-1 Comparison between the 1-hr TSP Monitoring Results and EIA Predictions**

Month	Average 1-hr TSP Concentration, $\mu\text{g}/\text{m}^3$		
	Dust Monitoring Station		
	AM1 (EIA ASRID: ASR11)	AM2 (EIA ASRID: ASR7)	AM3 (EIA ASRID: ASR1)
Dec 2022	54 (44 – 65)	54 (45 – 61)	63 (57 – 68)
Jan 2023	49 (34 – 60)	42 (32 – 53)	52 (39 – 67)
Feb 2023	27 (18 – 41)	28 (20 – 43)	33 (21 – 51)
Mar 2023	45 (22 – 67)	49 (31 – 65)	47 (15 – 68)
Apr 2023	35 (19 – 55)	42 (31 – 76)	40 (23 – 54)
May 2023	23 (15 – 40)	30 (15 – 43)	35 (26 – 49)
Jun 2023	28 (15 – 38)	31 (21 – 45)	33 (21 – 45)
Jul 2023	35 (21 – 46)	34 (21 – 48)	32 (21 – 44)
Aug 2023	33 (20 – 40)	35 (29 – 40)	39 (29 – 50)
Sep 2023	44 (36 – 54)	39 (36 – 42)	45 (36 – 53)
Oct 2023	31 (21 – 40)	42 (34 – 52)	46 (32 – 60)
Nov 2023	28 (22 – 36)	34 (30 – 39)	37 (30 – 43)
Dec 2023	29 (26 – 34)	37 (23 – 59)	51 (40 – 67)
<b>Predicted 1-hr TSP concentration <math>\mu\text{g}/\text{m}^3</math>, when NENT Landfill is under restoration and Phase 1 of NENT Landfill Extension is in site formation (1.5m)</b>	<b>240</b>	<b>180</b>	<b>230</b>

Remarks:

Predicted 1-hr TSP concentration extracted from Table 3.31 of EIA Report, AEIAR-111/2007.

14.1.2 The 1-hr TSP average monitoring results at AM1 to AM3 are below the Predicted 1-hr TSP concentration in the Environmental Impact Assessment (EIA) Report (Register No.: AEIAR-111/2007). The graphs of comparison between 1-hr TSP monitoring results at AM1 to AM3 and EIA predictions 24-hr TSP Level is presented in **Appendix K**.

### **24-hr TSP**

14.1.3 The 24-hr TSP average monitoring results are compared with the EIA predications as summarized in **Table 14-2**.

**Table 14-2 Comparison between the 24-hr TSP Monitoring Results and EIA Predictions**

Month	Average 24-hr TSP Concentration, $\mu\text{g}/\text{m}^3$ (Range)		
	Dust Monitoring Station		
	AM1 (EIA ASRID: ASR11)	AM2 (EIA ASRID: ASR7)	AM3 (EIA ASRID: ASR1)
Dec 2022	114 (88 – 147)	65 (43 – 92)	140 (126 – 157)
Jan 2023	98 (60 – 133)	53 (21 – 79)	85 (56 – 134)
Feb 2023	145 (62 – 286)	89 (61 – 126)	181 (93 – 284)
Mar 2023	184 (30 – 490)	78 (29 – 152)	162 (35 – 337)
Apr 2023	60 (34 – 112)	63 (37 – 111)	70 (40 – 151)
May 2023	62 (28 – 106)	73 (53 – 87)	93 (29 – 121)
Jun 2023	47 (28 – 95)	41 (32 – 54)	82 (43 – 130)
Jul 2023	36 (17 – 60)	34 (25 – 48)	30 (22 – 40)
Aug 2023	29 (19 – 37)	33 (27 – 43)	40 (27 – 63)
Sep 2023	40 (32 – 48)	41 (30 – 53)	51 (36 – 67)
Oct 2023	70 (62 – 77)	55 (43 – 77)	70 (61 – 78)
Nov 2023	112 (101 – 128)	89 (70 – 110)	101 (88 – 117)
Dec 2023	97 (71 – 108)	81 (65 – 119)	91 (70 – 122)
<b>Predicted 24-hr TSP concentration <math>\mu\text{g}/\text{m}^3</math>, when NENT Landfill is under restoration and Phase 1 of NENT Landfill Extension is in site formation (1.5m)</b>	<b>103</b>	<b>83</b>	<b>102</b>

Remarks:

Predicted 24-hr TSP concentration extracted from Table 3.32 of EIA Report, AEIAR-111/2007.

### AM1

14.1.4 According to the 24-hr TSP average monitoring results at AM1, it reflected that the results in February (145  $\mu\text{g}/\text{m}^3$ ), March (184  $\mu\text{g}/\text{m}^3$ ) and November (112  $\mu\text{g}/\text{m}^3$ ) 2023 are higher than predicted 24-hr TSP level (103  $\mu\text{g}/\text{m}^3$ ). The 24-hr TSP average monitoring results at AM1 during dry season (from November to March) are near or higher than the predicted 24-hr TSP level. The graph of comparison between 24-hr TSP monitoring results at AM1 and EIA predictions 24-hr TSP Level is presented in **Appendix K**.

### AM2

14.1.5 In summary of the 24-hr TSP average monitoring results at AM2, it viewed that the results in February (89  $\mu\text{g}/\text{m}^3$ ) and November (89  $\mu\text{g}/\text{m}^3$ ) 2023 are higher than the predicted 24-hr TSP level (83  $\mu\text{g}/\text{m}^3$ ). The 24-hr TSP average monitoring results in February, March, November, and December 2023 are near or higher than the predicted 24-hr TSP level. But the 24-hr TSP average monitoring results at AM2 were affected by the construction works of other project near leachate storage of the existing NENT Landfill (Within 10m of AM2). The graph of comparison between 24-hr TSP monitoring results at AM2 and EIA predictions 24-hr TSP Level is presented in **Appendix K**.

### AM3

14.1.6 The 24-hr TSP average monitoring results at AM3 in December 2022 (140  $\mu\text{g}/\text{m}^3$ ), February (181  $\mu\text{g}/\text{m}^3$ ), March (162  $\mu\text{g}/\text{m}^3$ ) and November (101  $\mu\text{g}/\text{m}^3$ ) 2023 are higher than the predicted 24-hr TSP level (102  $\mu\text{g}/\text{m}^3$ ). The 24-hr TSP average monitoring results in December 2022 (140  $\mu\text{g}/\text{m}^3$ ), February (181  $\mu\text{g}/\text{m}^3$ ), March (162  $\mu\text{g}/\text{m}^3$ ), May (93  $\mu\text{g}/\text{m}^3$ ), November (101  $\mu\text{g}/\text{m}^3$ ), and December (91  $\mu\text{g}/\text{m}^3$ ) 2023 are near or higher than the predicted 24-hr TSP level. The graph of comparison between 24-hr TSP monitoring results at AM3 and EIA predictions 24-hr TSP Level is presented in **Appendix K**.

14.1.7 In conclusion, the 24-hr TSP average monitoring results at AM1 to AM3 during dry season (from November to March) are near or higher than the predicted 24-hr TSP level mainly. Hence, the Contractor was reminded to enhance the dust control measures in the project site, especially during dry season. The recommended dust mitigation measures are listed as followed:

- The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation.
- Dust emission from construction vehicle movement is confined within the worksites area.
- Watering facilities will be provided at every designated vehicular exit point.
- Good site practice is recommended during construction phase.

14.1.8 The details of enhancement of dust mitigation measures are listed below:

- The worksites should be wetted with water regularly.
- The wheel washing facilities with high pressure water jet should be provided at all site exits.
- The areas of washing facilities and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.
- The main haul road should be paved with concrete, bituminous materials, hardcores or metal plates, and should be kept clear of dusty materials.
- The portion of any road leading only to construction site (within 30m of a vehicle entrance or exit) should be kept clear of dusty materials.
- The appropriate speed limit sign should be displayed at assess roads.

- The unpaved main haul road should be wetted by water spraying.
- The exposed earth should be treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabilizer within 6 months after last construction activity on the construction site or part of the construction site where the exposed earth lies properly.
- The stockpiling of dusty materials should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides or sprayed with water or a dust suppression chemical to maintain the entire surface wet.
- The stockpiling of dusty materials should be removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading.
- All dusty materials should be sprayed with water or a dust suppression chemical immediately prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet.
- The loaded dump trucks should be covered by impervious sheeting appropriately.
- The working area of any excavation or earth moving operation should be sprayed with water or a dust suppression chemical immediately before, during and immediately after the operation.

## **Noise**

14.1.9 The noise monitoring results are compared with the EIA predications as summarized in **Table 14-3**.

**Table 14-3 Comparison between the Noise Monitoring Results and EIA Predictions**

Month	Average Leq, 30min, dB(A) (Range)	
	Noise Monitoring Station	
	NM1a (EIA NSR No.: SR1)	NM2a (EIA NSR No.: SR9)
Dec 2022	51.1 (48.2 – 54.0)	48.1 (47.6 – 50.0)
Jan 2023	53.6 (51.1 – 56.1)	49.8 (48.9 – 51.2)
Feb 2023	52.8 (47.0 – 54.9)	50.2 (46.2 – 54.5)
Mar 2023	58.0 (53.1 – 62.3)	57.1 (42.3 – 62.1)
Apr 2023	56.8 (53.7 – 58.4)	60.1 (52.8 – 65.4)
May 2023	57.4 (47.6 – 61.0)	55.8 (48.4 – 58.0)
Jun 2023	58.6 (53.5 – 61.5)	53.9 (48.5 – 57.7)
Jul 2023	62.1 (61.0 – 63.7)	56.3 (54.2 – 58.2)
Aug 2023	52.5 (51.3 – 53.1)	51.1 (47.3 – 54.5)
Sep 2023	58.3 (56.6 – 59.3)	53.6 (49.8 – 54.7)
Oct 2023	63.1 (59.6 – 64.8)	55.2 (53.8 – 56.3)
Nov 2023	60.0 (52.2 – 63.3)	49.1 (47.7 – 49.8)
Dec 2023	61.9 (57.7 – 64.1)	53.5 (49.6 – 54.9)
<b>Max Predicted Noise Level, dB(A)</b>	<b>69.0</b>	<b>67.0</b>

Remarks:

Max Predicted Noise Level extracted from Table 4.9 of EIA Report, AEIAR-111/2007.

14.1.10 The noise results at NM1a to NM2a are below the Max Predicted Noise Level in the EIA Report (Register No.: AEIAR-111/2007). The graphs of comparison between noise monitoring results at NM1a and NM2a and EIA max predictions noise level are presented in **Appendix K**.

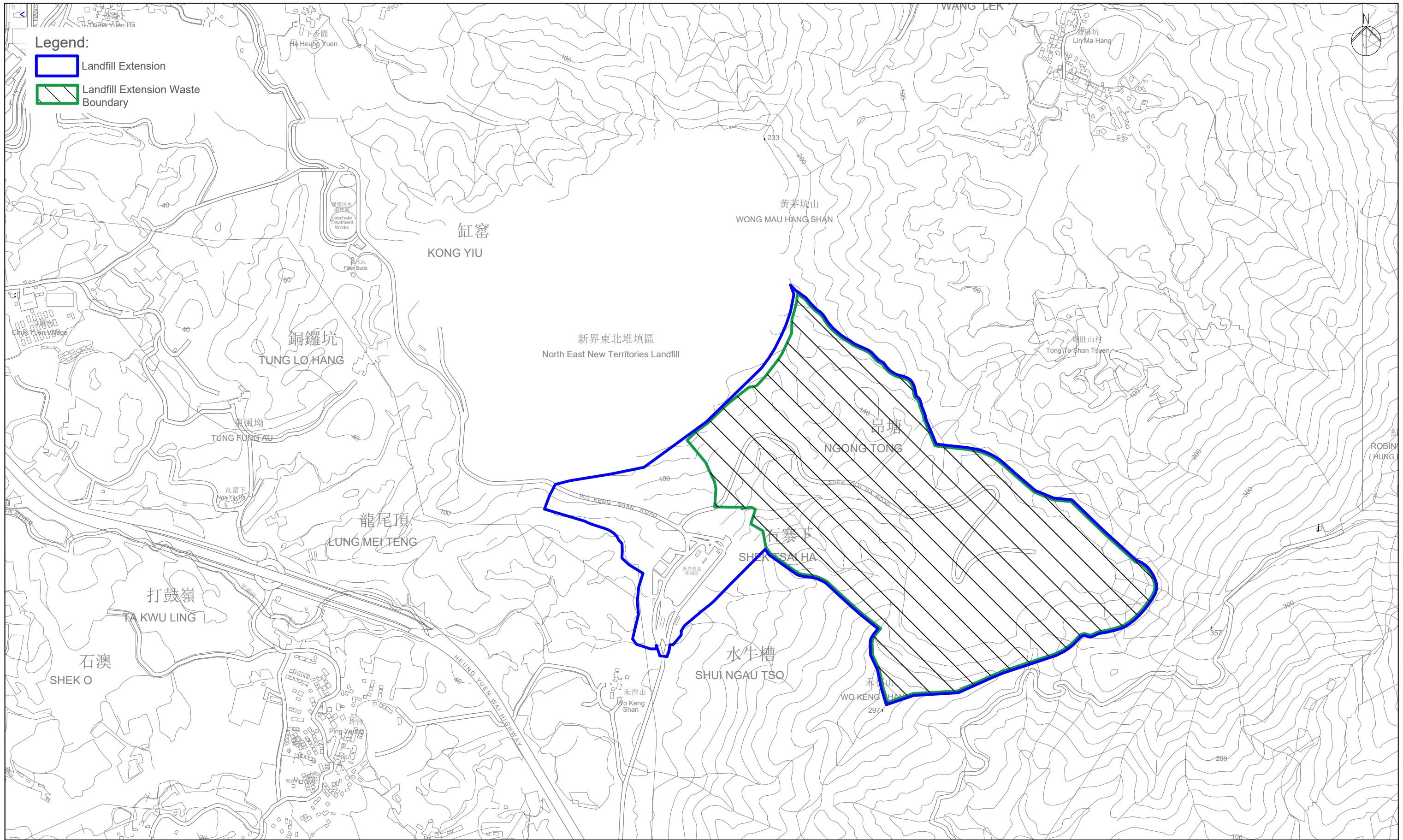
## 15 Conclusion

- 15.1.1 1-hr & 24-hr TSP impact monitoring was carried out in the reporting month. No Action / Limit Level exceedance for 1-hr TSP impact monitoring at AM1, AM2 & AM3 was recorded during the period.
- 15.1.2 2 Action Level Exceedance and 3 Limit Level Exceedance for 24-hr TSP monitoring at AM1 was recorded during the reporting period. The exceedance was considered likely caused by external sources such as the high level of background air quality in Hong Kong during the monitoring period etc and not project related.
- 15.1.3 No Action / Limit Level exceedance for 24-hr TSP monitoring at AM2 was recorded during the period.
- 15.1.4 4 Action Level Exceedance and 3 Limit Level Exceedance for 24-hr TSP monitoring at AM3 was recorded during the reporting period. The exceedance was considered likely caused by external sources such as the high level of background air quality in Hong Kong during the monitoring period etc and not project related.
- 15.1.5 Construction noise monitoring was carried out in the reporting month. No Action / Limit Level exceedance at NM1a & NM2a was recorded during the period.
- 15.1.6 Site clearance of future landfilling area is in progress. The installation of groundwater monitoring boreholes will be installed after the site formation work of the landfilling area. The target commencement period of groundwater monitoring will be in 2026. No groundwater monitoring is required before the completion of site formation work of the landfilling area.
- 15.1.7 Surface water monitoring was carried out in the reporting month. No exceedance of Action and Limit Levels of surface water monitoring was recorded from December 2022 to March 2023
- 15.1.8 No exceedance of Action Levels of surface water monitoring was recorded from April to June 2023. 1 turbidity exceedance of Limit Levels of surface water quality at WM2 was recorded from April to June 2023. After the investigation, the exceedance may involve the construction runoff of the project. The rectification actions are conducted by the contractor in progress. The rectification works should be achieved minimization the potential risk of causing high concentration of construction runoff, enhancement of maintenance of Temporary Surface Water Drainage System (TSWDS), enhancement of the effectiveness and treatment capacity of the TSWDS & Enhancement of temporary landscape treatment as green cover and Minimization the potential risk of causing high concentration of construction runoff.
- 15.1.9 No exceedance of Action Levels of surface water monitoring was recorded in July 2023.
- 15.1.10 1 DO exceedance of Action Level of surface water quality at WM1 was recorded in August 2023. In summary of the investigation, the DO exceedance in Action Level of Surface Water Quality at WM1 may involve the vary of temperature under the hot weather. Therefore, the exceedance is not related to project. No exceedance of Limit Level of surface water monitoring at WM1 was recorded in August 2023. No exceedance of Action Levels and Limit Level of surface water monitoring at WM2 were recorded in August 2023.
- 15.1.11 No exceedance of Action and Limit Levels of surface water monitoring was recorded from September to December 2023.
- 15.1.12 Landfill Gas Monitoring was carried out in the reporting month. No exceedance of Action AND Limit Levels of LFG was recorded during the reporting period.
- 15.1.13 In terms of cultural heritage, implementation of the mitigation measures such as permanent fencing to protect the boulder path and setting up warning notices during construction phase of the Project has been monitored through the regular site inspection/audit in the reporting period. All the mitigation measures are in order.
- 15.1.14 Post-translocation Monitoring was carried out in the reporting period. No *S. zanklon individual* was found. Post-transplantation monitoring was carried out in the reporting period. The numbers, measurements and health conditions of the transplanted species are recorded.

- 15.1.15 56 environmental site inspections were carried out in the reporting period. Recommendations on mitigation measures for Permit/ Licenses were given to the Contractor for remediating the deficiencies identified during the site inspections.
- 15.1.16 Six complaints (One complaint about air quality and Five complaints about water quality) were recorded during the reporting period.
- 15.1.17 One warning regarding suspected non-compliance event with Condition 1.7 and 2.15(a) of the EP & Condition 1.7 and 2.13(a) of the FEP-01 & FEP-02 was recorded during the reporting period. The related rectified actions are being taken in progress by the contractor.
- 15.1.18 No notification of summons and prosecution was received during the reporting period.
- 15.1.19 The Contractor has generally implemented environmental mitigation measures and requirements as stated in the EIA Report, the EP and EM&A Manual and the contract documents. The implemented mitigation measures are considered effective.
- 15.1.20 The ET will keep track on the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

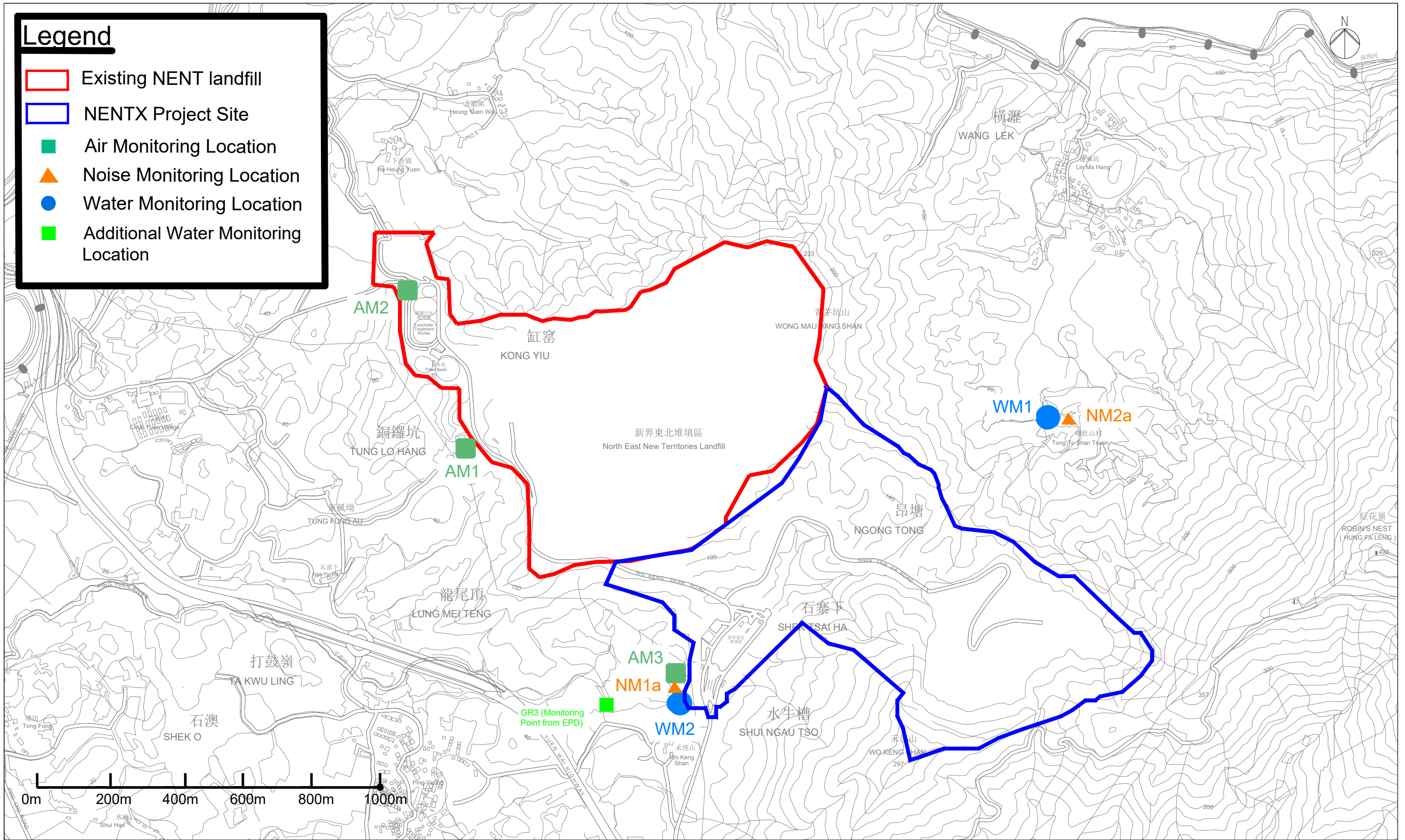


## Figure 1 Location of the Project Site



## Figure 2 Impact Air, Noise & Surface Water Quality Monitoring Locations





## Figure 3 Landfill Gas Monitoring Locations



Gas Monitoring Point ●

Monitoring Frequency: 2 times per day

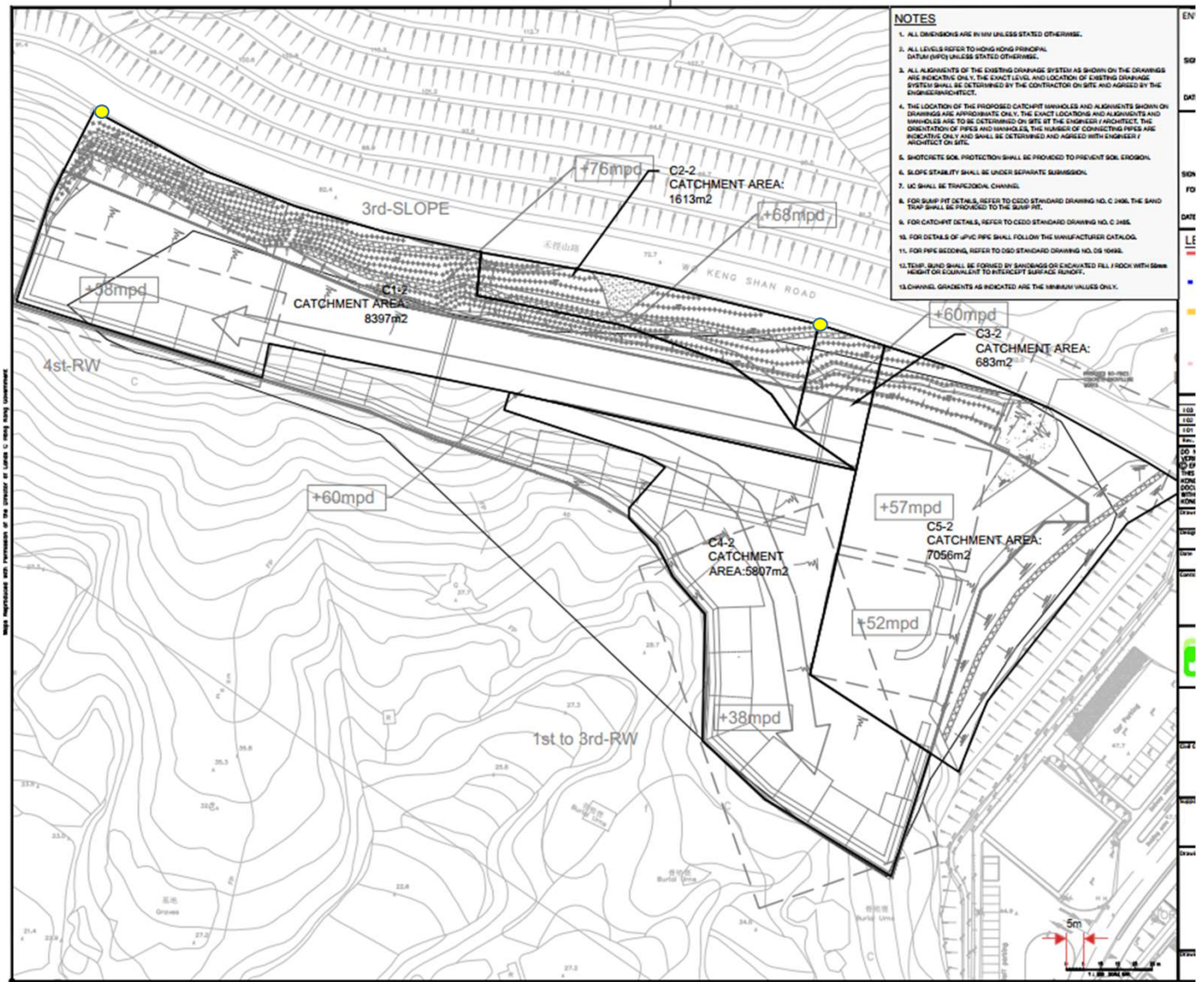
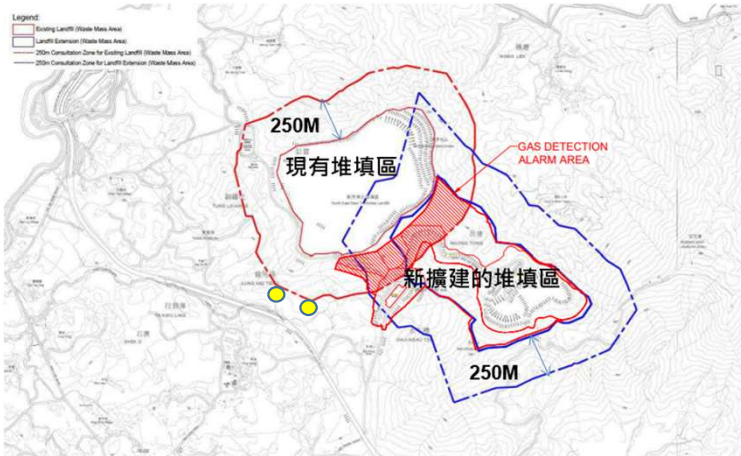


Figure 3 Landfill Gas Monitoring Locations

# Appendix A Construction Programme

Activity ID	Activity Name	At Completion Duration	Actual Start	Actual Finish	Early Start	Early Finish	Late Start	Late Finish	Predecessors	Successors	Total Float	2022				2023				2024				2025				2026								
												Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4					
<b>NENTX_Updated Baseline Programme (Rev.4)</b>																																				
<b>DESIGN DEVELOPMENT</b>																																				
Portion A - Site Formation																																				
Portion A & D Architectural Design																																				
Portion A - Leachate Treatment Works & LFG Treatment Plant																																				
Portion A - Process Building																																				
Portion D Site Formation																																				
Portion A and D Preliminary Utilities Arrangement																																				
Site services detailed design for Portion A and D																																				
Permanent Drainage - Portion A, C & D																																				
Sewerage Management Plan - Portion A, C & D																																				
Pavement Road and Traffic Design for Portion A & D																																				
Accommodation Buildings (Portion D)																																				
Existing Structures (Portion C)																																				
Landfill Area																																				
<b>FS Submission and FSD Consent</b>																																				
Preliminary FS Submission																																				
Process Building and Fire Services Building Detailed Design FS Submission																																				
<b>TECHNICAL SUBMISSION</b>																																				
Project Control Plan and Report																																				
<b>PROCUREMENT / FABRICATION / DELIVERY</b>																																				
General Material																																				
LIFT																																				
LTW - GFS and GRP Tanks																																				
LTW - Lamella Settlers																																				
LTW - Sludge Thickening																																				
LTW - Ammonia Stripper																																				
Process Building(Electrical equipments)																																				
LFG Plant																																				
<b>EPD REQUIREMENT - GI WORKS</b>																																				
PORTION D																																				
PORTION A																																				
PORTION E3-1																																				
PORTION E4																																				
PORTION E3-1-A																																				
PORTION E1																																				
ENVIRONMENTAL MONITORING																																				
<b>CONSTRUCTION - INITIAL WORKS PHASE 1</b>																																				
PORTION A																																				
SITEWIDE Underground UTILITIES (Portion A to Portion D)																																				
Waste Reception Area (PORTION C) Construct by Others																																				
PORTION D																																				
PORTION D - Underground Drainage / UG Utilities and Pipe Laying Works																																				
PORTION D - EVA Road Road Pavement Works																																				
Landfill Area (Portion E3-1, E4, E1, B1-1 & B2)																																				
Landscape Works (Landfill)																																				
<b>FS INSPECTION</b>																																				
Portion A - Readiness for FS Inspection (Process Building)																																				
Portion D : Readiness for FS inspection																																				
2nd Inspection																																				
FS Inspection Certificate																																				
<b>STATUTORY SUBMISSION</b>																																				
Obtain Licences & Permits for Construction																																				
Obtain Licences & Permits for Operation																																				



- ▬ Remaining Level of Effort
- ▬ Remaining Work
- ▬ Critical Remaining Work
- ◆ Milestone
- ▬ Summary

**NORTH EAST NEW TERRITORIES (NENTX) LANDFILL EXTENSION**  
**UPDATED BASELINE PROGRAMME (Rev.4)**  
**Executive Summary**  
**INITIAL WORKS (PHASE 1)**



Date	Revision	Ch...	Appr...
22-Jun-22	GENERAL REVISION		
31-Mar-23	GENERAL REVISION		



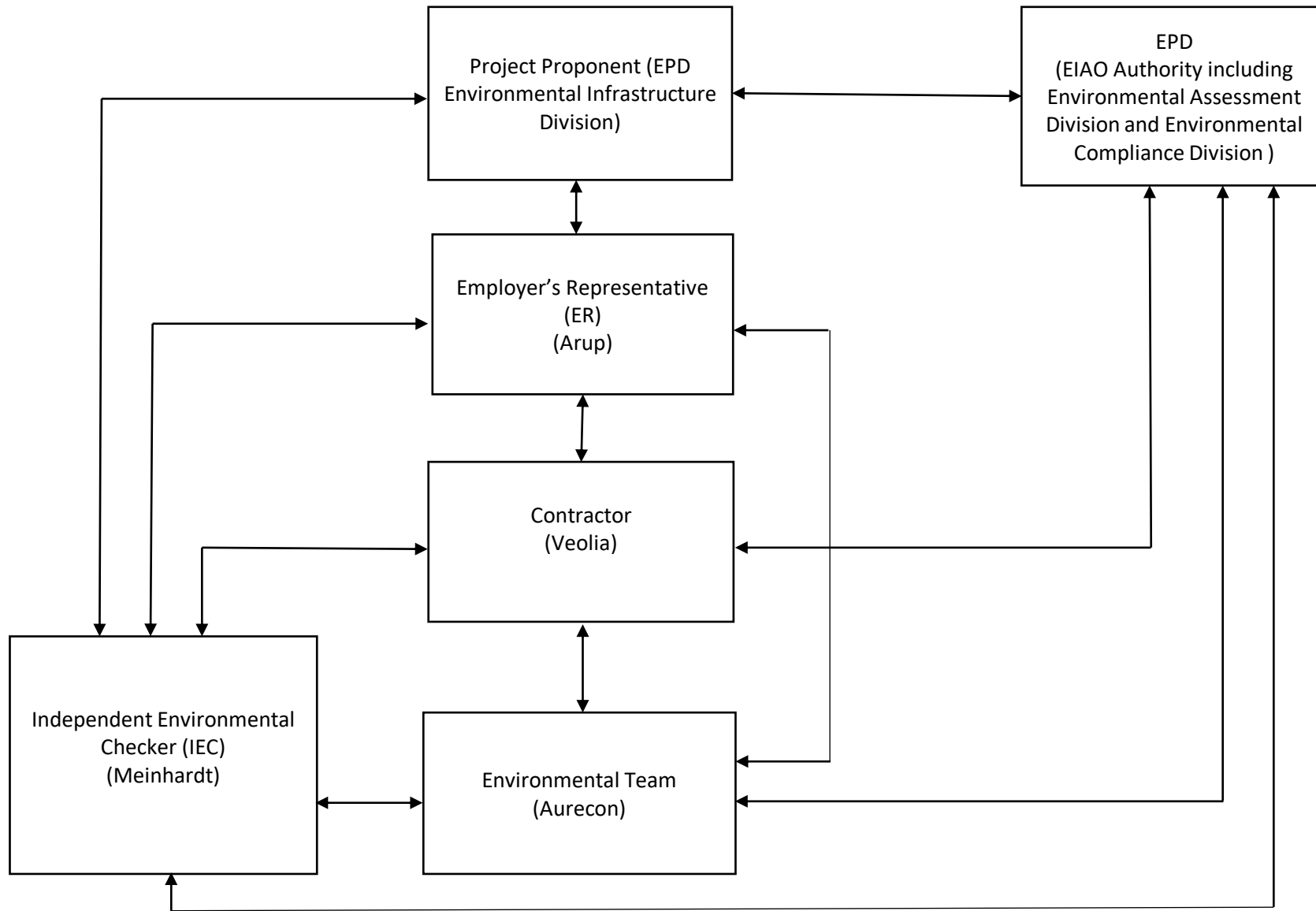
## Appendix B Construction Site Activities

Construction Activities	Where	Who	What - ENV Impacts	Mitigation Measures
Material loading and unloading, site traffic	Portion A, SBA to Alternative Disposal Ground	PYE	Dust, bringing mud to the common haul road	Speed limit, covering of materials and water spraying, lorry washing at the exit of the site
Construction of Site buildings	Portion D	PYE	Washout flowing to site water discharge point, dust emissions	Avoid the spillage of concrete, lorry washing at designated area, operation and maintenance of water treatment facility at discharge point
Site clearance	Portion A, Portion E3-1, Portion E4, Portion E1/B2	PYE	Wash out going to surface water channel and site water discharge point, generation of yard waste	Cover exposed slope by tarpaulin, diversion of surface water, operation and maintenance of water treatment facility at discharge point, implementation of trip ticket system
Installation of permanent fencing	Portion A, Portion B1, Portion E4	PYE	Dust	Covering of cement storage area, enclosure of mixing area
Site formation	Portion A, Portion E3-1	PYE	Generation of C&D waste	Implementation of trip ticket system, waste recycling, internal waste transfer
Tree Felling	Portion E3-1, E4, E1/B2	PYE	Generation of yard waste	Implementation of trip ticket system, waste recycling, internal waste transfer
Shotcreting (permanent and temporary)	Whole site	PYE	Dust	Covering of cement storage area, enclosure of mixing area
Soil Nail Installation	Portion A, E1/B2, E4	PYE	Dust	Covering of cement storage area, enclosure of mixing area, watering during works, install dust screen at work area

Remark:

PYE is the Sub-contractor for this project

# Appendix C Project Organization Chart & Management Structure



Notes:

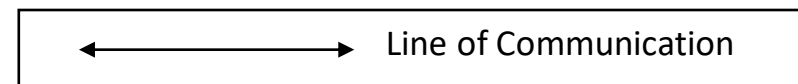
EPD - Environmental Protection Department

Arup – Ove Arup & Partners Limited

Veolia - Veolia Environmental Services Hong Kong Limited

Meinhardt - Meinhardt Infrastructure And Environment Limited

Aurecon - Aurecon Hong Kong Limited



## Appendix D Detail Status of FEP & EP Submission

## Detail Status of Submissions required under the FEP & EP

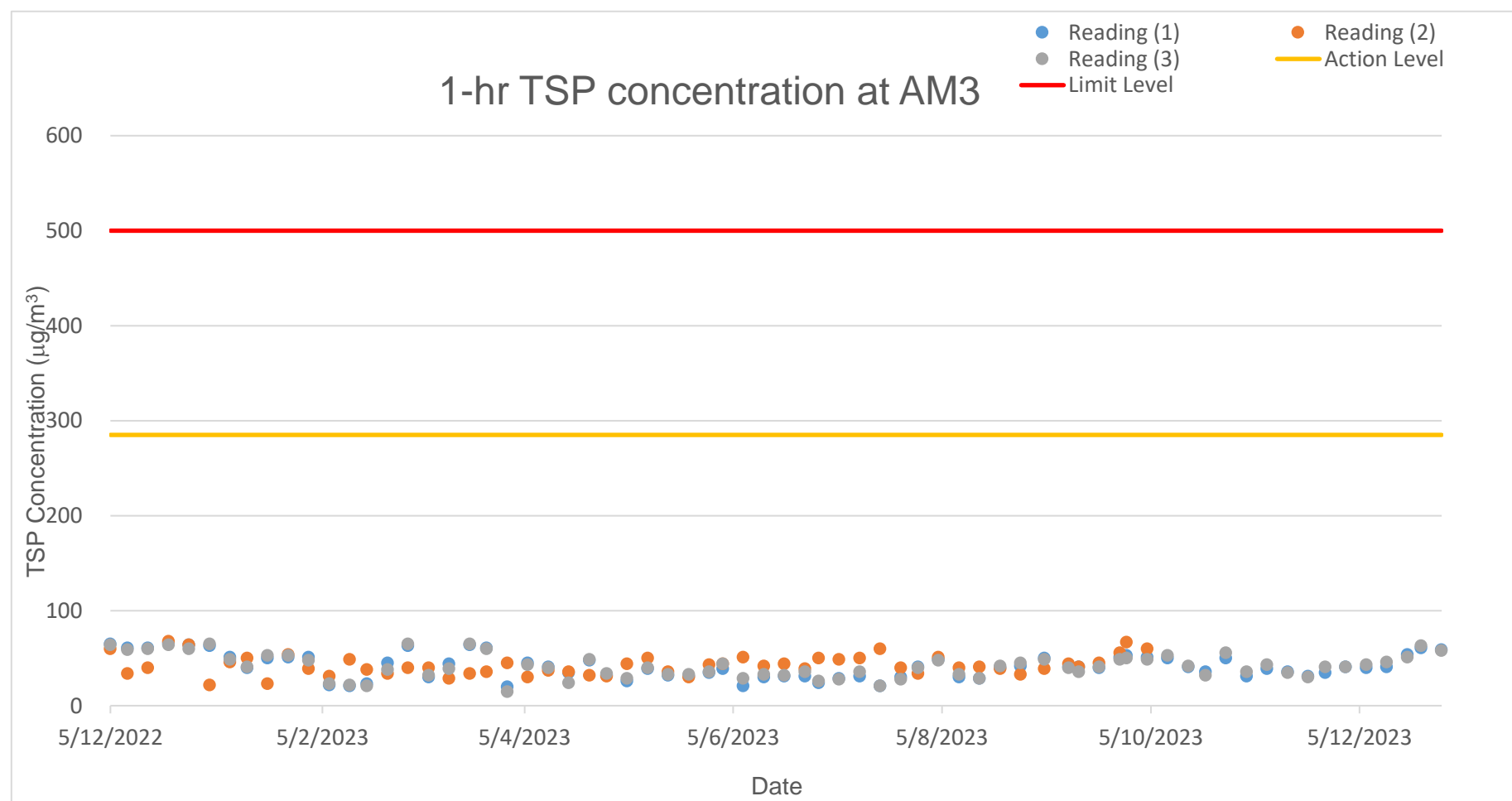
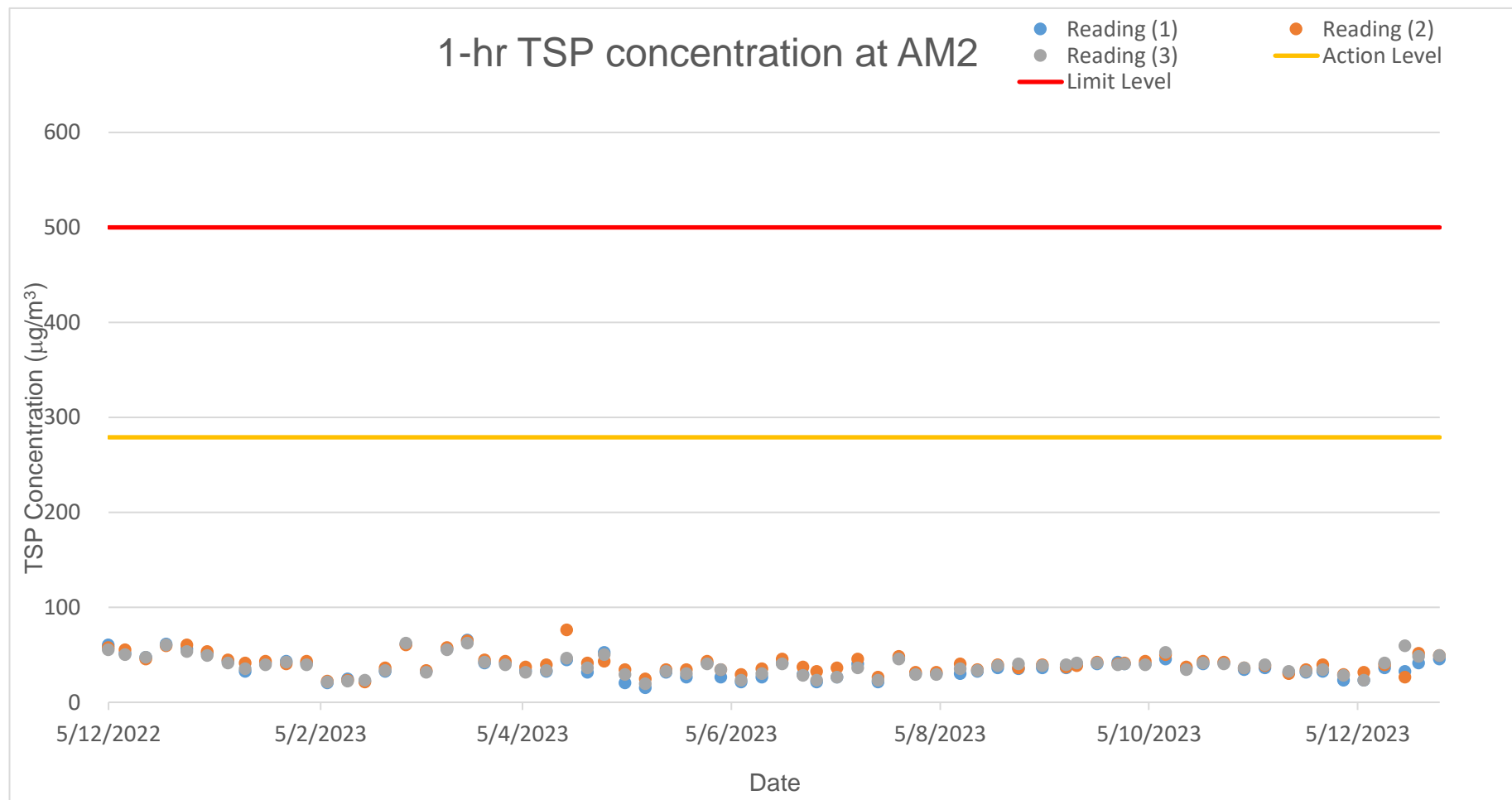
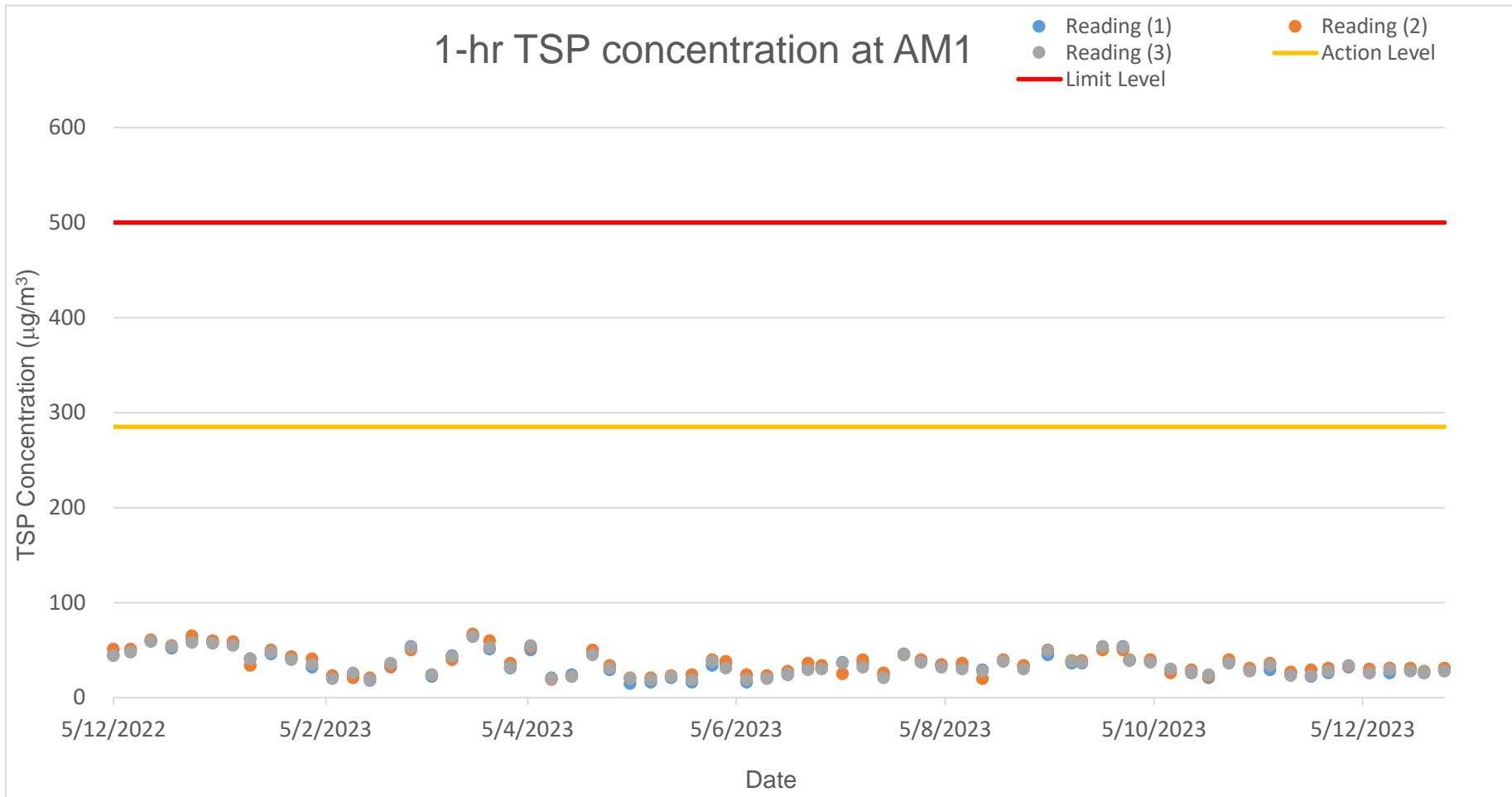
FEP Condition	EP Condition	Submission / Measures	Status
2.1	2.3	Management Organization of Main Construction Companies	Submission Date (12 Oct 2022)
2.2	2.4	Setting up of Community Liaison Group (CLG)	Submission Date (12 Oct 2022) 1 <sup>st</sup> CLG meeting (12 Jan 2023)
2.3	2.5	Submission of EM&A Manual	Submission Date (12 Oct 2022)
2.4	2.6	Submission of Preservation of Cultural Landscape Features	Survey and Preservation of Grave Records: Submission Date (15 Oct 2022) Survey and Preservation of Boulder Paths: Submission Date (12 Oct 2022)
2.5	2.7	Submission of Vegetation Survey (Transplantation Proposal)	Submission Date (2 September 2022)
2.6	2.8	Submission of translocation proposal	Submission Date (8 July 2022)
2.7	2.9	Submission of Transplantation Report and Post-Transplantation Monitoring	Submission Date (19 Jan 2023) 1 <sup>st</sup> monitoring (24 Nov 2022) 2 <sup>nd</sup> monitoring (9 Dec 2022) 3 <sup>rd</sup> monitoring (21 Dec 2022) 4 <sup>th</sup> monitoring (13 Jan 2023) 5 <sup>th</sup> monitoring (26 Jan 2023) 6 <sup>th</sup> monitoring (8 Feb 2023) 7 <sup>th</sup> monitoring (24 Feb 2023) 8 <sup>th</sup> monitoring (20 Mar 2023) 9 <sup>th</sup> monitoring (21 Apr 2023) 10 <sup>th</sup> monitoring (12 May 2023) 11 <sup>th</sup> monitoring (16 Jun 2023) 12 <sup>th</sup> monitoring (18 Jul 2023) 13 <sup>th</sup> monitoring (11 Aug 2023) 14 <sup>th</sup> monitoring (15 Sep 2023) 15 <sup>th</sup> monitoring (13 Oct 2023)

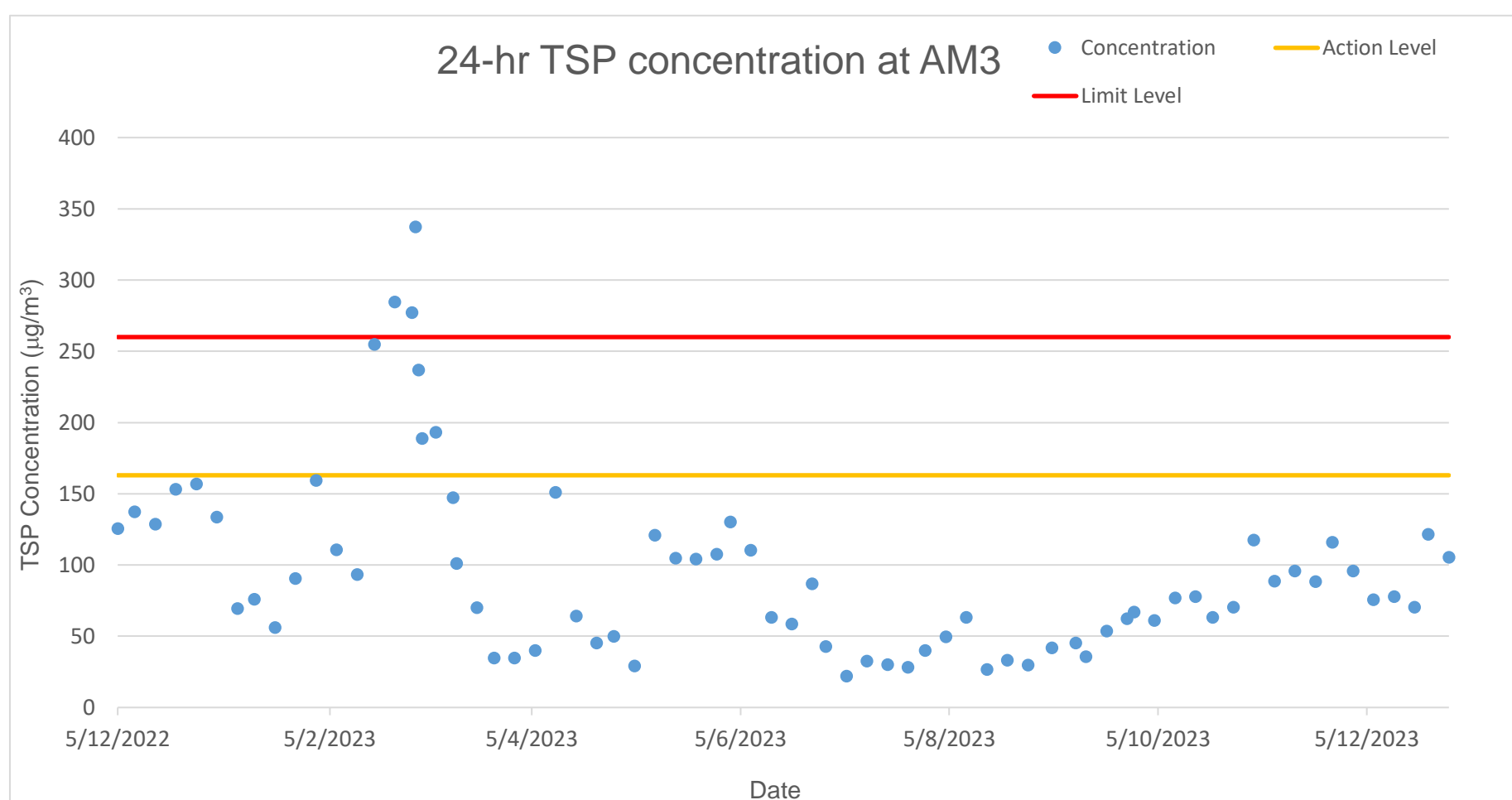
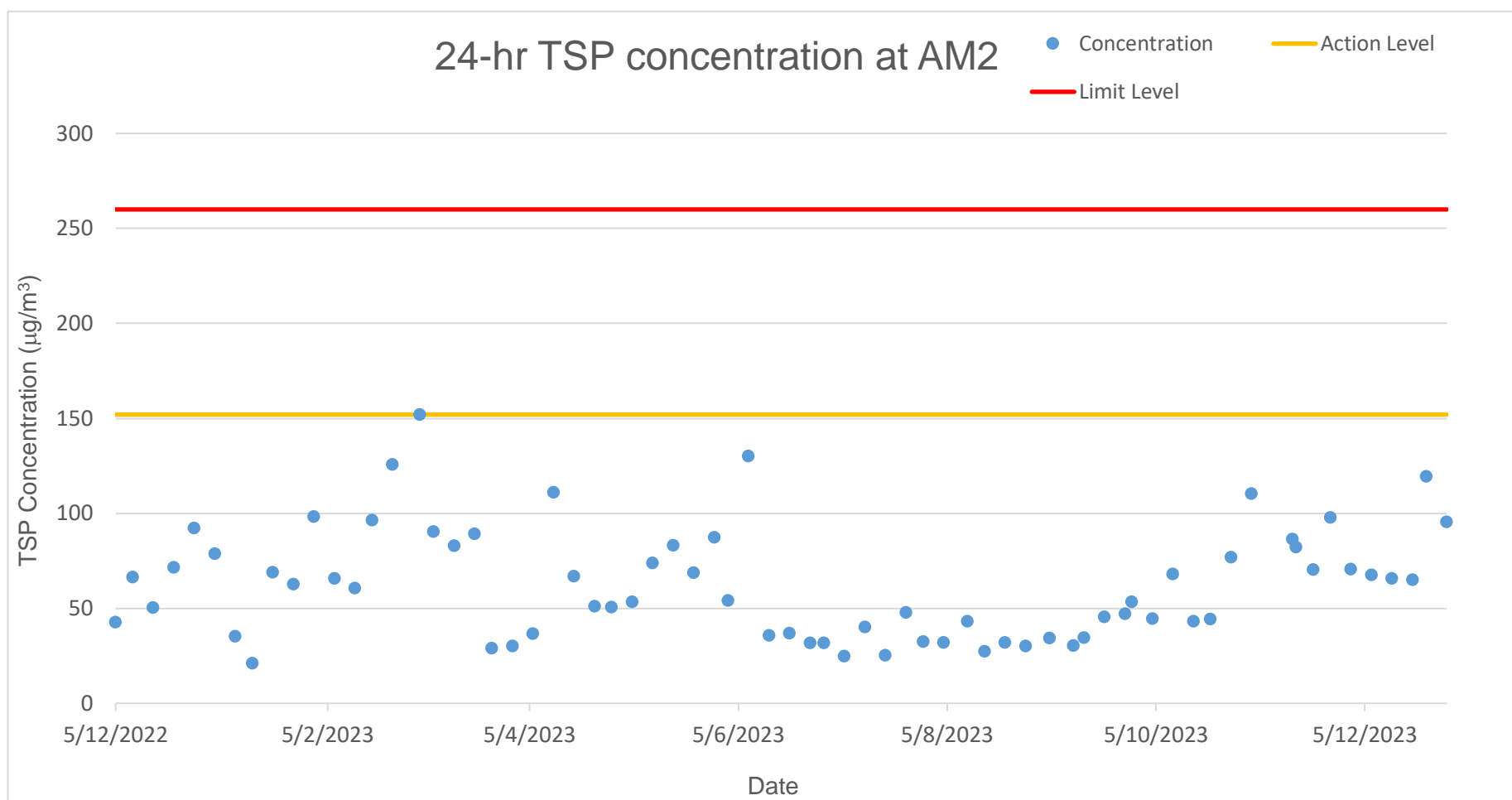
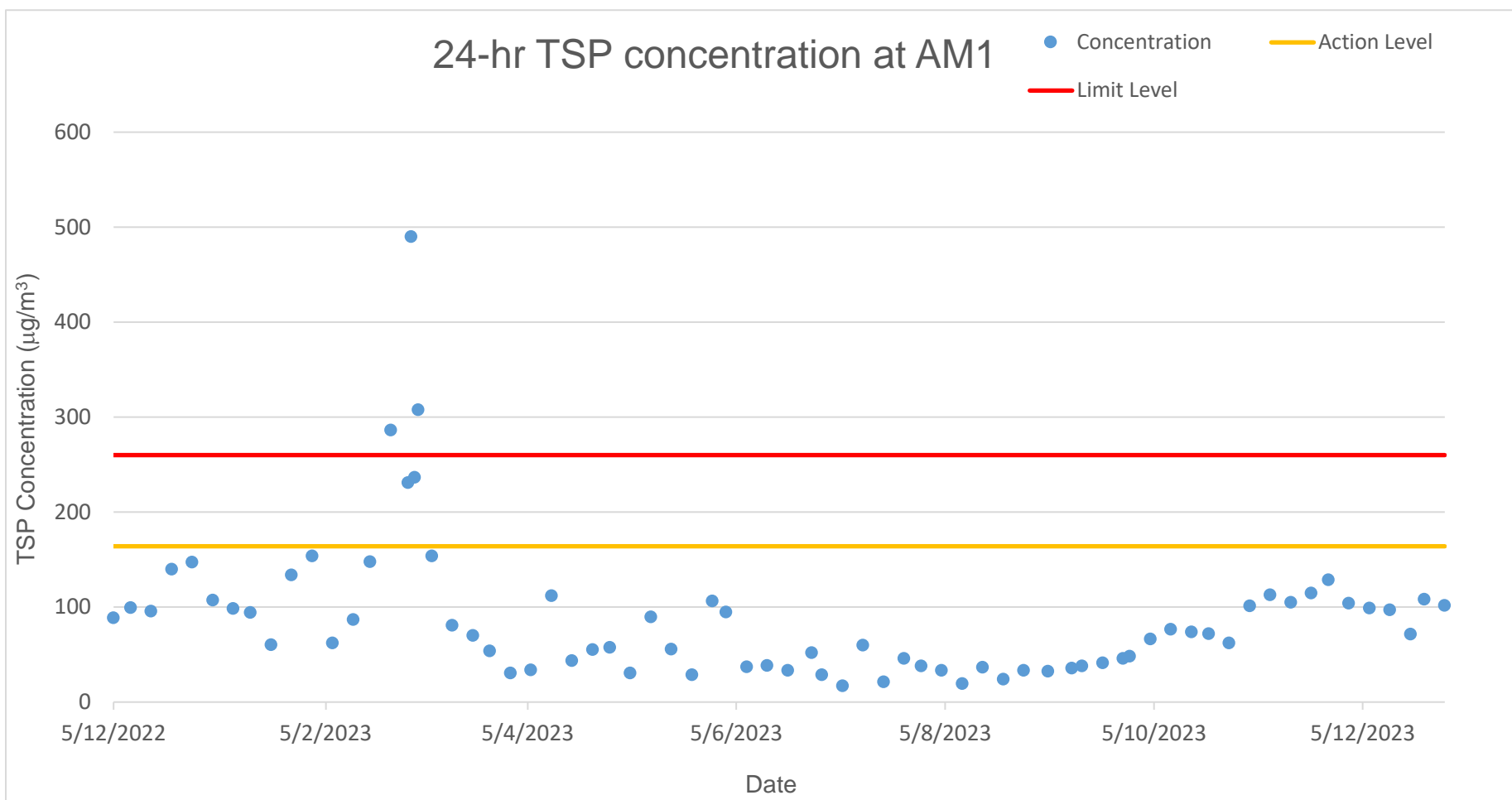
FEP Condition	EP Condition	Submission / Measures	Status
2.8	2.10	Submission of Translocation Report and Post-Translocation Monitoring	<p>Translocation was carried out in July 2022</p> <p>Submission Date (27 December 2022)</p> <p>1<sup>st</sup> monitoring (29 Aug 2022)</p> <p>2<sup>nd</sup> monitoring (28 Sep 2022)</p> <p>3<sup>rd</sup> monitoring (28 Oct 2022)</p> <p>4<sup>th</sup> monitoring (22 Nov 2022)</p> <p>5<sup>th</sup> monitoring (29 Dec 2022)</p> <p>6<sup>th</sup> monitoring (30 Jan 2023)</p> <p>7<sup>th</sup> monitoring (24 Feb 2023)</p> <p>8<sup>th</sup> monitoring (20 Mar 2023)</p> <p>9<sup>th</sup> monitoring (19 Apr 2023)</p> <p>10<sup>th</sup> monitoring (17 May 2023)</p> <p>11<sup>th</sup> monitoring (7 Jun 2023)</p> <p>12<sup>th</sup> monitoring (12 Jul 2023)</p>
2.9	2.11	Submission of Detailed Landfill Gas Hazard Assessment Report	Submission Date (6 Oct 2022)
2.10	2.12	Submission of Waste Management Plan	Submission Date (30 December 2022)
3.2	3.2	Submission of Baseline Monitoring Report	Submission Date (30 Nov 2022)
3.3	3.3	Submission of Monthly EM&A Report	<p>1<sup>st</sup> report (Dec 2022)</p> <p>2<sup>nd</sup> report (Jan 2023)</p> <p>3<sup>rd</sup> report (Feb 2023)</p> <p>4<sup>th</sup> report (Mar 2023)</p> <p>5<sup>th</sup> report (Apr 2023)</p> <p>6<sup>th</sup> report (May 2023)</p> <p>7<sup>th</sup> report (Jun 2023)</p> <p>8<sup>th</sup> report (Jul 2023)</p> <p>9<sup>th</sup> report (Aug 2023)</p> <p>10<sup>th</sup> report (Sep 2023)</p> <p>11<sup>th</sup> report (Oct 2023)</p> <p>12<sup>th</sup> report (Nov 2023)</p> <p>13<sup>th</sup> report (Dec 2023)</p>

# Appendix E Graphical Presentations

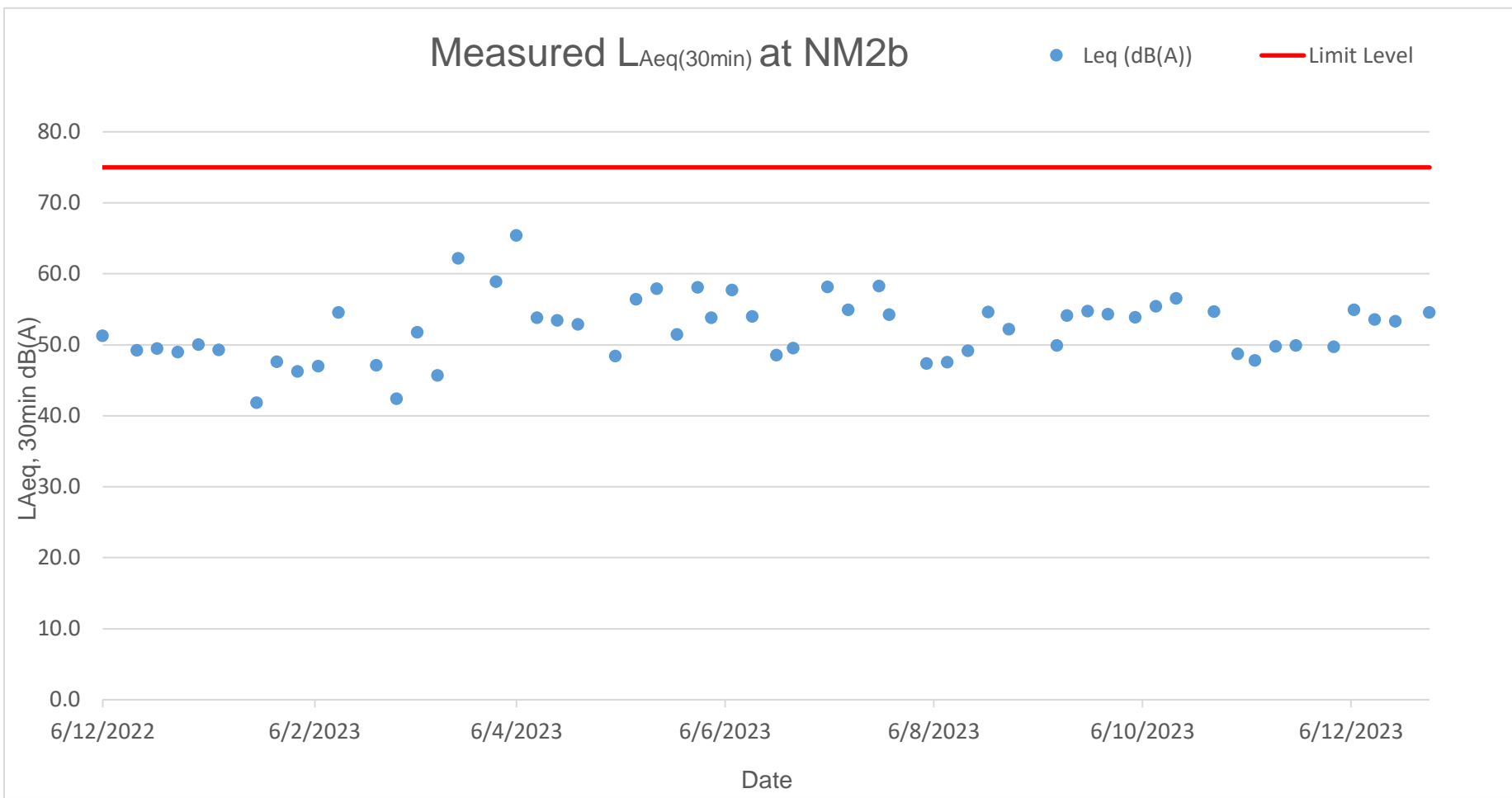
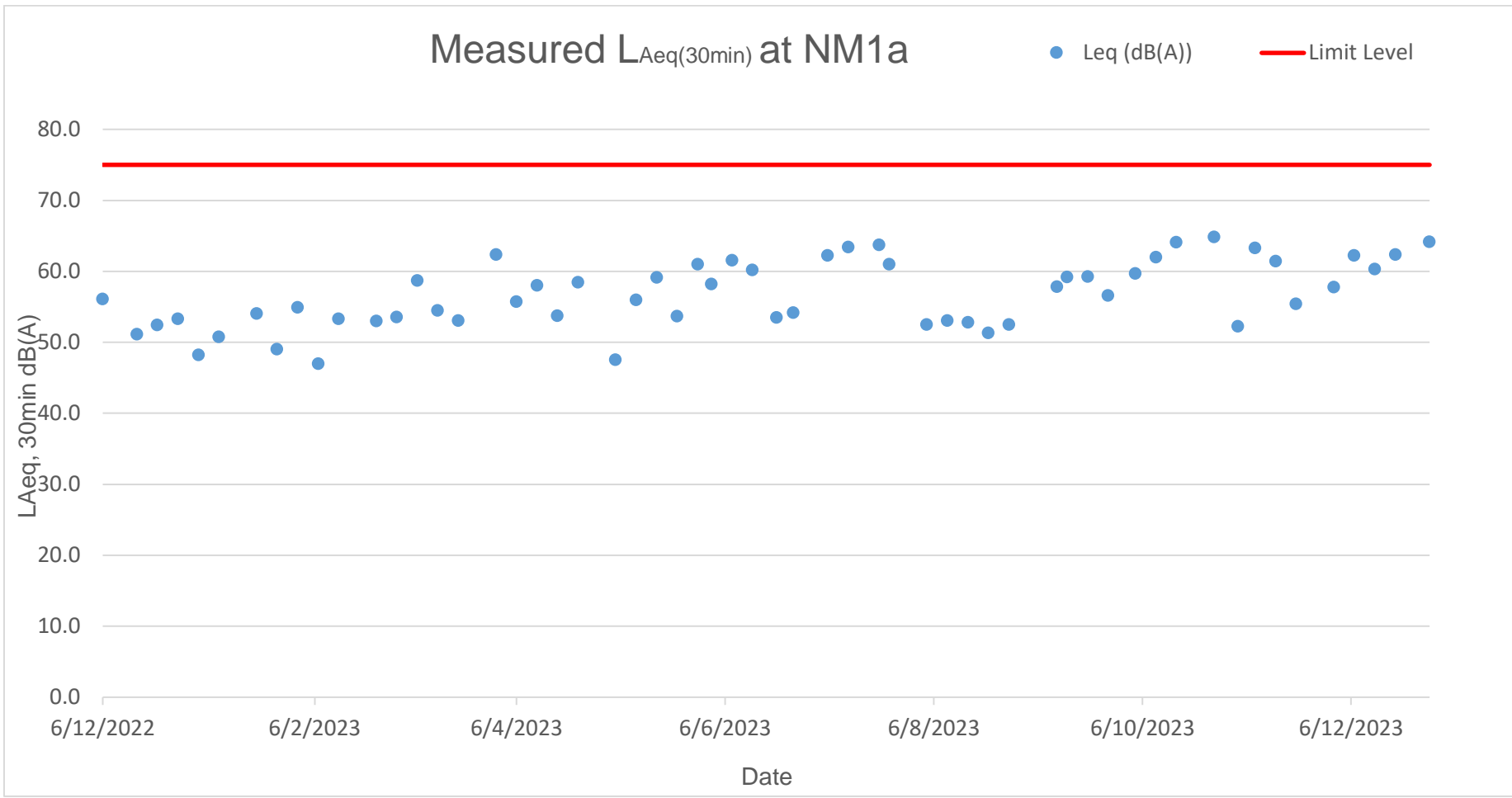


# Air Quality



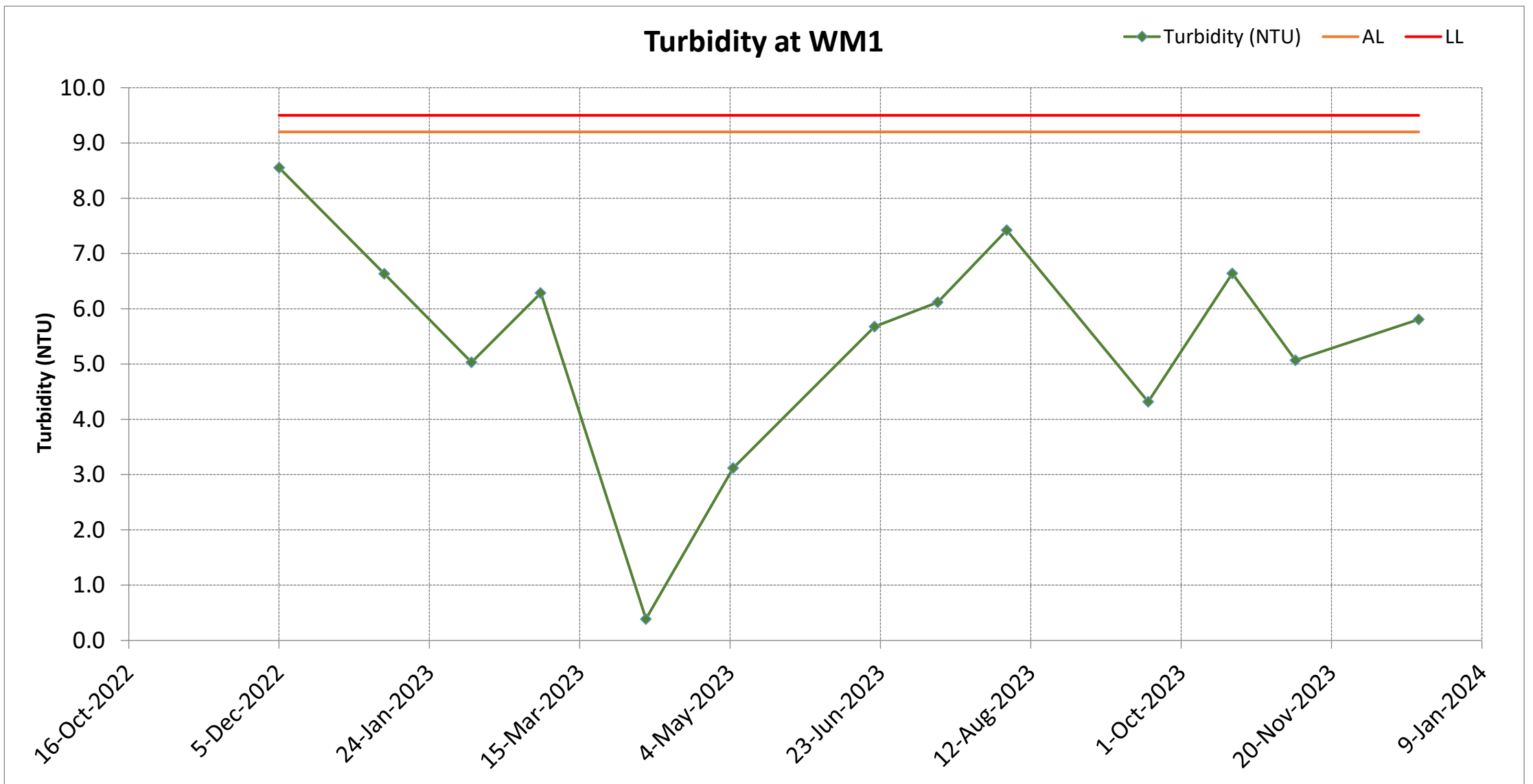
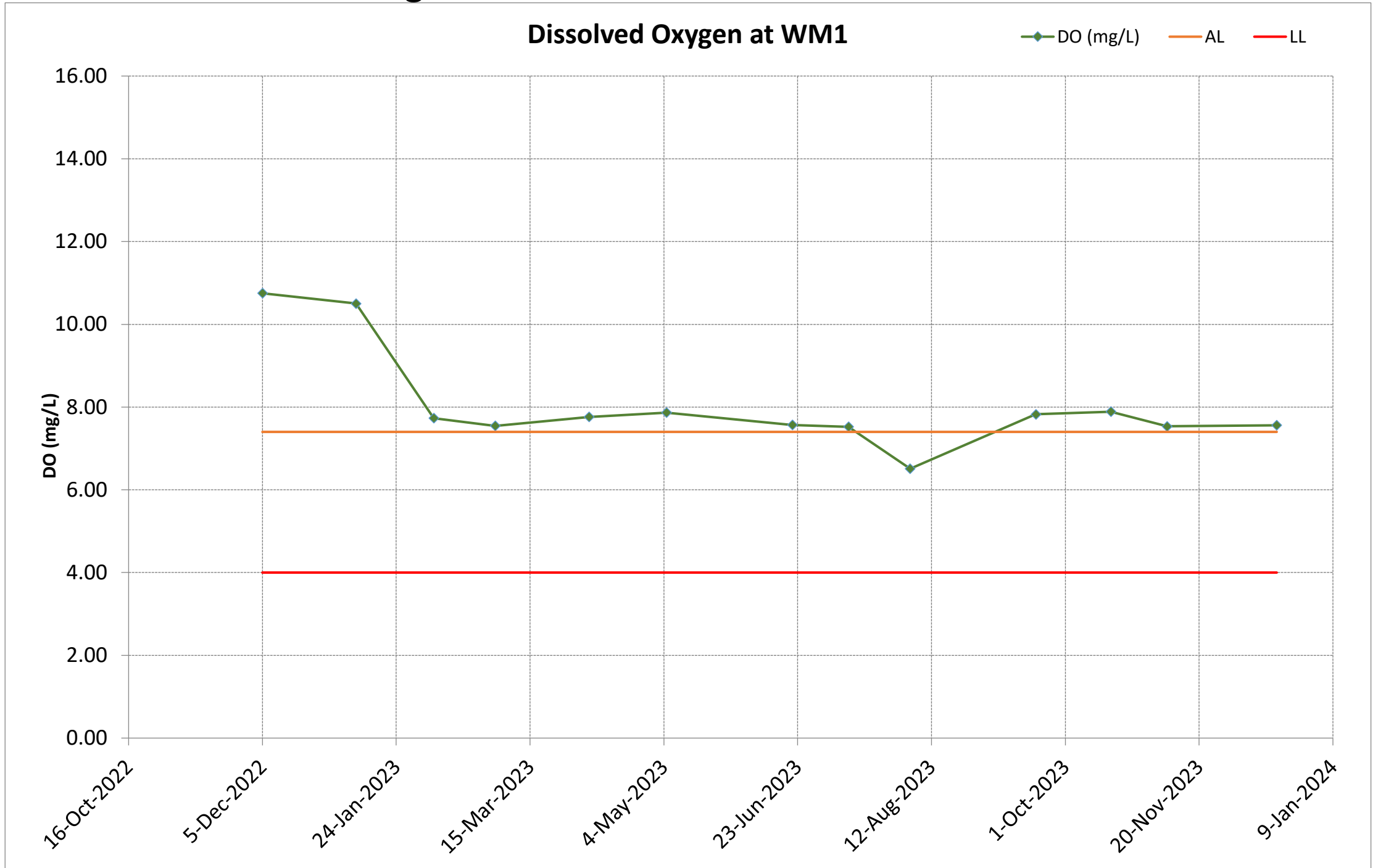


# Noise

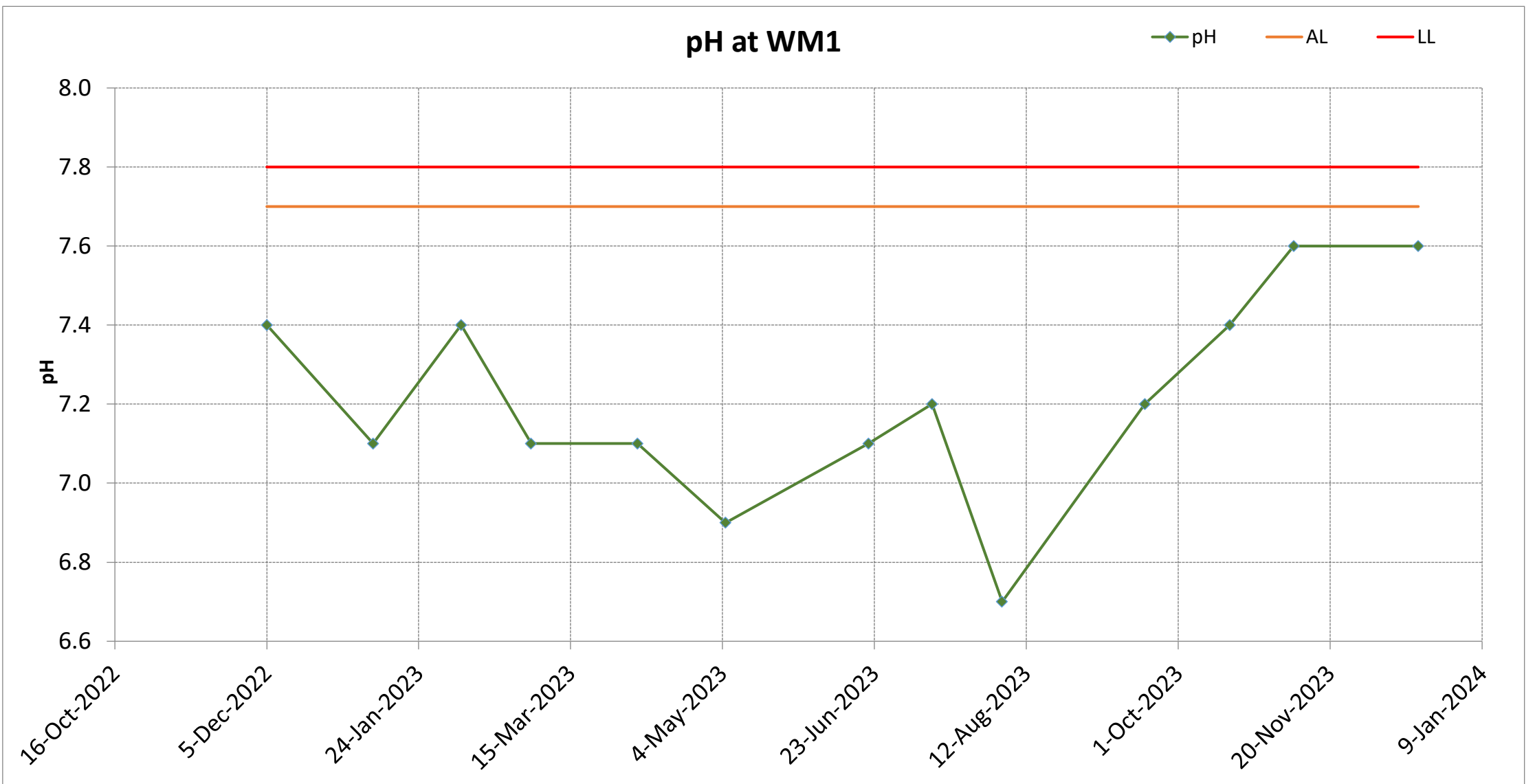
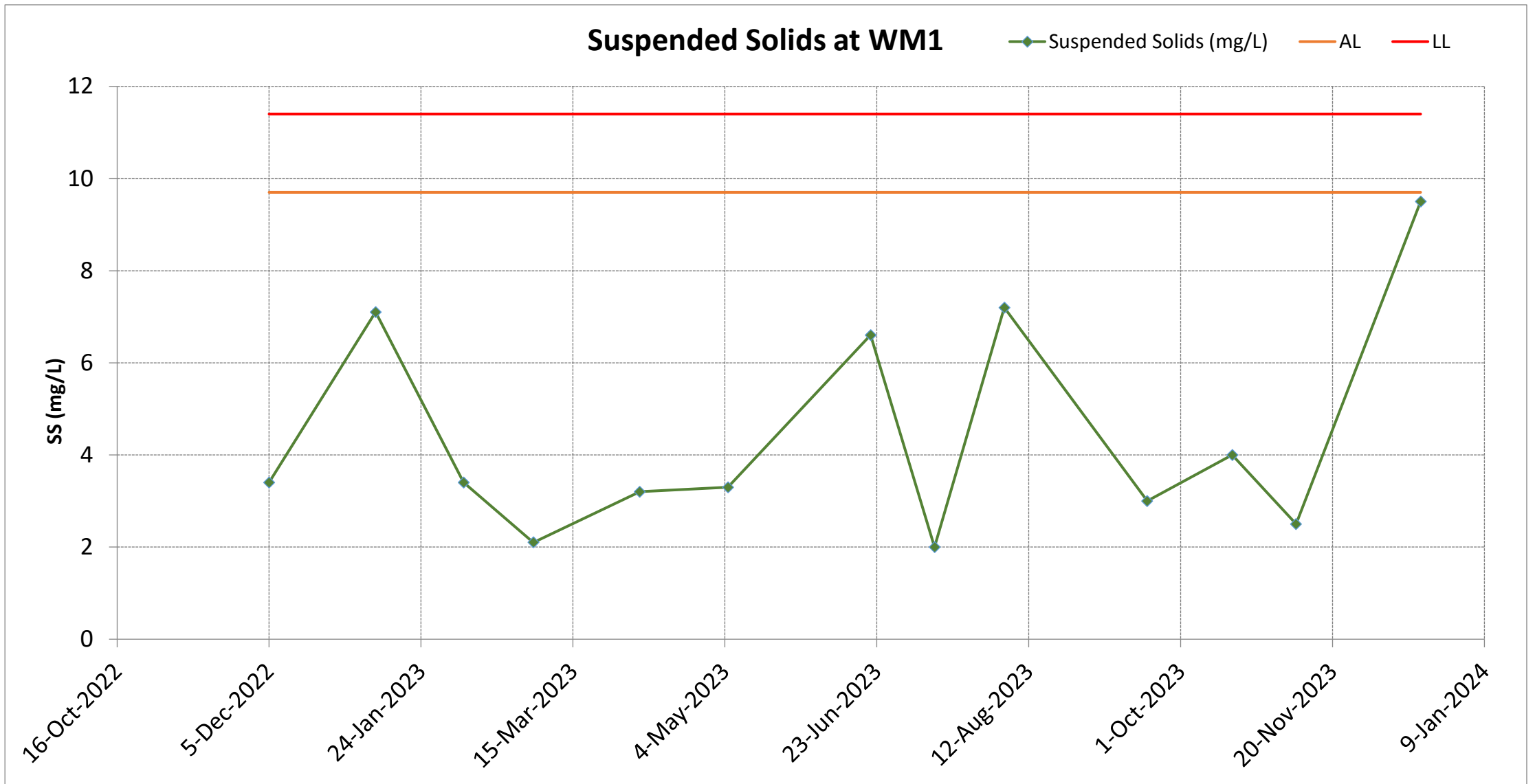


# Water Quality

# Surface Water Monitoring Results at WM1



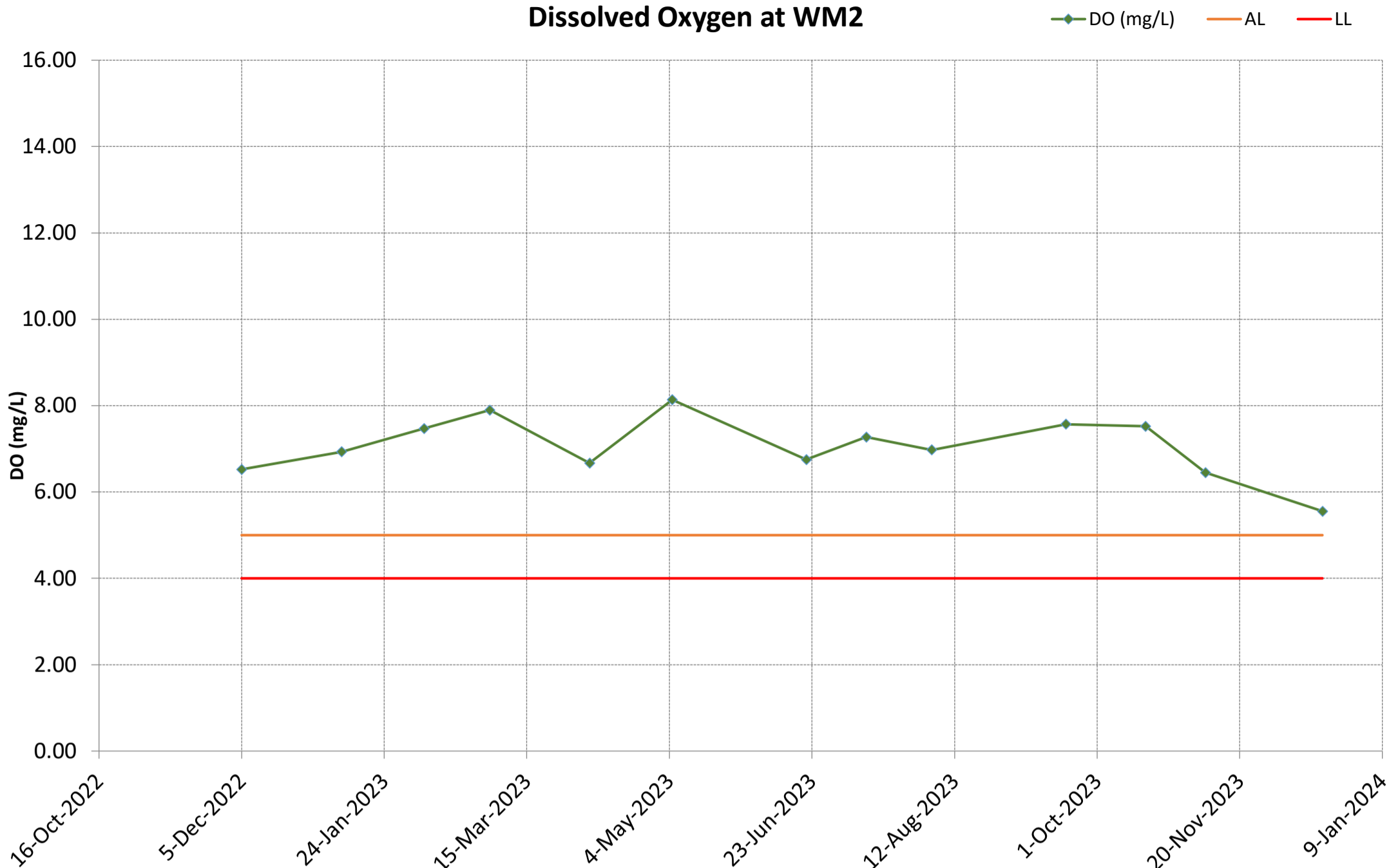
# Surface Water Monitoring Results at WM1



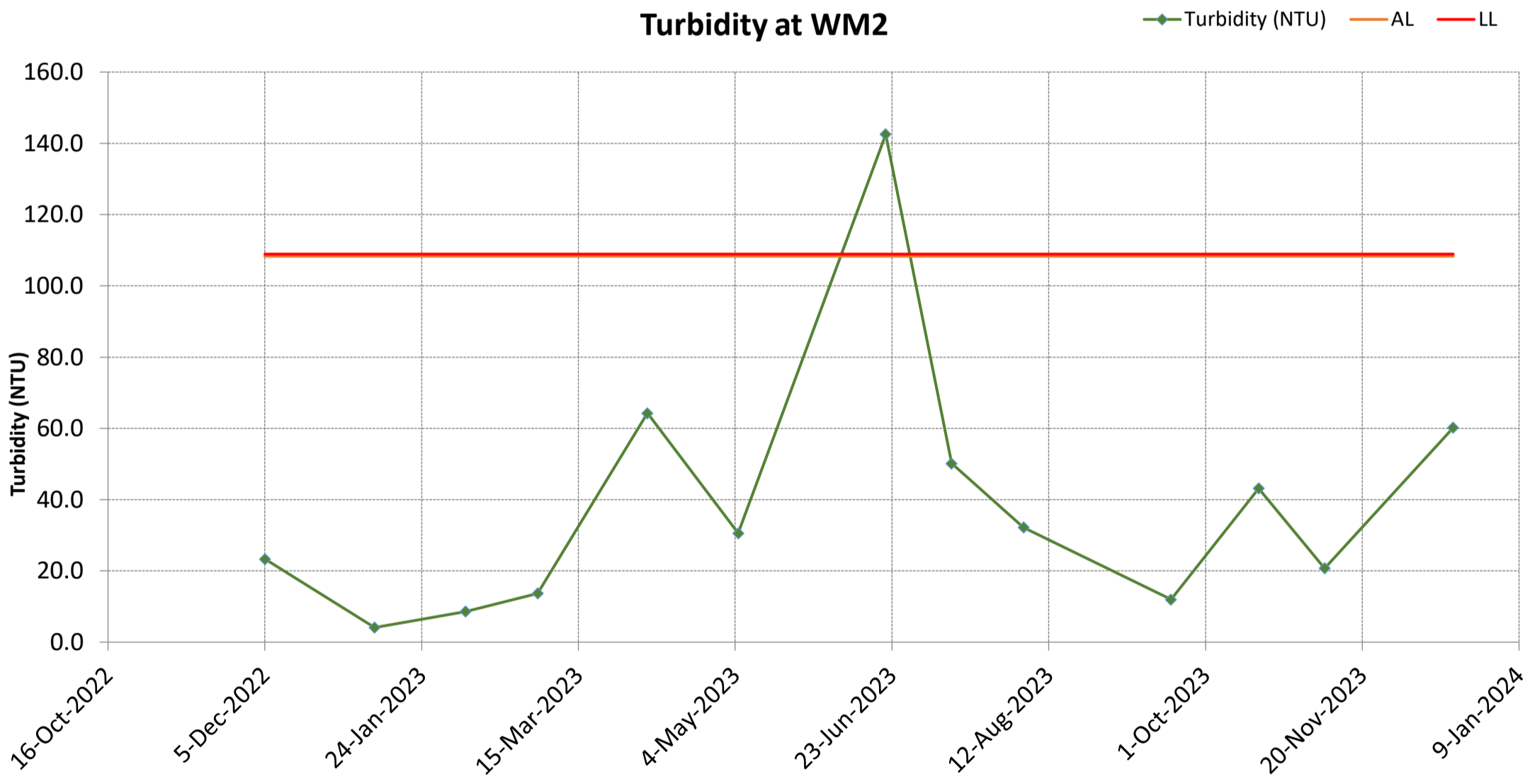


# Surface Water Monitoring Results at WM2

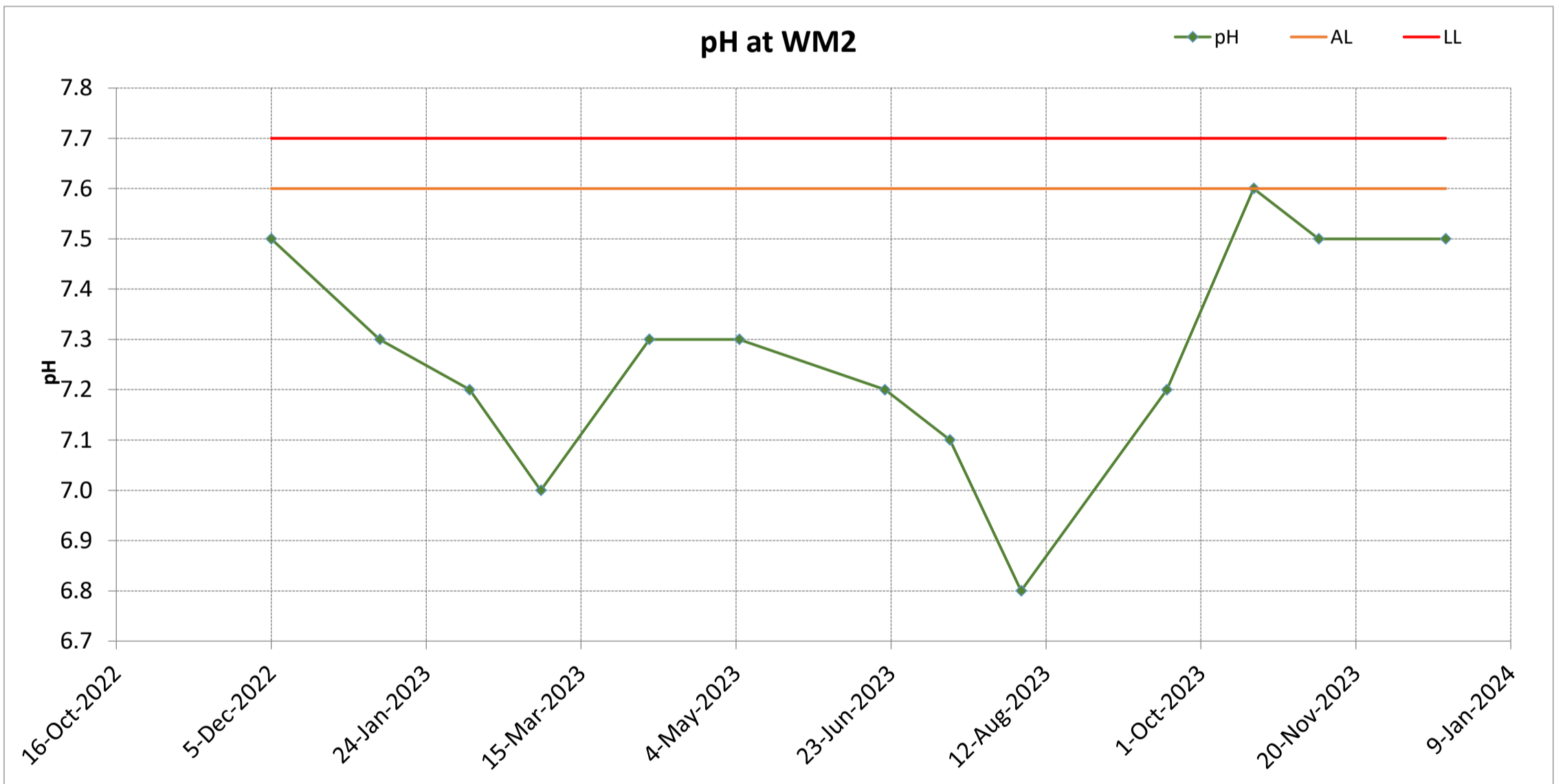
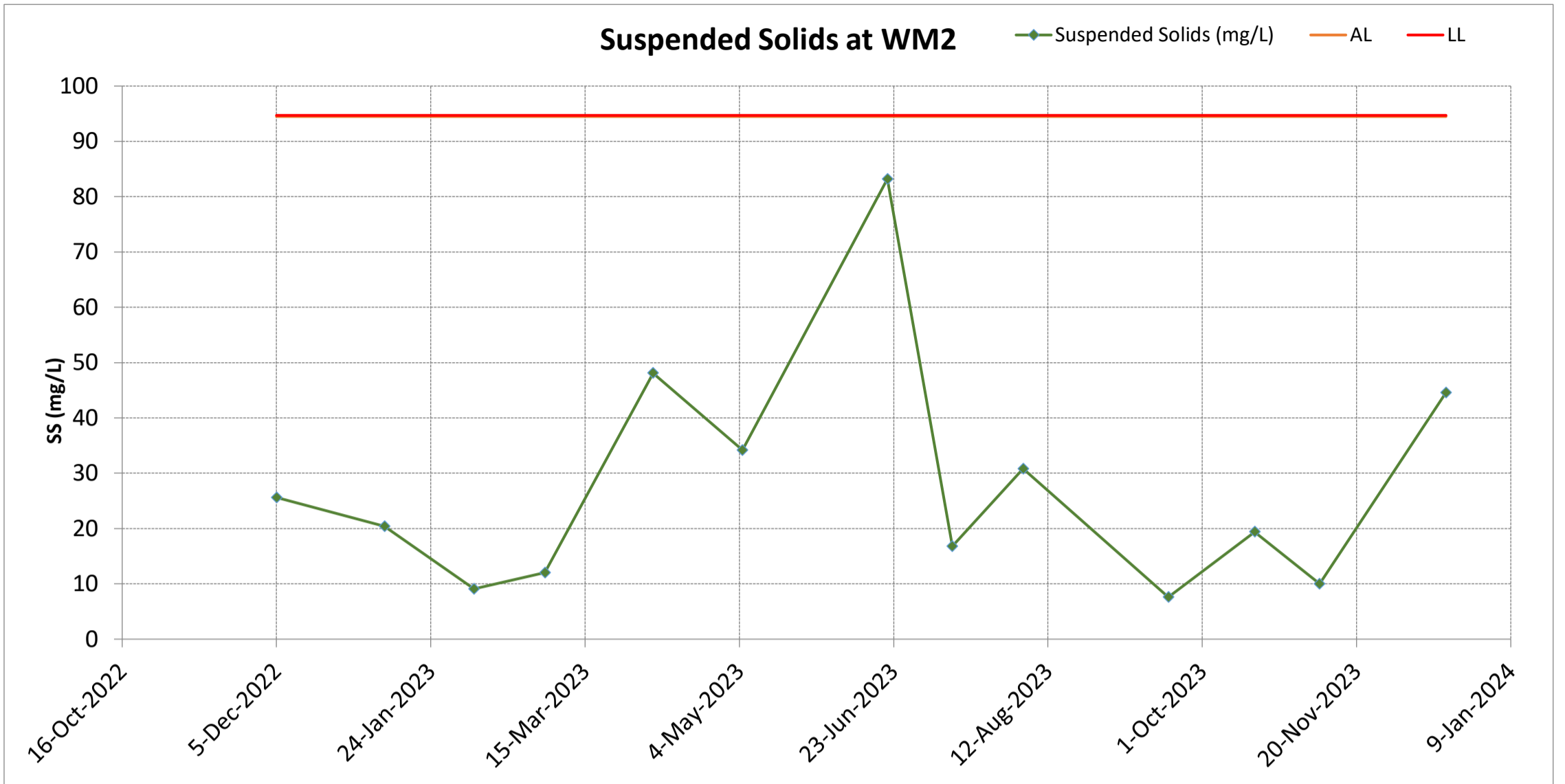
## Dissolved Oxygen at WM2



## Turbidity at WM2



# Surface Water Monitoring Results at WM2



# Appendix F Notification of Environmental Quality Limits Exceedance

## Notification of Environmental Quality Limits Exceedance

### Air Quality Monitoring - Construction Dust

Dust Monitoring Station	Level Exceedance	Monitoring Parameter (s)		1-hr TSP Exceedance Count				24-hr TSP Exceedance Count			
				Reporting period		Accumulate project to date		Reporting period		Accumulate project to date	
		1-hr TSP	24-hr TSP	Project related	Non-project related	Project related	Non-project related	Project related	Non-project related	Project related	Non-project related
AM1	Action	0	0	0	0	0	0	0	0	0	2
	Limit	0	0	0	0	0	0	0	0	0	3
AM2	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
AM3	Action	0	0	0	0	0	0	0	0	0	4
	Limit	0	0	0	0	0	0	0	0	0	3

### Noise Monitoring

Noise Monitoring Station	Level Exceedance	Monitoring Parameter	LAeq (30mins) Exceedance Count			
			Reporting period		Accumulate project to date	
		LAeq (30mins)	Project related	Non-project related	Project related	Non-project related
NM1a	Action	0	0	0	0	0
	Limit	0	0	0	0	0
NM2a	Action	0	0	0	0	0
	Limit	0	0	0	0	0

## Notification of Environmental Quality Limits Exceedance

### Surface Water Monitoring

Surface Water Quality Monitoring Station	Level Exceedance	Exceedance Count																			
		Monitoring Parameter (s)				Reporting period								Accumulate project to date							
						Project related				Non-project replated				Project related				Non-project replated			
		DO	pH	Turb	SS	DO	pH	Turb	SS	DO	pH	Turb	SS	DO	pH	Turb	SS	DO	pH	Turb	SS
WM1	Action	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WM2	Action	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0

Remarks:

1. "DO" equal to Dissolved Oxygen
2. "Turb" equal to Turbidity
3. "SS" equal to Suspended Solids

### Landfill Gas (LFG) Monitoring

LFG Monitoring Station	Monitoring Parameter(s)	No. of Exceedance
		Limit Level
Portion A +50 mpD to +70 mpD Platform	CH <sub>4</sub>	0
	CO <sub>2</sub>	0
	O <sub>2</sub>	0

## Appendix G Waste Flow Table

### Waste Flow Table

Month	Total Quantity Generated	Total Quantities of Inert C&D Materials to be Generated from the Contract					Total Quantities of Recyclables Generation				Total Quantities of C&D Materials to be Generated from the Contract		
		Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in Other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper / Cardboard Packaging	Plastics	Yard Waste (to Y-Park)	Chemical Waste	General Refuse	Others, e.g. non-recyclable yard waste
		(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in '000L)	(in tonne)	(in tonne)
Dec-22	84.77	0	0	0	0	0	0	0	0	11.49	0	7.53	65.75
Jan-23	24.51	0	0	0	0	0	0	0	0	0	0	24.51	0
Feb-23	506.45	0	0	0	0	0	0	0	0	3.16	0	5.85	497.44
Mar-23	9,581.15	0	0	9,187	0	0	0	0	0	3.69	0	6.96	383.5
Apr-23	18,532.07	0	0	18,466	0	0	0	0	0	1.97	0	5.81	58.29
May-23	28,889.61	0	0	28,473	0	0	0	0	0	0	0	7.45	409.16
Jun-23	11,574.89	0	0	11,211	0	0	0	0	0	2.38	0	14.69	346.82
Jul-23	50,595.49	0	0	50,307	0	0	0	0	0	0	0	25.54	262.95
Aug-23	63,178.52	0	0	63,076	0	0	0	0	0	0	0	30.77	71.75
Sep-23	42,709.75	0	0	42,676	0	0	0	0	0	0	0	33.38	0
Oct-23	55,551.68	0	0	55,405	0	0	0	0	0	2.56	0	28.05	116.07
Nov-23	76,127.24	0	0	73,352	0	2629.37	0	0	0	0	0	35.13	110.74
Dec-23	63,389.25	0	0	57,681	0	5296.17	0	0	0	2.48	0	34.26	375.34
<b>Total</b>	<b>420,745.38</b>	<b>0.00</b>	<b>0.00</b>	<b>409,834</b>	<b>0.00</b>	<b>7,925.54</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>27.73</b>	<b>0.00</b>	<b>259.93</b>	<b>2,697.81</b>

Note:

1. The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
2. Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.

## Appendix H Environmental Mitigation Implementation Schedule (EMIS)



North East New Territories (NENT) Landfill Extension  
Environmental Mitigation Implementation Schedule (EMIS) Construction Phase

EIA Ref.	EM&A Log Ref.	Weekly Site Inspection Item	Recommended Precautionary/Mitigation Measures (to be implemented when the trigger level is exceeded, where necessary)	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	What requirement or standards for the measures to achieve?	Status
<b>Air Quality</b>								
S3.8.1	S3.1.8	B7 – B36	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation.	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	Entire NENT Landfill Extension site	To control the dust impact to within the criteria of EIA Report (Register No. AEIAR-111/2007)	# (Refer to Appendix J (1) 27 Dec 2023 Weekly Site Inspection Observation 2 (2) 27 Dec 2023 Weekly Site Inspection Observation 3)
		B4, B15 & B18	<ul style="list-style-type: none"> <li>Dust emission from construction vehicle movement is confined within the worksites area.</li> </ul>					# (Refer to Appendix J 27 Dec 2023 Weekly Site Inspection Observation 1)
		B11 – B12	<ul style="list-style-type: none"> <li>Watering facilities will be provided at every designated vehicular exit point.</li> </ul>					✓ Vehicle washing facilities provided at vehicular exit point in Portion A, B1-2, D, E3-1 & E4
		-	<ul style="list-style-type: none"> <li>Good site practice is recommended during construction phase.</li> </ul>					✓
<b>Construction Noise</b>								
S4	S4.9	C1	1) Use of good site practices to limit noise emissions by considering the following: (a) Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme;	Control construction airborne noise by means of good site practices	Contractor	Entire construction site	Noise Control Ordinance	✓
		C2	(b) Machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;					✓
		C3	(c) Plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs;					✓
		C4	(d) Silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works;					N/A
		C5	(e) Mobile plant should be sited as far away from NSRs as possible and practicable;					✓
		C6	(f) Material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.					✓
S4	S4.9	C11 – C13	2) Select "Quiet plants" which comply with the BS 5228 Part 1 or TM standards.	Reduce the noise levels of plant items	Contractor	Entire construction site	Noise Control Ordinance & its TM Annex 5, TM-EIA	✓
<b>Construction Runoff</b>								
S5.8.1	S5.2.1	D1	<u>Construction on Site Runoff</u> (a) At the start of 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. (b) Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities.	Control construction runoff and erosion from site surface, drainage channel, stockpiles, wheel washing facilities, etc to minimize water quality during construction stage	Contractor	Entire Construction site	ProPECC PN 1/94 Water Pollution Control Ordinance	(a) The perimeter cut-off drains are establishing in progress (Completion: 85%) (b) ✓
		D2	<ul style="list-style-type: none"> <li>(a) The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. (b) Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. (c) The sediment/silt traps should be incorporated in the permanent drainage channels to enhance deposition rates.</li> </ul>					(a) N/A (b) ✓ (c) ✓
		D3	<ul style="list-style-type: none"> <li>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 silts and sediment traps should be 5 minutes under maximum flow conditions.</li> </ul>					✓

Remarks:

- ✓ Compliance of mitigation measure
- \* Recommendation was made during site audit but improved/rectified by the contractor
- # Recommendation was made during site audit but not yet improved/rectified by the contractor.
- N/A Not Applicable at this stage were conducted in the reporting period.
- @ (Which measure) Alternative measure was made by the contractor.

North East New Territories (NENT) Landfill Extension  
Environmental Mitigation Implementation Schedule (EMIS) Construction Phase

EIA Ref.	EM&A Log Ref	Weekly Site Inspection Item	Recommended Precautionary/Mitigation Measures (to be implemented when the trigger level is exceeded, where necessary)	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	What requirement or standards for the measures to achieve?	Status
Construction Runoff (Cont'd)								
S5.8.1	S5.2.1	D4	<ul style="list-style-type: none"> <li>(a) Construction works should be programmed to minimize surface excavation works during the rainy seasons (April to September). (b) All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. (c) If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.</li> </ul>	Control construction runoff and erosion from site surface, drainage channel, stockpiles, wheel washing facilities, etc to minimize water quality during construction stage	Contractor	Entire Construction site	ProPECC PN 1/94  DSD Technical Circular TC01/2017  Water Pollution Control Ordinance	(a) ✓ (b) ✓ (c) # (Refer to Appendix J 27 Dec 2023 Weekly Site Inspection Observation 2)
		D5	<ul style="list-style-type: none"> <li>(a) The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows, and all traffic areas and access roads protected by coarse stone ballast. (b) An additional advantage accruing from the use of crushed stone is the positive traction gained during prolonged periods of inclement weather and the reduction of surface sheet flows.</li> </ul>					(a) ✓ (b) N/A
		D6	<ul style="list-style-type: none"> <li>(a) All drainage facilities and erosion and sediment control structures should be regularly inspected and (b) maintained to ensure proper and efficient operation at all times and particularly following rainstorms. (c) Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas.</li> </ul>					(a) ✓ (b) ✓ (d) ✓
		D7	<ul style="list-style-type: none"> <li>(a) Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. (b) Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.</li> </ul>					(a) ✓ (b) ✓
		D8	<ul style="list-style-type: none"> <li>Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50 m<sup>3</sup> should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.</li> </ul>					✓
		D9	<ul style="list-style-type: none"> <li>(a) Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as (b) to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.</li> </ul>					(a) ✓ (b) ✓
		D10	<ul style="list-style-type: none"> <li>Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes.</li> </ul>					✓
		D11	<ul style="list-style-type: none"> <li>(a) All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. (b) An adequately designed and sited wheel washing bay should be provided at every construction site exit. (c) Wash-water should have sand and silt settled out and removed at least on a weekly basis (d) to ensure the continued efficiency of the process. (e) The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.</li> </ul>					(a) ✓ (b) ✓ (c) ✓ (d) ✓ (c) ✓
		D12	<ul style="list-style-type: none"> <li>(a) Oil interceptors should be provided in the site drainage system downstream of any oil/fuel pollution sources. (b) The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. (c) A bypass should be provided for the oil interceptors to prevent flushing during heavy rain.</li> </ul>					(a) N/A (b) N/A (c) N/A
		D13	<ul style="list-style-type: none"> <li>Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. Requirements for solid waste management are detailed in Section 6 of this Report.</li> </ul>					✓
		D14	<ul style="list-style-type: none"> <li>All fuel tanks and storage areas should be provided with docks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby.</li> </ul>					✓
		D15	<ul style="list-style-type: none"> <li>To prevent pollution risks arising from works area (waste reception area) and haul roads, intercepting bund or barrier along the roadside should be constructed.</li> </ul>					N/A

Remarks:

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North East New Territories (NENT) Landfill Extension  
Environmental Mitigation Implementation Schedule (EMIS) Construction Phase

EIA Ref.	EM&A Log Ref	Weekly Site Inspection Item	Recommended Precautionary/Mitigation Measures (to be implemented when the trigger level is exceeded, where necessary)	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	What requirement or standards for the measures to achieve?	Status
<b>Construction Runoff (Cont'd)</b>								
S5.8.1	S5.2.1	D19	<u>Sewage Effluent from Workforce</u> <ul style="list-style-type: none"> <li>(a) Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. (b) A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.</li> </ul>	Control sewage effluent arising from the sanitary facilities provided for the on-site construction workforce	Contractor	On-site sanitary facilities	ProPECC PN 1/94  DSD Technical Circular TC01/2017  Water Pollution Control Ordinance  Waste Disposal Ordinance	✓
		D20	<ul style="list-style-type: none"> <li>Notices will be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project.</li> </ul>					N/A
		-	<ul style="list-style-type: none"> <li>Regular environmental audit on the construction site can provide an effective control of any malpractices and can achieve continual improvement of environmental performance on site.</li> </ul>					✓
S5.8.1	S5.2.1	D21	<u>Accidental Spillage of Chemical</u> <ul style="list-style-type: none"> <li>(a) Any service workshop and maintenance facilities shall be located within a bunded area, and sumps and oil interceptors shall be provided. (b) Maintenance of equipment involving activities with potential for leakage and spillage will only be undertaken within the areas.</li> </ul>	Control of chemical leakage	Contractor	Service workshop and maintenance facilities	ProPECC PN 1/94  Water Pollution Control Ordinance  Waste Disposal Ordinance	(a) N/A (b) N/A
<b>Erosion Control Measures</b>								
S5.8.2	S5.2.2	-	<u>Erosion Control /Measures</u> <p>a. Preserve Natural Vegetation This Best Management Practices will involve preserving natural vegetation to the greatest extent possible during the construction process. and after construction where appropriate. Maintaining natural vegetation is the most effective and inexpensive form of erosion prevention control.</p>	Erosion control	Contractor	Drainage system	ProPECC PN 1/94  Water Pollution Control Ordinance	✓
		-	<p>b. Provision of Buffer Zone A buffer zone consists of an undisturbed area or strip of natural vegetation or an established suitable planting adjacent to a disturbed area that reduces erosion and runoff. The rooted vegetation holds soils acts as a wind break and filters runoff that may leave the site.</p>					✓
		-	<p>c. Seeding (Temporary/Permanent) A well-established vegetative cover is one of the most effective methods of reducing erosion. Vegetation should be established on construction sites as the slopes are finished, rather than waiting until all the grading is complete. Besides, Hydroseeding will be applied on the surface of stockpiled soil and on temporary soil covers for inactive tipping areas to prevent soil erosion during rainy season.</p>					✓
		-	<p>d. Ground Cover Ground Cover is a protective layer of straw or other suitable material applied to the soil surface. Straw mulch and/or hydromulch are also used in conjunction with seeding of critical areas for the establishment of temporary or permanent vegetation. Ground cover provides immediate temporary protection from erosion. Mulch also enhances plant establishment by conserving moisture, holding fertilizer, seed, and topsoil in place, and moderating soil temperatures.</p>					To be implemented
		-	<p>e. Hydraulic Application Hydraulic application is a mechanical method of applying erosion control materials to bare soil in order to establish erosion-resistant vegetation on disturbed areas and critical slopes. By using hydraulic equipment, soil amendments, mulch, tackifying agents, Bonded Fiber Matrix (BFM) and liquid co-polymers can be uniformly broadcast, as homogenous slurry, onto the soil. These erosion and dust control materials can often be applied in one operation.</p>					To be implemented
		-	<p>f. Sod Establishes permanent turf for immediate erosion protection and stabilizes rainageways.</p>					✓
		-	<p>g. Matting There are numerous erosion control products available that can be described in various ways, such as matting, blankets, fabric and nets. These products are referred as matting. A wide range of materials and combination of materials are used to produce matting including, but not limited to: straw, jute, wood fiber, coir (coconut fiber), plastic netting, and Bonded Fiber Matrix. The selection of matting materials for a site can make a significant difference in the effectiveness of the Best Management Practices.</p>					✓

Remarks:

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North East New Territories (NENT) Landfill Extension  
Environmental Mitigation Implementation Schedule (EMIS) Construction Phase

EIA Ref.	EM&A Log Ref	Weekly Site Inspection Item	Recommended Precautionary/Mitigation Measures (to be implemented when the trigger level is exceeded, where necessary)	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	What requirement or standards for the measures to achieve?	Status
<b>Erosion Control Measures (Cont'd)</b>								
S5.8.2	S5.2.2		h. Plastic Sheetting Plastic Sheetting will provide immediate protection to slopes and stockpiles. However, it has been known to transfer erosion problems because water will sheet flow off the plastic at high velocity. This is usually attributable to poor application, installation and maintenance.	Erosion control	Contractor	Drainage system	ProPECC PN 1/94  Water Pollution Control Ordinance	✓
		-	i. Dust Control Dust Control is one preventative measure to minimize the wind transport of soil, prevent traffic hazards and reduce sediment transported by wind and deposited in water resources.					✓
<b>Surface Water Drainage System</b>								
S5.8.2	S5.2.2	D22	<ul style="list-style-type: none"> <li>(a) Temporary surface water drainage system will be provided to manage runoff during construction and operation. (b) This system will consist of channels as constructed around the perimeter of the site area. (c) This system will collect surface water from the areas of higher elevations to those of lower elevations and ultimately to the point of discharge. (d) Erosion will therefore be minimised.</li> </ul>	Surface Water Management/ Control run off	Contractor	Surface water system Construction	Water Pollution Control Ordinance  TM-water	(a) ✓ (b) ✓ (c) ✓ (d) ✓
	D23	<ul style="list-style-type: none"> <li>(a) The temporary surface water drainage system will include the use of a silt fence around the soil stockpile areas to prevent sediment from entering the system. (b) Regular cleaning will be carried out to prevent blockage of the passage of water flow in silt fence.</li> </ul>	(a) # (Refer to Appendix J 18 Dec 2023 Weekly Site Inspection Observation 2) (b) ✓					
	-	<ul style="list-style-type: none"> <li>Intermediate drainage system will be installed for filled cell/phase. The major purpose of the intermediate drainage system is to prevent the clean surface water run-off from the filled phases coming into contact with the waste mass in active cell and to prevent excessive surface water infiltration through the intermediate cover, thus contribute to increasing volume of leachate. The intermediate drainage system will collect the clean surface water run-off and divert it to the permanent discharge channels connected to the public drainage system.</li> </ul>	N/A					
	-	<ul style="list-style-type: none"> <li>In addition, surface flow from the haul road (especially near the wheel washing facility) will be collected to a dry weather flow interceptor and conveyed to the on-site leachate treatment plant for further treatment.</li> </ul>	N/A					
<b>Waste Management</b>								
S6	WM1	-	<u>C&amp;D Materials</u> <ul style="list-style-type: none"> <li>Implement proper waste management measures during construction phase as stipulated in the Environmental Management Plan (EMP) in accordance with the ETWB TC(W) No. 19/2005 Environmental Management in Construction Sites.</li> </ul>	Good site practice to minimise C&D waste generation and reuse/recycle all C&D on-site as far as possible	Contractor	Entire construction site	Waste Disposal Ordinance  ETWB TC(W) No. 19/2005  DEVB TC(W) No. 6/2010	✓
	-	<ul style="list-style-type: none"> <li>Implement a trip-ticket system to ensure that the movement of C&amp;D materials are properly documented and verified in accordance with DEVB TC(W) No. 6/2010. Copies/counterfoils from trip-tickets (with quantities of C&amp;D Materials off-site) should be kept for record purposes.</li> </ul>	✓					
	-	<ul style="list-style-type: none"> <li>Appropriate waste management should be implemented in accordance with the ETWB TC(W) No. 19/2005.</li> </ul>	✓					
	E4	<ul style="list-style-type: none"> <li>(a) Make provisions in Contract documents to allow and promote the use of recycled aggregates where appropriate. Ensure material balance in terms of excavated C&amp;D materials in the design of NENT landfill extension project. (b) The contract specifications should specify no excavated materials should be removed from the landfill extension site, but should be fully reused.</li> </ul>	(a) ✓ (b) ✓					
	E5	<ul style="list-style-type: none"> <li>Careful design, planning and good site management to minimise over-ordering and waste materials such as concrete, mortars and cement grouts. (a)(b) The design of formwork should maximise the use of standard wooden panels so that high reuse levels can be achieved. (c) Alternatives such as steel formwork or plastic fencing should be considered to increase the potential for reuse.</li> </ul>	(a) ✓ (b) ✓ (c) ✓					
	E6	<ul style="list-style-type: none"> <li>(a) The Contractor should recycle as much as possible the C&amp;D waste on-site through proper waste segregation on-site. (b) Concrete and masonry should be used as general fill and steel reinforcement bars can be used by scrap steel mills. (c) Proper areas should be designated for waste segregation and storage wherever site conditions permit. (d) Maximise the use of reusable steel formwork to reduce the amount of C&amp;D material.</li> </ul>	(a) ✓ (b) ✓ (c) ✓ (d) ✓					

Remarks:

- ✓ Compliance of mitigation measure
- \* Recommendation was made during site audit but improved/rectified by the contractor
- # Recommendation was made during site audit but not yet improved/rectified by the contractor.
- N/A Not Applicable at this stage were conducted in the reporting period.
- @ (Which measure) Alternative measure was made by the contractor.

EIA Ref.	EM&A Log Ref	Weekly Site Inspection Item	Recommended Precautionary/Mitigation Measures (to be implemented when the trigger level is exceeded, where necessary)	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	What requirement or standards for the measures to achieve?	Status
Waste Management (Cont'd)								
S6	WM1	E7	<ul style="list-style-type: none"> <li>(a) Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement. On-site sorting and segregation facility of all type of wastes is considered as one of the best practice in waste management and hence, should be implemented in all projects generating construction waste. (b) The sorted public fill and C&amp;D waste should be properly reused.</li> </ul>	Good site practice to minimise C&D waste generation and reuse/recycle all C&D on-site as far as possible	Contractor	Entire construction site	Waste Disposal Ordinance ETWB TC(W) No. 19/2005 DEVB TC(W) No. 6/2010	(a) ✓ (b) ✓
		E8	<ul style="list-style-type: none"> <li>(a) Excavated slope, stockpiled material and bund walls should be covered by tarpaulin until used in order to prevent wind-blown dust during dry weather, and to reduce muddy runoff during wet weather. (b)(c) Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers</li> </ul>					(a) ✓ (b) ✓ (c) ✓
		E9	<ul style="list-style-type: none"> <li>If any topsoil-like materials need to be stockpiled for any length of time, consideration should be given to hydroseeding of the topsoil on the stockpile to improve its visual appearance and prevent soil erosion.</li> </ul>					N/A
		E10	<ul style="list-style-type: none"> <li>Nomination of approved personnel to be responsible for good site practices and making arrangements for collection of all wastes generated on-site and effective disposal.</li> </ul>					✓
		E11	<ul style="list-style-type: none"> <li>Training of site personnel for cleanliness, proper waste management procedures including chemical waste handling, and waste reduction, reuse and recycling concepts.</li> </ul>					✓
		E12	<ul style="list-style-type: none"> <li>Regular cleaning and maintenance programme systems, sumps and oil interceptors.</li> </ul>					✓
		E13	<ul style="list-style-type: none"> <li>(a) Prior to disposal of C&amp;D waste, wood, steel and other metals should be separated for re-use and/or recycling to minimise the quantity of waste to be disposed of to landfill. (b)(c) Proper storage and site practices should be implemented to minimise the potential for damage or contamination of construction materials.</li> </ul>					(a) ✓ (b) ✓ (c) N/A
			<ul style="list-style-type: none"> <li>Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste. Minimise excessive ordering of concrete, mortars and cement grout by doing careful check before ordering.</li> </ul>					✓
S6	WM2	E16 – E23	<p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> <li>Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.</li> </ul>	Ensure proper disposal of chemical waste generated on-site to minimise the associated hazards on human health and environment	Contractor	Entire construction site	Waste Disposal (Chemical Waste) General Regulation  Code of Practice on the Packaging, Labelling and Storage of Chemical Waste	✓
		-	<ul style="list-style-type: none"> <li>Plant/equipment maintenance schedule should be designed to optimise maintenance effectiveness and to minimise the generation of chemical wastes. Where possible, chemical wastes (e.g. waste lube oil) should be recycled by licensed treatment facilities</li> </ul>					✓
		E17 & E18	<ul style="list-style-type: none"> <li>Containers used for storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD. Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulation.</li> </ul>					✓
		E19	<ul style="list-style-type: none"> <li>(a) The storage area for chemical wastes should be clearly labelled and used solely for storage of chemical waste, (b) enclosed with at least 3 sides, having an impermeable floor and bund of sufficient capacity to accommodate 110% of volume of the largest container or 20 % of total volume of waste stored in that area, (c)(d) whichever is the greatest, having adequate ventilation, being covered to prevent rainfall entering, and being arranged so that incompatible materials are adequately separated.</li> </ul>					(a) ✓ (b) N/A (c) N/A (d) N/A
		E20	<ul style="list-style-type: none"> <li>Chemical waste should be collected by licensed waste collectors and disposed of at licensed facility, e.g. Chemical Waste Treatment Centre.</li> </ul>					✓

Remarks:

- ✓ Compliance of mitigation measure
- \* Recommendation was made during site audit but improved/rectified by the contractor
- # Recommendation was made during site audit but not yet improved/rectified by the contractor.
- N/A Not Applicable at this stage were conducted in the reporting period.
- @ (Which measure) Alternative measure was made by the contractor.

EIA Ref.	EM&A Log Ref	Weekly Site Inspection Item	Recommended Precautionary/Mitigation Measures (to be implemented when the trigger level is exceeded, where necessary)	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	What requirement or standards for the measures to achieve?	Status
Waste Management (Cont'd)								
S6	WM3	E1	<u>General Refuse</u> • General refuse generated on-site should be properly stored in enclosed bins or compaction units separately from construction and chemical wastes.	Minimise generation of general refuse to avoid odour, pest and visual nuisance	Contractor	Entire construction site	Waste Disposal Ordinance	✓
		E2	• (a) 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 for subsequent reuse and recycling. Residual, non-recyclable, general waste should be stored in appropriate containers to avoid odour. (b)(c)(d) Regular collection should be arranged by an approved waste collector in purpose-built vehicles that minimise environmental impacts during transportation					(a) ✓ (b) ✓ (c) ✓ (d) ✓
		-	• Reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimise odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law.					✓
		-	• Aluminium cans should be separated from general waste stream and collected by recyclers. Proper collection bins should be provided on-site to facilitate the waste sorting.					✓
		-	• Office waste paper should be recycled if the volume warrant collection by recyclers. Participation in community waste paper recycling programme should be considered by the Contractor, including waste paper, aluminium cans, plastic bottles, waste batteries, etc.					✓
LFG								
Within NENT Landfill Extension								
S7	LFG1	F1	Special LFG precautions should be taken due to close proximity of NENT landfill extension site to existing landfill to avoid potential hazards of LFG exposure (ignition, explosion, asphyxiation, toxicity).	To minimise the risk of LFG hazards to personnel in construction site	Contractor	Entire construction site	Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/97)  F&IU (Confined Spaces) Regulations  Code of Practice on Safety and Health at Work in Confined Spaces	N/A
	LFG2	F2	Prominent safety warning signs should be erected on-site to alert all personnel and visitors of LFG hazards during excavation works.					✓
	LFG3	F3	No smoking or burning should be permitted on-site.					✓
	LFG4	F4	Prominent 'No smoking' and 'No Naked Flames' signs should be erected on-site.					✓
	LFG5	F5	No worker should be allowed to work alone at any time in excavated trenches or confined areas on-site.					✓
	LFG6	F6	Adequate fire fighting equipment should be provided on-site.					✓
	LFG7	F7	Construction equipment should be equipped with vertical exhaust at least 0.6m above ground installed with spark arrestors.					✓
	LFG8	F8	Electrical motors and extension cords should be explosion-proof and intrinsically safe for use on-site.					✓
	LFG9	F9	'Permit to Work' system should be implemented.					✓
	LFG10	F10	Welding, flame-cutting or other hot works should be conducted only under 'Permit to Work' system following clear safety requirements, gas monitoring procedures and presence of qualified persons to supervise the works.					✓
	LFG11	F11	(a) For piping assembly or conduit construction, all valves and seals should be closed immediately after installation to avoid accumulation and migration of LFG. (b) If installation of large diameter pipes (diameter >600mm) is required, the pipe ends should be sealed on one side during installation. (c) Forced ventilation is required prior to operation of installed pipeline. (d) Forced ventilation should also be required for works inside trenches deeper than 1m.					(a) N/A (b) N/A (c) N/A (d) N/A
	LFG12	F12	Frequency and location of LFG monitoring within excavation area should be determined prior to commencement of works. LFG monitoring in excavations should be conducted at no more than 10mm from exposed ground surface.					✓
	LFG13	F13	For excavation works, LFG monitoring should be conducted (1) at ground surface prior to excavation, (2) immediately before workers entering excavations, (3) at the beginning of each half-day work, and (4) periodically throughout the working day when workers are in the excavation.					✓
	LFG14	F14	Any cracks on ground level encountered on-site should be monitored for LFG periodically. Appropriate action should be taken in accordance with the action plan in Table 7.6 of EIA Report.					✓
	LFG15	F15	(a) LFG precautionary measures involved in excavation and piping works should be provided in accordance with LFG Guidance Note and included in Safety Plan of construction phase. (b) Temporary offices or buildings should be located where free LFG has been proven or raised clear of ground at a separation distance of at least 500mm.					(a) N/A (b) N/A

Remarks:

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- N/A Not Applicable at this stage were conducted in the reporting period.
- @ (Which measure) Alternative measure was made by the contractor.

North East New Territories (NENT) Landfill Extension  
Environmental Mitigation Implementation Schedule (EMIS) Construction Phase

EIA Ref.	EM&A Log Ref	Weekly Site Inspection Item	Recommended Precautionary/Mitigation Measures (to be implemented when the trigger level is exceeded, where necessary)	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	What requirement or standards for the measures to achieve?	Status
LFG (Cont'd)								
Within NENT Landfill Extension								
S7	LFG16	F16	For large development such as NENT landfill extension, a Safety Officer trained in the use of gas detection equipment and LFG- related hazards should be present on-site throughout the groundwork phase. The Safety Officer should be provided with an intrinsically safe portable instrument appropriately calibrated and capable of measuring the following gases: •CH <sub>4</sub> : 0-100% and LEL: 0-100%/v •CO <sub>2</sub> : 0-100% •O <sub>2</sub> : 0-21%	To minimise the risk of LFG hazards to personnel in construction site	Contractor	Entire construction site	Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/97)  F&IU (Confined Spaces) Regulations  Code of Practice on Safety and Health at Work in Confined Spaces	✓
	LFG17	F17	(a) Periodically during groundwork construction, the works area should be monitored for CH <sub>4</sub> CO <sub>2</sub> and O <sub>2</sub> using appropriately calibrated portable gas detection equipment. The monitoring frequency and areas should be established prior to commencement of groundwork either by Safety Officer or appropriately qualified person. (b) Routine monitoring should be carried out in all excavations, manholes, created by temporary storage of building materials on-site. (c) All measurements in excavations should be made with monitoring tube located not more than 10mm from exposed ground surface.					(a) N/A (b) N/A (c) N/A
	LFG18	F18	For excavations deeper than 1m, measurements should be conducted: • At ground surface before excavation commences; • Immediately before any worker enters the excavation; • At the beginning of each working day for entire period the excavation remains open; and Periodically throughout the working day whilst workers are in excavation.					✓
	LFG19	F19	For excavations between 300mm and 1m, measurements should be conducted: • Directly after excavation has been completed; and Periodic all whilst excavation remains open.					✓
	LFG20	F20	For excavations less than 300mm, monitoring may be omitted at the discretion of Safety Officer or appropriately qualified person.					✓
Landscape and Visual Phases								
S8	LV1	G4	<u>Advanced screening tree planting</u> • Early planting using fast growing trees and tall shrubs at strategic locations within site to block major view corridors to the site from the VSRs, and to locally screen haul roads, excavation works and site preparation works. • Roadside planter and shrub planting design in front of Cheung Shan Temple.	To minimise the impact on existing vegetation retained by personnel in construction  To provide initiation on permanent landscape and visual mitigation measures	Contractor	Entire construction site	DEVB TC(W) No. 4/2020 - Tree Preservation  DEVB TC(W) No. 6/2015 - Maintenance of Vegetation and Hard Landscape Features  DEVB TC(W) No. 6/2011 - Maintenance of Man-made Slopes and Emergency Repair on Stability of Land	✓
S8	LV2	G5	<u>Boundary Green Belt planting</u> Considerable planting belts proposed around the site perimeter and the construction of temporary soil bunds will screen the landfill operations to a certain degree. Fast growing and fire resistant plant species will be used.					To be implemented during operation phase
S8	LV3	G6	<u>Temporary landscape treatment as green surface cover</u> For certain areas where landfilling operations would have to be suspended temporarily for periods of years, simple temporary landscape treatment such as hydroseeding should be considered. During construction and operational phases, grass hydroseeding or synthetic covering material of green colour should also be used as a temporary slope cover if applicable.					✓
S8	LV4	G7	<u>Existing tree preservation</u> Transplant existing trees and vegetation, which are identified as ecologically significant in Ecological Impact Assessment and as rare tree species recorded in the tree survey, under circumstances where technically feasible. For all affected trees, the principle of avoidance of tree felling and tree transplanting of tree before felling should apply whenever possible. A tree felling application should be submitted to DEVB-GLTMS and be approved before any trees are felled or transplanted.					✓

Remarks:

- ✓ Compliance of mitigation measure
- \* Recommendation was made during site audit but improved/rectified by the contractor
- # Recommendation was made during site audit but not yet improved/rectified by the contractor.
- N/A Not Applicable at this stage were conducted in the reporting period.
- @ (Which measure) Alternative measure was made by the contractor.

North East New Territories (NENT) Landfill Extension  
Environmental Mitigation Implementation Schedule (EMIS) Construction Phase

EIA Ref.	EM&A Log Ref	Weekly Site Inspection Item	Recommended Precautionary/Mitigation Measures (to be implemented when the trigger level is exceeded, where necessary)	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	What requirement or standards for the measures to achieve?	Status
Ecology								
General Protection Measures:								
S10	E1	-	Restriction of construction activities to the work areas that would be clearly demarcated.	To minimise environmental impacts and therefore potential ecological impacts within and near the construction site	Contractor	Entire construction site	Practice Note for Professional Persons (ProPECC), Construction Site Drainage (PN1/94)	✓
	E2	-	Reinstatement of the work areas immediately after completion of the works.				✓	
	E3	-	Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme.				✓	
	E4	-	Machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.				✓	
	E5	-	Plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs.				✓	
	E6	-	Silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works.				N/A	
	E7	-	Mobile plant should be sited as far away from NSRs as possible and practicable.				✓	
	E8	-	Material stockpiles, site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.				✓	
	E9	-	Use of "quiet" plant and working methods.				✓	
	E10	-	Construction phase mitigation measures in the Practice Note for Professional Persons on Construction Site Drainage.				✓	
	E11	-	Design and set up of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction.				✓	
	E12	-	Design and incorporation of silt/sediment traps in the permanent drainage channels to enhance deposition rates and regular removal of repositied silt and grit.				✓	
	E13	-	Minimization of surface excavation works during the rainy seasons (April to September), and in particular, control of silty surface runoff during storm events, especially for areas located near steep slopes.				N/A	
	E14	-	Regular inspection and maintenance of all drainage facilities and erosion and sediment control structures to ensure proper and efficient operation at all times and particularly following rainstorms.				✓	
	E15	-	Provision of oil interceptors in the drainage system downstream of any oil/fuel pollution sources				N/A	

Remarks:

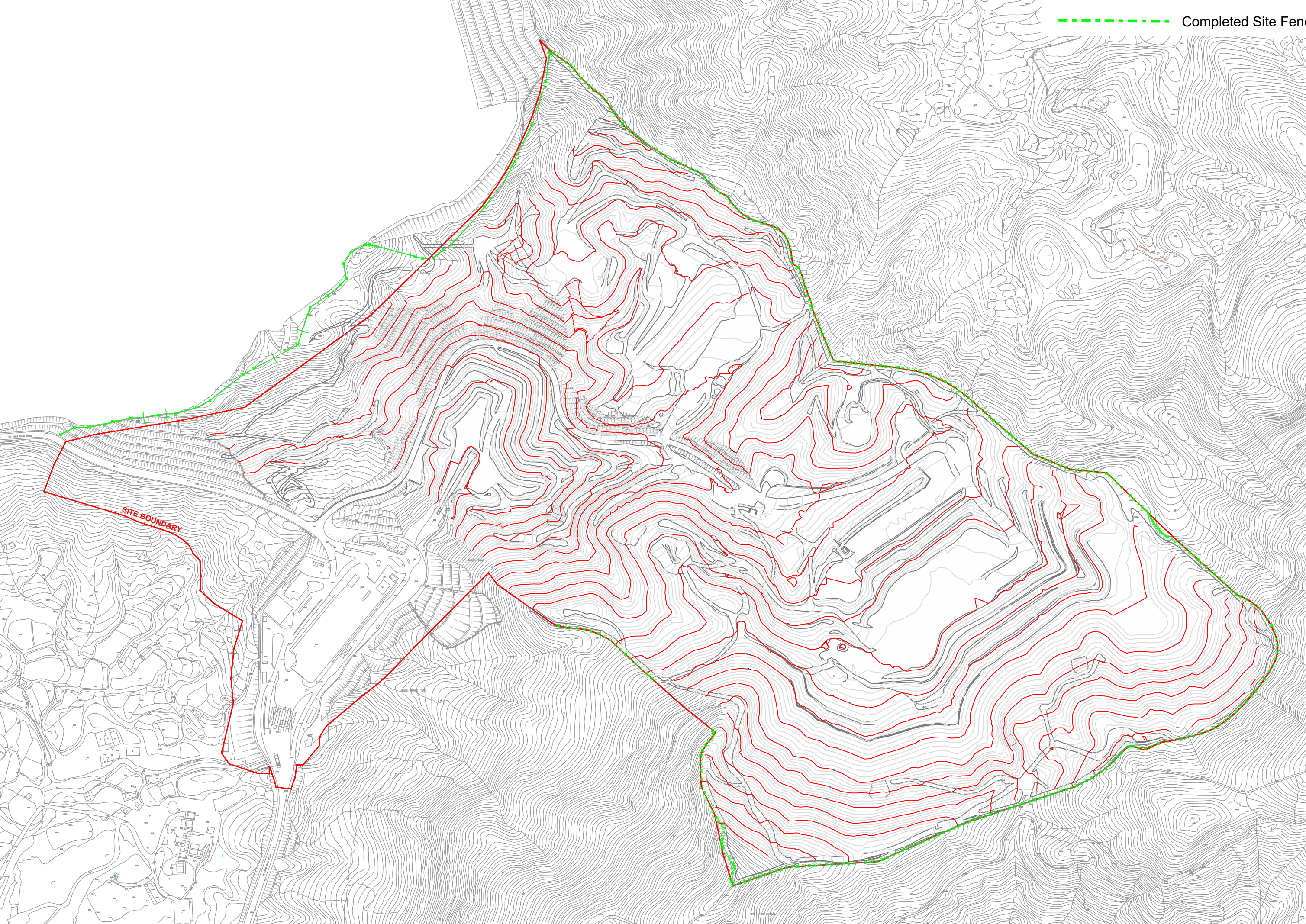
- ✓ Compliance of mitigation measure
- \* Recommendation was made during site audit but improved/rectified by the contractor
- # Recommendation was made during site audit but not yet improved/rectified by the contractor.
- N/A Not Applicable at this stage were conducted in the reporting period.
- @ (Which measure) Alternative measure was made by the contractor.



# Appendix I Mitigation Measures of Cultural Landscape Features



----- Completed Site Fencing



SITE BOUNDARY



## Appendix J Cumulative complaint / enquiry log and Summaries of complaints

## Environmental Complaints Log

Complaint Ref. No.	Date of Complaint Received	Received from	Received by	Aspect of Complaint	Date of Investigation	Investigation Summary & Conclusion	Date of Reply
C001_20221220	21 Dec 2022	Veolia (Contractor)	ET	Air Quality (Construction Dust)	5, 12 & 19 Dec 2022	It was noted from Veolia's email to the ET on 20 December 2022 that Veolia received complaint lodged regarding presenting much dusty materials at roundabout at Wo Keng Shan Road & dusty flying problem at Kowloon-bound traffic at Lung Shan Tunnel. No dusty materials and wastes were transported out from the NENTX site during the complaint period. During the regular weekly site inspection on 5, 12 & 19 December 2022, it was observed that the wheel washing facilities with high-pressure water jets have been provided at all site exits of NENTX and cleaned all vehicles before allowing them to leave the construction site to ensure that no mud or debris would be brought to the public area. All site vehicles of NENTX are also required to go through the auto wheel washing facility, which is managed by the operator of the NENT landfill, before entering the public area. The road section between the washing facilities and the exit point was paved with concrete, or bituminous materials were implemented in all site entrances. No mud generated from vehicles under the NENTX project after exiting the site entrance was observed. In conclusion, there is no direct evidence showing that the complaint is likely related to the NENTX project.	5 Jan 2023
C002_20230614	14 Jun 2023	EPD-RNG	ET	Water Quality	16, 21 Jun, 24, 25 Jul & 2 Aug 2023	It was noted from EPD-RNG's email to the ET on 14 Jun 2023 that EPD received complaint lodged regarding the muddy water was observed at Lin MA Hang International Bridge. In summary of the investigation, the pollutant water appeared crimson colour with bubbles at the LMH-OP01 (Monitoring Point from EPD). The colour and pattern of pollutant water is different from the runoff at surface WQM monitoring location WM1. Hence, the project is not the major source causing the pollutant water. To minimise the potential impact of the project, the enhancement of mitigation measures at north boundary were advised to implement by contractor. The related rectified actions had been conducted by the contractor.	29 Jun & 21 Aug 2023

Complaint Ref. No.	Date of Complaint Received	Received from	Received by	Aspect of Complaint	Date of Investigation	Investigation Summary & Conclusion	Date of Reply
C003_20230615	15 Jun 2023	EPD-RNG	ET	Water Quality	16, 19, 21 Jun, 18 Jul 2023	It was noted from EPD-RNG's email to the ET on 15 June 2023 that EPD received information regarding the muddy water was observed at River Ganges (GR3) (Water Quality Monitoring Location from EPD). In summary of the investigation, the muddy water caused from multi-potential sources while the runoff from the box culvert under the Wo Keng Shan Road is the major source including runoff from Existing channel near Portion E3-1, discharge water from the silt removal facilities at Portion E3-1 of the project, runoff from branch near the entrance of Portion E3-1, runoff from weighting plaza of NENT Landfill & natural stream near Wo Keng Shan & Shui Ngau Tso etc.. Hence, the project is a part of factor causing the high turbidity muddy water. To minimise the potential impact of construction runoff from the project, the further mitigation measures and enhancement of the temporary surface water drainage system were advised to implement by contractor. The related rectified actions had been conducted by the contractor.	15 Jun, 21 Aug 2023
C004_20230803	3 Aug 2023	EPD-RNG	ET	Water Quality	18 Jul 2023	It was noted from EPD-RNG's email to the ET on 3 Aug 2023 that EPD received information regarding the muddy water was observed at River Ganges (GR3) (Water Quality Monitoring Location from EPD). In summary of the investigation, the muddy water caused from multi-potential sources while the runoff from the box culvert under the Wo Keng Shan Road is the major source including runoff from Existing channel near Portion E3-1, discharge water from the silt removal facilities at Portion E3-1 of the project, runoff from branch near the entrance of Portion E3-1, runoff from weighting plaza of NENT Landfill & natural stream near Wo Keng Shan & Shui Ngau Tso etc.. Hence, the project is a part of factor causing the high turbidity muddy water. To minimise the potential impact of construction runoff from the project, the further mitigation measures and enhancement of the temporary surface water drainage system were advised to implement by contractor. The related rectified actions had been conducted by the contractor.	14 Aug 2023

Complaint Ref. No.	Date of Complaint Received	Received from	Received by	Aspect of Complaint	Date of Investigation	Investigation Summary & Conclusion	Date of Reply
C005_20230818	18 Aug 2023	EPD-RNG	ET	Water Quality	18 Sep 2023	It was noted from EPD-RNG's email to the ET on 18 August 2023 that EPD received information regarding the muddy water was observed at River Ganges (GR3) (Water Quality Monitoring Location from EPD) on 14 August 2023. In summary of the investigation, the complaint is project related. It viewed that muddy water arising from wheel washing water from the site entrance at Portion E4 & Runoff from Existing Channel near Portion E3-1 & discharge water from the silt removal facilities at Portion E3-1 eventually flows into the box culvert under Wo Keng Shan Road, WM2 and ultimately to GR3. The related rectified actions had been conducted by the contractor.	13 October 2023
C006_20230914	14 Sep 2023	EPD-RNG	ET	Water Quality	18 Sep 2023	It was noted from EPD-RNG's email to the ET on 14 September 2023 that EPD received information regarding the muddy water was observed at River Ganges (GR3) (Water Quality Monitoring Location from EPD) on 11 September 2023. In summary of the investigation, the complaint is project related. It viewed that muddy water arising from wheel washing water from the site entrance at Portion E4 & Runoff from Existing Channel near Portion E3-1 & discharge water from the silt removal facilities at Portion E3-1 eventually flows into the box culvert under Wo Keng Shan Road, WM2 and ultimately to GR3. The related rectified actions had been conducted by the contractor.	13 October 2023

Remarks:

1. "ET" equal to "Environmental Team"
2. "EPD-RNG" equal to "Environmental Protection Department-Regional Office (North)"
3. "TBC" equal to "To Be Confirm"

## Environmental Enquiries Log

Enquiry Ref. No.	Date of Enquiry Received	Received from	Received by	Aspect of Complaint	Date of Investigation	Investigation Summary & Conclusion	Date of Reply
NA	NA	NA	NA	NA	NA	NA	NA

Remarks:

1. "ET" equal to "Environmental Team"
2. "EPD-RNG" equal to "Environmental Protection Department-Regional Office (North)"
3. "NA" equal to "Not Applicable"

## Cumulative Statistics on Complaints

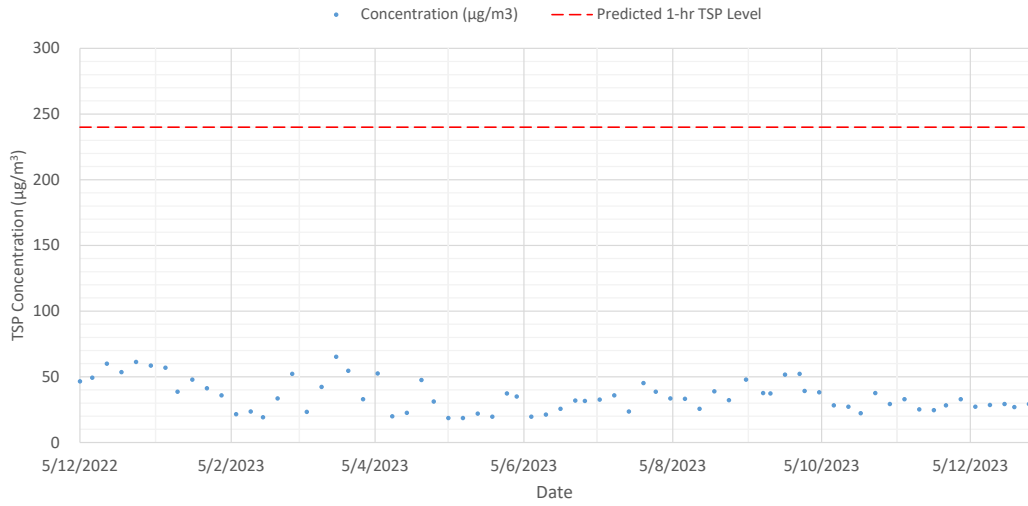
Aspects	Cumulative No. Brought Forward	No. of Complaints during reporting period	Cumulative Project-to-Date
Air Quality	0	0	1
Noise	0	0	0
Water Quality	0	0	5
Waste Management	0	0	0
Total	0	0	6

# Appendix K Graphical Presentation for comparison between monitoring results and EIA Predictions

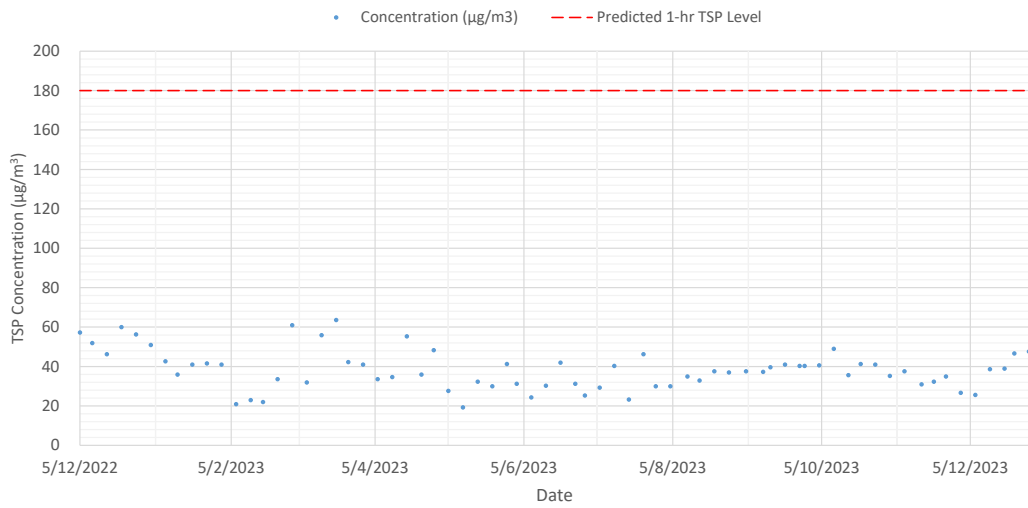


# Air Quality

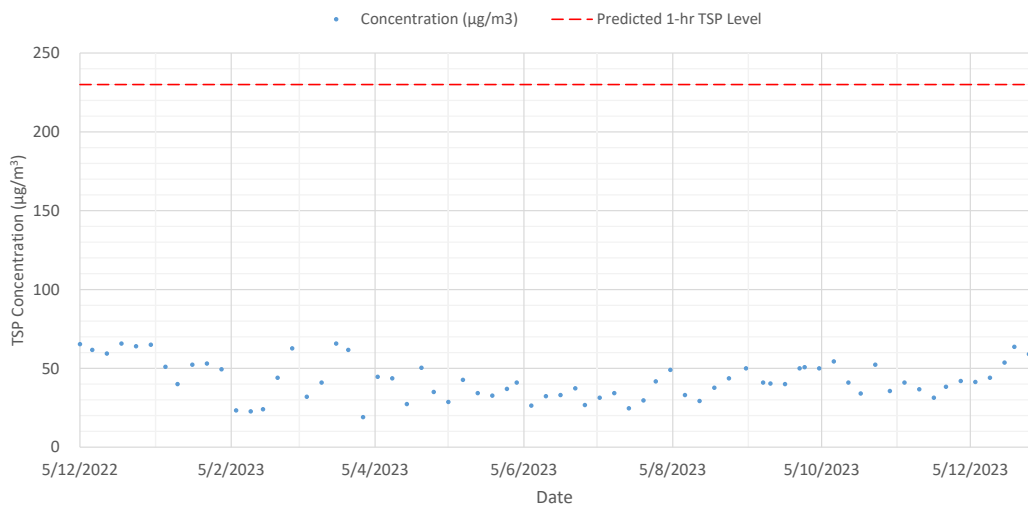
Comparison between 1-hr TSP Monitoring Results and EIA Predictions at AM1



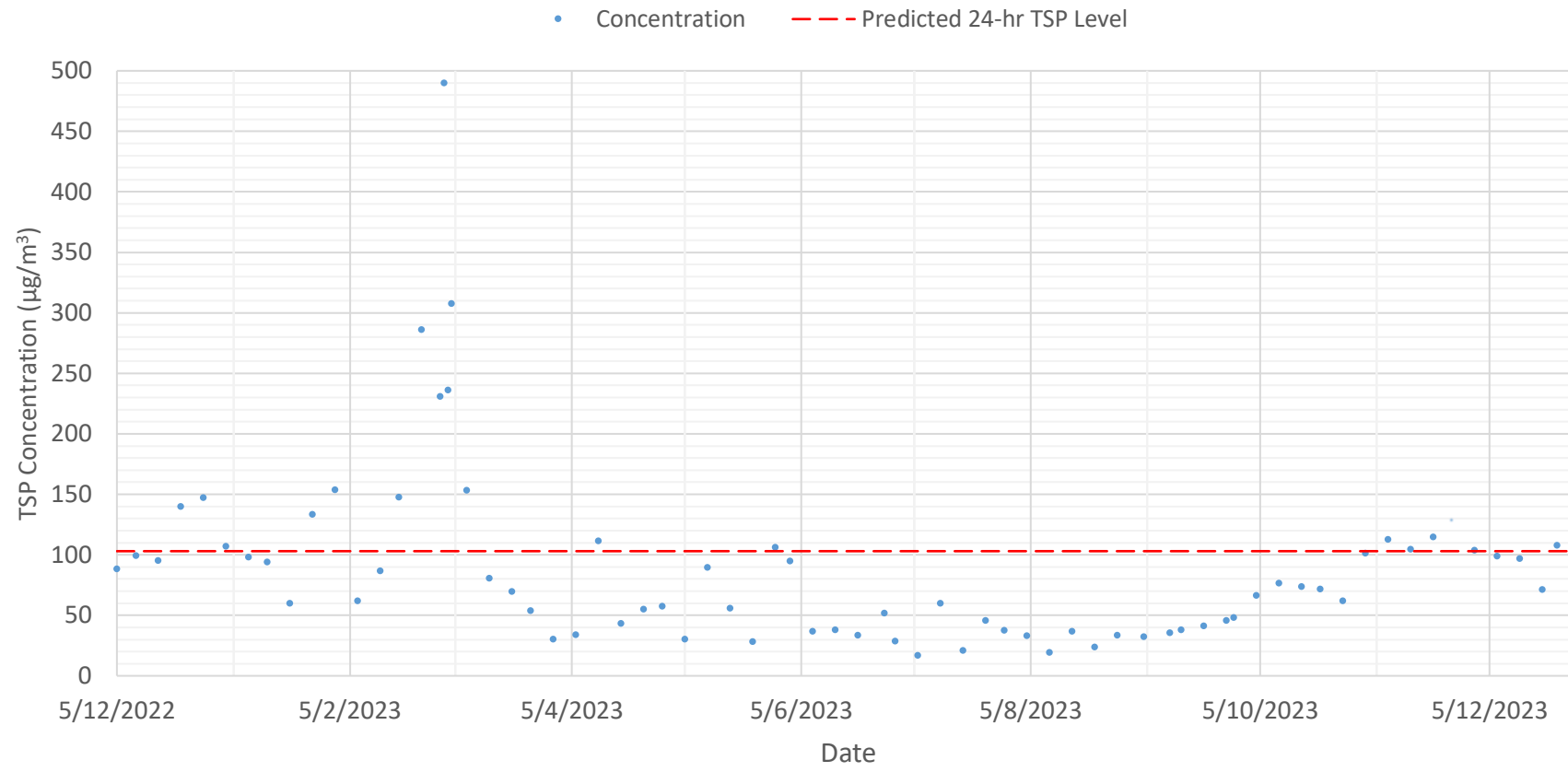
Comparison between 1-hr TSP Monitoring Results and EIA Predictions at AM2



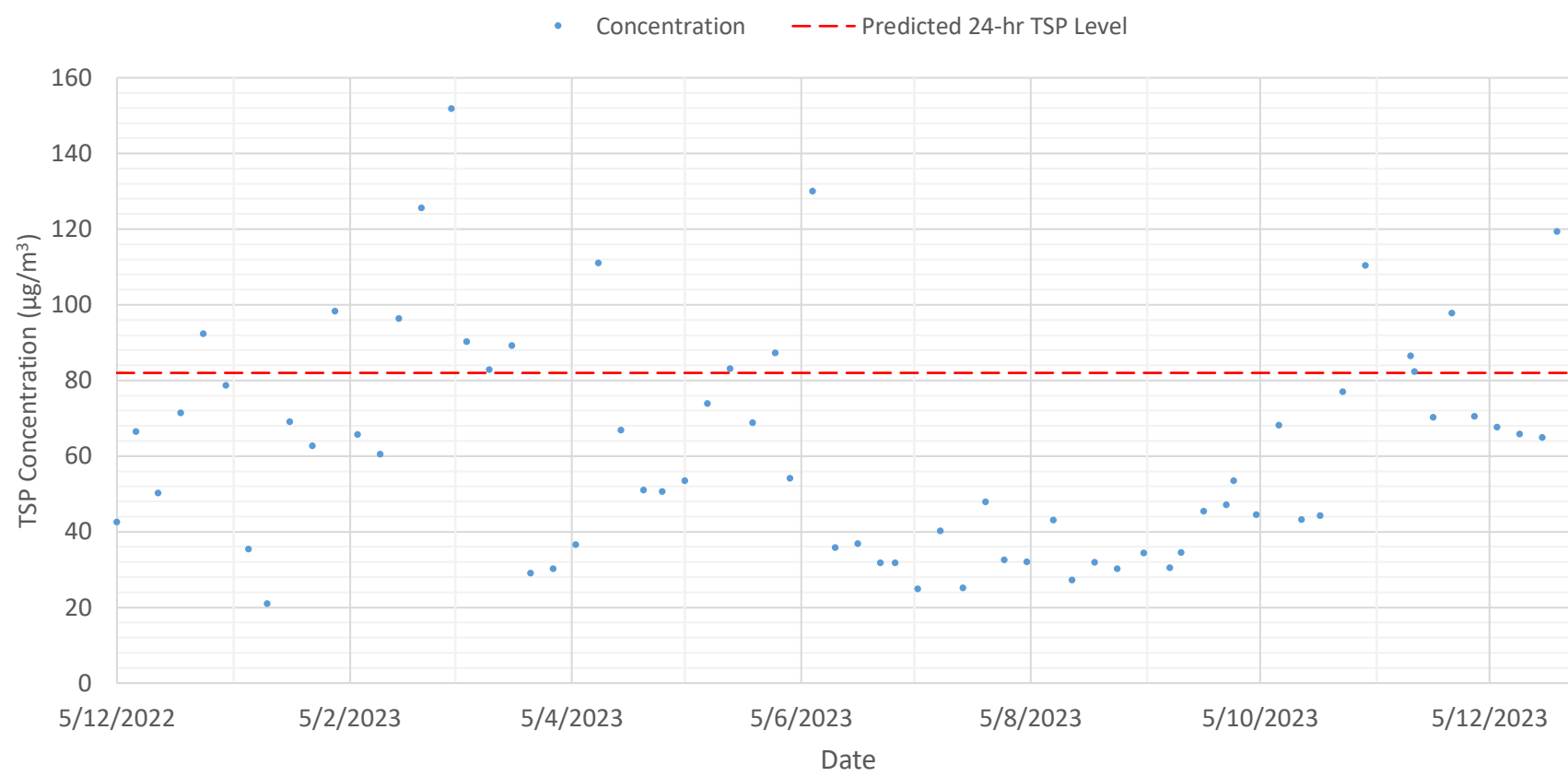
Comparison between 1-hr TSP Monitoring Results and EIA Predictions at AM3



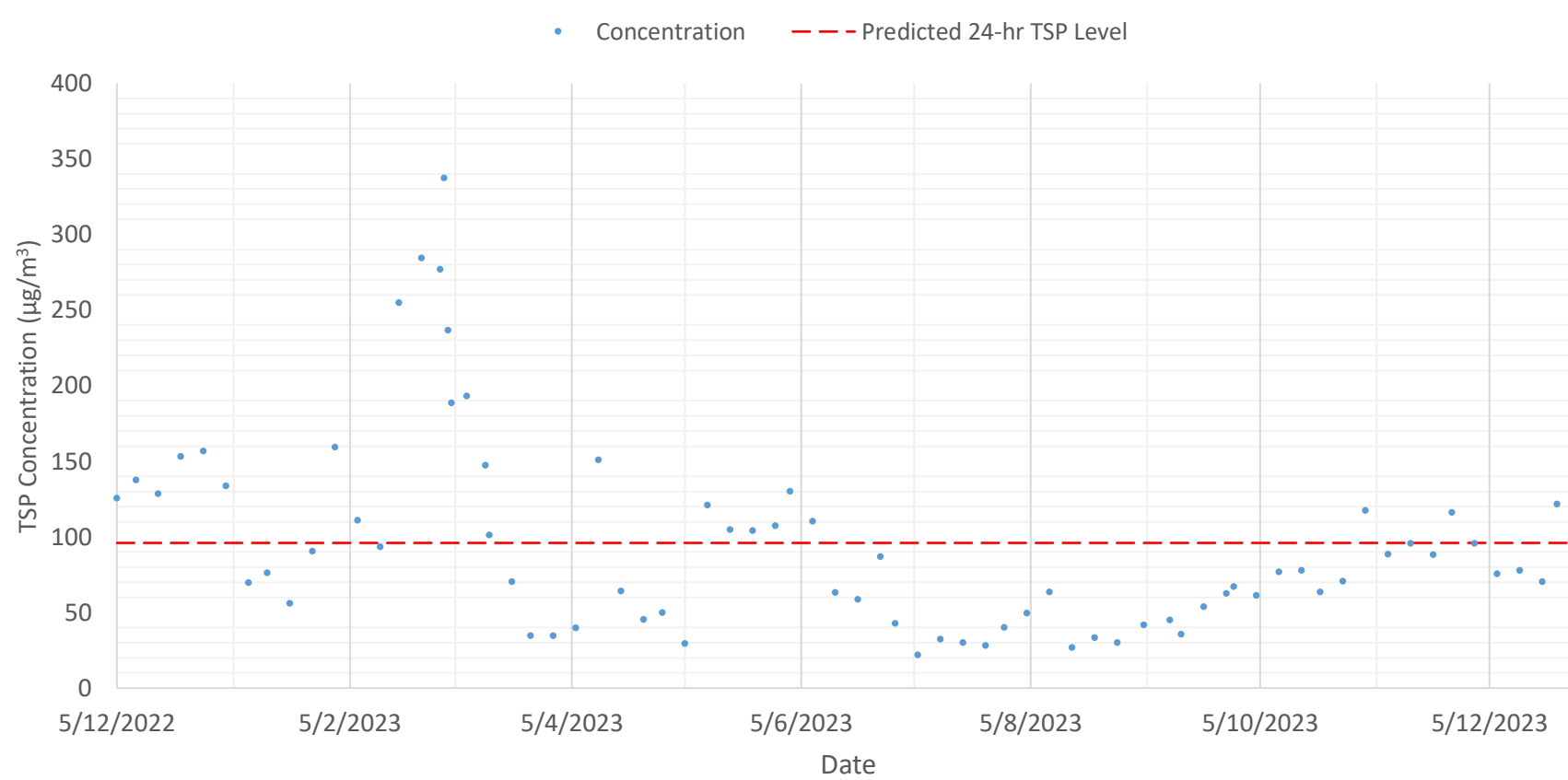
### Comparison between 24-hr TSP Monitoring Results and EIA Predictions at AM1



### Comparison between 24-hr TSP Monitoring Results and EIA Predictions at AM2

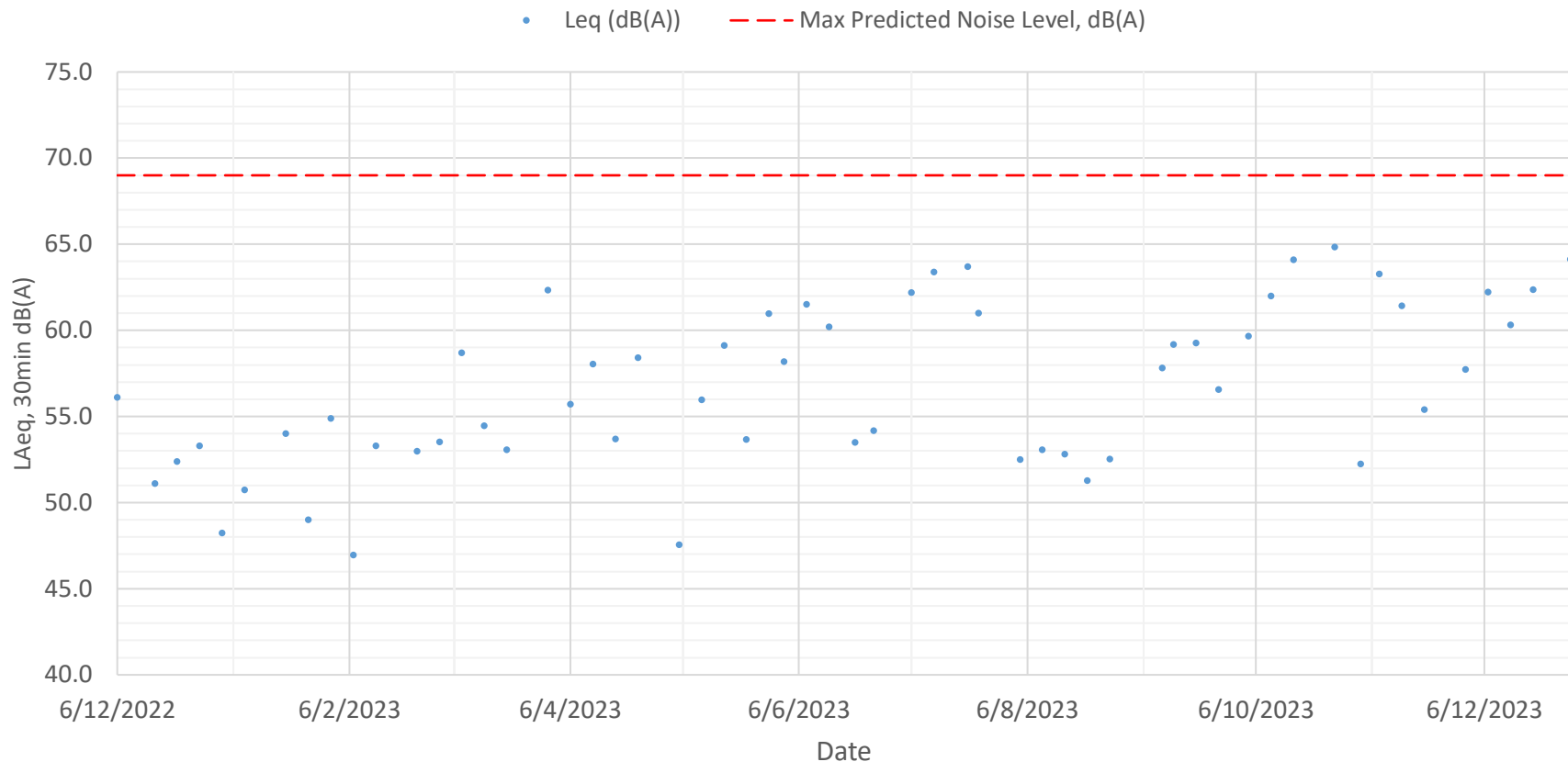


### Comparison between 24-hr TSP Monitoring Results and EIA Predictions at AM3

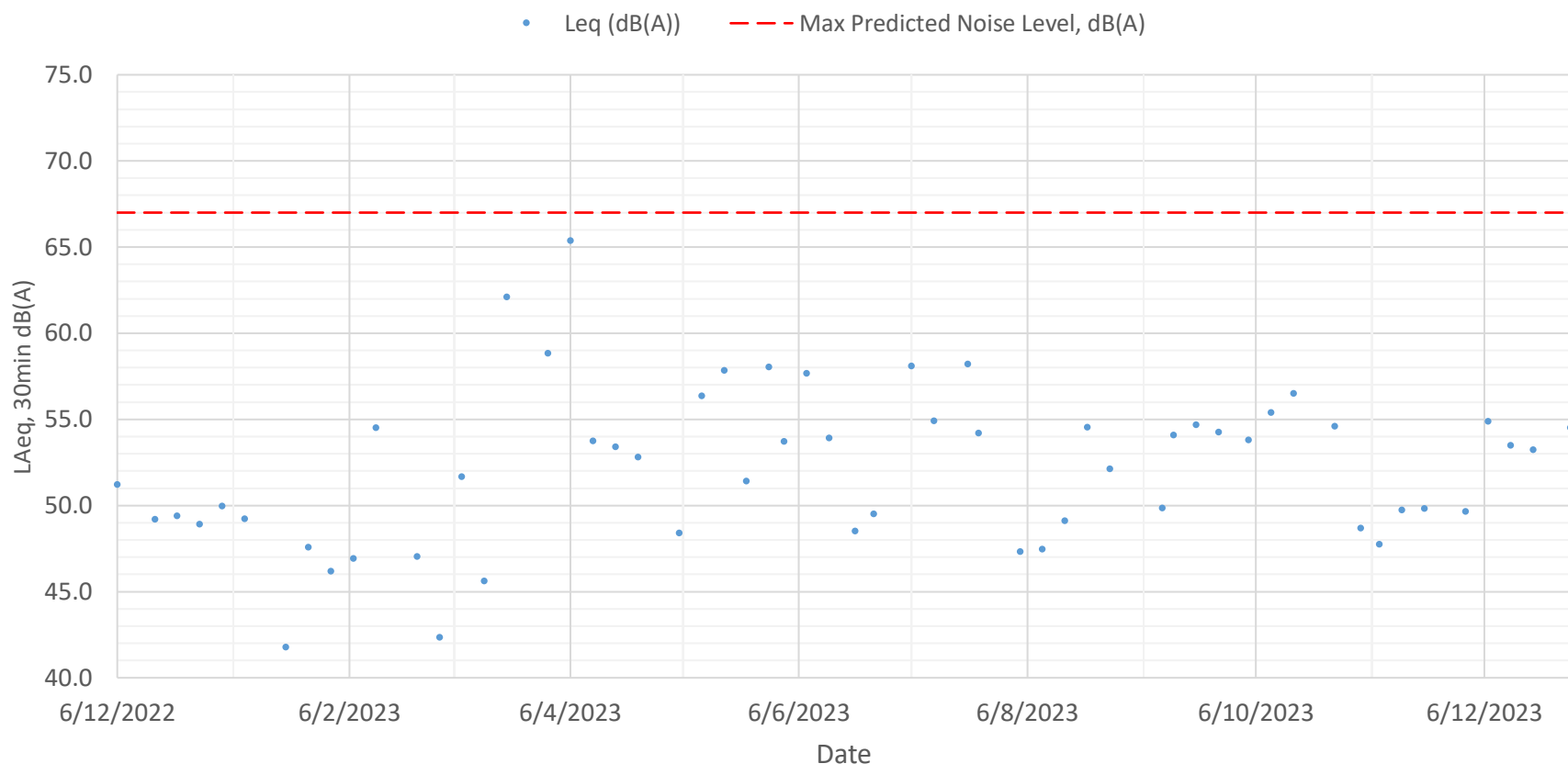


Noise

Comparison between Noise Monitoring Results and EIA Predictions at NM1a



Comparison between Noise Monitoring Results and EIA Predictions at NM2a



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