



# **Proposed Comprehensive Development at Wo Shang Wai, Yuen Long**

Quarterly EM&A Summary Report for August  
2022 – October 2022 (Rev A)

24 November 2022



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Limited

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# Executive summary

Mott MacDonald Hong Kong Ltd. (“MMHK”) has been commissioned by Heng Shung Construction Co. Ltd. to undertake the Environmental Team (ET) services to carry out environmental monitoring and audit (EM&A) for both pre-construction and construction phases of the Proposed Comprehensive Development at Wo Shang Wai, Yuen Long. From August 2016, the Project Proponent, Profit Point Enterprises Limited, commissioned MMHK to continue the ET services.

This is the 50<sup>th</sup> Quarterly EM&A Summary report and this report summarises the findings on EM&A during the period from 1 August 2022 to 31 October 2022.

## Exceedance of Action and Limit Levels

There was no breach of Action or Limit Levels for air quality (1-hr TSP and 24-hr TSP) and noise during the reporting period. However, for water quality, a total of four Action Level exceedances and two Limit Level exceedances were observed. One Action Level exceedance of pH was recorded at MP3 and one Limit Level exceedance of Suspended Solids (SS) was recorded at MP4 in August 2022; one Action Level exceedance of dissolved oxygen (DO) was recorded at MP3 and one Limit Level exceedance of SS was recorded at MP4 in September 2022; and two Action Level exceedances of pH were recorded at MP3 in October 2022.

Investigations have been carried out to identify the causes of exceedances. From investigation, the contractor has implemented water quality mitigation measures as recommended in the EIA report. With localised natural variations and external factors such as pond fish culture activities in the fish pond represented by MP3, the exceedances were considered not due to the project’s construction works.

## Implementation of Mitigation Measures

Site audits were carried out on a weekly basis during the monitoring period to confirm the implementation of environmental mitigation measures undertaken by the Contractor in the reporting period. The status of implementation of mitigation measures in the site is shown in **Appendix F**.

## Record of Complaints

There was no record of complaints received in the reporting period.

## Future Key Issues

Site works scheduled to be commissioned in the coming three months include regular maintenance work for the Wetland Restoration Area including adjusting the water level, if required, and removal of unwanted species in the pond. No major construction works will be carried out. Potential environmental impacts due to the activities, including air quality, noise, water quality, ecology and landscape and visual, will be monitored.

Environmental mitigation measures will be implemented on site as recommended and weekly site audits will be carried out to ensure that the environmental conditions are acceptable.

# 1 Introduction

## 1.1 Background

In March 2005, the Project Proponent, Profit Point Enterprises Limited, acquired the development site in Yuen Long at Wo Shang Wai. An Environmental Impact Assessment (EIA) was then carried out under the EIA Ordinance (EIAO), and the Environmental Permit (EP-311/2008) for construction of the comprehensive development in Wo Shang Wai was first granted by EPD on 9 September 2008 and has been subsequently varied, with the current version (EP-311/2008/E) issued by EPD on 19 December 2017.

The Project involves the residential development and associated infrastructure and wetland restoration area and linear landscape area. The construction works under the Environmental Permit commenced on 12 May 2010. The site formation construction works of the Wetland Restoration Area (hereafter WRA) were completed on 15 November 2010, and the WRA was established by October 2012, within 30 months from the commencement of construction as stipulated in the EP. This indicated that planting works as scheduled in the approved Wetland Restoration and Creation Scheme (WRCS; November 2009) were complete, except along the western and southern boundary where the planting is affected by the existing site boundary and noise barrier, and for which a Variation to Environmental Permit (EP-311/2008/C) to defer planting at the location was approved. Consequently, EP (EP-311/2008/D) including specific mitigation measures to minimise certain identified noise impacts during the operation phase was approved. The current valid EP (EP-311/2008/E) comprises varied conditions for the implementation and maintenance of visual and landscape measures, and for the implementation of noise mitigation measures.

Mott MacDonald Hong Kong Ltd. (“MMHK”) has been commissioned to undertake the Environmental Team (ET) services to carry out environmental monitoring and audit (EM&A) for both pre-construction and construction phases of the Proposed Comprehensive Development at Wo Shang Wai, Yuen Long.

This report summarises the findings during the period from 1 August 2022 to 31 October 2022.

## 1.2 Project Organization

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

## 1.3 Environmental Status in the reporting period

During the reporting period, construction works of the Project undertaken include:

- General site maintenance work
- Regular maintenance work for the Wetland Restoration Area (including monitoring the water level and removal of unwanted species in the pond)

There were no major construction works carried out. The general layout plan of the Project site is shown in **Figure 1.1**.

## 1.4 Summary of EM&A Requirements

The EM&A programme requires environmental monitoring of air quality, noise, water quality, ecology and landscape and visual as specified in the approved EM&A Manual.

A summary of impact EM&A requirements is presented in **Table 1.1** below:

**Table 1.1: Summary of Impact EM&A Requirements**

Parameters	Descriptions	Locations	Frequencies
Air Quality	24-Hour TSP	ASR1, ASR2A, ASR3, ASR4 <sup>(1)</sup>	Once every 6 days
	1-Hour TSP	ASR1, ASR2A, ASR3, ASR4 <sup>(1)</sup>	3 times every 6 days
Noise	L <sub>eq</sub> , 30min	NSR1, NSR3, NSR5 <sup>(2)</sup> , NSR7	Weekly
Water Quality	Dissolved Oxygen (DO), temperature, pH, suspended solids (SS) and Biological Oxygen Demand (BOD)	MP1 to MP6 <sup>(3)</sup>	3 days per week
Ecology	Birds	Within the Project Area and Assessment Area of 500m	Weekly
	Dragonflies and Butterflies	Within the Project Area and Assessment Area of 500m	Once per month during March and September to November, and twice per month during April to August
	Herpetofauna	Within the Project Area and Assessment Area of 500m	Daytime: Once per month during April to November Night-time: Once per month during March to August
	Water quality of Wetland Restoration Area (WRA)	WRA	After filling of WRA with water, monthly for in situ water quality and every six months (end of wet season and end of dry season) for laboratory testing
	Site Inspections	Within the Project Area and Assessment Area of 500m	Weekly
Landscape and Visual	Auditing of protection of existing trees, the transplanting of existing trees, the creation of new wetland, the planting of new trees and shrubs and other landscape and visual mitigation measures	CM1 to CM10 and OM1 to OM7 within the Project Area	Site inspections once every two weeks during construction phase; once every two months during operational phase

Notes:

- (1) The air quality stations ASR1 and ASR4 were relocated to new locations on 5 June 2018 as the previous locations will be affected by upcoming construction activities. All monitoring data at ASR1 and ASR4 from June 2018 is measured at the new monitoring locations.
- (2) The noise impact monitoring station NSR5 was relocated to a new location on 5 June 2018 as the previous location will be affected by upcoming construction activities. All monitoring data at NSR5 from June 2018 is measured at the new monitoring location.
- (3) The water quality impact monitoring at MP1 and MP2 have been terminated since July 2012 due to the withdrawal of access rights by the landowner.

The Environmental Quality Performance Limits for air quality, noise and water quality are shown in **Appendix C**.

## 1.5 Recommended Mitigation Measures

The EM&A programme followed the recommended mitigation measures in the EM&A Manual. The EM&A requirements as well as the summary of implementation status of the environmental mitigation measures are provided in **Appendix F**. In particular, the following mitigation measures continued to be implemented at the site during the reporting period:

### Air Quality

- Access roads should be sprayed with water or dust suppression chemical to maintain the entire road surface wet or paved.

### **Water Quality**

- Site effluent should be discharged in accordance with the discharge licence.
- The site should be confined and properly maintained to avoid silt runoff.
- Chemicals should always be stored on drip trays or in bunded areas.

### **Waste Management**

- The chemical waste storage area should be clearly labelled.
- General refuse should be stored in enclosed bins or compaction units separate from construction and demolition (C&D) and chemical wastes.

## 2 Summary of Monitoring Results

### 2.1 Air Quality Monitoring

Results and graphical plots of 1-hour TSP and 24-hr TSP at the four monitoring locations are summarised and shown in the **Appendix D**. No exceedance of 1-hour and 24-hour TSP (Action or Limit Level) was recorded in the reporting period.

Due to the rainfall associated with the tropical cyclone activity, August 2022 was wetter than usual with the monthly rainfall of 614.8 millimetres, about 36 percent above the normal of 453.2 millimetres. The monthly mean temperature was 28.8 degrees, close to the normal figure (28.7 degrees).

September 2022 was much sunnier and hotter than usual. The monthly mean maximum temperature was 32.7 degrees, 2.2 degrees above the normal and it was the second highest on record for September. The total duration of bright sunshine was 237.4 hours, which was 36 percent above the normal of 174.4 hours for September. The month was also drier than usual with a monthly rainfall of 171.2 millimetres, about 53 percent of the normal of 321.4 millimetres.

October 2022 was sunnier than usual. The duration of bright sunshine in the month was 241.0 hours, 43.2 hours above the normal. The monthly mean maximum temperature was 29.5 degrees, 1.4 degrees above the normal figure and one of the highest on record for October. The month was also drier than usually with the monthly rainfall of 49.9 millimetres, which was about 41 percent of the normal of 120.3 millimetres.

For details of wind speed and direction during the monitoring period, please refer to the respective Monthly EM&A Report.

### 2.2 Construction Noise Monitoring

The construction noise monitoring results and graphical plots are shown in **Appendix D**. No exceedance (Action or Limit Level) of construction noise was recorded in the reporting period.

### 2.3 Water Quality Monitoring

The water quality monitoring results and the graphical plots of the monitoring data are shown in **Appendix D**.

During August 2022, one Action Level exceedance of pH was recorded at MP3 and one Limit Level exceedance of SS was recorded at MP4.

During September 2022, one Action Level exceedance of DO was recorded at MP3 and one Limit Level exceedance of SS were recorded at MP4.

During October 2022, two Action Level exceedances of pH were recorded at MP3.

### 2.4 Ecological Monitoring

#### 2.4.1 Monitoring of Birds

Monitoring was undertaken following the survey methodology in the EM&A Manual. The WRA was also surveyed during the reporting period as the area became accessible and site formation works for WRA has been completed. A transect was followed in the bird surveys (see **Figure 2.1**).

All bird species of conservation importance and/or wetland dependent were identified and enumerated. Flying birds were not recorded unless they were foraging and associated with the habitat (such as swifts). Further, notable bird observations during other surveys were also recorded.

A summary of the survey data of bird species of conservation importance and/or wetland-dependence recorded is provided in **Appendix E**.

Bird surveys were conducted on a weekly basis. In the survey area (excluding the WRA), a total of 47, 48 and 47 bird species were recorded in August 2022, September 2022 and October 2022 respectively. In each respective month, 21, 23 and 22 of the recorded bird species were of conservation importance and/or wetland-dependence. Within the WRA, a total of 44, 49 and 53 bird species were recorded in August 2022, September 2022 and October 2022 respectively. In each respective month, 20, 25 and 23 of the recorded bird species were of conservation importance and/or wetland-dependence.

In August 2022, all three bird target species were recorded within the WRA (high count<sup>1</sup> and mean of the target species respectively): Chinese Pond Heron (8, 5.0), Eastern Cattle Egret (2, 0.6) and Little Egret (5, 2.4).

In September 2022, all three bird target species were recorded within the WRA (high count and mean of the target species respectively): Chinese Pond Heron (5, 2.5), Eastern Cattle Egret (2, 0.5) and Little Egret (5, 2.3).

In October 2022, all three bird target species were recorded within WRA (high count and mean of the target species respectively): Little Egret (4, 2.25), Eastern Cattle Egret (1, 0.5) and Chinese Pond Heron (12, 7.75).

The survey data shows that when compared with the surrounding fishponds which cover a much larger area, the WRA attracts a good number of wetland dependent birds or species of conservation importance. A summary of the survey findings is provided in **Appendix E**.

#### 2.4.2 Monitoring of Herpetofauna

Monitoring was undertaken following the survey methodology in the EM&A Manual. One daytime survey and one night-time survey on herpetofauna were conducted in August 2022. One daytime survey was conducted in September and October 2022, respectively. Further, notable herpetofauna observations during other surveys were also recorded.

In August 2022, seven amphibian species and one reptile species were recorded in the Survey Area (excluding the WRA) during regular surveys. Within the WRA, seven amphibian species and two reptile species were recorded during regular surveys.

In September 2022, no amphibian species nor reptile species were recorded in the Survey Area (excluding the WRA) during regular or outside regular surveys. Within the WRA, no amphibian species and two reptile species were recorded during regular surveys.

In October 2022, no amphibian species nor reptile species were recorded in the Survey Area (excluding the WRA) during regular or outside regular surveys. Within the WRA, no amphibian species and three reptile species were recorded during regular surveys and two additional reptile species were recorded outside regular surveys. A total of five reptile species were recorded within the WRA in October 2022.

A summary of the survey findings is provided in **Appendix E**.

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<sup>1</sup> The "high count" of a species is the highest number of that species recorded during a particular survey within the survey month.

### 2.4.3 Monitoring of Dragonflies and Butterflies

In accordance with the EM&A Manual, two odonates and butterflies were conducted in August 2022 and one odonates and butterflies survey was conducted in September and October 2022, respectively. Further, notable odonate and butterfly observations during other surveys were also recorded.

In August 2022, 15 odonate species and 13 butterfly species were recorded in the Survey Area (excluding the WRA) during regular surveys. Within the WRA, 25 odonate species and 21 butterfly species were recorded during regular surveys. Among the odonate species recorded within the WRA, Blue Sprite (*Pseudagrion microcephalum*), Coastal Glider (*Macrodiplox cora*), Ruby Darter (*Rhodothemis rufa*) and Scarlet Basker (*Urothemis signata signata*) were listed by Fellowes *et al.* as “Local Concern” in 2002.

In September 2022, 11 odonate and 12 butterfly species were recorded in the Survey Area (excluding the WRA) during the regular survey. Within the WRA, 12 odonate species and 17 butterfly species were recorded during the regular survey; whereas, Dingy Dusk-hawker (*Gynacantha subinterrupta*) and two butterfly species (Little Branded Swift *Pelopidas agna* and Small Branded Swift *Pelopidas mathias oberthueri*) were recorded outside the regular survey. Therefore, a total of 13 odonate species and 19 butterfly species were recorded within the WRA. Among the odonates species recorded within the WRA, Dingy Dusk-hawker (*Gynacantha subinterrupta*), Coastal Glider (*Macrodiplox cora*) and Scarlet Basker (*Urothemis signata signata*) were listed by Fellowes *et al.* as of “Local Concern” in 2002.

In October 2022, 12 odonate and 15 butterfly species were recorded in the Survey Area (excluding the WRA) during the regular survey. Within the WRA, 20 odonate species and 24 butterfly species were recorded during the regular survey. In addition, four butterfly species were recorded outside the regular survey, bringing the total number of butterfly species recorded within the WRA to 28. Among the butterflies and odonates recorded within the WRA, Common Awl (*Hasora badra badra*), Ruby Darter (*Rhodothemis rufa*) and Scarlet Basker (*Urothemis signata signata*) were listed by Fellowes *et al.* as “Local Concern” in 2002.

A summary of the survey findings is provided in **Appendix E**.

### 2.4.4 Monitoring of Mammals

Monitoring of mammals was conducted concurrently with other surveys.

In August 2022, one mammal species (Japanese Pipistrelle *Pipistrellus abramus*) was recorded in the Survey Area (excluding the WRA) during regular surveys. Within the WRA, three mammal species, an indeterminate bat species, Japanese Pipistrelle (*Pipistrellus abramus*) and Leopard Cat (*Prionailurus bengalensis*), were recorded during regular surveys. Leopard Cat scats were recorded within the WRA, during a site inspection.

In September 2022, no mammal species was recorded in the Survey Area (excluding the WRA) during regular or outside regular surveys. Within the WRA, two mammal species, Leopard Cat (*Prionailurus bengalensis*) and Pallas's Squirrel (*Callosciurus erythraeus*), were recorded during regular surveys. Leopard Cat scats were recorded during the herpetofauna survey on 15 September 2022.

In October 2022, no mammal species was recorded in both the Survey Area (excluding the WRA) and within the WRA during regular or outside regular surveys.

A summary of the survey findings is provided in **Appendix E**.

### 2.4.5 Management Activities

#### 2.4.5.1 Vegetation Management

Vegetation management activities undertaken at the WRA primarily involved the removal of excess grass, shrubs and tree branches, as well as excessive climbers and floating vegetation. These removals included but

were not limited to *Leucaena leucocephala*, *Macaranga tanarius*, *Ficus macrocarpa*, *Rhaphiolepis indica*, *Lantana camara*, *Mimosa* sp., *Pennisetum* sp., *Ipomea* sp., *Bidens alba* and *Paederia foetida*.

Excessive branches along the emergency vehicle access (EVA) were trimmed and broken and fallen branches were cleared. Fallen leaves along the EVA of Cell 3 and Cell 4 were swept aside and formed piles of plant material on both sides of the EVA. These piles were used to attract herpetofauna.

#### 2.4.5.2 Wildlife Management

Excessive vegetation along the EVA and pond bunds was gradually cleared to uncover the soil and road surface. Red Imported Fire Ant nests along the EVA and pond bunds will be treated with approved pesticide in the coming months.

Egg masses of the Apple Snails (*Pomacea canaliculate*) found along the concrete structures of the WRA (e.g. sluice gates between Cells, and concrete walls of Cell 4) were cleared during site inspections.

Mitigation actions have been carried out in the WRA during the survey period to increase the WRA utilization by birds. Mitigation actions include controlling vegetation and water level of Cells 1 to 4.

## 2.5 Landscape and Visual Monitoring

The audit was undertaken with references to the specific mitigation measures recommended in Section 10.2 of the EM&A Manual and the audit results are summarized in **Table 2.1**.

Representative photos showing the implementation of mitigation measures are presented in **Appendix G**.

**Table 2.1: Construction Audit Summary on Landscape and Visual**

Area of Works	Items to be Monitored
Works Area	The boundaries of the works area have been established on site in accordance with the contract documents and approved plans (EP), and the limit of current heavy construction activity is now confined to within the site hoardings (North side of the site / access road) and the noise barriers (other sides of the site). Minor works such as horticultural maintenance of the planting and transplanted trees, and boundary fence repair was proceeding along the Royal Palms - Palm Springs boundary. (Photo 1 in <b>Appendix G</b> ) No construction works were observed to have exceeded the site boundaries. No construction was carried out at the wetland restoration area after 15 November 2010.
Protection of all trees and woodland blocks to be retained	Trees retained within the site along the northeast boundary, beside wetland restoration area, have been identified and protected by temporary protective fencing.
Streams	The works site is partly encircled by a berm / perimeter channel to intercept surface water and prevent it from washing off into any of the neighbouring sites. Surface water is collected within the site in a temporary drainage channel. Gravels beds and barriers have been installed to filter site runoff; sedimentation ponds have been provided to enable primary treatment before discharge to mains drains.
Clearance of existing vegetation	Site clearance was completed prior to the commencement of construction.
Transplanting of trees	Tree transplanting has been completed, with the trees relocated to various points within the planting strip along the southern boundary of the site, outside the noise barrier. Most of the trees continue to re-establish well.
Topsoil stripping	Suitable pond bund and soil material which had been excavated and stockpiled from the original site, has now been re-used within the landscape works. Dust suppression measures are active along all internal site access tracks.
New buildings	No new permanent buildings have been constructed on site.
Boundaries	Hoardings have been erected along most of the boundaries of the site. Installation of new screen fence between the future residential sites and the constructed wetland restoration areas is complete. Fence has been painted green to match with the surrounding vegetated environment. (Photo 1 in <b>Appendix G</b> )
Noise Barrier	Noise barriers have been installed along the southern and western boundaries of the site in accordance with the Environmental Permit (EP-311/2008/E) requirements. Their design complies with the mitigation requirements, with upper 6 to 7m portion of the barrier being made from a translucent material with green



Area of Works	Items to be Monitored
	tinted (to match with the environment). Supporting GMS structure, likewise, has been painted green. (Photo 3 in <b>Appendix G</b> ).
Night-time lighting	No night-time works were reported to have been carried out during the monitoring period.
Landscape and wetland treatments	<p>Continuous belt of screen planting along the southern and western boundaries of the site has been completed. The formation, soiling and water control structures of the wetland restoration area have been completed. (Photo 3 in <b>Appendix G</b>)</p> <p>The wetland areas have been established and the ponds are seasonally filled with rainwater. Planting of areas around the WRA cells has been completed. No construction was carried out at the wetland restoration area after 15 November 2010. (Photo 2 in <b>Appendix G</b>)</p>
Soiling, etc.	The soil placement and grading for each of the wetland restoration area has been completed. Refilling of holes from whole tree removal works has been completed.
Plant supply	<p>The plant material used in the Advance Planting Strip and in the WRA are all commonly available species and came from commercial sources.</p> <p>Transplanted reeds (<i>Phragmites australis</i>) at the wetland habitat came from the temporary holding nursery onsite.</p>
Planting	<p>Planted tree species are all from the approved list.</p> <p>Seedling trees and shrubs have been established at the margins of the wetland cells. Some invasive species and undesirable exotic species have been found during site inspection; removal of these species should be undertaken on a regular basis.</p>
Establishment Works	<p>The advance planting, the compensatory planting and transplanted trees are generally being maintained by the landscape sub-contractor in accordance with the specification to ensure that the contract requirements are met.</p> <p>Removal of overgrown weeds, unplanned tree seedlings and invasive climbers in the space behind screen noise barrier needs to be undertaken on a monthly basis as they may inhibit the advance planting.</p> <p>Regular removal of invasive species (i.e. apple snails, <i>Leucaena leucocephala</i>, <i>Mikania micrantha</i>, <i>Mimosa pudica</i>, <i>Bidens alba</i>, <i>Ludwigia erecta</i>, <i>Sesbania cannabina</i>, etc.) in WRA should be undertaken.</p> <p>Overgrown vegetation and fish-free ponds were observed within the WRA. Horticultural maintenance (grass cutting, weeding, etc.) in the shrubs and tree seedling areas around the WRA cells, access pathways and ponds should be undertaken regularly. It is recommended to trim the vegetation in the fish-free pond in line with the design of short marsh vegetation areas to attract dragonflies.</p> <p>The growth of shrubs / seedlings on the north side of WRA remains fair.</p>

## 3 Environmental Site Inspection and Audit

### 3.1 Site Inspection

The ET carried out construction phase weekly site inspections on 4, 11, 19 and 26 August 2022; 2, 6, 14, 23 and 29 September 2022; and 5, 12, 21 and 28 October 2022. All observations have been recorded in the site inspection checklist and passed to the Contractor together with the appropriate recommended mitigation measures where necessary.

### 3.2 Solid and Liquid Waste Management Status

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

As advised by the Contractor, no inert C&D material (i.e. broken concrete/ big boulders) were generated on site and sent to a sorting facility for recycling into rockfill. No metals were generated and collected by registered recycling collector. No paper/cardboard packing and no plastics were generated on site and collected by registered recycling collector. No chemical waste was generated and collected by licensed chemical waste collector. No other types of wastes (e.g. general refuse) were generated on site and disposed of at public landfill facility.

The Contractor is advised to maintain on site waste sorting and recording system and maximize reuse / recycling of C&D wastes, whenever these are generated.

## 4 Report on Non-compliance and Complaints

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

#### 4.1.1 Record of Non-compliance

There is no breach of Action or Limit Levels for Air Quality and Noise monitoring in the reporting period.

A total of four Action Level exceedances and two Limit Level exceedances for Water Quality were recorded during the reporting period. These are described as follows:

- August 2022: one Action Level exceedance of pH was recorded at MP3 and one Limit Level exceedance of SS was recorded at MP4.
- September 2022: one Action Level exceedance of DO was recorded at MP3 and one Limit Level exceedance of SS was recorded at MP4.
- October 2022: two Action Level exceedance of pH were recorded at MP3.

#### 4.1.2 Constructional Impacts on Water Quality

In order to determine the constructional impacts on water quality, the suspended solids level, which is a good indicator of the quality of effluent from construction site, is selected for assessment. The average value of suspended solids (SS) for water quality monitoring stations (MP3 – MP6) during baseline monitoring and construction phase monitoring for the reporting period are listed in **Table 4.1** below.

**Table 4.1: Comparison of Monitoring Data of Suspended Solids**

Monitoring Stations	Average Levels of Suspended Solids (mg/L)		Within 130% of mean value of Baseline data?
	During Baseline Monitoring	During Construction Phase Monitoring for the reporting period	
MP3	49.5	21	Yes
MP4	36.9	28	Yes
MP5	47.7	28	Yes
MP6	54.1	31	Yes

The average levels of suspended solids (SS) during the reporting period were within (i.e. below) 130% of the baseline values at MP3, MP4, MP5 and MP6. The above statistics show that the water quality at these locations during the reporting period had not worsened when compared with the baseline condition.

#### 4.1.3 Exceedance Investigations

##### Water Quality

From investigation, the Contractor has implemented water quality mitigation measures as recommended in the EIA report, including:

- Temporary drainage channels were provided to collect the surface runoff generated within the project site; and
- Installation of barrier at the drainage channels to intercept site runoff and pump the wastewater to the sedimentation tanks as primary treatment prior to treatment by wastewater treatment facilities (AquaSed),

which will ensure all site runoff is treated to satisfactory quality before discharging into the northern ditches.

The possible causes of exceedances have been investigated and reported to the IEC during construction phase monitoring. The exceedance investigations have also been included in the monthly EM&A reports and some of them are extracted and summarised in **Table 4.2**. The causes of some of the exceedances were unknown but all of them were considered not related to the project. For details, please refer to the relevant monthly EM&A reports.

**Table 4.2: Summary of Exceedance Investigations**

Descriptions of exceedances	Possible causes	Exceedance related to project?
Exceedance of pH in August and October 2022; exceedance of DO in September 2022	<p>At MP3, exceedance of the Action Level of pH was observed on 17 August 2022; and 17 and 24 October 2022. Exceedance of the Action Level of DO was observed on 5 September 2022.</p> <p>As understood, the fish pond near the site (represented by MP3) is separated from the open ditch by the pond bund (since commencement of construction phase EM&amp;A monitoring in May 2010) and from the construction site by the WRA (since it was completed in November 2010). No direct discharge from the project site to the fish pond was observed.</p> <p>Mitigation measures for water quality protection, including the provision of wastewater treatment facilities (including sedimentation tank and AquaSed) and proper drainage system that separates from the WRA, have been implemented. No adverse impact on the fish pond near the site was observed, including on the day with exceedance of water quality parameters.</p> <p>According to the results of the baseline water quality monitoring conducted prior to the commencement of construction works, the pH recorded at MP3 ranged from 7.7 to 8.6 and the DO level recorded at MP3 ranged from 6.6 to 11.9 mg/L. The recorded pH exceedances (7.6) and DO exceedances (6.7mg/L) are therefore considered to be very close to / within the range of natural variations at this location.</p> <p>It is also noted from AFCD's Environmental Management of Pond Fish Culture (EMPF) guidelines from its Series of Good Aquaculture Practice that the pH level of fishpond water should be between 6 and 8.5 and for good water quality DO levels should be maintained above 4 mg/L. The recorded values are well within the guideline recommendations. Nevertheless, aerators continued to be observed on most of the days with pH and DO exceedance. Aerators mitigate low DO levels; help reduce alkalinity and remove excess carbon dioxide, thus improving water quality and stabilizing pH levels.</p>	No. It is concluded that the exceedance was possibly due to localised natural variations and external factors such as pond fish culture activities in the fish pond represented by MP3, which are not related to project construction activities.
Exceedance of SS in August and September 2022	<p>At MP4, exceedance of the Limit Level of SS was observed on 29 August 2022 and 17 September 2022.</p> <p>On the days of SS exceedance at MP4, a slightly muddy appearance of the water body was observed. It is noted that the measured turbidity level at MP4 was high, although no exceedance was recorded. It is believed that increased turbidity resulted in higher SS inside the ditch water on the days of SS exceedance.</p> <p>Furthermore, it is noted that SS levels recorded upstream at MP5 on 29 August and 17 September 2022 and MP6 on 29 August 2022 were also elevated but did not exceed their respective Action Levels.</p> <p>As presented in the weekly site inspections checklists in August 2022 and September 2022, no observation regarding discharge of muddy water was recorded. Hence it is believed that the SS exceedance was probably due to localised natural variations instead.</p>	No. It is concluded that the SS exceedance was probably due to localised natural variations.

## 4.2 Record on Environmental Complaints Received

There was no new record of complaints received in the reporting period.

### 4.3 Follow-up Actions Taken

#### **Non-compliance**

Although it is considered that the exceedances were not related to the Project, the Contractor was reminded to implement water quality mitigation measures in accordance with the recommendations stated in Sections 5.6.1 to 5.6.4 of the EIA Report as far as practicable. Regular spot checks would be conducted on the nearby discharge by the Contractor and the Contractor would inform ET about the findings for investigation.

It was also advised that the operation condition of the Wastewater Treatment Facilities should be checked regularly to ensure proper functioning of the plant and good quality of effluent discharge.

#### **Complaints**

Not applicable for this reporting period.

## 5 Future Key Issues

### 5.1 Construction Works for the Coming Months

Site works scheduled to be commissioned in the coming three months involve regular maintenance work for the Wetland Restoration Area (including adjusting the water level, if required, and removal of unwanted species in the pond). No other major construction works have been scheduled.

### 5.2 Key Issues for the Coming Months

Key issues to be considered in the coming three months include:

- Provision of water spraying or dust suppression chemical to prevent generation of dust from activities on-site and the haul road during dry weather conditions;
- Provision of wheel washing facilities at vehicle exit point;
- Generation and treatment of site surface runoffs and wastewater from activities on-site and during wet weather conditions;
- Sorting, recycling, storage and disposal of general refuse and construction waste from activities on-site; and
- Management of chemicals and avoidance of oil spillage on-site and to the drainage.

### 5.3 Conclusions and Recommendations

#### 5.3.1 Conclusions

The EM&A programme as recommended in the EM&A Manual has been undertaken in the reporting period.

Monitoring of Air Quality, Noise, Water Quality, Ecology and Landscape and Visual impacts due to the Project was underway. In particular, the 1-hr TSP, 24-hr TSP, noise level (as  $L_{eq}$ ) and water quality parameters (such as pH, DO, turbidity and SS) under monitoring have been checked against established Action and Limit Levels.

There was no breach of Action or Limit Levels for Air Quality and Noise during the reporting period.

As for Water Quality, Action Level exceedances of pH and DO and Limit Level exceedances of SS were recorded during the reporting period. However, investigations into the exceedances concluded that these were not related to the Project and may have been due to external factors including natural variations.

#### 5.3.2 Recommendations

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

##### **Air Quality**

- All stockpiles should be covered by tarpaulin or kept wet by water spraying;
- All vehicles should be washed to remove any dusty materials before leaving the construction sites;
- The portion of road leading the construction site that is within 30m of a designated vehicle entrance or exit should be kept clear of dusty materials;
- During the dry season, sufficient water spraying should be provided at haul road to reduce dust emission; and
- Ensure proper functioning of the wheel wash facility.

### **Noise**

- Mobile plant should be sited as far away from NSRs as possible;
- Plant known to emit noise strongly in one direction should be orientated to direct noise away from the NSRs; and
- The construction activities should be better scheduled to reduce noise nuisance.

### **Water Quality**

- Effluent should be discharged in accordance with the discharge licence conditions;
- Soil contaminated with chemicals/oils should be removed from site, and the voids created should be filled with suitable materials; and
- Silt and debris should be removed from the temporary drainage channel regularly.

### **Waste Management**

- General refuse should be stored in enclosed bins or compaction units separate from C&D and chemical wastes to minimise odour, pest and litter impacts;
- Reuse the excavated materials as far as practical to reduce the amount of waste disposal;
- C&D waste should be segregated and stored in different containers to other wastes to encourage the re-use or recycling of materials and their proper disposal;
- Ensure drip trays are provided for chemical containers to prevent leakage or soil contamination;
- All plants and vehicles should be properly maintained to prevent oil leakage; and
- Oil stains on soil should be cleared by disposal of contaminated soil.

## 6 References

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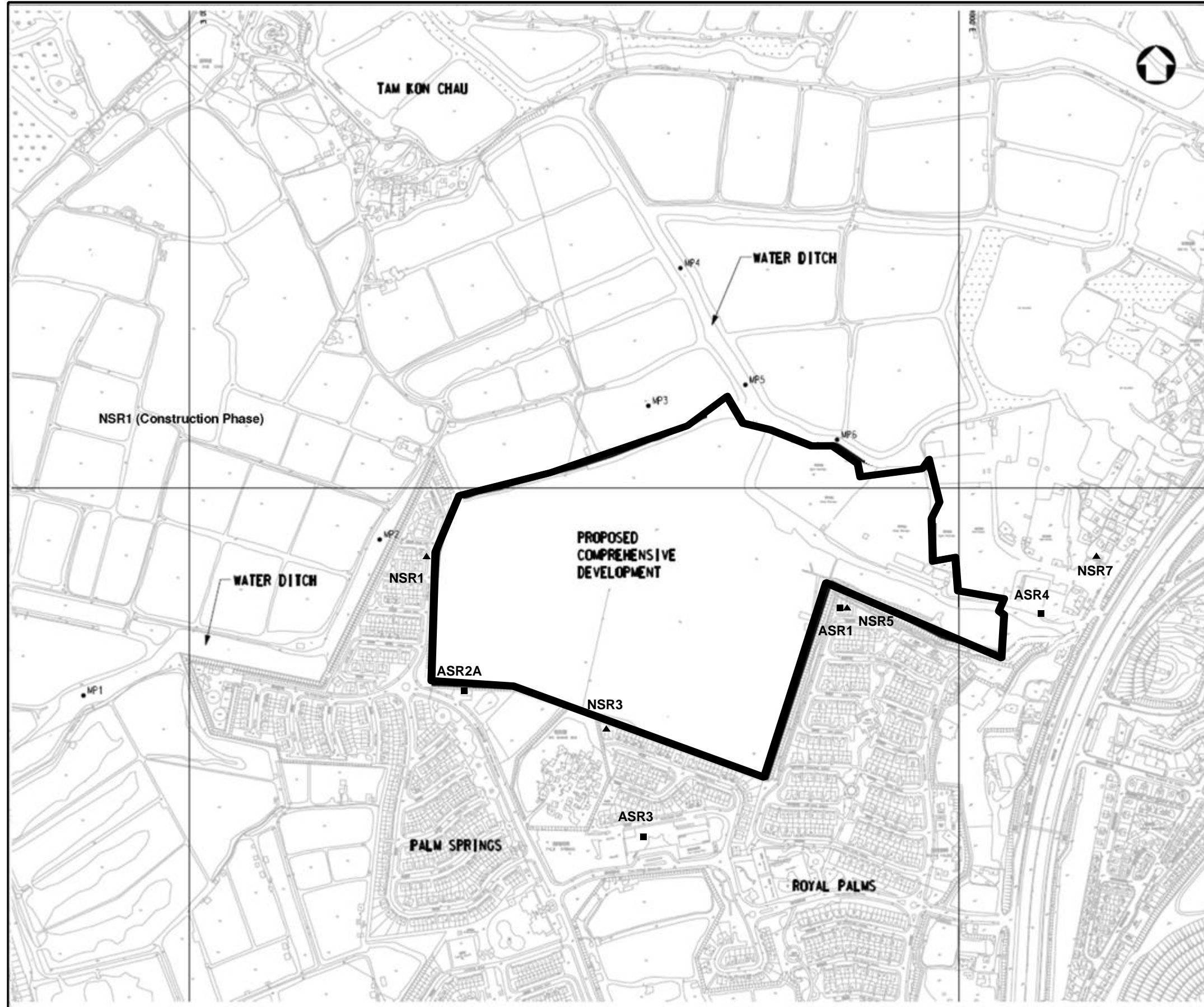
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Zheng Guangmei and Wang Qishan (1998) (Edited), *China Red Data Book of Endangered Animals: Aves*,  
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# Figures





Notes

- Key to symbols
- Air Quality Monitoring Stations
  - ▲ Noise Monitoring Stations
  - Water Quality Monitoring Stations
  - Site Boundary

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd

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 T +852 2828 5757  
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Client

**PROFIT POINT ENTERPRISES LIMITED**

Project

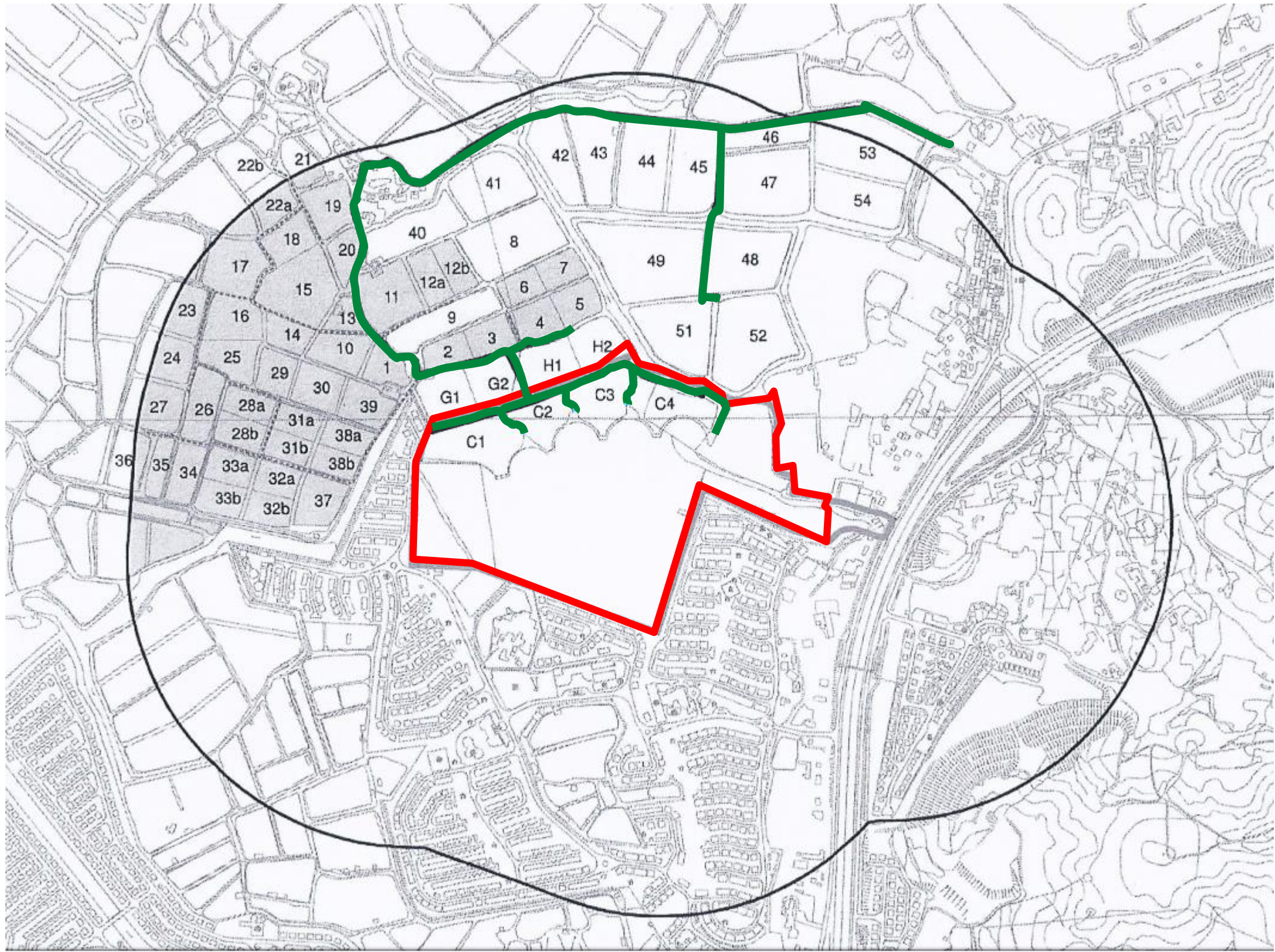
**PROPOSED COMPREHENSIVE DEVELOPMENT  
 AT WO SHANG WAI, YUEN LONG**

Title

**Locations of Water Quality  
 Monitoring Stations**

Designed		Eng check	
Drawn		Coordination	
Dwg check		Approved	
Scale at A1	Status	Rev	

Drawing Number **Figure 1.1**



Notes

---

Key to symbols

- Project Area
- Assessment Area
- Transect

---

Reference drawings

---

Rev	Date	Drawn	Description	Ch'k'd	App'd

**M**  
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W mottmac.com

---

Client

**PROFIT POINT ENTERPRISES LIMITED**

---

Project

**PROPOSED COMPREHENSIVE DEVELOPMENT  
AT WO SHANG WAI, YUEN LONG**

---

Title

**Survey Area and Transect  
Walked**

---

Designed		Eng check	
Drawn		Coordination	
Dwg check		Approved	
Scale at A1	Status		Rev

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Drawing Number **Figure 2.1**

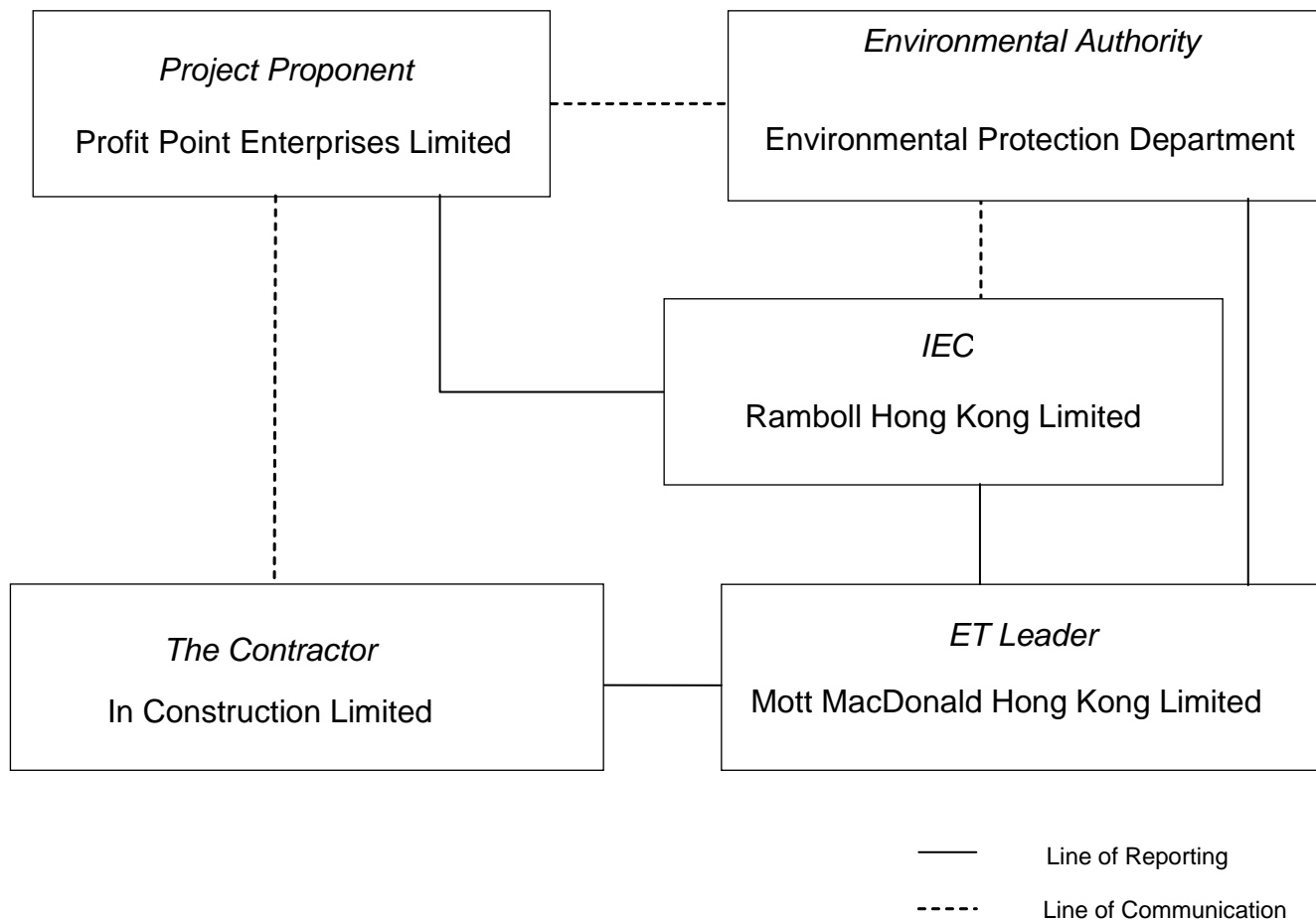
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## A. Project Organization Chart



### Contact information:

Company	Position	Name	Telephone
Profit Point Enterprises Limited (Project Proponent)	Project Manager	Ms Stacey Lau	2281 0112
In Construction Limited (The Main Contractor)	Construction Manager	Mr. Chun Kit Tse	9400 7007
	Site Agent	Mr. Chi Hei Leung	6775 1468
	Safety Officer	Mr. Wong Kam Leung	2710 8663
	Environmental Officer	Mr. Vega T. L. Wong	6113 2368
Ramboll Hong Kong Limited (Independent Environmental Checker (IEC))	Independent Environmental Checker	Mr. David Yeung	3465 2888
Mott MacDonald Hong Kong Ltd. (Environmental Team (ET))	Environmental Team Leader	Ms. Nikita Nanwani Nanwani	2828 5960



## **B. Tentative Construction Programme (not used)**



## C. Action and Limit Levels for Construction Phase

### Air Quality

#### Action and Limit Levels for 24-hour TSP

Monitoring Station	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
ASR1	226	260
ASR2A	213	260
ASR3	205	260
ASR4	237	260

#### Action and Limit Levels for 1-hour TSP

Monitoring Station	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
ASR1	378	500
ASR2A	357	500
ASR3	358	500
ASR4	372	500

### Noise

#### Action and Limit Levels for Construction Noise

Time Period	Action Level	Limit Level
NSR1, NSR3, NSR5, NSR7		
0700 – 1900 hours on normal weekdays	When one documented complaint is received from any one of the sensitive receivers	75 dB(A)

### Water Quality

#### Action and Limit Levels for Water Quality

Parameters	DO in mg/L		Turbidity in NTU		SS in mg/L		pH	
	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level
MP1	1.23	1.17	173	177	231	299	< 5.5 or > 7.5	< 4.0 or > 8.0
MP2	1.04	0.89	132	163	170	209		
MP3	6.85	6.65	64	67	65	66		
MP4	3.91	3.82	60	64	50	53		
MP5	4.13	3.87	81	84	66	69		
MP6	4.61	4.52	94	96	75	75		

Notes:

- (1) For the Limit Level of DO, 1-percentile of baseline data is adopted as it is greater than 2mg/L. (Refer to [Baseline Monitoring Report](#))



## **D. Summary and Graphical Plots of the Monitoring Results**





## Air Quality (1-hr TSP)

### Station ASR1

Date	Start Time	Finish Time	TSP Concentration ( $\mu\text{g}/\text{m}^3$ )	Weather Condition	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
01-Aug-22	08:47	09:47	23	Sunny	378	500
01-Aug-22	09:47	10:47	21	Sunny	378	500
01-Aug-22	10:47	11:47	27	Sunny	378	500
05-Aug-22	09:09	10:09	17	Sunny	378	500
05-Aug-22	10:09	11:09	14	Sunny	378	500
05-Aug-22	11:09	12:09	15	Sunny	378	500
11-Aug-22	08:44	09:44	16	Cloudy	378	500
11-Aug-22	09:44	10:44	18	Cloudy	378	500
11-Aug-22	10:44	11:44	18	Cloudy	378	500
17-Aug-22	08:17	09:17	14	Sunny	378	500
17-Aug-22	09:17	10:17	12	Sunny	378	500
17-Aug-22	10:17	11:17	12	Sunny	378	500
23-Aug-22	08:40	09:40	20	Sunny	378	500
23-Aug-22	09:40	10:40	23	Sunny	378	500
23-Aug-22	10:40	11:40	27	Sunny	378	500
29-Aug-22	08:46	09:46	21	Sunny	378	500
29-Aug-22	09:46	10:46	18	Sunny	378	500
29-Aug-22	10:46	11:46	17	Sunny	378	500
02-Sep-22	08:49	09:49	25	Sunny	378	500
02-Sep-22	09:49	10:49	20	Sunny	378	500
02-Sep-22	10:49	11:49	22	Sunny	378	500
08-Sep-22	08:22	09:22	21	Sunny	378	500
08-Sep-22	09:22	10:22	16	Sunny	378	500
08-Sep-22	10:22	11:22	18	Sunny	378	500
14-Sep-22	12:56	13:56	20	Sunny	378	500
14-Sep-22	13:56	14:56	21	Sunny	378	500
14-Sep-22	14:56	15:56	21	Sunny	378	500
20-Sep-22	09:01	10:01	58	Sunny	378	500
20-Sep-22	10:01	11:01	57	Sunny	378	500
20-Sep-22	11:01	12:01	55	Sunny	378	500
26-Sep-22	08:22	09:22	32	Sunny	378	500
26-Sep-22	09:22	10:22	32	Sunny	378	500
26-Sep-22	10:22	11:22	35	Sunny	378	500
30-Sep-22	09:17	10:17	20	Rainy	378	500
30-Sep-22	10:17	11:17	19	Rainy	378	500
30-Sep-22	11:17	12:17	20	Rainy	378	500
06-Oct-22	14:06	15:06	17	Sunny	378	500
06-Oct-22	15:06	16:06	16	Sunny	378	500
06-Oct-22	16:06	17:06	20	Sunny	378	500
11-Oct-22	08:26	09:26	20	Sunny	378	500
11-Oct-22	09:26	10:26	21	Sunny	378	500
11-Oct-22	10:26	11:26	22	Sunny	378	500
17-Oct-22	09:11	10:11	20	Sunny	378	500
17-Oct-22	10:11	11:11	22	Sunny	378	500
17-Oct-22	11:11	12:11	26	Sunny	378	500
21-Oct-22	08:36	09:36	41	Sunny	378	500
21-Oct-22	09:36	10:36	45	Sunny	378	500
21-Oct-22	10:36	11:36	43	Sunny	378	500
27-Oct-22	08:15	09:15	18	Sunny	378	500
27-Oct-22	09:15	10:15	19	Sunny	378	500
27-Oct-22	10:15	11:15	19	Sunny	378	500
		Min.		12}		for
		Max.		58}		reporting
		Average		24}		period

## Air Quality (1-hr TSP)

### Station ASR2A

Date	Start Time	Finish Time	TSP Concentration ( $\mu\text{g}/\text{m}^3$ )	Weather Condition	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
01-Aug-22	13:04	14:04	20	Sunny	357	500
01-Aug-22	14:04	15:04	20	Sunny	357	500
01-Aug-22	15:04	16:04	18	Sunny	357	500
05-Aug-22	13:35	14:35	19	Sunny	357	500
05-Aug-22	14:35	15:35	19	Sunny	357	500
05-Aug-22	15:35	16:35	18	Sunny	357	500
11-Aug-22	13:03	14:03	17	Cloudy	357	500
11-Aug-22	14:03	15:03	14	Cloudy	357	500
11-Aug-22	15:03	16:03	12	Cloudy	357	500
17-Aug-22	12:57	13:57	12	Sunny	357	500
17-Aug-22	13:57	14:57	13	Sunny	357	500
17-Aug-22	14:57	15:57	15	Sunny	357	500
23-Aug-22	12:56	13:56	28	Sunny	357	500
23-Aug-22	13:56	14:56	31	Sunny	357	500
23-Aug-22	14:56	15:56	30	Sunny	357	500
29-Aug-22	13:01	14:01	19	Sunny	357	500
29-Aug-22	14:01	15:01	14	Sunny	357	500
29-Aug-22	15:01	16:01	15	Sunny	357	500
02-Sep-22	13:18	14:18	22	Sunny	357	500
02-Sep-22	14:18	15:18	24	Sunny	357	500
02-Sep-22	15:18	16:18	21	Sunny	357	500
08-Sep-22	13:06	14:06	15	Sunny	357	500
08-Sep-22	14:06	15:06	18	Sunny	357	500
08-Sep-22	15:06	16:06	14	Sunny	357	500
14-Sep-22	09:24	10:24	24	Sunny	357	500
14-Sep-22	10:24	11:24	27	Sunny	357	500
14-Sep-22	11:24	12:24	29	Sunny	357	500
20-Sep-22	13:03	14:03	54	Sunny	357	500
20-Sep-22	14:03	15:03	45	Sunny	357	500
20-Sep-22	15:03	16:03	47	Sunny	357	500
26-Sep-22	13:07	14:07	30	Sunny	357	500
26-Sep-22	14:07	15:07	31	Sunny	357	500
26-Sep-22	15:07	16:07	31	Sunny	357	500
30-Sep-22	13:11	14:11	25	Rainy	357	500
30-Sep-22	14:11	15:11	24	Rainy	357	500
30-Sep-22	15:11	16:11	22	Rainy	357	500
06-Oct-22	09:24	10:24	19	Sunny	357	500
06-Oct-22	10:24	11:24	17	Sunny	357	500
06-Oct-22	11:24	12:24	17	Sunny	357	500
11-Oct-22	13:10	14:10	23	Sunny	357	500
11-Oct-22	14:10	15:10	20	Sunny	357	500
11-Oct-22	15:10	16:10	18	Sunny	357	500
17-Oct-22	13:05	14:05	24	Sunny	357	500
17-Oct-22	14:05	15:05	22	Sunny	357	500
17-Oct-22	15:05	16:05	22	Sunny	357	500
21-Oct-22	13:17	14:17	35	Sunny	357	500
21-Oct-22	14:17	15:17	34	Sunny	357	500
21-Oct-22	15:17	16:17	32	Sunny	357	500
27-Oct-22	13:05	14:05	14	Sunny	357	500
27-Oct-22	14:05	15:05	14	Sunny	357	500
27-Oct-22	15:05	16:05	15	Sunny	357	500
		Min.	12}	for		
		Max.	54}	reporting		
		Average	23}	period		

## Air Quality (1-hr TSP)

### Station ASR3

Date	Start Time	Finish Time	TSP Concentration ( $\mu\text{g}/\text{m}^3$ )	Weather Condition	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
01-Aug-22	13:22	14:22	16	Sunny	358	500
01-Aug-22	14:22	15:22	17	Sunny	358	500
01-Aug-22	15:22	16:22	16	Sunny	358	500
05-Aug-22	13:16	14:16	15	Sunny	358	500
05-Aug-22	14:16	15:16	15	Sunny	358	500
05-Aug-22	15:16	16:16	18	Sunny	358	500
11-Aug-22	13:20	14:20	17	Cloudy	358	500
11-Aug-22	14:20	15:20	15	Cloudy	358	500
11-Aug-22	15:20	16:20	14	Cloudy	358	500
17-Aug-22	13:14	14:14	16	Sunny	358	500
17-Aug-22	14:14	15:14	15	Sunny	358	500
17-Aug-22	15:14	16:14	16	Sunny	358	500
23-Aug-22	13:07	14:07	33	Sunny	358	500
23-Aug-22	14:07	15:07	30	Sunny	358	500
23-Aug-22	15:07	16:07	30	Sunny	358	500
29-Aug-22	13:18	14:18	20	Sunny	358	500
29-Aug-22	14:18	15:18	20	Sunny	358	500
29-Aug-22	15:18	16:18	21	Sunny	358	500
02-Sep-22	13:02	14:02	19	Sunny	358	500
02-Sep-22	14:02	15:02	19	Sunny	358	500
02-Sep-22	15:02	16:02	17	Sunny	358	500
08-Sep-22	13:25	14:25	18	Sunny	358	500
08-Sep-22	14:25	15:25	19	Sunny	358	500
08-Sep-22	15:25	16:25	19	Sunny	358	500
14-Sep-22	09:10	10:10	24	Sunny	358	500
14-Sep-22	10:10	11:10	28	Sunny	358	500
14-Sep-22	11:10	12:10	31	Sunny	358	500
20-Sep-22	13:19	14:19	51	Sunny	358	500
20-Sep-22	14:19	15:19	52	Sunny	358	500
20-Sep-22	15:19	16:19	48	Sunny	358	500
26-Sep-22	13:24	14:24	29	Sunny	358	500
26-Sep-22	14:24	15:24	34	Sunny	358	500
26-Sep-22	15:24	16:24	30	Sunny	358	500
30-Sep-22	13:29	14:29	18	Rainy	358	500
30-Sep-22	14:29	15:29	18	Rainy	358	500
30-Sep-22	15:29	16:29	19	Rainy	358	500
06-Oct-22	09:08	10:08	24	Sunny	358	500
06-Oct-22	10:08	11:08	25	Sunny	358	500
06-Oct-22	11:08	12:08	21	Sunny	358	500
11-Oct-22	13:30	14:30	18	Sunny	358	500
11-Oct-22	14:30	15:30	18	Sunny	358	500
11-Oct-22	15:30	16:30	15	Sunny	358	500
17-Oct-22	13:22	14:22	20	Sunny	358	500
17-Oct-22	14:22	15:22	21	Sunny	358	500
17-Oct-22	15:22	16:22	20	Sunny	358	500
21-Oct-22	13:01	14:01	38	Sunny	358	500
21-Oct-22	14:01	15:01	33	Sunny	358	500
21-Oct-22	15:01	16:01	36	Sunny	358	500
27-Oct-22	13:21	14:21	20	Sunny	358	500
27-Oct-22	14:21	15:21	19	Sunny	358	500
27-Oct-22	15:21	16:21	17	Sunny	358	500
		Min.	14	for		
		Max.	52	reporting		
		Average	23	period		

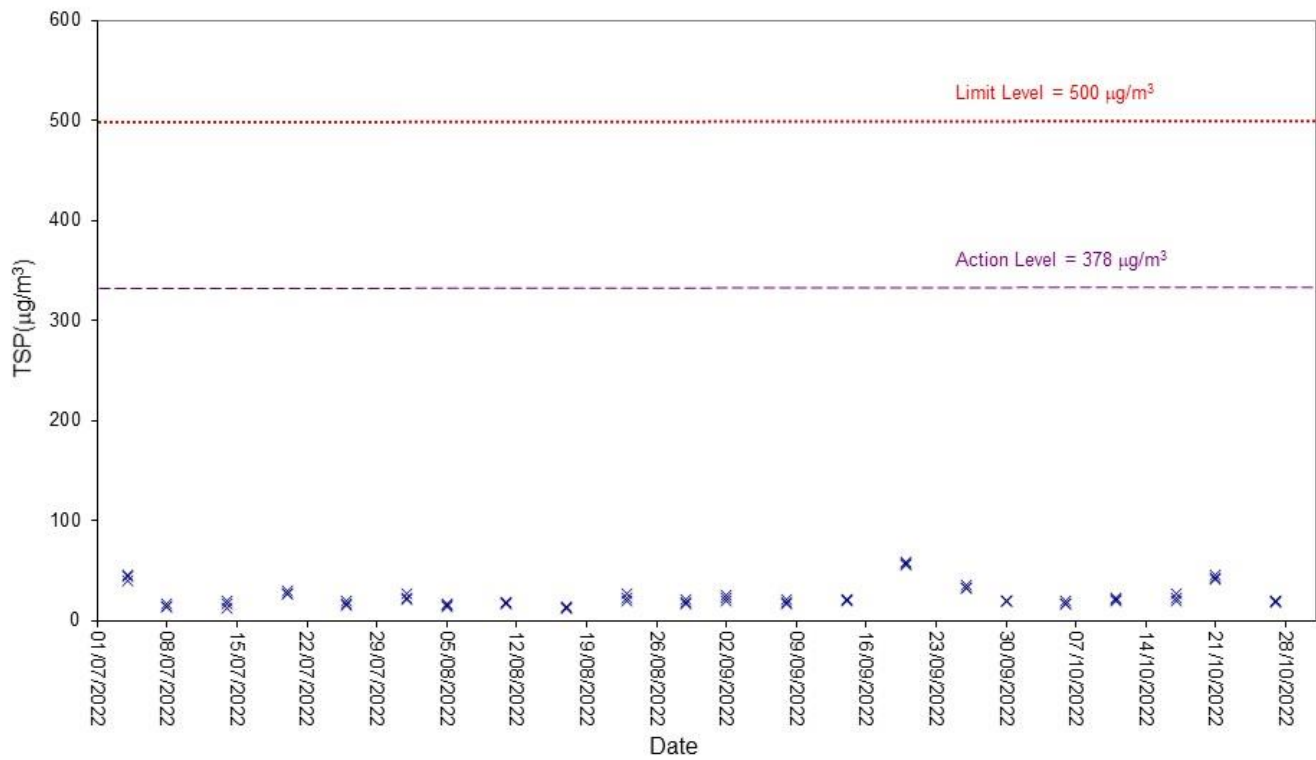
## Air Quality (1-hr TSP)

### Station ASR4

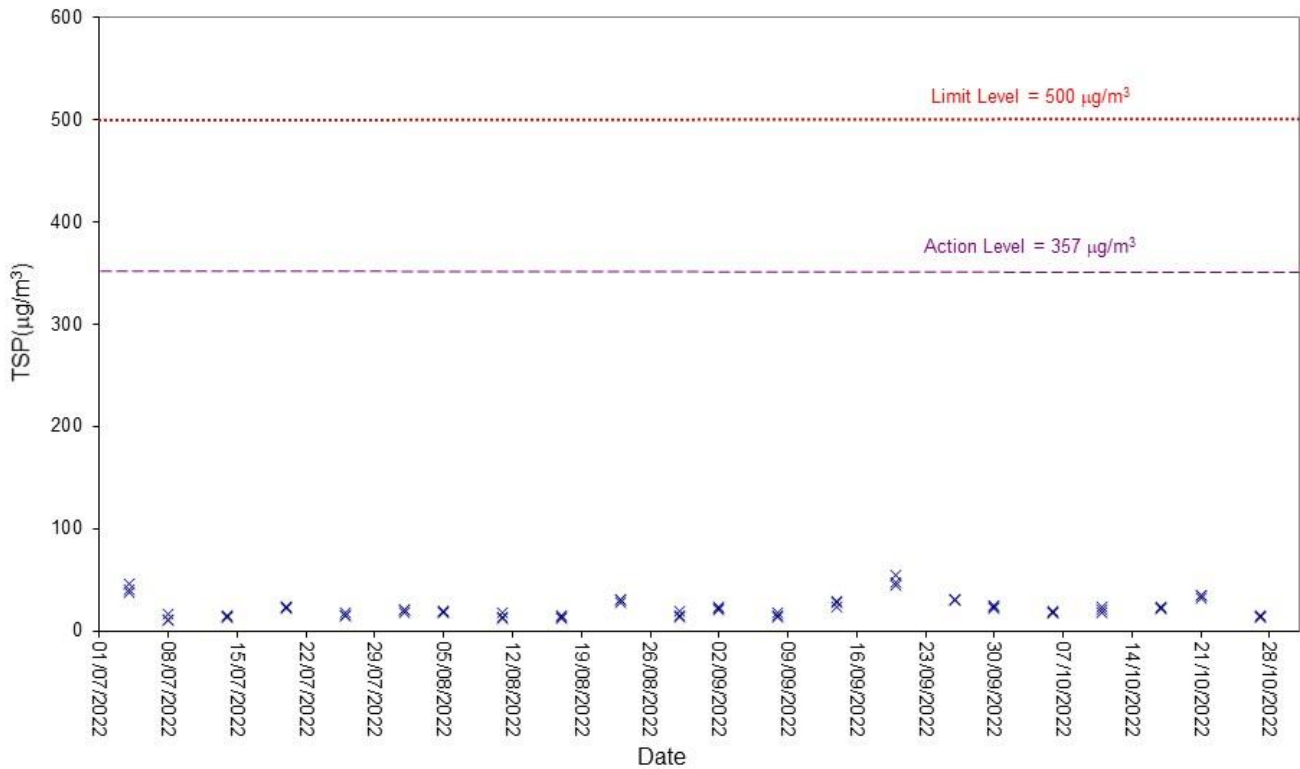
Date	Start Time	Finish Time	TSP Concentration (µg/m <sup>3</sup> )	Weather Condition	Action Level (µg/m <sup>3</sup> )	Limit Level (µg/m <sup>3</sup> )
01-Aug-22	09:04	10:04	19	Sunny	372	500
01-Aug-22	10:04	11:04	18	Sunny	372	500
01-Aug-22	11:04	12:04	18	Sunny	372	500
05-Aug-22	08:48	09:48	21	Sunny	372	500
05-Aug-22	09:48	10:48	20	Sunny	372	500
05-Aug-22	10:48	11:48	20	Sunny	372	500
11-Aug-22	09:02	10:02	12	Cloudy	372	500
11-Aug-22	10:02	11:02	13	Cloudy	372	500
11-Aug-22	11:02	12:02	16	Cloudy	372	500
17-Aug-22	08:34	09:34	13	Sunny	372	500
17-Aug-22	09:34	10:34	11	Sunny	372	500
17-Aug-22	10:34	11:34	15	Sunny	372	500
23-Aug-22	09:00	10:00	24	Sunny	372	500
23-Aug-22	10:00	11:00	28	Sunny	372	500
23-Aug-22	11:00	12:00	26	Sunny	372	500
29-Aug-22	09:02	10:02	20	Sunny	372	500
29-Aug-22	10:02	11:02	18	Sunny	372	500
29-Aug-22	11:02	12:02	19	Sunny	372	500
02-Sep-22	08:29	09:29	18	Sunny	372	500
02-Sep-22	09:29	10:29	19	Sunny	372	500
02-Sep-22	10:29	11:29	21	Sunny	372	500
08-Sep-22	08:41	09:41	16	Sunny	372	500
08-Sep-22	09:41	10:41	13	Sunny	372	500
08-Sep-22	10:41	11:41	17	Sunny	372	500
14-Sep-22	13:12	14:12	26	Sunny	372	500
14-Sep-22	14:12	15:12	24	Sunny	372	500
14-Sep-22	15:12	16:12	28	Sunny	372	500
20-Sep-22	09:17	10:17	54	Sunny	372	500
20-Sep-22	10:17	11:17	51	Sunny	372	500
20-Sep-22	11:17	12:17	56	Sunny	372	500
26-Sep-22	08:40	09:40	37	Sunny	372	500
26-Sep-22	09:40	10:40	38	Sunny	372	500
26-Sep-22	10:40	11:40	36	Sunny	372	500
30-Sep-22	09:01	10:01	27	Rainy	372	500
30-Sep-22	10:01	11:01	24	Rainy	372	500
30-Sep-22	11:01	12:01	21	Rainy	372	500
06-Oct-22	14:22	15:22	18	Sunny	372	500
06-Oct-22	15:22	16:22	17	Sunny	372	500
06-Oct-22	16:22	17:22	18	Sunny	372	500
11-Oct-22	08:42	09:42	17	Sunny	372	500
11-Oct-22	09:42	10:42	16	Sunny	372	500
11-Oct-22	10:42	11:42	16	Sunny	372	500
17-Oct-22	09:28	10:28	24	Sunny	372	500
17-Oct-22	10:28	11:28	20	Sunny	372	500
17-Oct-22	11:28	12:28	19	Sunny	372	500
21-Oct-22	08:20	09:20	43	Sunny	372	500
21-Oct-22	09:20	10:20	52	Sunny	372	500
21-Oct-22	10:20	11:20	41	Sunny	372	500
27-Oct-22	08:33	09:33	18	Sunny	372	500
27-Oct-22	09:33	10:33	15	Sunny	372	500
27-Oct-22	10:33	11:33	14	Sunny	372	500
		Min.	11}	for		
		Max.	56}	reporting		
		Average	24}	period		

## Air Quality (1-hr TSP)

### 1-hour TSP Level at ASR1

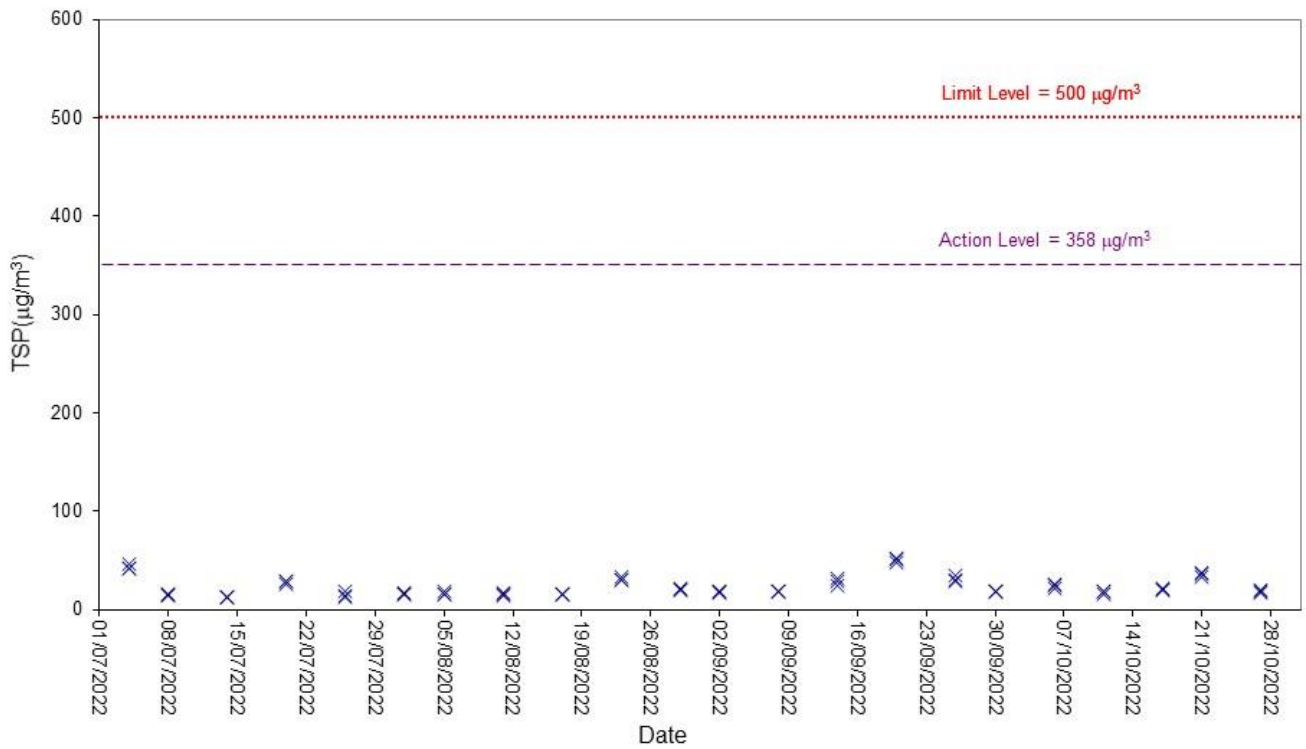


### 1-hour TSP Level at ASR2A

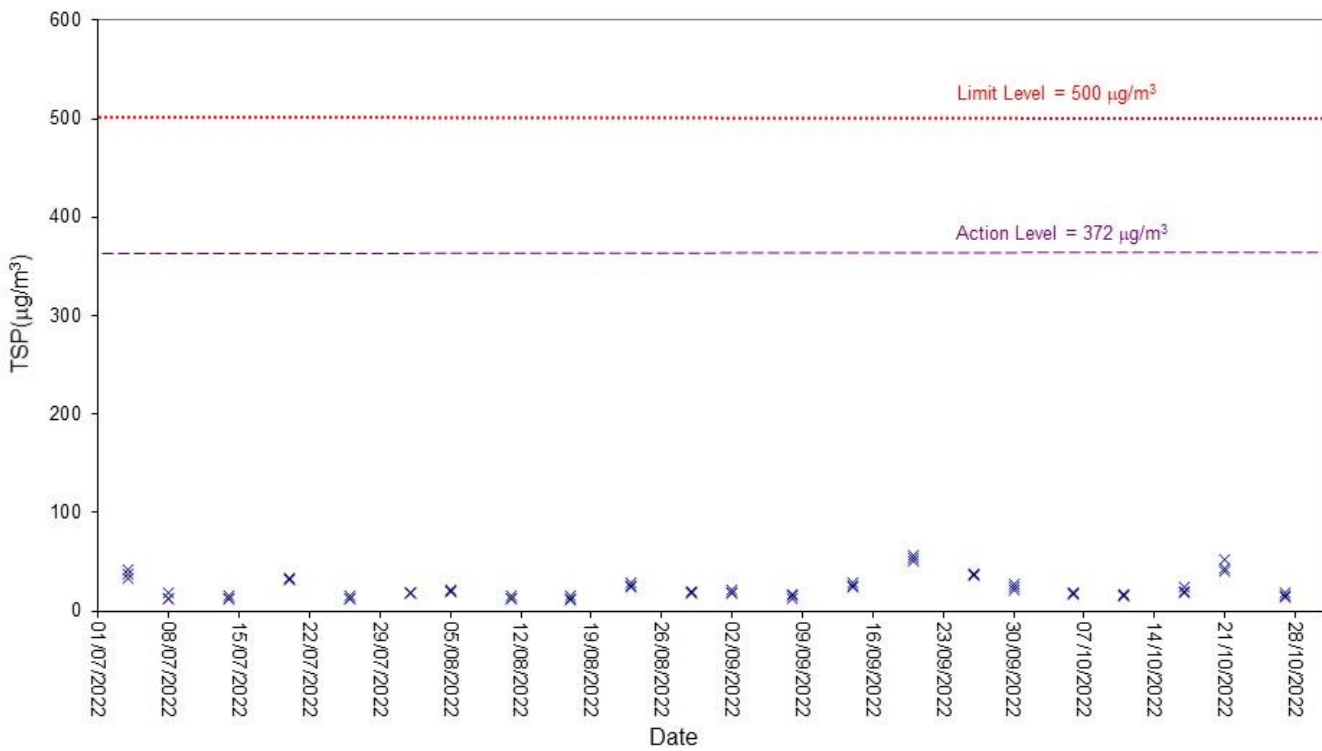


## Air Quality (1-hr TSP)

### 1-hour TSP Level at ASR3



### 1-hour TSP Level at ASR4



## Air Quality (24-hr TSP)

### Station ASR1

Start Date	Start Time	Finish Date	Finish Time	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min)			Conc. (µg/m <sup>3</sup> )	Weather Condition	Action Level (µg/m <sup>3</sup> )	Limit Level (µg/m <sup>3</sup> )
				Initial	Final	Initial	Final		Initial	Final	Average				
01-Aug-22	08:46	02-Aug-22	08:46	2.7544	2.8069	29146.64	29170.64	24.00	1.2600	1.2600	1.2600	29	Sunny	226	260
05-Aug-22	09:08	06-Aug-22	09:08	2.7468	2.7902	29170.64	29194.64	24.00	1.2600	1.2600	1.2600	24	Sunny	226	260
11-Aug-22	08:43	12-Aug-22	08:43	2.7501	2.7899	29194.64	29218.64	24.00	1.2600	1.2600	1.2600	22	Cloudy	226	260
17-Aug-22	08:16	18-Aug-22	08:16	2.7513	2.7915	29218.64	29242.64	24.00	1.2600	1.2600	1.2600	22	Sunny	226	260
23-Aug-22	08:38	24-Aug-22	08:38	2.7470	2.9042	29242.64	29266.64	24.00	1.3300	1.3300	1.3300	82	Sunny	226	260
29-Aug-22	08:44	30-Aug-22	08:44	2.7373	2.8290	29266.64	29290.64	24.00	1.3300	1.3300	1.3300	48	Sunny	226	260
02-Sep-22	08:48	03-Sep-22	08:48	2.7717	2.8610	29290.64	29314.64	24.00	1.3300	1.3300	1.3300	47	Sunny	226	260
08-Sep-22	08:21	09-Sep-22	08:21	2.7726	2.8694	29314.64	29338.64	24.00	1.3300	1.3300	1.3300	51	Sunny	226	260
14-Sep-22	12:55	15-Sep-22	12:55	2.7656	2.9105	29338.64	29362.64	24.00	1.3300	1.3300	1.3300	76	Sunny	226	260
20-Sep-22	09:00	21-Sep-22	09:00	2.7663	2.8883	29362.64	29386.64	24.00	1.3300	1.3300	1.3300	64	Sunny	226	260
26-Sep-22	08:21	27-Sep-22	08:21	2.7512	2.8800	29386.64	29410.64	24.00	1.3300	1.3300	1.3300	67	Sunny	226	260
30-Sep-22	09:16	01-Oct-22	09:16	2.7544	2.8358	29410.64	29434.64	24.00	1.3300	1.3300	1.3300	43	Rainy	226	260
06-Oct-22	14:05	07-Oct-22	14:05	2.7466	2.8165	29434.64	29458.64	24.00	1.3300	1.3300	1.3300	36	Sunny	226	260
11-Oct-22	08:25	12-Oct-22	08:25	2.7829	2.9311	29458.64	29482.64	24.00	1.3300	1.3300	1.3300	77	Sunny	226	260
17-Oct-22	09:10	18-Oct-22	09:10	2.7807	2.9137	29482.64	29506.64	24.00	1.3300	1.3300	1.3300	69	Sunny	226	260
21-Oct-22	08:35	22-Oct-22	08:35	2.7807	2.9013	29506.64	29530.64	24.00	1.3100	1.3100	1.3100	64	Sunny	226	260
27-Oct-22	08:14	28-Oct-22	08:14	2.7717	2.9168	29530.64	29554.64	24.00	1.3100	1.3100	1.3100	77	Sunny	226	260
												Min	22}	for reporting period	
												Max	82}		
												Average	53}		

## Air Quality (24-hr TSP)

### Station ASR2A

Start Date	Start Time	Finish Date	Finish Time	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min)			Conc. (µg/m <sup>3</sup> )	Weather Condition	Action Level (µg/m <sup>3</sup> )	Limit Level (µg/m <sup>3</sup> )
				Initial	Final	Initial	Final		Initial	Final	Average				
01-Aug-22	13:03	02-Aug-22	13:03	2.7500	2.8029	32242.02	32266.02	24.00	1.2700	1.2700	1.2700	29	Sunny	213	260
05-Aug-22	13:33	06-Aug-22	13:33	2.7384	2.7859	32266.02	32290.02	24.00	1.2700	1.2700	1.2700	26	Sunny	213	260
11-Aug-22	13:02	12-Aug-22	13:02	2.7452	2.7862	32290.02	32314.02	24.00	1.2700	1.2700	1.2700	22	Cloudy	213	260
17-Aug-22	12:55	18-Aug-22	12:55	2.7503	2.7914	32314.02	32338.02	24.00	1.2700	1.2700	1.2700	22	Sunny	213	260
23-Aug-22	12:54	24-Aug-22	12:54	2.7492	2.8766	32338.02	32362.02	24.00	1.2200	1.2200	1.2200	73	Sunny	213	260
29-Aug-22	12:59	30-Aug-22	12:59	2.7589	2.8430	32362.02	32386.02	24.00	1.2200	1.2200	1.2200	48	Sunny	213	260
02-Sep-22	13:16	03-Sep-22	13:16	2.7586	2.8407	32386.02	32410.02	24.00	1.2200	1.2200	1.2200	47	Sunny	213	260
08-Sep-22	13:05	09-Sep-22	13:05	2.7650	2.8608	32410.02	32434.02	24.00	1.2200	1.2200	1.2200	55	Sunny	213	260
14-Sep-22	09:23	15-Sep-22	09:23	2.7489	2.8917	32434.02	32458.02	24.00	1.2200	1.2200	1.2200	81	Sunny	213	260
20-Sep-22	13:01	21-Sep-22	13:01	2.7487	2.8637	32458.02	32482.02	24.00	1.2200	1.2200	1.2200	65	Sunny	213	260
26-Sep-22	13:05	27-Sep-22	13:05	2.7497	2.8472	32482.02	32506.02	24.00	1.2200	1.2200	1.2200	55	Sunny	213	260
30-Sep-22	13:10	01-Oct-22	13:10	2.7707	2.8522	32506.02	32530.02	24.00	1.2200	1.2200	1.2200	46	Rainy	213	260
06-Oct-22	09:23	07-Oct-22	09:23	2.8022	2.8670	32530.02	32554.02	24.00	1.2200	1.2200	1.2200	37	Sunny	213	260
11-Oct-22	13:09	12-Oct-22	13:09	2.7786	2.9090	32554.02	32578.02	24.00	1.2200	1.2200	1.2200	74	Sunny	213	260
17-Oct-22	13:04	18-Oct-22	13:04	2.7844	2.9158	32578.02	32602.02	24.00	1.2200	1.2200	1.2200	75	Sunny	213	260
21-Oct-22	13:16	22-Oct-22	13:16	2.7629	2.8649	32602.02	32626.02	24.00	1.2200	1.2200	1.2200	58	Sunny	213	260
27-Oct-22	13:04	28-Oct-22	13:04	2.7708	2.8800	32626.02	32650.02	24.00	1.2200	1.2200	1.2200	62	Sunny	213	260
												Min	22}	for	
												Max	81}	reporting	
												Average	52}	period	



## Air Quality (24-hr TSP)

### Station ASR3

Start Date	Time	Finish Date	Time	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min)			Conc. (µg/m <sup>3</sup> )	Weather Condition	Action Level (µg/m <sup>3</sup> )	Limit Level (µg/m <sup>3</sup> )
				Initial	Final	Initial	Final		Initial	Final	Average				
01-Aug-22	13:21	02-Aug-22	13:21	2.7397	2.7855	23426.92	23450.92	24.00	1.0700	1.0700	1.0700	30	Sunny	205	260
05-Aug-22	13:15	06-Aug-22	13:15	2.7420	2.7810	23450.92	23474.92	24.00	1.0700	1.0700	1.0700	25	Sunny	205	260
11-Aug-22	13:19	12-Aug-22	13:19	2.7630	2.7991	23474.92	23498.92	24.00	1.0700	1.0700	1.0700	23	Cloudy	205	260
17-Aug-22	13:13	18-Aug-22	13:13	2.7620	2.7977	23498.92	23522.92	24.00	1.0700	1.0700	1.0700	23	Sunny	205	260
23-Aug-22	13:05	24-Aug-22	13:05	2.7514	2.8817	23522.92	23546.92	24.00	1.0600	1.0600	1.0600	85	Sunny	205	260
29-Aug-22	13:17	30-Aug-22	13:17	2.7504	2.8254	23546.92	23570.92	24.00	1.0600	1.0600	1.0600	49	Sunny	205	260
02-Sep-22	13:00	03-Sep-22	13:00	2.7834	2.8657	23570.92	23594.92	24.00	1.0600	1.0600	1.0600	54	Sunny	205	260
08-Sep-22	13:24	09-Sep-22	13:24	2.7803	2.8749	23594.92	23618.92	24.00	1.0600	1.0600	1.0600	62	Sunny	205	260
14-Sep-22	09:08	15-Sep-22	09:08	2.7605	2.8986	23618.92	23642.92	24.00	1.0600	1.0600	1.0600	90	Sunny	205	260
20-Sep-22	13:17	21-Sep-22	13:17	2.7588	2.8796	23642.92	23666.92	24.00	1.0600	1.0600	1.0600	79	Sunny	205	260
26-Sep-22	13:23	27-Sep-22	13:23	2.7546	2.8573	23666.92	23690.92	24.00	1.0600	1.0600	1.0600	67	Sunny	205	260
30-Sep-22	13:28	01-Oct-22	13:28	2.7592	2.8326	23690.92	23714.92	24.00	1.0600	1.0600	1.0600	48	Rainy	205	260
06-Oct-22	09:06	07-Oct-22	09:06	2.8050	2.8711	23714.92	23738.92	24.00	1.0600	1.0600	1.0600	43	Sunny	205	260
11-Oct-22	13:29	12-Oct-22	13:29	2.7839	2.9160	23738.92	23762.92	24.00	1.0600	1.0600	1.0600	87	Sunny	205	260
17-Oct-22	13:21	18-Oct-22	13:21	2.7751	2.9024	23762.92	23786.92	24.00	1.0600	1.0600	1.0600	83	Sunny	205	260
21-Oct-22	13:00	22-Oct-22	13:00	2.7734	2.8855	23786.92	23810.92	24.00	1.0300	1.0300	1.0300	76	Sunny	205	260
27-Oct-22	13:20	28-Oct-22	13:20	2.7704	2.8996	23810.92	23834.92	24.00	1.0300	1.0300	1.0300	87	Sunny	205	260
												Min	23}	for	
												Max	90}	reporting	
												Average	60}	period	

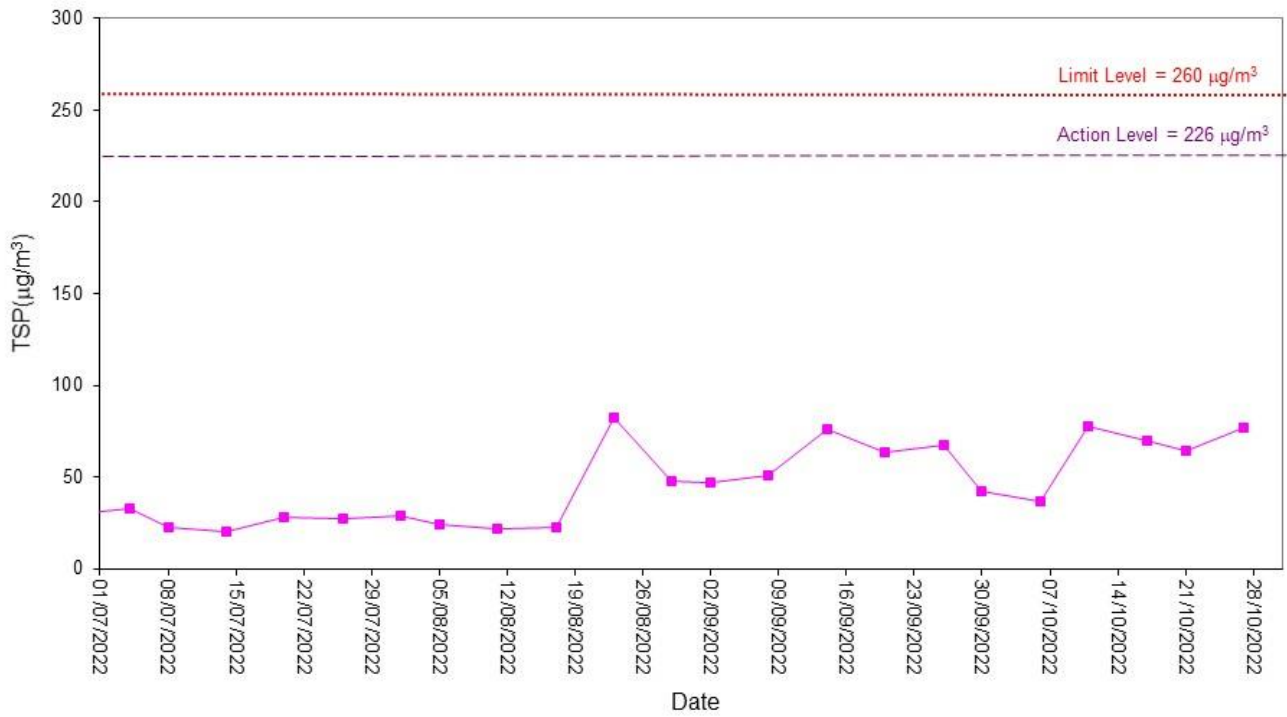
## Air Quality (24-hr TSP)

### Station ASR4

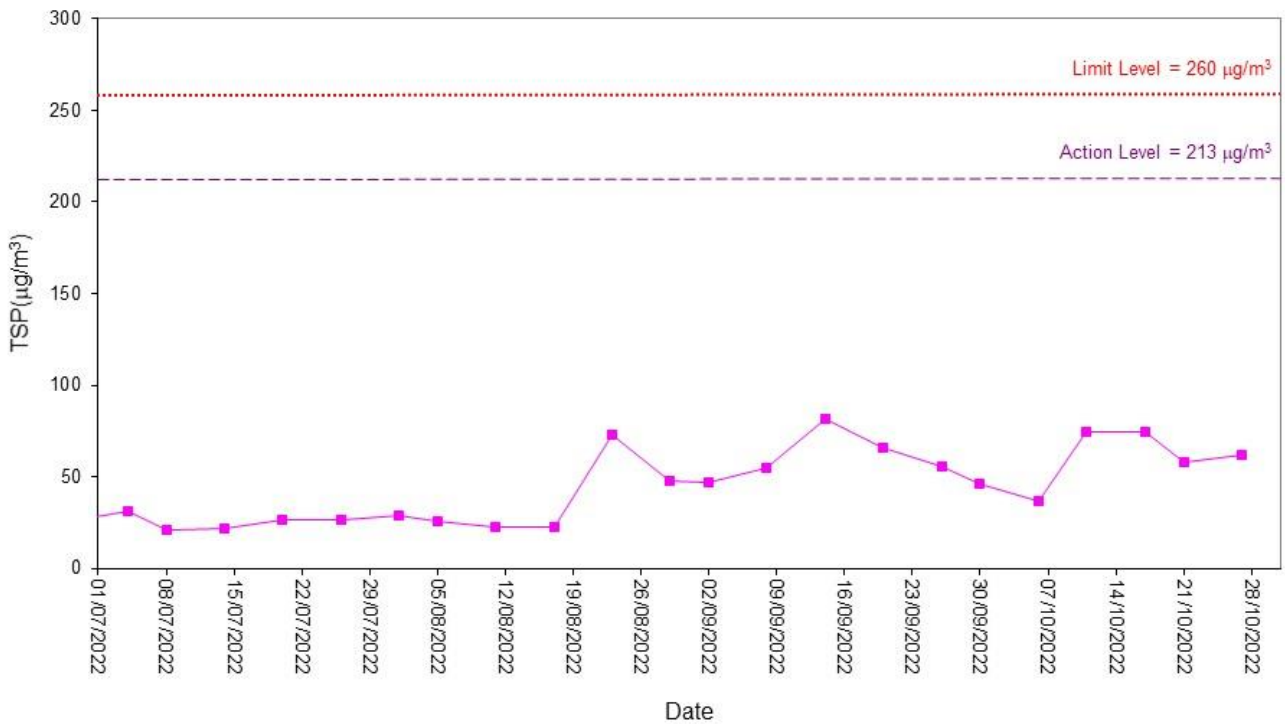
Start Date	Start Time	Finish Date	Finish Time	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min)			Conc. (µg/m <sup>3</sup> )	Weather Condition	Action Level (µg/m <sup>3</sup> )	Limit Level (µg/m <sup>3</sup> )
				Initial	Final	Initial	Final		Initial	Final	Average				
01-Aug-22	09:03	02-Aug-22	09:03	2.7561	2.8043	31024.54	31048.54	24.00	1.3300	1.3300	1.3300	25	Sunny	237	260
05-Aug-22	08:47	06-Aug-22	08:47	2.7471	2.7905	31048.54	31072.54	24.00	1.3300	1.3300	1.3300	23	Sunny	237	260
11-Aug-22	09:01	12-Aug-22	09:01	2.7520	2.7913	31072.54	31096.54	24.00	1.3300	1.3300	1.3300	21	Cloudy	237	260
17-Aug-22	08:33	18-Aug-22	08:33	2.7452	2.7878	31096.54	31120.54	24.00	1.3300	1.3300	1.3300	22	Sunny	237	260
23-Aug-22	08:58	24-Aug-22	08:58	2.7511	2.9110	31120.54	31144.54	24.00	1.3400	1.3400	1.3400	83	Sunny	237	260
29-Aug-22	09:01	30-Aug-22	09:01	2.7322	2.8225	31144.54	31168.54	24.00	1.3400	1.3400	1.3400	47	Sunny	237	260
02-Sep-22	08:27	03-Sep-22	08:27	2.7827	2.8670	31168.54	31192.54	24.00	1.3400	1.3400	1.3400	44	Sunny	237	260
08-Sep-22	08:40	09-Sep-22	08:40	2.7751	2.8924	31192.54	31216.54	24.00	1.3400	1.3400	1.3400	61	Sunny	237	260
14-Sep-22	13:11	15-Sep-22	13:11	2.7662	2.9220	31216.54	31240.54	24.00	1.3400	1.3400	1.3400	81	Sunny	237	260
20-Sep-22	09:16	21-Sep-22	09:16	2.7581	2.9176	31240.54	31264.54	24.00	1.3400	1.3400	1.3400	83	Sunny	237	260
26-Sep-22	08:39	27-Sep-22	08:39	2.7420	2.8680	31264.54	31288.54	24.00	1.3400	1.3400	1.3400	65	Sunny	237	260
30-Sep-22	09:00	01-Oct-22	09:00	2.7518	2.8396	31288.54	31312.54	24.00	1.3400	1.3400	1.3400	46	Rainy	237	260
06-Oct-22	14:21	07-Oct-22	14:21	2.7432	2.8207	31312.54	31336.54	24.00	1.3400	1.3400	1.3400	40	Sunny	237	260
11-Oct-22	08:41	12-Oct-22	08:41	2.7947	2.9467	31336.54	31360.54	24.00	1.3400	1.3400	1.3400	79	Sunny	237	260
17-Oct-22	09:27	18-Oct-22	09:27	2.7776	2.9055	31360.54	31384.54	24.00	1.3400	1.3400	1.3400	66	Sunny	237	260
21-Oct-22	08:18	22-Oct-22	08:18	2.7697	2.8916	31384.54	31408.54	24.00	1.3200	1.3200	1.3200	64	Sunny	237	260
27-Oct-22	08:32	28-Oct-22	08:32	2.7716	2.9030	31408.54	31432.54	24.00	1.3200	1.3200	1.3200	69	Sunny	237	260
												Min	21}	for	
												Max	83}	reporting	
												Average	54}	period	

## Air Quality (24-hr TSP)

### 24-hour TSP Level at ASR1

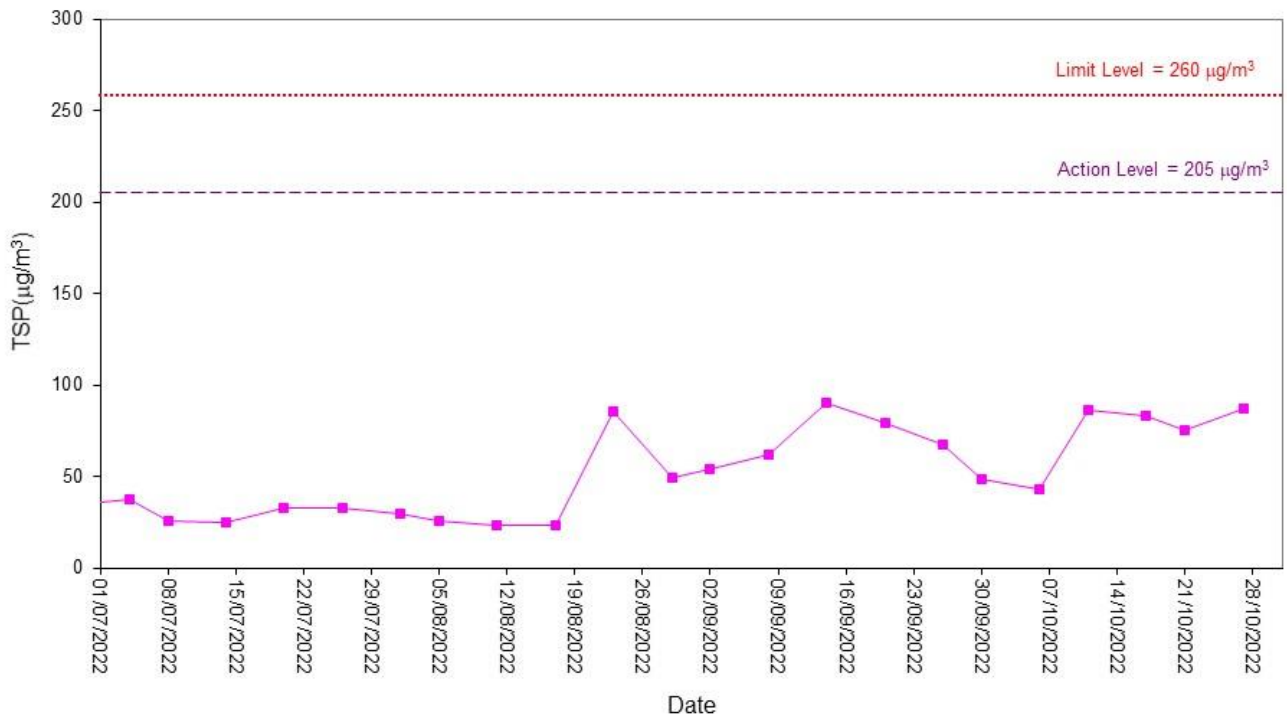


### 24-hour TSP Level at ASR2A

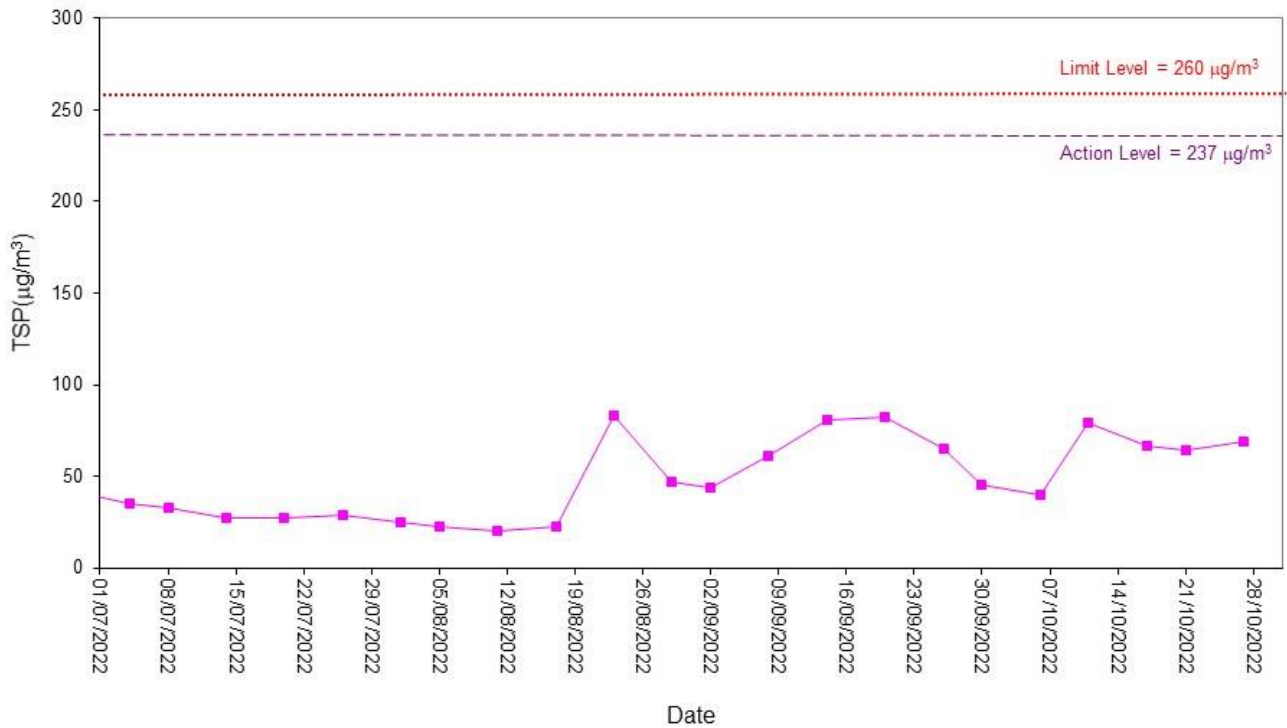


## Air Quality (24-hr TSP)

### 24-hour TSP Level at ASR3



### 24-hour TSP Level at ASR4



## Noise

### Station NSR1

Date	Start Time	Noise Level for 30 min, dB(A)			Wind Speed (m/s)	Weather Condition	Limit Level, dB(A)
		L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>			
01-Aug-22	11:27	44	45	40	0.2	Sunny	75
11-Aug-22	11:26	50	51	43	0.4	Cloudy	75
17-Aug-22	11:05	48	51	41	0.2	Sunny	75
23-Aug-22	11:27	50	51	42	0.2	Sunny	75
29-Aug-22	11:28	50	51	43	0.2	Sunny	75
08-Sep-22	11:20	44	45	43	0.2	Sunny	75
14-Sep-22	15:45	49	52	38	0.2	Sunny	75
20-Sep-22	14:20	48	50	43	0.2	Sunny	75
26-Sep-22	11:18	49	51	38	0.4	Sunny	75
06-Oct-22	16:49	43	45	41	0.7	Sunny	75
11-Oct-22	11:14	46	47	40	0.5	Sunny	75
17-Oct-22	14:18	50	52	41	0.4	Sunny	75
27-Oct-22	11:08	49	51	40	0.2	Sunny	75

### Station NSR3

Date	Start Time	Noise Level for 30 min, dB(A)			Wind Speed (m/s)	Weather Condition	Limit Level, dB(A)
		L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>			
01-Aug-22	10:45	41	42	38	0.3	Sunny	75
11-Aug-22	10:44	46	50	42	0.4	Cloudy	75
17-Aug-22	10:13	45	46	41	0.3	Sunny	75
23-Aug-22	10:44	41	43	38	0.2	Sunny	75
29-Aug-22	10:43	42	44	39	0.2	Sunny	75
08-Sep-22	10:35	40	42	37	0.3	Sunny	75
14-Sep-22	14:56	43	44	37	0.3	Sunny	75
20-Sep-22	13:27	47	49	41	0.4	Sunny	75
26-Sep-22	10:30	42	44	37	0.3	Sunny	75
06-Oct-22	16:04	44	45	41	0.5	Sunny	75
11-Oct-22	10:22	42	43	39	0.4	Sunny	75
17-Oct-22	13:30	45	47	41	0.5	Sunny	75
27-Oct-22	10:17	45	45	41	0.3	Sunny	75

## Noise

### Station NSR5

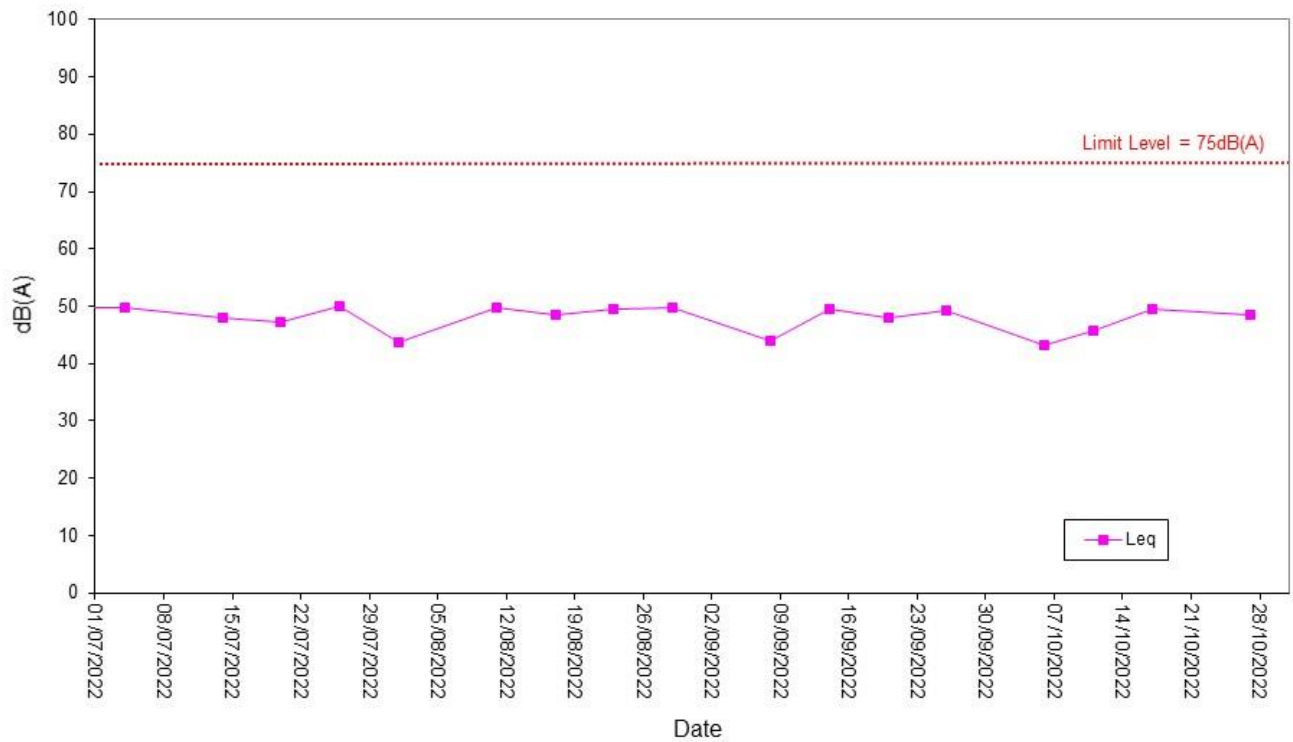
Date	Start Time	Noise Level for 30 min, dB(A)			Wind Speed (m/s)	Weather Condition	Limit Level, dB(A)
		L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>			
01-Aug-22	09:58	48	51	41	0.2	Sunny	75
11-Aug-22	09:55	48	50	45	0.4	Cloudy	75
17-Aug-22	09:27	49	51	44	0.4	Sunny	75
23-Aug-22	09:54	51	54	41	0.2	Sunny	75
29-Aug-22	10:00	50	54	43	0.2	Sunny	75
08-Sep-22	09:44	47	49	42	0.2	Sunny	75
14-Sep-22	14:05	45	46	41	0.2	Sunny	75
20-Sep-22	11:08	47	49	44	0.3	Sunny	75
26-Sep-22	09:37	48	50	43	0.2	Sunny	75
06-Oct-22	15:15	50	52	45	0.6	Sunny	75
11-Oct-22	09:36	49	50	43	0.4	Sunny	75
17-Oct-22	11:12	49	51	45	0.5	Sunny	75
27-Oct-22	09:29	48	50	45	0.4	Sunny	75

### Station NSR7

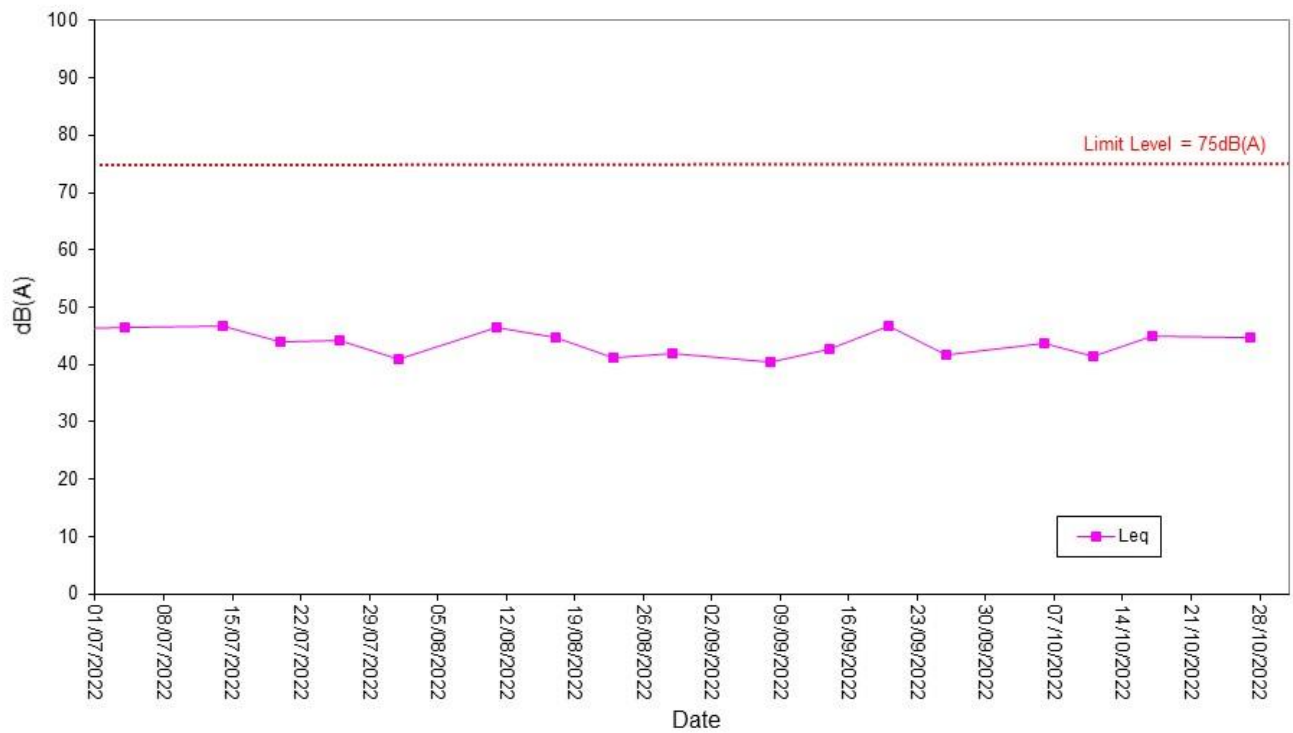
Date	Start Time	Noise Level for 30 min, dB(A)			Wind Speed (m/s)	Weather Condition	Limit Level, dB(A)
		L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>			
01-Aug-22	09:08	66	68	63	0.2	Sunny	75
11-Aug-22	09:06	68	69	65	0.5	Cloudy	75
17-Aug-22	08:39	67	68	64	0.3	Sunny	75
23-Aug-22	09:05	66	68	63	0.3	Sunny	75
29-Aug-22	09:07	67	68	63	0.2	Sunny	75
08-Sep-22	08:46	68	70	64	0.2	Sunny	75
14-Sep-22	13:17	63	65	60	0.2	Sunny	75
20-Sep-22	10:19	65	67	62	0.3	Sunny	75
26-Sep-22	08:47	66	68	64	0.3	Sunny	75
06-Oct-22	14:28	66	68	63	0.5	Sunny	75
11-Oct-22	08:46	65	67	62	0.5	Sunny	75
17-Oct-22	10:25	66	67	63	0.4	Sunny	75
27-Oct-22	08:38	66	68	63	0.3	Sunny	75

# Noise

### Noise Level for 30 min, dB(A), at NSR1

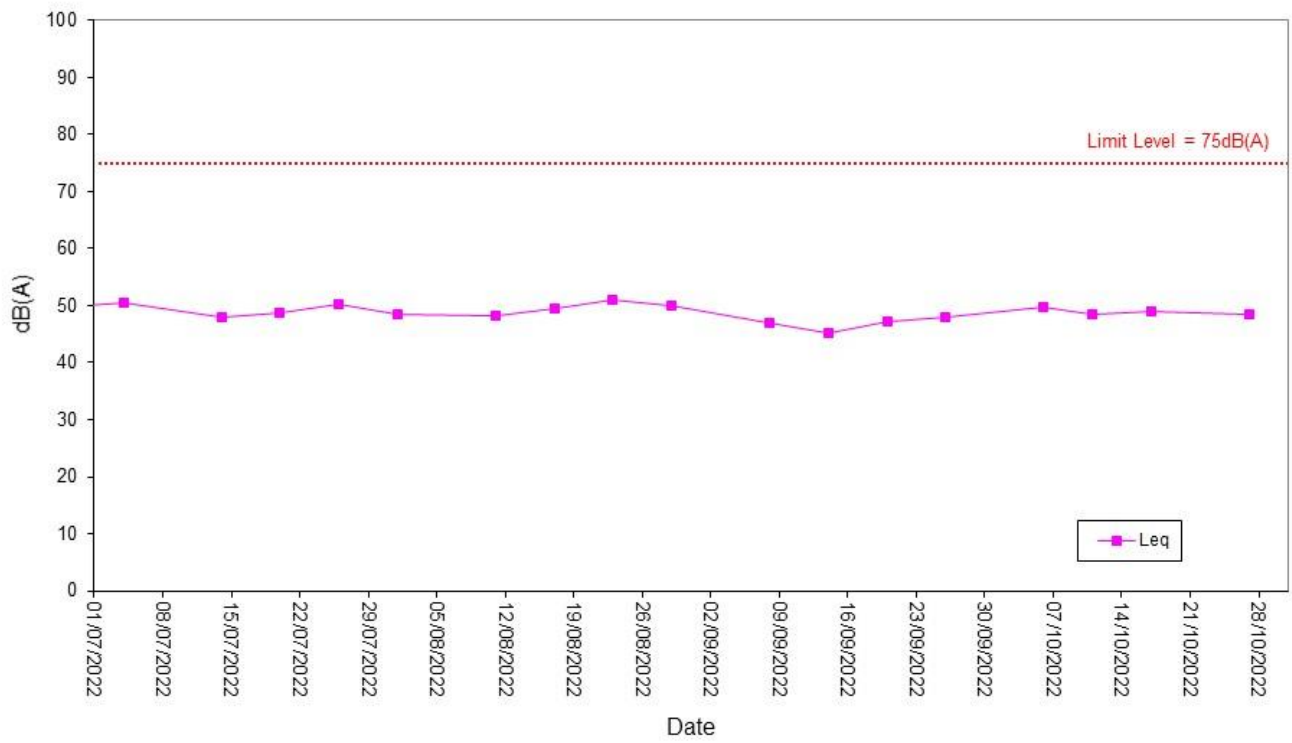


### Noise Level for 30 min, dB(A), at NSR3

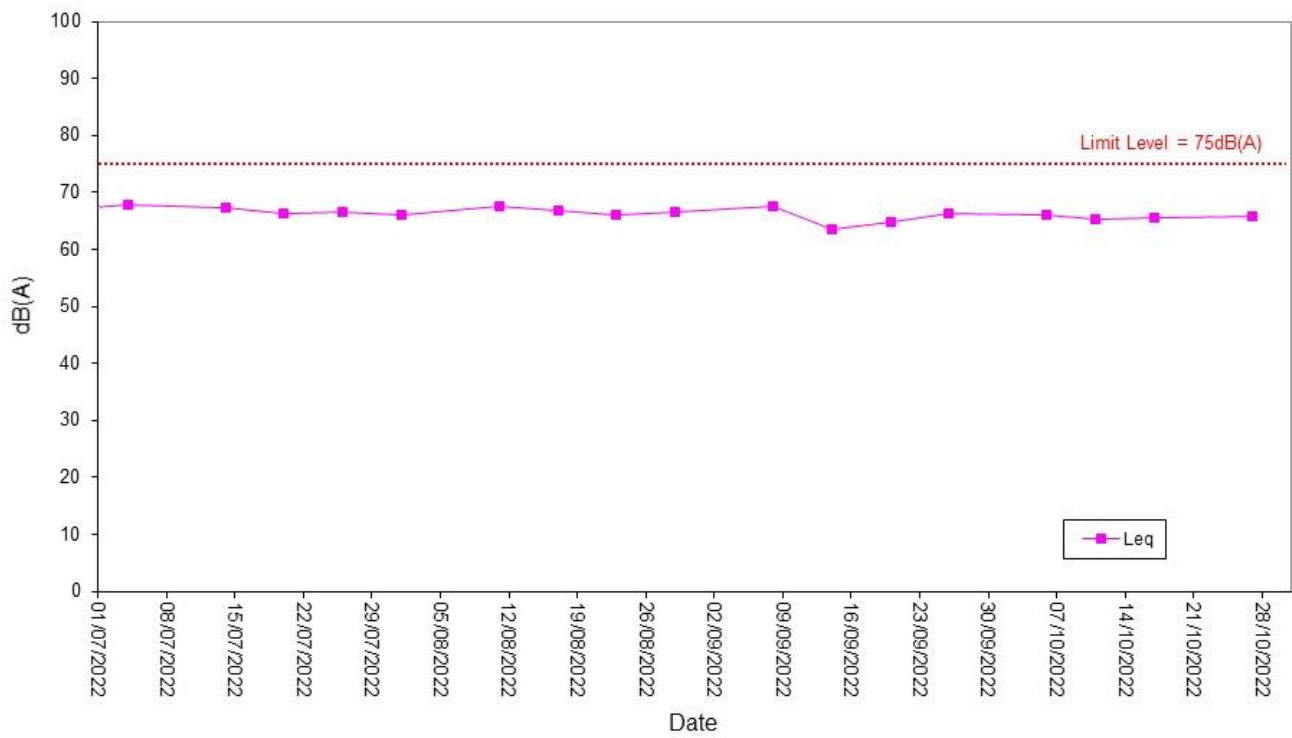


# Noise

### Noise Level for 30 min, dB(A), at NSR5



### Noise Level for 30 min, dB(A), at NSR7





## Water Quality

### Monitoring Location MP3

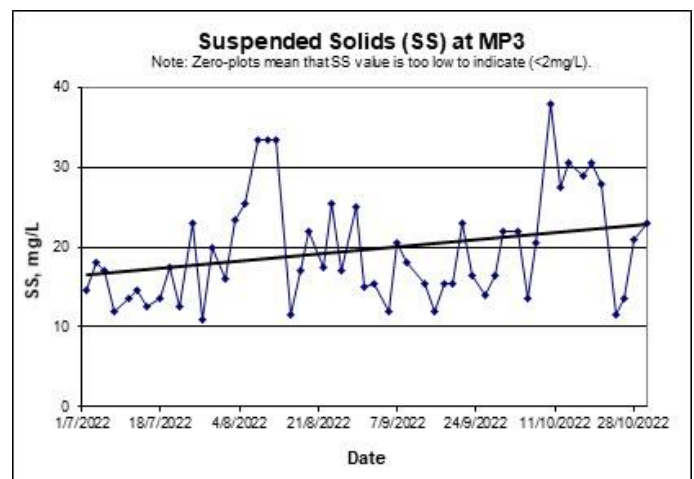
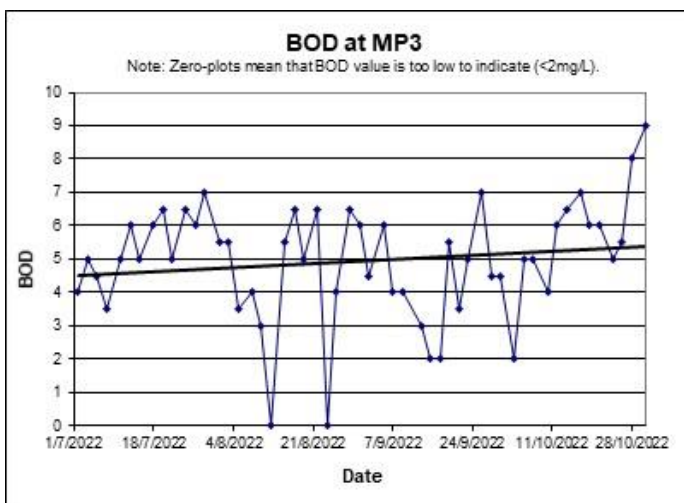
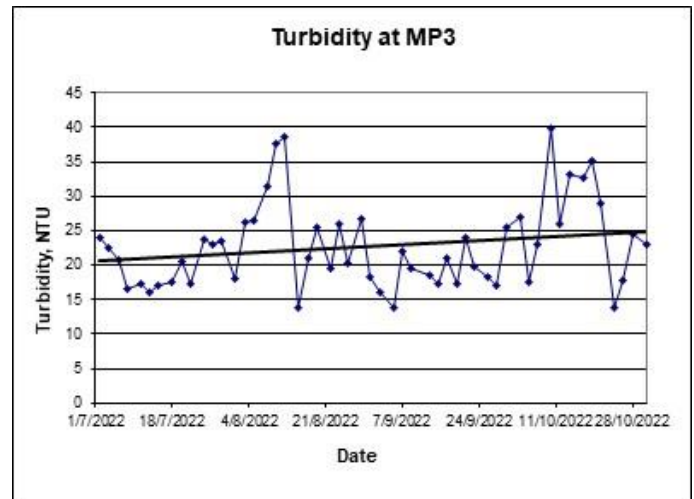
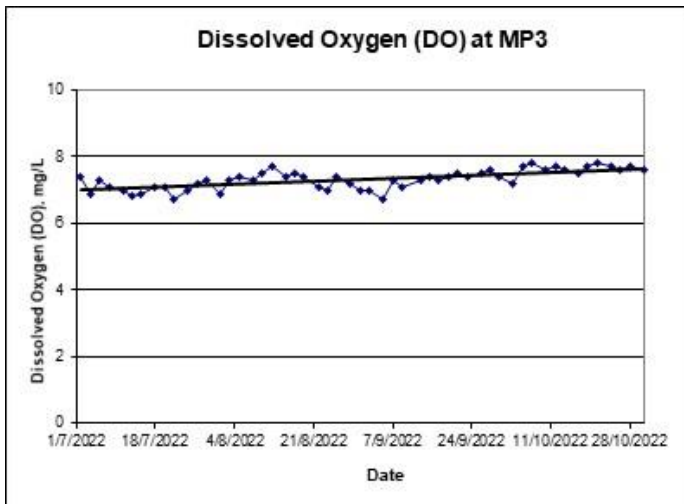
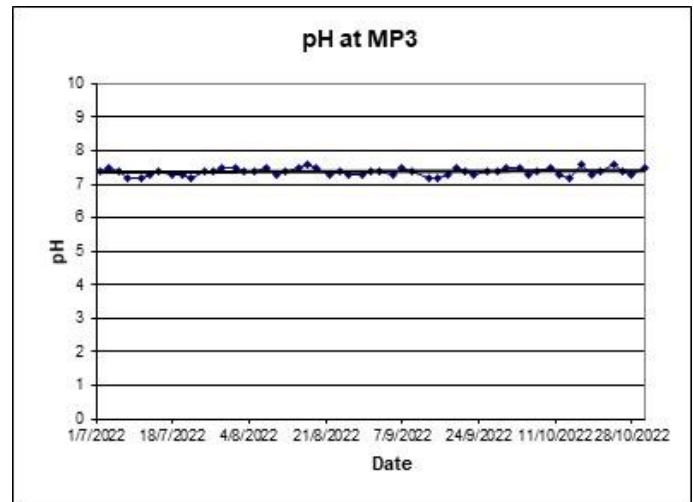
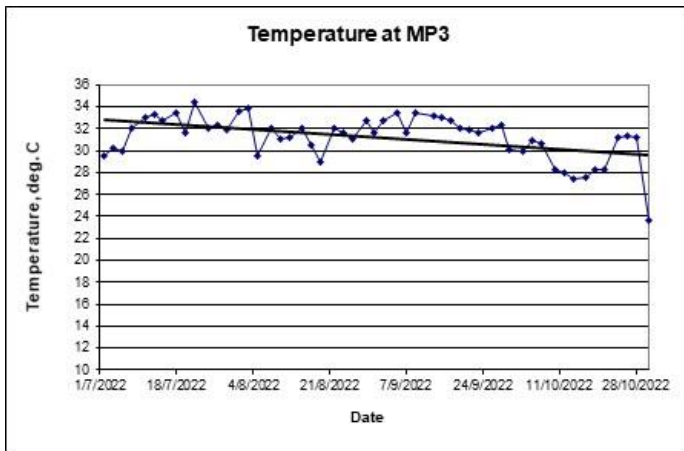
Monitoring Date	Temp (°C)	pH	Dissolved Oxygen (mg/L)	DO (%)	Turbidity (NT)	BOD (mg/L)	Suspended Solids (mg/L)
<b>MP3</b>							
01/08/2022	33.6	7.5	6.9	96.1	18.1	6	16
03/08/2022	33.9	7.4	7.3	101.1	26.4	6	24
05/08/2022	29.5	7.4	7.4	98.0	26.5	4	26
08/08/2022	32.0	7.5	7.3	99.6	31.6	4	34
10/08/2022	31.1	7.3	7.5	100.9	37.6	3	34
12/08/2022	31.2	7.4	7.7	104.1	38.6	<2	34
15/08/2022	32.0	7.5	7.4	100.5	14.0	6	12
17/08/2022	30.5	<b>7.6</b>	7.5	99.8	20.9	7	17
19/08/2022	29.0	7.5	7.4	96.0	25.5	5	22
22/08/2022	32.1	7.3	7.1	97.8	19.5	7	18
24/08/2022	31.7	7.4	7.0	95.0	26.1	<2	26
26/08/2022	31.1	7.3	7.4	100.5	20.2	4	17
29/08/2022	32.8	7.3	7.2	100.6	26.7	7	25
31/08/2022	31.7	7.4	7.0	94.8	18.4	6	15
02/09/2022	32.8	7.4	7.0	97.9	16.1	5	16
05/09/2022	33.4	7.3	<b>6.7</b>	98.7	14.0	6	12
07/09/2022	31.7	7.5	7.3	97.9	22.0	4	21
09/09/2022	33.5	7.4	7.1	103.3	19.7	4	18
13/09/2022	33.2	7.2	7.3	102.0	18.7	3	16
15/09/2022	33.0	7.2	7.4	103.4	17.3	2	12
17/09/2022	32.7	7.3	7.3	102.4	20.9	2	16
19/09/2022	32.0	7.5	7.4	101.3	17.3	6	16
21/09/2022	31.9	7.4	7.5	103.2	24.1	4	23
23/09/2022	31.7	7.3	7.4	100.5	19.8	5	17
26/09/2022	32.1	7.4	7.5	103.0	18.2	7	14
28/09/2022	32.3	7.4	7.6	105.2	17.2	5	17
30/09/2022	30.1	7.5	7.4	98.5	25.5	5	22
03/10/2022	30.0	7.5	7.2	95.3	27.0	2	22
05/10/2022	30.9	7.3	7.7	102.8	17.6	5	14
07/10/2022	30.7	7.4	7.8	103.9	23.1	5	21
10/10/2022	28.3	7.5	7.6	98.3	39.8	4	38
12/10/2022	28.0	7.3	7.7	99.0	25.9	6	28
14/10/2022	27.4	7.2	7.6	97.0	33.3	7	31
17/10/2022	27.5	<b>7.6</b>	7.5	95.4	32.8	7	29
19/10/2022	28.3	7.3	7.7	99.6	35.2	6	31
21/10/2022	28.3	7.4	7.8	100.0	29.0	6	28
24/10/2022	31.2	<b>7.6</b>	7.7	104.2	14.0	5	12
26/10/2022	31.3	7.4	7.6	102.9	17.8	6	14
28/10/2022	31.2	7.3	7.7	104.1	24.4	8	21
31/10/2022	23.7	7.5	7.6	95.0	23.1	9	23
Average	31.0	7.4	7.4	100.0	23.6	5	21
Action Level	-	<5.5 or >7.5	<6.85	-	>64	-	>65
Limit Level	-	<4.0 or >8.0	<6.65	-	>67	-	>66

Notes:

- (1) <2: Value is too low to indicate (<2mg/L).
- (2) For the Limit Level of DO, 1-percentile of baseline data is adopted as it is greater than 2mg/L. (Refer to [Baseline Monitoring Report](#))
- (3) Values **Bold** indicate Action Level exceedance.
- (4) Values **Underlined and Bold** indicate Limit Level exceedance.

# Water Quality

## Monitoring Location MP3



## Water Quality

### Monitoring Location MP4

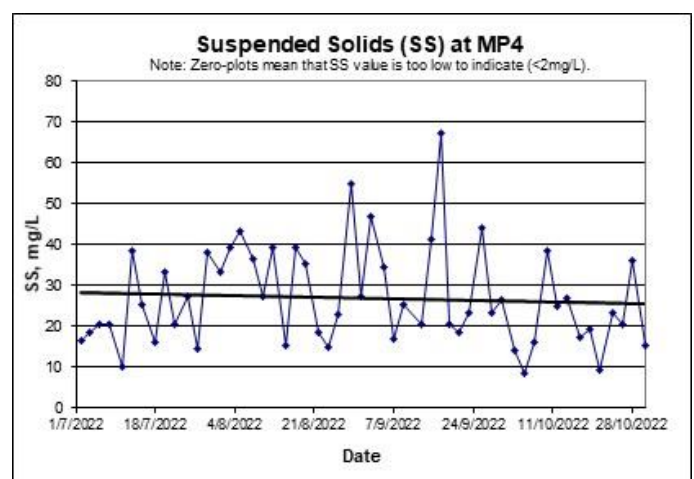
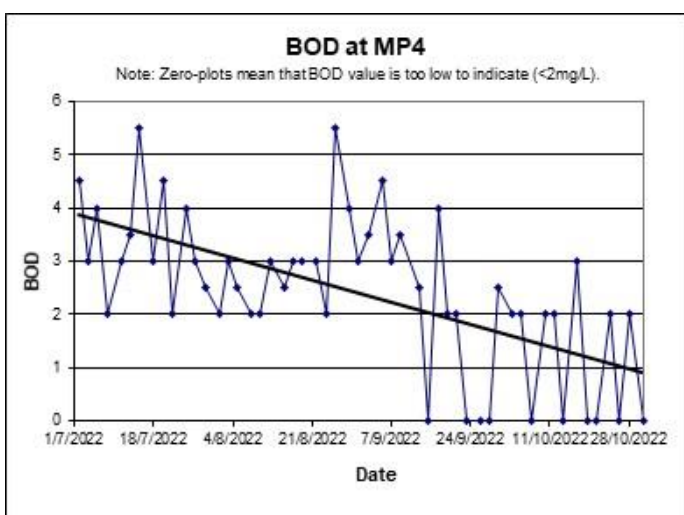
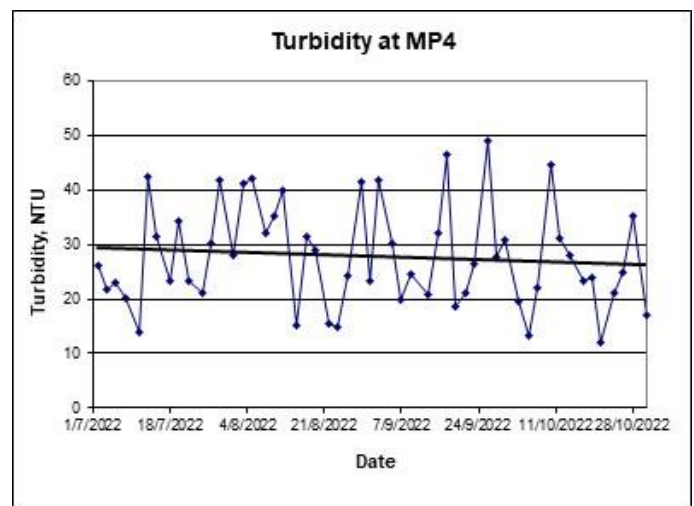
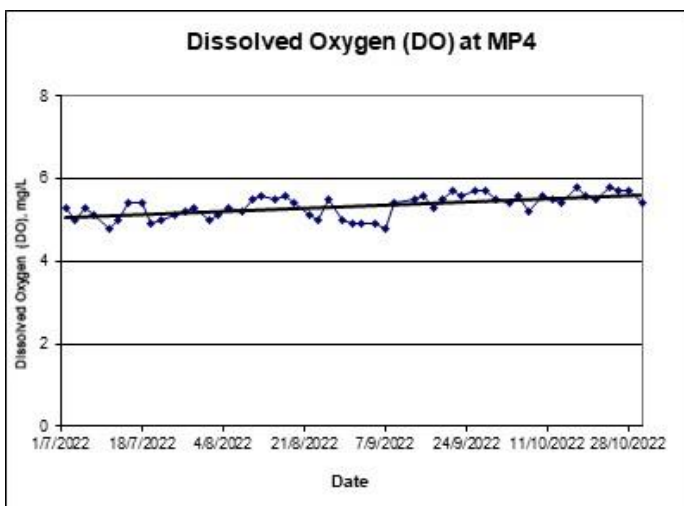
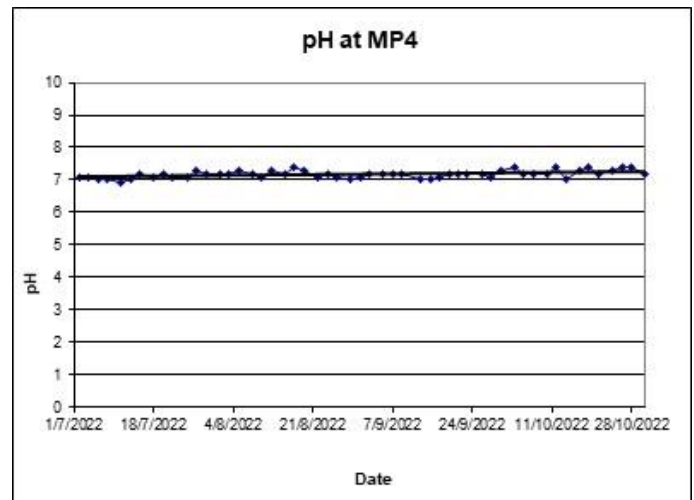
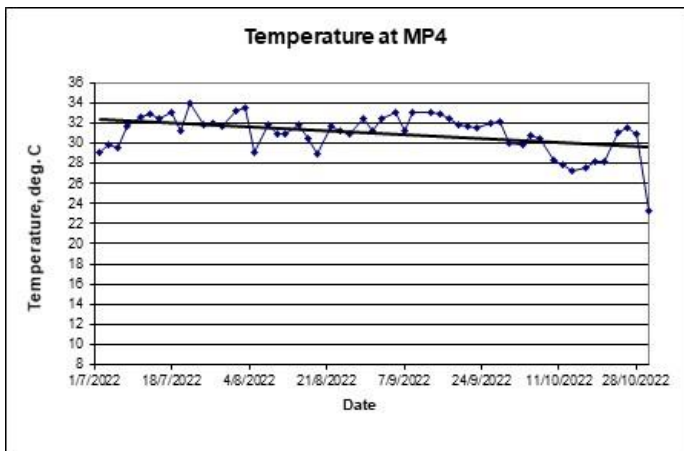
Monitoring Date	Temp (°C)	pH	Dissolved Oxygen (mg/L)	DO (%)	Turbidity (NT)	BOD (mg/L)	Suspended Solids (mg/L)
<b>MP4</b>							
01/08/2022	33.2	7.2	5.0	60.0	28.1	2	34
03/08/2022	33.5	7.2	5.1	62.1	41.2	3	40
05/08/2022	29.1	7.3	5.3	56.3	42.1	3	44
08/08/2022	31.9	7.2	5.2	71.3	32.1	2	37
10/08/2022	30.9	7.1	5.5	74.0	35.4	2	28
12/08/2022	31.0	7.3	5.6	75.3	40.0	3	40
15/08/2022	31.8	7.2	5.5	75.3	15.1	3	16
17/08/2022	30.4	7.4	5.6	74.2	31.4	3	40
19/08/2022	28.9	7.3	5.4	69.8	29.0	3	36
22/08/2022	31.7	7.1	5.1	69.9	15.5	3	19
24/08/2022	31.3	7.2	5.0	68.4	14.8	2	15
26/08/2022	31.0	7.1	5.5	74.1	24.3	6	23
29/08/2022	32.4	7.0	5.0	67.1	41.5	4	<b>55</b>
31/08/2022	31.3	7.1	4.9	58.1	23.3	3	28
02/09/2022	32.4	7.2	4.9	65.6	41.8	4	47
05/09/2022	33.0	7.2	4.9	59.9	30.1	5	35
07/09/2022	31.3	7.2	4.8	61.1	19.8	3	17
09/09/2022	33.1	7.2	5.4	71.7	24.6	4	26
13/09/2022	33.0	7.0	5.5	76.5	21.0	3	21
15/09/2022	32.9	7.0	5.6	78.0	32.1	<2	42
17/09/2022	32.5	7.1	5.3	73.3	46.5	4	<b>68</b>
19/09/2022	31.9	7.2	5.5	75.8	18.6	2	21
21/09/2022	31.7	7.2	5.7	76.9	21.1	2	19
23/09/2022	31.5	7.2	5.6	75.8	26.5	<2	24
26/09/2022	32.0	7.2	5.7	77.8	49.1	<2	44
28/09/2022	32.2	7.1	5.7	79.3	27.8	<2	24
30/09/2022	30.0	7.3	5.5	73.7	31.0	3	27
03/10/2022	29.9	7.4	5.4	72.1	19.5	2	14
05/10/2022	30.7	7.2	5.6	75.3	13.3	2	9
07/10/2022	30.5	7.2	5.2	70.0	22.1	<2	16
10/10/2022	28.3	7.2	5.6	72.6	44.5	2	39
12/10/2022	27.9	7.4	5.5	70.0	31.1	2	25
14/10/2022	27.3	7.0	5.4	69.7	28.2	<2	27
17/10/2022	27.5	7.3	5.8	74.3	23.4	3	18
19/10/2022	28.2	7.4	5.6	71.9	24.1	<2	20
21/10/2022	28.1	7.2	5.5	70.3	11.9	<2	10
24/10/2022	31.1	7.3	5.8	78.4	21.2	2	24
26/10/2022	31.5	7.4	5.7	78.3	25.0	<2	21
28/10/2022	30.9	7.4	5.7	77.4	35.3	2	36
31/10/2022	23.3	7.2	5.4	50.9	17.1	<2	16
Average	30.8	7.2	5.4	70.8	28.0	3	28
Action Level	-	<5.5 or >7.5	<3.91	-	>60	-	>50
Limit Level	-	<4.0 or >8.0	<3.82	-	>64	-	>53

Notes:

- (1) <2: Value is too low to indicate (<2mg/L).
- (2) For the Limit Level of DO, 1-percentile of baseline data is adopted as it is greater than 2mg/L. (Refer to [Baseline Monitoring Report](#))
- (3) Values **Bold** indicate Action Level exceedance.
- (4) Values **Underlined and Bold** indicate Limit Level exceedance

# Water Quality

## Monitoring Location MP4



## Water Quality

### Monitoring Location MP5

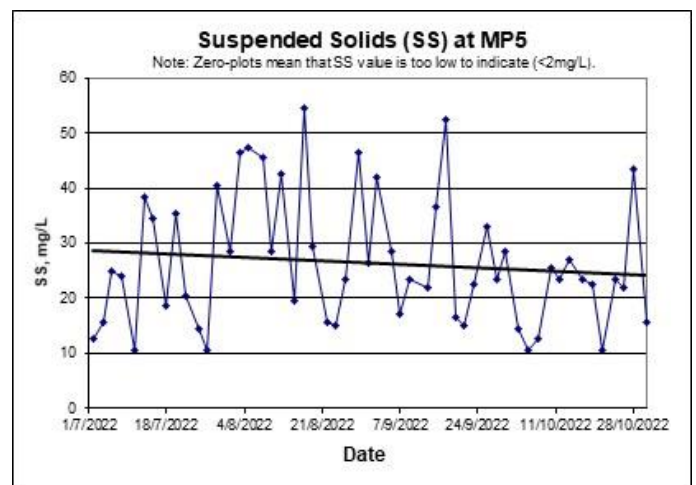
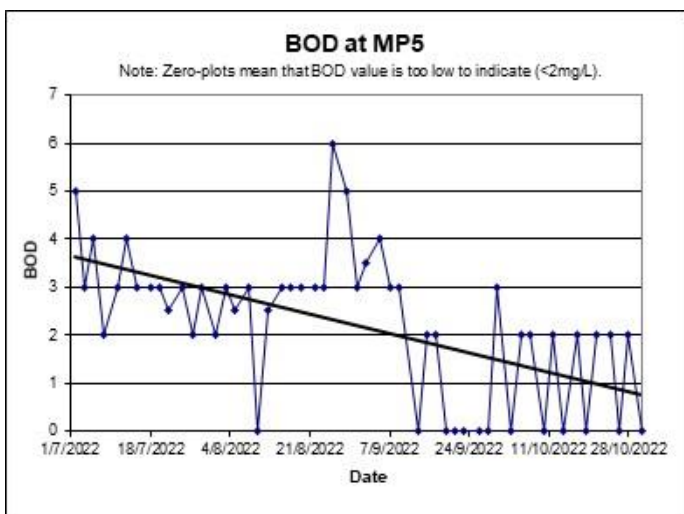
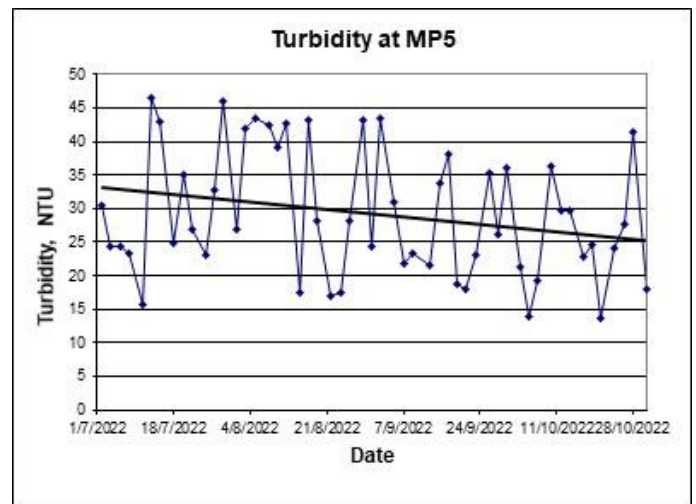
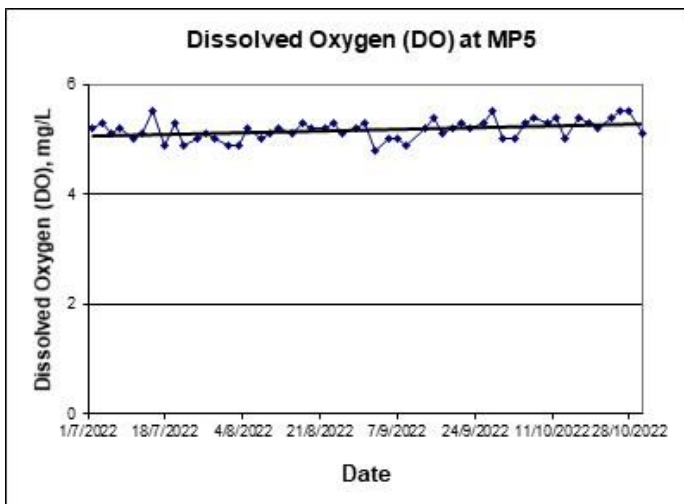
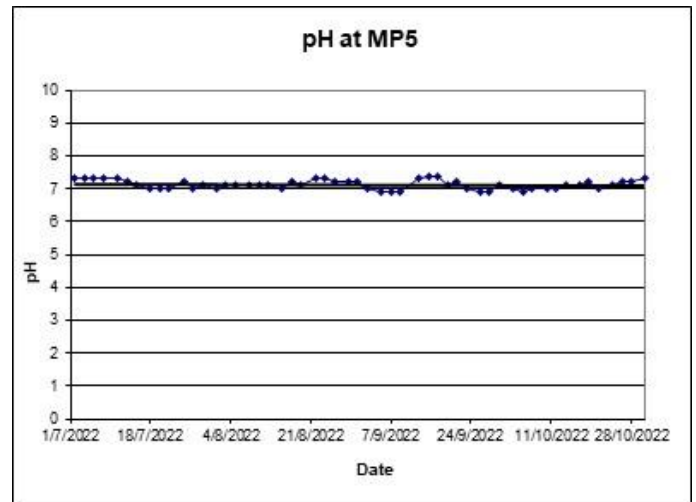
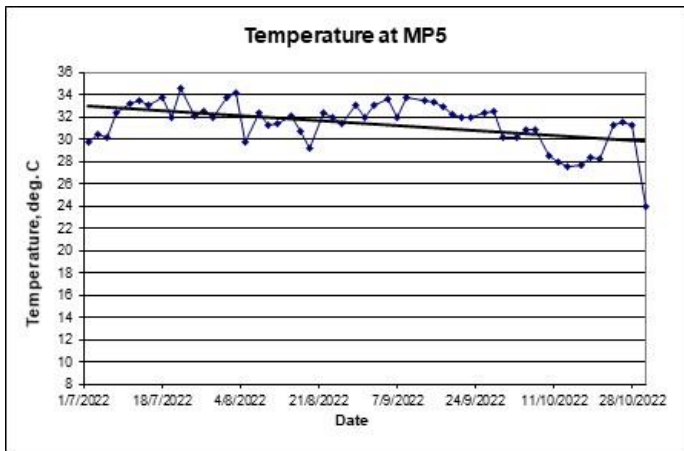
Monitoring Date	Temp (°C)	pH	Dissolved Oxygen (mg/L)	DO (%)	Turbidity (NT)	BOD (mg/L)	Suspended Solids (mg/L)
<b>MP5</b>							
01/08/2022	33.8	7.0	4.9	57.0	26.9	2	29
03/08/2022	34.1	7.1	4.9	51.9	41.8	3	47
05/08/2022	29.7	7.1	5.2	61.2	43.4	3	48
08/08/2022	32.3	7.1	5.0	69.2	42.3	3	46
10/08/2022	31.3	7.1	5.1	69.4	39.2	<2	29
12/08/2022	31.4	7.1	5.2	71.4	42.7	3	43
15/08/2022	32.1	7.0	5.1	70.4	17.6	3	20
17/08/2022	30.7	7.2	5.3	71.0	43.2	3	55
19/08/2022	29.2	7.1	5.2	68.4	28.2	3	30
22/08/2022	32.3	7.3	5.2	69.6	17.0	3	16
24/08/2022	31.9	7.3	5.3	68.9	17.4	3	15
26/08/2022	31.4	7.2	5.1	69.5	28.2	6	24
29/08/2022	33.0	7.2	5.2	71.0	43.1	5	47
31/08/2022	31.9	7.2	5.3	69.3	24.5	3	27
02/09/2022	33.0	7.0	4.8	66.6	43.4	4	42
05/09/2022	33.6	6.9	5.0	64.9	30.9	4	29
07/09/2022	31.9	6.9	5.0	65.4	21.9	3	17
09/09/2022	33.7	6.9	4.9	65.5	23.5	3	24
13/09/2022	33.4	7.3	5.2	73.2	21.6	<2	22
15/09/2022	33.3	7.4	5.4	75.8	33.7	2	37
17/09/2022	32.9	7.4	5.1	70.9	38.2	2	53
19/09/2022	32.2	7.1	5.2	72.2	18.8	<2	17
21/09/2022	32.0	7.2	5.3	72.7	18.0	<2	15
23/09/2022	31.9	7.0	5.2	71.5	23.2	<2	23
26/09/2022	32.4	6.9	5.3	74.0	35.3	<2	33
28/09/2022	32.5	6.9	5.5	76.0	26.1	<2	24
30/09/2022	30.2	7.1	5.0	67.3	36.2	3	29
03/10/2022	30.2	7.0	5.0	67.7	21.3	<2	15
05/10/2022	30.8	6.9	5.3	71.6	14.0	2	11
07/10/2022	30.9	7.0	5.4	73.0	19.2	2	13
10/10/2022	28.5	7.0	5.3	69.8	36.2	<2	26
12/10/2022	27.9	7.0	5.4	68.7	29.7	2	24
14/10/2022	27.5	7.1	5.0	64.5	29.7	<2	27
17/10/2022	27.7	7.1	5.4	69.5	23.0	2	24
19/10/2022	28.3	7.2	5.3	68.4	24.7	<2	23
21/10/2022	28.2	7.0	5.2	67.4	13.8	2	11
24/10/2022	31.2	7.1	5.4	73.8	24.1	2	24
26/10/2022	31.6	7.2	5.5	75.1	27.6	<2	22
28/10/2022	31.3	7.2	5.5	74.2	41.5	2	44
31/10/2022	23.9	7.3	5.1	45.7	18.0	<2	16
Average	31.2	7.1	5.2	68.6	28.7	3	28
Action Level	-	<5.5 or >7.5	<4.13	-	>81	-	>66
Limit Level	-	<4.0 or >8.0	<3.87	-	>84	-	>69

Notes:

- (1) <2: Value is too low to indicate (<2mg/L).
- (2) For the Limit Level of DO, 1-percentile of baseline data is adopted as it is greater than 2mg/L. (Refer to [Baseline Monitoring Report](#))
- (3) Values **Bold** indicate Action Level exceedance.
- (4) Values **Underlined and Bold** indicate Limit Level exceedance.

# Water Quality

## Monitoring Location MP5



## Water Quality

### Monitoring Location MP6

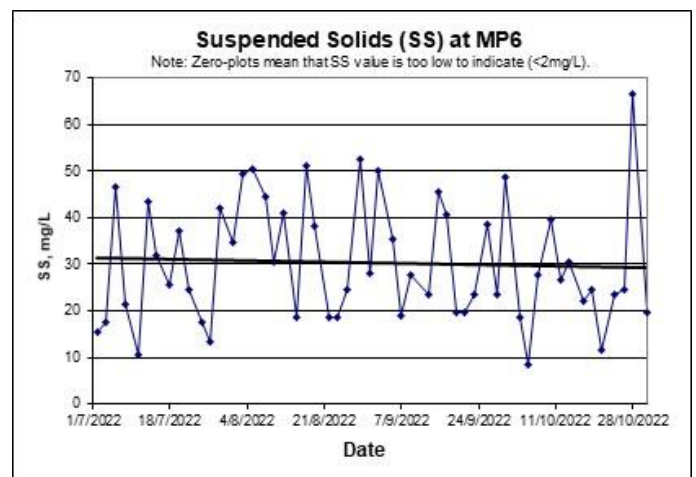
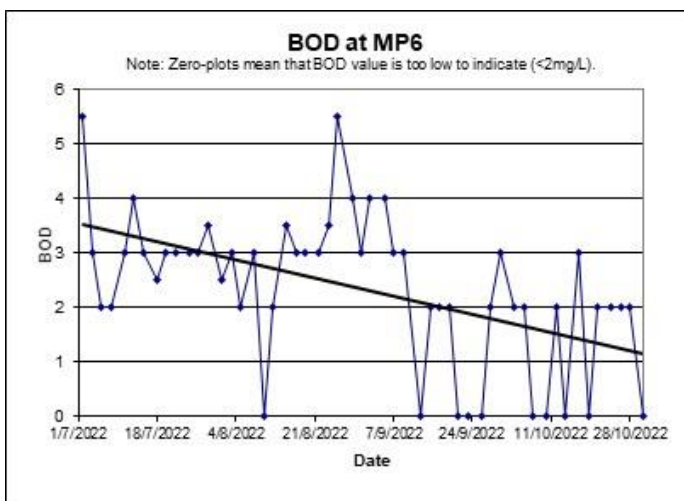
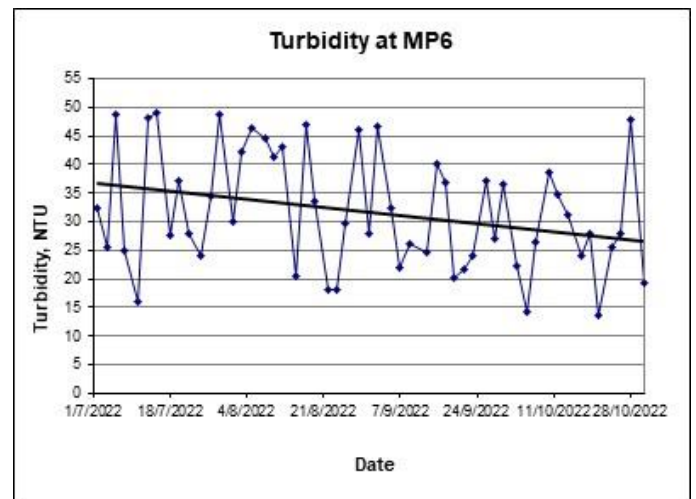
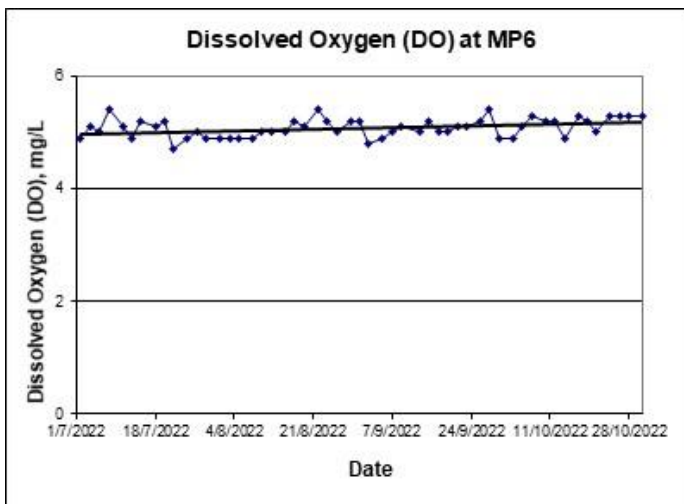
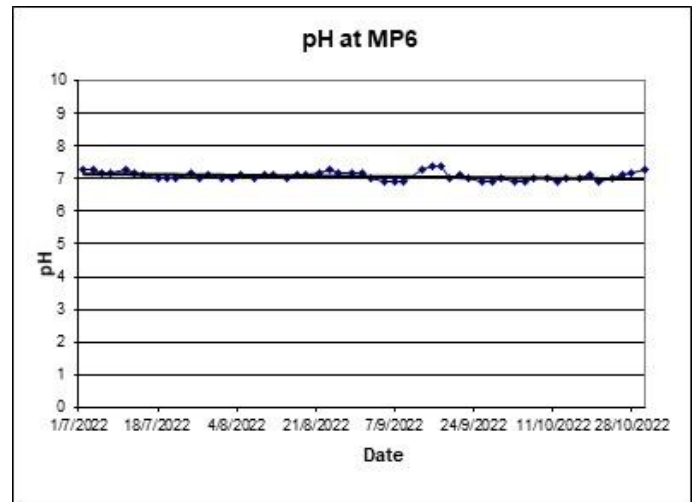
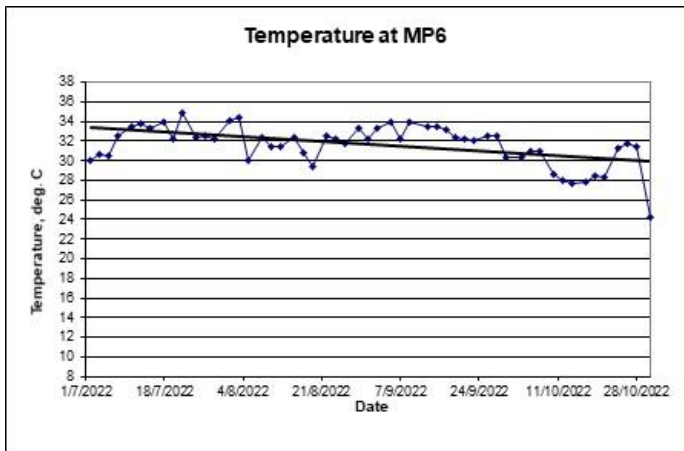
Monitoring Date	Temp (°C)	pH	Dissolved Oxygen (mg/L)	DO (%)	Turbidity (NT)	BOD (mg/L)	Suspended Solids (mg/L)
<b>MP6</b>							
01/08/2022	34.1	7.0	4.9	51.0	30.1	3	35
03/08/2022	34.4	7.0	4.9	52.4	42.1	3	50
05/08/2022	30.0	7.1	4.9	50.9	46.5	2	51
08/08/2022	32.3	7.0	4.9	67.2	44.6	3	45
10/08/2022	31.4	7.1	5.0	68.0	41.3	<2	31
12/08/2022	31.5	7.1	5.0	68.3	43.1	2	41
15/08/2022	32.3	7.0	5.0	69.1	20.6	4	19
17/08/2022	30.8	7.1	5.2	69.5	47.0	3	51
19/08/2022	29.4	7.1	5.1	67.0	33.5	3	38
22/08/2022	32.6	7.2	5.4	71.5	18.0	3	19
24/08/2022	32.2	7.3	5.2	64.0	18.1	4	19
26/08/2022	31.7	7.2	5.0	68.3	29.6	6	25
29/08/2022	33.3	7.2	5.2	69.8	46.2	4	53
31/08/2022	32.2	7.2	5.2	64.5	28.1	3	28
02/09/2022	33.3	7.0	4.8	63.1	46.6	4	50
05/09/2022	33.9	6.9	4.9	61.4	32.4	4	36
07/09/2022	32.2	6.9	5.0	64.0	22.1	3	19
09/09/2022	34.0	6.9	5.1	61.7	26.2	3	28
13/09/2022	33.5	7.3	5.0	69.8	24.7	<2	24
15/09/2022	33.4	7.4	5.2	73.0	40.1	2	46
17/09/2022	33.1	7.4	5.0	69.4	36.7	2	41
19/09/2022	32.4	7.0	5.0	69.5	20.3	2	20
21/09/2022	32.2	7.1	5.1	70.0	21.6	<2	20
23/09/2022	32.0	7.0	5.1	69.9	23.9	<2	24
26/09/2022	32.5	6.9	5.2	72.4	37.1	<2	39
28/09/2022	32.6	6.9	5.4	74.5	27.2	2	24
30/09/2022	30.3	7.0	4.9	65.7	36.6	3	49
03/10/2022	30.3	6.9	4.9	65.2	22.4	2	19
05/10/2022	30.9	6.9	5.1	69.4	14.3	2	9
07/10/2022	31.0	7.0	5.3	70.7	26.5	<2	28
10/10/2022	28.6	7.0	5.2	67.4	38.6	<2	40
12/10/2022	28.0	6.9	5.2	66.1	34.7	2	27
14/10/2022	27.6	7.0	4.9	62.2	31.1	<2	31
17/10/2022	27.8	7.0	5.3	67.9	24.1	3	22
19/10/2022	28.4	7.1	5.2	66.8	27.8	<2	25
21/10/2022	28.3	6.9	5.0	64.1	13.5	2	12
24/10/2022	31.3	7.0	5.3	72.0	25.6	2	24
26/10/2022	31.7	7.1	5.3	71.9	28.1	2	25
28/10/2022	31.4	7.2	5.3	71.9	47.8	2	67
31/10/2022	24.2	7.3	5.3	46.7	19.2	<2	20
Average	31.3	7.1	5.1	66.2	30.9	3	31
Action Level	-	<5.5 or >7.5	<4.61	-	>94	-	>75
Limit Level	-	<4.0 or >8.0	<4.52	-	>96	-	>75

Notes:

- (1) <2: Value is too low to indicate (<2mg/L).
- (2) For the Limit Level of DO, 1-percentile of baseline data is adopted as it is greater than 2mg/L. (Refer to [Baseline Monitoring Report](#))
- (3) Values **Bold** indicate Action Level exceedance.
- (4) Values **Underlined and Bold** indicate Limit Level exceedance.

# Water Quality

## Monitoring Location MP6





## E. Summary of Ecological Monitoring Results

**Table E1. Summary of bird species of conservation importance and/or wetland-dependence recorded in the Survey Area (excluding the WRA)**

Species Name <sup>(1)</sup>	Scientific Name <sup>(1)</sup>	Wetland Dependence	Conservation Status <sup>(2)</sup>	Aug 2022		Records outside survey <sup>(5)</sup>
				Occurrence <sup>(3)</sup>	Mean <sup>(4)</sup>	
Little Grebe	<i>Tachybaptus ruficollis</i>	Y	LC	5	8.8	0
Grey Heron	<i>Ardea cinerea</i>	Y	PRC	5	4.8	0
Great Egret	<i>Ardea alba</i>	Y	PRC, (RC)	5	17.8	0
Intermediate Egret	<i>Egretta intermedia</i>	Y	RC	1	0.2	0
Little Egret	<i>Egretta garzetta</i>	Y	PRC, (RC)	5	21.8	0
Eastern Cattle Egret	<i>Bubulcus coromandus</i>	Y	(LC)	3	2.6	0
Chinese Pond Heron	<i>Ardeola bacchus</i>	Y	PRC, (RC)	5	20.6	0
Yellow Bittern	<i>Ixobrychus sinensis</i>	Y	(LC)	1	0.6	0
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	Y	(LC)	5	7.0	0
Black Kite#	<i>Milvus migrans</i>	Y	Class II, (RC)	3	1.4	0
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	Y	-	4	3.2	0
Common Moorhen	<i>Gallinula chloropus</i>	Y	-	2	0.8	0
Black-winged Stilt	<i>Himantopus himantopus</i>	Y	RC	2	1.0	0
Common Sandpiper	<i>Actitis hypoleucos</i>	Y	-	5	1.8	0
Pied Kingfisher	<i>Ceryle rudis</i>	Y	(LC)	3	1.0	0
White-throated Kingfisher#	<i>Halcyon smyrnenis</i>	Y	Class II, (LC)	3	0.8	0
Common Kingfisher	<i>Alcedo atthis</i>	Y	-	5	2.2	0
Grey Wagtail	<i>Motacilla cinerea</i>	Y	-	1	0.2	0
White Wagtail	<i>Motacilla alba</i>	Y	-	5	7.8	0
White-shouldered Starling	<i>Sturnia sinensis</i>	Y	(LC)	3	1.6	0
Collared Crow	<i>Corvus torquatus</i>	Y	LC, NT	4	1.4	0
<b>No. of Species Recorded</b>						<b>21</b>
Species Name <sup>(1)</sup>	Scientific Name <sup>(1)</sup>	Wetland Dependence	Conservation Status <sup>(2)</sup>	Sep 2022		Records outside survey <sup>(5)</sup>
				Occurrence <sup>(3)</sup>	Mean <sup>(4)</sup>	
Little Grebe	<i>Tachybaptus ruficollis</i>	Y	LC	4	8.0	0
Great Cormorant	<i>Phalacrocorax carbo</i>	Y	PRC	3	1.5	0
Grey Heron	<i>Ardea cinerea</i>	Y	PRC	4	7.0	0
Great Egret	<i>Ardea alba</i>	Y	PRC, (RC)	4	17.0	0
Intermediate Egret	<i>Egretta intermedia</i>	Y	RC	1	0.3	0

Species Name <sup>(1)</sup>	Scientific Name <sup>(1)</sup>	Wetland Dependence	Conservation Status <sup>(2)</sup>	Sep 2022		Records outside survey <sup>(5)</sup>
				Occurrence <sup>(3)</sup>	Mean <sup>(4)</sup>	
Little Egret	<i>Egretta garzetta</i>	Y	PRC, (RC)	4	22.8	0
Eastern Cattle Egret	<i>Bubulcus coromandus</i>	Y	(LC)	3	12.8	0
Chinese Pond Heron	<i>Ardeola bacchus</i>	Y	PRC, (RC)	4	24.8	0
Yellow Bittern	<i>Ixobrychus sinensis</i>	Y	(LC)	2	1.0	0
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	Y	(LC)	4	4.8	0
Black Kite#	<i>Milvus migrans</i>	Y	Class II, (RC)	4	2.5	0
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	Y	-	3	3.3	0
Common Moorhen	<i>Gallinula chloropus</i>	Y	-	1	0.5	0
Common Sandpiper	<i>Actitis hypoleucos</i>	Y	-	4	3.3	0
Pied Kingfisher	<i>Ceryle rudis</i>	Y	(LC)	1	0.3	0
White-throated Kingfisher#	<i>Halcyon smyrnensis</i>	Y	Class II, (LC)	2	0.5	0
Common Kingfisher	<i>Alcedo atthis</i>	Y	-	4	2.3	0
Eastern Yellow Wagtail	<i>Motacilla tschutschensis</i>	Y	-	1	0.3	0
White Wagtail	<i>Motacilla alba</i>	Y	-	4	6.8	0
Oriental Reed Warbler	<i>Acrocephalus orientalis</i>	Y	-	1	0.3	0
Zitting Cisticola	<i>Cisticola juncidis</i>	Y	LC	1	0.5	0
White-shouldered Starling	<i>Sturnia sinensis</i>	Y	(LC)	1	3.8	0
Collared Crow	<i>Corvus torquatus</i>	Y	LC, NT	2	1.0	0

**No. of Species Recorded** **23**

Species Name <sup>(1)</sup>	Scientific Name <sup>(1)</sup>	Wetland Dependence	Conservation Status <sup>(2)</sup>	Oct 2022		Records outside survey <sup>(5)</sup>
				Occurrence <sup>(3)</sup>	Mean <sup>(4)</sup>	
Little Grebe	<i>Tachybaptus ruficollis</i>	Y	LC	4	13.5	0
Great Cormorant	<i>Phalacrocorax carbo</i>	Y	PRC	3	11.3	0
Grey Heron	<i>Ardea cinerea</i>	Y	PRC	4	8.0	0
Great Egret	<i>Ardea alba</i>	Y	PRC, (RC)	4	10.5	0
Little Egret	<i>Egretta garzetta</i>	Y	PRC, (RC)	4	15.3	0
Eastern Cattle Egret	<i>Bubulcus coromandus</i>	Y	(LC)	3	7.5	0
Chinese Pond Heron	<i>Ardeola bacchus</i>	Y	PRC, (RC)	4	20.0	0
Yellow Bittern	<i>Ixobrychus sinensis</i>	Y	(LC)	2	0.8	0
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	Y	(LC)	2	1.0	0
Black Kite#	<i>Milvus migrans</i>	Y	Class II, (RC)	4	3.5	0
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	Y	-	3	0.8	0
Little Ringed Plover	<i>Charadrius dubius</i>	Y	(LC)	2	0.5	0
Green Sandpiper	<i>Tringa ochropus</i>	Y	-	4	1.0	0

Species Name <sup>(1)</sup>	Scientific Name <sup>(1)</sup>	Wetland Dependence	Conservation Status <sup>(2)</sup>	Oct 2022		Records outside survey <sup>(5)</sup>
				Occurrence <sup>(3)</sup>	Mean <sup>(4)</sup>	
Common Sandpiper	<i>Actitis hypoleucos</i>	Y	-	4	1.8	0
Whiskered Tern	<i>Chlidonias hybrida</i>	Y	-	1	0.5	0
Pied Kingfisher	<i>Ceryle rudis</i>	Y	(LC)	4	2.3	0
White-throated Kingfisher#	<i>Halcyon smyrnensis</i>	Y	Class II, (LC)	2	0.5	0
Common Kingfisher	<i>Alcedo atthis</i>	Y	-	4	4.0	0
Eastern Yellow Wagtail	<i>Motacilla tschutschensis</i>	Y	-	3	2.0	0
White Wagtail	<i>Motacilla alba</i>	Y	-	4	8.8	0
White-shouldered Starling	<i>Sturnia sinensis</i>	Y	(LC)	1	1.0	0
Collared Crow	<i>Corvus torquatus</i>	Y	LC, NT	2	0.8	0
<b>No. of Species Recorded</b>						<b>22</b>

- (1) Follows the List of Hong Kong Birds (ver. 2020-03-10)  
 (2) Conservation status follows that of *Fellowes et al.* (2002) and Bird Life International listing (2017). Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence. (*Fellowes et al.* 2002)  
 (3) Indicates number of surveys recorded within each month of the reporting period.  
 (4) Refers to the mean number of individuals recorded in each survey in the Survey Area (excluding the WRA).  
 (5) Includes observations during other surveys and/or site visits.  
 # Birds tagged with '#' are Category II protected under terrestrial wildlife state protection.

**Table E2. Summary of bird species of conservation importance and/or wetland-dependence recorded in the WRA**

Species Name <sup>(1)</sup>	Scientific Name <sup>(1)</sup>	Wetland Dependence	Conservation Status <sup>(2)</sup>	Aug 2022		Records outside survey <sup>(5)</sup>
				Occurrence <sup>(3)</sup>	Mean <sup>(4)</sup>	
Little Grebe	<i>Tachybaptus ruficollis</i>	Y	LC	3	1.0	0
Grey Heron	<i>Ardea cinerea</i>	Y	PRC	3	0.6	0
Great Egret	<i>Ardea alba</i>	Y	PRC, (RC)	4	1.4	0
Little Egret	<i>Egretta garzetta</i>	Y	PRC, (RC)	4	2.4	0
Eastern Cattle Egret	<i>Bubulcus coromandus</i>	Y	(LC)	2	0.6	0
Chinese Pond Heron	<i>Ardeola bacchus</i>	Y	PRC, (RC)	5	5.0	0
Yellow Bittern	<i>Ixobrychus sinensis</i>	Y	(LC)	5	2.0	0
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	Y	(LC)	5	6.0	V
Black Kite#	<i>Milvus migrans</i>	Y	Class II, (RC)	2	0.6	0
Eurasian Hobby#	<i>Falco subbuteo</i>	Y	Class II, (LC)	-	-	V
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	Y	-	1	0.2	0
Common Moorhen	<i>Gallinula chloropus</i>	Y	-	4	1.6	0
Common Sandpiper	<i>Actitis hypoleucos</i>	Y	-	3	0.8	0
Pied Kingfisher	<i>Ceryle rudis</i>	Y	(LC)	1	0.4	0
White-throated Kingfisher#	<i>Halcyon smyrnensis</i>	Y	Class II, (LC)	1	0.2	0
Common Kingfisher	<i>Alcedo atthis</i>	Y	-	5	1.2	0

Eastern Yellow Wagtail	<i>Motacilla tschutschensis</i>	Y	-	1	0.2	0
White Wagtail	<i>Motacilla alba</i>	Y	-	2	1.2	0
White-shouldered Starling	<i>Sturnia sinensis</i>	Y	(LC)	1	1.2	0
Collared Crow	<i>Corvus torquatus</i>	Y	LC, NT	2	0.4	0

**No. of Species Recorded** **20**

Species Name <sup>(1)</sup>	Scientific Name <sup>(1)</sup>	Wetland Dependence	Conservation Status <sup>(2)</sup>	Sep 2022		Records outside survey <sup>(5)</sup>
				Occurrence <sup>(3)</sup>	Mean <sup>(4)</sup>	
Little Grebe	<i>Tachybaptus ruficollis</i>	Y	LC	2	0.8	0
Great Cormorant	<i>Phalacrocorax carbo</i>	Y	PRC	1	0.3	0
Grey Heron	<i>Ardea cinerea</i>	Y	PRC	3	0.8	0
Great Egret	<i>Ardea alba</i>	Y	PRC, (RC)	3	2.0	0
Little Egret	<i>Egretta garzetta</i>	Y	PRC, (RC)	2	2.3	0
Eastern Cattle Egret	<i>Bubulcus coromandus</i>	Y	(LC)	1	0.5	0
Chinese Pond Heron	<i>Ardeola bacchus</i>	Y	PRC, (RC)	4	2.5	0
Yellow Bittern	<i>Ixobrychus sinensis</i>	Y	(LC)	3	1.5	0
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	Y	(LC)	3	4.3	0
Black Kite#	<i>Milvus migrans</i>	Y	Class II, (RC)	3	0.8	0
Eurasian Hobby#	<i>Falco subbuteo</i>	Y	Class II, (LC)	1	0.3	0
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	Y	-	3	1.5	0
Common Moorhen	<i>Gallinula chloropus</i>	Y	-	2	0.8	0
Common Sandpiper	<i>Actitis hypoleucos</i>	Y	-	2	0.8	0
Common Snipe	<i>Gallinago gallinago</i>	Y	-	-	-	V
Pied Kingfisher	<i>Ceryle rudis</i>	Y	(LC)	1	0.5	0
White-throated Kingfisher#	<i>Halcyon smyrnensis</i>	Y	Class II, (LC)	1	0.3	0
Common Kingfisher	<i>Alcedo atthis</i>	Y	-	4	1.0	0
Eastern Yellow Wagtail	<i>Motacilla tschutschensis</i>	Y	-	1	0.3	0
White Wagtail	<i>Motacilla alba</i>	Y	-	4	2.3	0
Oriental Reed Warbler	<i>Acrocephalus orientalis</i>	Y	-	2	0.5	0
Black-browed Reed Warbler	<i>Acrocephalus bistrigiceps</i>	Y	-	1	0.3	0
Zitting Cisticola	<i>Cisticola juncidis</i>	Y	LC	1	0.3	0
White-shouldered Starling	<i>Sturnia sinensis</i>	Y	(LC)	1	0.5	0
Collared Crow	<i>Corvus torquatus</i>	Y	LC, NT	1	0.3	0

**No. of Species Recorded** **25**

Species Name <sup>(1)</sup>	Scientific Name <sup>(1)</sup>	Wetland Dependence	Conservation Status <sup>(2)</sup>	Oct 2022		Records outside survey <sup>(5)</sup>
				Occurrence <sup>(3)</sup>	Mean <sup>(4)</sup>	
Little Grebe	<i>Tachybaptus ruficollis</i>	Y	LC	3	2.0	0
Great Cormorant	<i>Phalacrocorax carbo</i>	Y	PRC	2	1.3	0

Species Name <sup>(1)</sup>	Scientific Name <sup>(1)</sup>	Wetland Dependence	Conservation Status <sup>(2)</sup>	Oct 2022		Records outside survey <sup>(5)</sup>
				Occurrence <sup>(3)</sup>	Mean <sup>(4)</sup>	
Grey Heron	<i>Ardea cinerea</i>	Y	PRC	2	0.5	0
Great Egret	<i>Ardea alba</i>	Y	PRC, (RC)	4	1.5	0
Intermediate Egret	<i>Egretta intermedia</i>	Y	RC	2	0.5	0
Little Egret	<i>Egretta garzetta</i>	Y	PRC, (RC)	4	2.3	0
Eastern Cattle Egret	<i>Bubulcus coromandus</i>	Y	(LC)	2	0.5	0
Chinese Pond Heron	<i>Ardeola bacchus</i>	Y	PRC, (RC)	4	7.8	0
Yellow Bittern	<i>Ixobrychus sinensis</i>	Y	(LC)	3	1.3	0
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	Y	(LC)	3	2.5	0
Black-winged Kite#	<i>Elanus caeruleus</i>	Y	Class II, LC	-	-	V
Black Kite#	<i>Milvus migrans</i>	Y	Class II, (RC)	3	2.0	0
Eastern Buzzard#	<i>Buteo japonicus</i>	Y	Class II	1	0.3	0
White-breasted Waterhen	<i>Amauornis phoenicurus</i>	Y	-	3	1.0	0
Little Ringed Plover	<i>Charadrius dubius</i>	Y	(LC)	2	0.8	0
Common Sandpiper	<i>Actitis hypoleucos</i>	Y	-	1	0.3	0
Common Snipe	<i>Gallinago gallinago</i>	Y	-	1	0.3	0
Pied Kingfisher	<i>Ceryle rudis</i>	Y	(LC)	1	0.3	0
White-throated Kingfisher#	<i>Halcyon smyrnensis</i>	Y	Class II, (LC)	2	0.5	0
Common Kingfisher	<i>Alcedo atthis</i>	Y	-	1	0.5	0
Eastern Yellow Wagtail	<i>Motacilla tschutschensis</i>	Y	-	2	0.5	0
White Wagtail	<i>Motacilla alba</i>	Y	-	4	2.8	0
Black-browed Reed Warbler	<i>Acrocephalus bistrigiceps</i>	Y	-	1	0.3	0
<b>No. of Species Recorded</b>						<b>23</b>

- (1) Follows the List of Hong Kong Birds (ver. 2020-03-10)  
 (2) Conservation status follows that of Fellowes *et al.* (2002) and BirdLife International listing (2017). Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence. (Fellowes *et al.* 2002).  
 (3) Indicates number of surveys recorded within each month of the reporting period.  
 (4) Refers to the mean number of individuals recorded in each survey in the WRA.  
 (5) Includes observations during other surveys and/or site visits.  
 # Birds tagged with '#' are Category II protected under terrestrial wildlife state protection.

**Table E3. Summary of herpetofauna monitoring in the Survey Area (excluding the WRA)**

Species Name	Scientific Name	Conservation Status <sup>(1)</sup>	Aug 2022		Records outside surveys <sup>(4)</sup>
			Occurrence <sup>(2)</sup>	Mean <sup>(3)</sup>	
<b>Amphibian</b>		<b>No. of Species Recorded</b>	<b>7</b>		
Asian Common Toad	<i>Bufo melanostictus</i>	-	1	14.5	0
Gunther's Frog	<i>Hylarana guentheri</i>	-	1	2.0	0
Paddy Frog	<i>Fejervarya limnocharis</i>	-	1	23.0	0

Species Name	Scientific Name	Conservation Status <sup>(1)</sup>	Aug 2022		Records outside surveys <sup>(4)</sup>
			Occurrence <sup>(2)</sup>	Mean <sup>(3)</sup>	
Brown Tree Frog	<i>Polypedates megacephalus</i>	-	1	1.0	0
Asiatic Painted Frog	<i>Kaloula pulchra pulchra</i>	-	1	1.0	0
Ornate Pygmy Frog	<i>Microhyla fissipes</i>	-	1	4.0	0
Greenhouse Frog	<i>Eleutherodactylus planirostris</i>	-	1	2.5	0
			Occurrence <sup>(2)</sup>	Mean <sup>(3)</sup>	
<b>Reptiles</b>		<b>No. of Species Recorded</b>	<b>1</b>		
Bowring's Gecko	<i>Hemidactylus bowringii</i>	-	1	15.5	0

Species Name	Scientific Name	Conservation Status <sup>(1)</sup>	Sep 2022		Records outside surveys <sup>(4)</sup>
			Occurrence <sup>(2)</sup>	Mean <sup>(3)</sup>	
<b>Amphibian</b>		<b>No. of Species Recorded</b>	<b>0</b>		
No record in September 2022					
			Occurrence <sup>(2)</sup>	Mean <sup>(3)</sup>	
<b>Reptiles</b>		<b>No. of Species Recorded</b>	<b>0</b>		
No record in September 2022					

Species Name	Scientific Name	Conservation Status <sup>(1)</sup>	Oct 2022		Records outside surveys <sup>(4)</sup>
			Occurrence <sup>(2)</sup>	Mean <sup>(3)</sup>	
<b>Amphibian</b>		<b>No. of Species Recorded</b>	<b>0</b>		
No record in October 2022					
			Occurrence <sup>(2)</sup>	Mean <sup>(3)</sup>	
<b>Reptiles</b>		<b>No. of Species Recorded</b>	<b>0</b>		
No record in October 2022					

- (1) Conservation status follows that of Fellowes *et al.* (2002), Chan *et al.* (2005) and Karsen *et al.* (1998).
- (2) Indicates number of surveys recorded within the reporting period.
- (3) Refers to the mean number of individuals recorded in the reporting period (excluding the WRA)
- (4) Includes observations during other surveys and/or site visits.

**Table E4. Summary of herpetofauna monitoring in the WRA**

Species Name	Scientific Name	Conservation Status <sup>(1)</sup>	Aug 2022		Records outside surveys <sup>(4)</sup>
			Occurrence <sup>(2)</sup>	Mean <sup>(3)</sup>	
<b>Amphibian</b>		<b>No. of Species Recorded</b>	<b>7</b>		
Asian Common Toad	<i>Bufo melanostictus</i>	-	2	9.0	0
Gunther's Frog	<i>Hylarana guentheri</i>	-	2	2.5	0
Paddy Frog	<i>Fejervarya limnocharis</i>	-	1	10.0	0
Brown Tree Frog	<i>Polypedates megacephalus</i>	-	1	2.0	0
Asiatic Painted Frog	<i>Kaloula pulchra pulchra</i>	-	1	0.5	0
Ornate Pygmy Frog	<i>Microhyla fissipes</i>	-	1	2.0	0

Species Name	Scientific Name	Conservation Status <sup>(1)</sup>	Aug 2022		Records outside surveys <sup>(4)</sup>
			Occurrence <sup>(2)</sup>	Mean <sup>(3)</sup>	
Greenhouse Frog	<i>Eleutherodactylus planirostris</i>	-	1	3.0	0
<b>Reptiles</b>		<b>No. of Species Recorded</b>	<b>2</b>		
Bowring's Gecko	<i>Hemidactylus bowringii</i>	-	1	7.5	0
Reeve's Smooth Skink	<i>Scincella reevesii</i>	Class II	1	1.0	0

Species Name	Scientific Name	Conservation Status <sup>(1)</sup>	Sep 2022		Records outside surveys <sup>(4)</sup>
			Occurrence <sup>(2)</sup>	Mean <sup>(3)</sup>	
<b>Amphibian</b>		<b>No. of Species Recorded</b>	<b>0</b>		
No record in September 2022					
<b>Reptiles</b>		<b>No. of Species Recorded</b>	<b>2</b>		
Bowring's Gecko	<i>Hemidactylus bowringii</i>	-	1	2.0	0
Long-tailed Skink	<i>Eutropis longicaudata</i>	-	1	1.0	0

Species Name	Scientific Name	Conservation Status <sup>(1)</sup>	Oct 2022		Records outside surveys <sup>(4)</sup>
			Occurrence <sup>(2)</sup>	Mean <sup>(3)</sup>	
<b>Amphibian</b>		<b>No. of Species Recorded</b>	<b>0</b>		
No record in October 2022					
			Occurrence <sup>(2)</sup>	Mean <sup>(3)</sup>	
<b>Reptiles</b>		<b>No. of Species Recorded</b>	<b>5</b>		
Red-eared Slider	<i>Trachemys scripta elegans</i>	-	-	-	V
Bowring's Gecko	<i>Hemidactylus bowringii</i>	-	1	3.0	0
Long-tailed Skink	<i>Eutropis longicaudata</i>	-	1	1.0	0
Common Rat Snake	<i>Ptyas mucosus</i>	-	1	1.0	0
Many-banded Krait	<i>Bungarus multicinctus multicinctus</i>	-	-	-	V

(1) Conservation status follows that of Fellowes *et al.* (2002), Chan *et al.* (2005) and Karsen *et al.* (1998).

(2) Indicates number of surveys recorded within the reporting period.

(3) Refers to the mean number of individuals recorded in the reporting period in the WRA

(4) Includes observations during other surveys and/or site visits.

**Table E5. Summary of mammal monitoring in the Survey Area (excluding the WRA)**

Species Name	Scientific Name	Conservation Status <sup>(1)</sup>	Aug 2022		Records outside surveys <sup>(4)</sup>
			Occurrence <sup>(2)</sup>	Max <sup>(3)</sup>	
<b>Mammal</b>		<b>No. of Species Recorded</b>	<b>1</b>		
Japanese Pipistrelle	<i>Pipistrellus abramus</i>	-	1	3	0

Species Name	Scientific Name	Conservation Status <sup>(1)</sup>	Sep 2022		Records outside surveys <sup>(4)</sup>
			Occurrence <sup>(2)</sup>	Max <sup>(3)</sup>	
<b>Mammal</b>	<b>No. of Species Recorded</b>		<b>0</b>		
No record in September 2022					

Species Name	Scientific Name	Conservation Status <sup>(1)</sup>	Oct 2022		Records outside surveys <sup>(4)</sup>
			Occurrence <sup>(2)</sup>	Max <sup>(3)</sup>	
<b>Mammal</b>	<b>No. of Species Recorded</b>		<b>0</b>		
No record in October 2022					

- (1) Conservation status follows that of Fellowes *et al.* (2002) and Shek (2006).
- (2) Indicates number of surveys recorded within the reporting period.
- (3) Refers to the maximum number of individuals recorded in the reporting period (excluding the WRA).
- (4) Includes observations during other surveys and/or site visits.

**Table E6. Summary of mammal monitoring in the WRA**

Species Name	Scientific Name	Conservation Status <sup>(1)</sup>	Aug 2022		Records outside surveys <sup>(4)</sup>
			Occurrence <sup>(2)</sup>	Max <sup>(3)</sup>	
<b>Mammal</b>	<b>No. of Species Recorded</b>		<b>3</b>		
Bat	Indet. sp.	-	1	2	0
Japanese Pipistrelle	<i>Pipistrellus abramus</i>	-	1	8	0
Leopard Cat#	<i>Prionailurus bengalensis</i>	Class II	1	1	V*

Species Name	Scientific Name	Conservation Status <sup>(1)</sup>	Sep 2022		Records outside surveys <sup>(4)</sup>
			Occurrence <sup>(2)</sup>	Max <sup>(3)</sup>	
<b>Mammal</b>	<b>No. of Species Recorded</b>		<b>2</b>		
Leopard Cat#*	<i>Prionailurus bengalensis</i>	Class II	1	1	0
Pallas's Squirrel	<i>Callosciurus erythraeus</i>	-	1	1	0

Species Name	Scientific Name	Conservation Status <sup>(1)</sup>	Oct 2022		Records outside surveys <sup>(4)</sup>
			Occurrence <sup>(2)</sup>	Max <sup>(3)</sup>	
<b>Mammal</b>	<b>No. of Species Recorded</b>		<b>0</b>		
No record in October 2022					

- (1) Conservation status follows that of Fellowes *et al.* (2002) and Shek (2006).
- (2) Indicates number of surveys recorded within the reporting period.
- (3) Refers to the maximum number of individuals recorded in the reporting period in the WRA
- (4) Includes observations during other surveys and/or site visits.
- # Mammals tagged with '#' are Category II protected under terrestrial wildlife state protection.
- \* Leopard Cat scats were recorded.

**Table E7. Summary of dragonfly and butterfly monitoring in the Survey Area (excluding the WRA)**

Species Name	Scientific Name	Conservation Status <sup>(1)</sup>	Aug 2022		Records Outside Surveys <sup>(4)</sup>
			Occurrence <sup>(2)</sup>	Mean <sup>(3)</sup>	
<b>Odonate</b>	<b>No. of Species Recorded</b>		<b>15</b>		
Wandering Midget	<i>Agriocnemis pygmaea</i>	-	1	2.0	0
Common Bluetail	<i>Ischnura senegalensis</i>	-	1	3.5	0
Pale-spotted Emperor	<i>Anax guttatus</i>	-	1	0.5	0



Species Name	Scientific Name	Conservation Status <sup>(1)</sup>	Aug 2022		Records Outside Surveys <sup>(4)</sup>
			Occurrence <sup>(2)</sup>	Mean <sup>(3)</sup>	
Common Flangetail	<i>Ictinogomphus pertinax</i>	-	1	5.0	0
Golden Flangetail	<i>Sinictinogomphus clavatus</i>	-	1	0.5	0
Regal Pond Cruiser	<i>Epophthalmia elegans</i>	-	1	0.5	0
Blue Dasher	<i>Brachydiplax chalybea flavovittata</i>	-	1	0.5	0
Asian Amberwing	<i>Brachythemis contaminata</i>	-	2	3.5	0
Crimson Darter	<i>Crocothemis servilia servilia</i>	-	2	10.0	0
Coastal Glider	<i>Macrodiplax cora</i>	LC	2	1.5	0
Green Skimmer	<i>Orthetrum sabina sabina</i>	-	2	12.5	0
Wandering Glider	<i>Pantala flavescens</i>	-	2	30.0	0
Variiegated Flutterer	<i>Rhyothemis variegata arria</i>	-	2	26.5	0
Scarlet Basker	<i>Urothemis signata signata</i>	LC	1	1.0	0
Emerald Cascader	<i>Zygonyx iris insignis</i>	PGC	1	0.5	0
			<b>Occurrence<sup>(2)</sup></b>	<b>Mean<sup>(3)</sup></b>	
<b>Butterfly</b>	<b>No. of Species Recorded</b>		<b>13</b>		
Blue-spotted Crow	<i>Euploea midamus midamus</i>	-	2	1.0	0
Great Egg-fly	<i>Hypolimnas bolina kezia</i>	-	2	2.0	0
Red Ring Skirt	<i>Hestina assimilis assimilis</i>	-	1	1.0	0
Common Palmfly	<i>Elymnias hypermnestra hainana</i>	-	1	0.5	0
Dark Brand Bush Brown	<i>Mycalesis mineus mineus</i>	-	1	0.5	0
Pale Grass Blue	<i>Pseudozizeeria maha serica</i>	-	1	4.5	0
Red-base Jezebel	<i>Delias pasithoe pasithoe</i>	-	1	0.5	0
Lemon Emigrant	<i>Catopsilia pomona pomona</i>	-	2	3.0	0
Common Bluebottle	<i>Graphium sarpedon sarpedon</i>	-	1	0.5	0
Common Mime	<i>Chilasa clytia clytia</i>	-	1	0.5	0
Red Helen	<i>Papilio helenus</i>	-	1	0.5	0
Common Mormon	<i>Papilio polytes polytes</i>	-	2	1.0	0
Spangle	<i>Papilio protenor</i>	-	1	0.5	0

Species Name	Scientific Name	Conservation Status <sup>(1)</sup>	Sep 2022		Records Outside Surveys <sup>(4)</sup>
			Occurrence <sup>(2)</sup>	Mean <sup>(3)</sup>	
<b>Odonate</b>	<b>No. of Species Recorded</b>		<b>11</b>		
Common Bluetail	<i>Ischnura senegalensis</i>	-	1	1.0	0
Common Flangetail	<i>Ictinogomphus pertinax</i>	-	1	3.0	0
Regal Pond Cruiser	<i>Epophthalmia elegans</i>	-	1	1.0	0
Asian Amberwing	<i>Brachythemis contaminata</i>	-	1	3.0	0
Crimson Darter	<i>Crocothemis servilia servilia</i>	-	1	3.0	0
Coastal Glider	<i>Macrodiplax cora</i>	LC	1	2.0	0
Green Skimmer	<i>Orthetrum sabina sabina</i>	-	1	7.0	0
Wandering Glider	<i>Pantala flavescens</i>	-	1	8.0	0
Variiegated Flutterer	<i>Rhyothemis variegata arria</i>	-	1	7.0	0
Saddlebag Glider	<i>Tramea virginia</i>	-	1	1.0	0
Scarlet Basker	<i>Urothemis signata signata</i>	LC	1	6.0	0

Species Name	Scientific Name	Conservation Status <sup>(1)</sup>	Sep 2022		Records Outside Surveys <sup>(4)</sup>
			Occurrence <sup>(2)</sup>	Mean <sup>(3)</sup>	
<b>Butterfly</b>	<b>No. of Species Recorded</b>		<b>12</b>		
Plain Tiger	<i>Danaus chrysippus</i>	-	1	1.0	0
Common Tiger	<i>Danaus genutia</i>	-	1	1.0	0
Great Egg-fly	<i>Hypolimnas bolina kezia</i>	-	1	2.0	0
Common Palmfly	<i>Elymnias hypermnestra hainana</i>	-	1	1.0	0
Dark Brand Bush Brown	<i>Mycalesis mineus mineus</i>	-	1	2.0	0
Pale Grass Blue	<i>Pseudozizeeria maha serica</i>	-	1	3.0	0
Red-base Jezebel	<i>Delias pasithoe pasithoe</i>	-	1	1.0	0
Lemon Emigrant	<i>Catopsilia pomona pomona</i>	-	1	7.0	0
Common Bluebottle	<i>Graphium sarpedon sarpedon</i>	-	1	1.0	0
Common Mime	<i>Chilasa clytia clytia</i>	-	1	2.0	0
Common Mormon	<i>Papilio polytes polytes</i>	-	1	8.0	0
Spangle	<i>Papilio protenor</i>	-	1	3.0	0

Species Name	Scientific Name	Conservation Status <sup>(1)</sup>	Oct 2022		Records Outside Surveys <sup>(4)</sup>
			Occurrence <sup>(2)</sup>	Mean <sup>(3)</sup>	
<b>Odonate</b>	<b>No. of Species Recorded</b>		<b>12</b>		
Common Bluetail	<i>Ischnura senegalensis</i>	-	1	5.0	0
Pale-spotted Emperor	<i>Anax guttatus</i>	-	1	1.0	0
Common Flangetail	<i>Ictinogomphus pertinax</i>	-	1	4.0	0
Regal Pond Cruiser	<i>Epophthalmia elegans</i>	-	1	1.0	0
Asian Amberwing	<i>Brachythemis contaminata</i>	-	1	5.0	0
Crimson Darter	<i>Crocothemis servilia servilia</i>	-	1	1.0	0
Coastal Glider	<i>Macrodiplax cora</i>	LC	1	1.0	0
Green Skimmer	<i>Orthetrum sabina sabina</i>	-	1	24.0	0
Wandering Glider	<i>Pantala flavescens</i>	-	1	12.0	0
Variiegated Flutterer	<i>Rhyothemis variegata arria</i>	-	1	13.0	0
Saddlebag Glider	<i>Tramea virginia</i>	-	1	4.0	0
Scarlet Basker	<i>Urothemis signata signata</i>	LC	1	1.0	0
			<b>Occurrence<sup>(2)</sup></b>	<b>Mean<sup>(3)</sup></b>	
<b>Butterfly</b>	<b>No. of Species Recorded</b>		<b>15</b>		
Plain Tiger	<i>Danaus chrysippus</i>	-	1	3.0	0
Blue-spotted Crow	<i>Euploea midamus midamus</i>	-	1	1.0	0
Great Egg-fly	<i>Hypolimnas bolina kezia</i>	-	1	1.0	0
Red Ring Skirt	<i>Hestina assimilis assimilis</i>	-	1	2.0	0
Common Palmfly	<i>Elymnias hypermnestra hainana</i>	-	1	1.0	0
Dark Brand Bush Brown	<i>Mycalesis mineus mineus</i>	-	1	1.0	0
Long-tailed Blue	<i>Lampides boeticus</i>	-	1	1.0	0
Pale Grass Blue	<i>Pseudozizeeria maha serica</i>	-	1	10.0	0
Tiny Grass Blue	<i>Zizula hylax</i>	-	1	2.0	0
Lemon Emigrant	<i>Catopsilia pomona pomona</i>	-	1	11.0	0

Species Name	Scientific Name	Conservation Status <sup>(1)</sup>	Oct 2022		Records Outside Surveys <sup>(4)</sup>
			Occurrence <sup>(2)</sup>	Mean <sup>(3)</sup>	
Common Grass Yellow	<i>Eurema hecabe hecabe</i>	-	1	1.0	0
Common Bluebottle	<i>Graphium sarpedon sarpedon</i>	-	1	2.0	0
Lime Butterfly	<i>Papilio demoleus</i>	-	1	1.0	0
Common Mormon	<i>Papilio polytes polytes</i>	-	1	3.0	0
Spangle	<i>Papilio protenor</i>	-	1	1.0	0

(1) Conservation status follows that of Fellowes *et al.* (2002), Lo & Hui (2004), Tam *et al.* (2011) and Young & Yiu (2002).

(2) Indicates number of surveys recorded within the reporting period.

(3) Refers to the mean number of individuals recorded in the reporting period (excluding the WRA)

(4) Includes observations during other surveys and/or site visits.

**Table E8. Summary of dragonfly and butterfly monitoring in the WRA**

Species Name	Scientific Name	Conservation Status <sup>(1)</sup>	Aug 2022		Records Outside Surveys <sup>(4)</sup>
			Occurrence <sup>(2)</sup>	Mean <sup>(3)</sup>	
<b>Odonate</b>			<b>No. of Species Recorded</b>	<b>25</b>	
Wandering Midget	<i>Agriocnemis pygmaea</i>	-	2	2.0	0
Orange-tailed Sprite	<i>Ceriagrion auranticum ryukyuanum</i>	-	2	1.5	0
Common Bluetail	<i>Ischnura senegalensis</i>	-	2	2.0	0
Blue Sprite	<i>Pseudagrion microcephalum</i>	LC	1	1.0	0
Yellow Featherlegs	<i>Copera marginipes</i>	-	1	0.5	0
Pale-spotted Emperor	<i>Anax guttatus</i>	-	2	6.5	0
Lesser Emperor	<i>Anax parthenope julius</i>	-	2	1.0	0
Common Flangetail	<i>Ictinogomphus pertinax</i>	-	2	3.0	0
Regal Pond Cruiser	<i>Epophthalmia elegans</i>	-	2	1.0	0
Asian Pintail	<i>Acisoma panorpoides</i>	-	2	1.0	0
Blue Dasher	<i>Brachydiplax chalybea flavovittata</i>	-	2	16.5	0
Asian Amberwing	<i>Brachythemis contaminata</i>	-	1	3.5	0
Crimson Darter	<i>Crocothemis servilia servilia</i>	-	2	14.0	0
Amber-winged Glider	<i>Hydrobasileus croceus</i>	-	1	1.5	0
Coastal Glider	<i>Macrodiplax cora</i>	LC	1	2.0	0
Pied Percher	<i>Neurothemis tullia tullia</i>	-	2	5.0	0
Green Skimmer	<i>Orthetrum sabina sabina</i>	-	2	9.0	0
Wandering Glider	<i>Pantala flavescens</i>	-	2	17.5	0
Pied Skimmer	<i>Pseudothemis zonata</i>	-	2	2.5	0
Ruby Darter	<i>Rhodothemis rufa</i>	LC	2	3.0	0
Variiegated Flutterer	<i>Rhyothemis variegata arria</i>	-	2	25.0	0
Evening Skimmer	<i>Tholymis tillarga</i>	-	2	4.5	0
Saddlebag Glider	<i>Tramea virginia</i>	-	2	2.5	0
Scarlet Basker	<i>Urothemis signata signata</i>	LC	1	1.0	0
Dingy Dusk-darter	<i>Zyxomma petiolatum</i>	-	2	8.0	0
			<b>Occurrence<sup>(2)</sup></b>	<b>Mean<sup>(3)</sup></b>	
<b>Butterfly</b>			<b>No. of Species Recorded</b>	<b>21</b>	
Blue Tiger	<i>Tirumala limniace</i>	-	1	0.5	0

Species Name	Scientific Name	Conservation Status <sup>(1)</sup>	Aug 2022		Records Outside Surveys <sup>(4)</sup>
			Occurrence <sup>(2)</sup>	Mean <sup>(3)</sup>	
Blue-spotted Crow	<i>Euploea midamus midamus</i>	-	2	3.0	0
Common Indian Crow	<i>Euploea core amydone</i>	-	1	0.5	0
Great Egg-fly	<i>Hypolimnas bolina kezia</i>	-	2	3.0	0
Common Sailor	<i>Neptis hylas hylas</i>	-	2	1.0	0
Red Ring Skirt	<i>Hestina assimilis assimilis</i>	-	2	4.0	0
Common Evening Brown	<i>Melanitis leda</i>	-	1	1.5	0
Common Palmfly	<i>Elymnias hypermnestra hainana</i>	-	1	0.5	0
Dark Brand Bush Brown	<i>Mycalesis mineus mineus</i>	-	2	2.0	0
Pale Grass Blue	<i>Pseudozizeeria maha serica</i>	-	2	7.5	0
Lesser Grass Blue	<i>Zizina otis</i>	-	1	2.0	0
Tiny Grass Blue	<i>Zizula hylax</i>	-	1	1.5	0
Red-base Jezebel	<i>Delias pasithoe pasithoe</i>	-	1	0.5	0
Lemon Emigrant	<i>Catopsilia pomona pomona</i>	-	2	2.0	0
Common Grass Yellow	<i>Eurema hecabe hecabe</i>	-	2	4.0	0
Three-spot Grass Yellow	<i>Eurema blanda hylama</i>	-	1	1.0	0
Common Mime	<i>Chilasa clytia clytia</i>	-	1	1.0	0
Common Mormon	<i>Papilio polytes polytes</i>	-	2	2.5	0
Conjoined Swift	<i>Pelopidas conjunctus</i>	-	1	0.5	0
Colon Swift	<i>Caltoris bromus</i>	-	1	0.5	0
Dark Swift	<i>Caltoris cahira</i>	-	1	0.5	0

Species Name	Scientific Name	Conservation Status <sup>(1)</sup>	Sep 2022		Records Outside Surveys <sup>(4)</sup>
			Occurrence <sup>(2)</sup>	Mean <sup>(3)</sup>	

Odonate		No. of Species Recorded	13		
Dingy Dusk-hawker	<i>Gynacantha subinterrupta</i>	LC	-	-	V
Regal Pond Cruiser	<i>Epophthalmia elegans</i>	-	1	3.0	0
Blue Dasher	<i>Brachydiplax chalybea flavovittata</i>	-	1	12.0	0
Asian Amberwing	<i>Brachythemis contaminata</i>	-	1	3.0	0
Crimson Darter	<i>Crocothemis servilia servilia</i>	-	1	4.0	0
Coastal Glider	<i>Macrodiplax cora</i>	LC	1	1.0	0
Pied Percher	<i>Neurothemis tullia tullia</i>	-	1	9.0	0
Green Skimmer	<i>Orthetrum sabina sabina</i>	-	1	8.0	0
Wandering Glider	<i>Pantala flavescens</i>	-	1	4.0	0
Variiegated Flutterer	<i>Rhyothemis variegata arria</i>	-	1	16.0	0
Evening Skimmer	<i>Tholymis tillarga</i>	-	1	3.0	0
Saddlebag Glider	<i>Tramea virginia</i>	-	1	4.0	0
Scarlet Basker	<i>Urothemis signata signata</i>	LC	1	4.0	0

Butterfly		No. of Species Recorded	19		
Blue-spotted Crow	<i>Euploea midamus midamus</i>	-	1	1.0	0
Great Egg-fly	<i>Hypolimnas bolina kezia</i>	-	1	5.0	0
Common Sailor	<i>Neptis hylas hylas</i>	-	1	1.0	0
Dark Brand Bush Brown	<i>Mycalesis mineus mineus</i>	-	1	4.0	0
South China Bush Brown	<i>Mycalesis zonata</i>	-	1	2.0	0

Species Name	Scientific Name	Conservation Status <sup>(1)</sup>	Aug 2022		Records Outside Surveys <sup>(4)</sup>
			Occurrence <sup>(2)</sup>	Mean <sup>(3)</sup>	
Chocolate Royal	<i>Remelana jangala mudra</i>	-	1	2.0	0
Pale Grass Blue	<i>Pseudozizeeria maha serica</i>	-	1	5.0	0
Tiny Grass Blue	<i>Zizula hylax</i>	-	1	7.0	0
Tailless Line Blue	<i>Prosotas dubiosa</i>	-	1	4.0	0
Red-base Jezebel	<i>Delias pasithoe pasithoe</i>	-	1	1.0	0
Lemon Emigrant	<i>Catopsilia pomona pomona</i>	-	1	1.0	0
Three-spot Grass Yellow	<i>Eurema blanda hylama</i>	-	1	3.0	0
Common Jay	<i>Graphium doson axion</i>	-	1	1.0	0
Common Mime	<i>Chilasa clytia clytia</i>	-	1	6.0	0
Common Mormon	<i>Papilio polytes polytes</i>	-	1	2.0	0
Little Branded Swift	<i>Pelopidas agna</i>	-	-	-	V
Small Branded Swift	<i>Pelopidas mathias oberthueri</i>	-	-	-	V
Colon Swift	<i>Caltoris bromus</i>	-	1	1.0	0
Dark Swift	<i>Caltoris cahira</i>	-	1	1.0	0

Species Name	Scientific Name	Conservation Status <sup>(1)</sup>	Oct 2022		Records Outside Surveys <sup>(4)</sup>
			Occurrence <sup>(2)</sup>	Mean <sup>(3)</sup>	

**Odonate** **No. of Species Recorded** **20**

Orange-tailed Sprite	<i>Ceriagrion auranticum ryukyuanum</i>	-	1	1.0	0
Common Bluetail	<i>Ischnura senegalensis</i>	-	1	2.0	0
Yellow Featherlegs	<i>Copera marginipes</i>	-	1	2.0	0
Pale-spotted Emperor	<i>Anax guttatus</i>	-	1	1.0	0
Lesser Emperor	<i>Anax parthenope julius</i>	-	1	1.0	0
Common Flangetail	<i>Ictinogomphus pertinax</i>	-	1	5.0	0
Regal Pond Cruiser	<i>Epophthalmia elegans</i>	-	1	3.0	0
Asian Pintail	<i>Acisoma panorpoides</i>	-	1	2.0	0
Blue Dasher	<i>Brachydiplax chalybea flavovittata</i>	-	1	14.0	0
Asian Amberwing	<i>Brachythemis contaminata</i>	-	1	7.0	0
Crimson Darter	<i>Crocothemis servilia servilia</i>	-	1	2.0	0
Pied Percher	<i>Neurothemis tullia tullia</i>	-	1	11.0	0
Green Skimmer	<i>Orthetrum sabina sabina</i>	-	1	16.0	0
Wandering Glider	<i>Pantala flavescens</i>	-	1	9.0	0
Ruby Darter	<i>Rhodothemis rufa</i>	LC	1	1.0	0
Variiegated Flutterer	<i>Rhyothemis variegata arria</i>	-	1	14.0	0
Evening Skimmer	<i>Tholymis tillarga</i>	-	1	1.0	0
Saddlebag Glider	<i>Tramea virginia</i>	-	1	5.0	0
Scarlet Basker	<i>Urothemis signata signata</i>	LC	1	1.0	0
Dingy Dusk-darter	<i>Zyxomma petiolatum</i>	-	1	1.0	0

Occurrence<sup>(2)</sup>      Mean<sup>(3)</sup>

**Butterfly** **No. of Species Recorded** **28**

Common Tiger	<i>Danaus genutia</i>	-	1	1.0	0
Great Egg-fly	<i>Hypolimnas bolina kezia</i>	-	1	8.0	0
Common Sailor	<i>Neptis hylas hylas</i>	-	1	1.0	0
Red Ring Skirt	<i>Hestina assimilis assimilis</i>	-	1	4.0	0

Species Name	Scientific Name	Conservation Status <sup>(1)</sup>	Aug 2022		Records Outside Surveys <sup>(4)</sup>
			Occurrence <sup>(2)</sup>	Mean <sup>(3)</sup>	
Southern Sullied Sailer	<i>Neptis clinia susruta</i>	-	1	1.0	0
Common Palmfly	<i>Elymnias hypermnestra hainana</i>	-	1	1.0	0
Dark Brand Bush Brown	<i>Mycalesis mineus mineus</i>	-	1	5.0	0
South China Bush Brown	<i>Mycalesis zonata</i>	-	1	1.0	0
Gram Blue	<i>Euchrysops cnejus</i>	-	1	1.0	0
Slate Flash	<i>Rapala manea</i>	-	-	-	V
Long-tailed Blue	<i>Lampides boeticus</i>	-	1	1.0	0
Pale Grass Blue	<i>Pseudozizeeria maha serica</i>	-	1	6.0	0
Tiny Grass Blue	<i>Zizula hylax</i>	-	1	11.0	0
Tailless Line Blue	<i>Prosotas dubiosa</i>	-	1	16.0	0
Red-base Jezebel	<i>Delias pasithoe pasithoe</i>	-	1	2.0	0
Lemon Emigrant	<i>Catopsilia pomona pomona</i>	-	1	2.0	0
Three-spot Grass Yellow	<i>Eurema blanda hylama</i>	-	1	3.0	0
Tailed Jay	<i>Graphium agamemnon agamemnon</i>	-	1	1.0	0
Common Mime	<i>Chilasa clytia clytia</i>	-	1	5.0	0
Common Mormon	<i>Papilio polytes polytes</i>	-	1	2.0	0
Spangle	<i>Papilio protenor</i>	-	1	1.0	0
Common Awl	<i>Hasora badra badra</i>	LC	-	-	V
Dart	<i>Potanthus sp.</i>	-	-	-	V
Formosan Swift	<i>Borbo cinnara</i>	-	1	1.0	0
Swift	<i>Pelopidas sp.</i>	-	-	-	V
Colon Swift	<i>Caltoris bromus</i>	-	1	1.0	0
Chinese Dart	<i>Potanthus confucius confucius</i>	-	1	1.0	0
Grass Demon	<i>Udaspes folus</i>	-	1	1.0	0

(1) Conservation status follows that of Fellowes *et al.* (2002), Lo & Hui (2004), Tam *et al.* (2011) and Young & Yiu (2002).

(2) Indicates number of surveys recorded within the reporting period.

(3) Refers to the mean number of individuals recorded in the reporting period in the WRA

(4) Includes observations during other surveys and/or site visits.

## F. Environmental Mitigation Measures - Implementation Status

### Air Quality – Recommended Mitigation Measures

Air Quality Mitigation Measures during construction	Implementation Status
• access roads should be sprayed with water or dust suppression chemical to maintain the entire road surface wet or paved;	✓
• every stock of more than 20 bags of cement or dry PFA should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides;	N/A
• de-bagging, batching or mixing process should be carried out in sheltered areas during the use of bagged cement;	N/A
• use of effective dust screens, sheeting or netting to be provided to enclose dry scaffolding which may be provided from the ground floor level of the building or if a canopy is provided at the first-floor level, from the first-floor level, up to the highest level (maximum four floors for this Project) of the scaffolding where scaffolding is erected around the perimeter of a building under construction;	N/A
• dump trucks for material transport should be totally enclosed using impervious sheeting;	✓
• any excavated dusty materials or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated within 24 hours of the excavation or unloading;	✓
• dusty materials remaining after a stockpile is removed should be wetted with water;	✓
• the area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with e.g. concrete, bituminous materials or hardcore or similar;	✓
• the portion of road leading only to a construction site that is within 30m of a designated vehicle entrance or exit should be kept clear of dusty materials;	✓
• stockpile of dusty materials to be either covered entirely by impervious sheeting, placed in an area sheltered on the top and the 3 sides; or sprayed with water so as to maintain the entire surface wet;	✓
• all dusty materials to be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet;	✓
• vehicle speed to be limited to 10 kph except on completed access roads;	✓
• every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites;	✓
• the load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle; and	✓
• the working area of excavation should be sprayed with water immediately before, during and immediately after (as necessary) the operations so as to maintain the entire surface wet.	✓
<b>Odour mitigation measures</b>	
• all malodorous excavated material should be placed as far as possible from any ASRs;	N/A
• the stockpiled malodorous material should be removed from site as soon as possible; and	N/A
• the stockpiled malodorous material should be covered entirely by plastic tarpaulin sheets.	N/A

## Noise – Recommended Mitigation Measures

Noise Mitigation Measures during construction	Implementation Status
<ul style="list-style-type: none"> <li>only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction works;</li> </ul>	✓
<ul style="list-style-type: none"> <li>machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;</li> </ul>	✓
<ul style="list-style-type: none"> <li>plant known to emit noise strongly in one direction should, where possible, be orientated to direct noise away from the NSRs;</li> </ul>	✓
<ul style="list-style-type: none"> <li>silencers or mufflers on construction equipment should be utilised and should be properly maintained during the construction period;</li> </ul>	✓
<ul style="list-style-type: none"> <li>mobile plant should be sited as far away from NSRs as possible;</li> </ul>	✓
<ul style="list-style-type: none"> <li>material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities;</li> </ul>	✓
<ul style="list-style-type: none"> <li>air compressor and hand-held breaker should be fitted with valid noise emission labels during operation; and</li> </ul>	N/A
<ul style="list-style-type: none"> <li>The Contractor shall at all times comply with all current statutory environmental legislation.</li> </ul>	✓
<p><i>Selection of quieter plant and working methods</i></p> <p>The Contractor shall obtain particular models of plant that are quieter than standards given in GW-TM. The list of assumed quieter plants can be found in the Table 4–14 of the EIA report. The Contractor shall select from the available models achieving the assumed sound levels while making reference to the GW-TM and BS5228: Part 1: 1997</p>	✓
<p><i>Use of Noise Barriers</i></p> <p>Noise barriers are proposed along the site boundary to block the direct line of sight from the most affected NSRs to the major noise contribution construction phases. The height of the noise barriers ranged from 9-10m. The noise barriers shall be built before the commencement of construction works in order to ensure protection to nearby NSRs. The noise barrier should have a surface density of at least 10kg/m<sup>2</sup> or material providing equivalent transmission loss. The noise barriers and hoardings should have no gaps and openings to avoid noise leakage.</p>	✓

## Water Quality – Recommended Mitigation Measures

Water Quality Mitigation Measures during construction	Implementation Status
<ul style="list-style-type: none"> <li>The site should be confined to avoid silt runoff to the site;</li> </ul>	✓
<ul style="list-style-type: none"> <li>No discharge of silty water into the storm drain and drainage channel within and the vicinity of the site;</li> </ul>	✓
<ul style="list-style-type: none"> <li>Any soil contaminated with chemicals/oils shall be removed from site and the void created shall be filled with suitable materials;</li> </ul>	P
<ul style="list-style-type: none"> <li>Stockpiles to be covered by tarpaulin to avoid spreading of materials during rainstorms;</li> </ul>	✓
<ul style="list-style-type: none"> <li>Suitable containers shall be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport;</li> </ul>	✓
<ul style="list-style-type: none"> <li>Chemical waste containers shall be labelled with appropriate warning signs in English and Chinese to avoid accidents. there shall also be clear instructions showing what action to take in the event of an accidental;</li> </ul>	✓
<ul style="list-style-type: none"> <li>Storage areas shall be selected at safe locations on site and adequate space shall be allocated to the storage area;</li> </ul>	✓
<ul style="list-style-type: none"> <li>Any construction plant which causes pollution to the water system due to leakage of oil or fuel shall be removed off-site immediately;</li> </ul>	N/A
<ul style="list-style-type: none"> <li>Spillage or leakage of chemical waste to be controlled by using suitable absorbent materials;</li> </ul>	N/A
<ul style="list-style-type: none"> <li>Chemicals will always be stored on drip trays or in bunded areas where the volume is 110% of the stored volume; and</li> </ul>	✓
<ul style="list-style-type: none"> <li>Regular clearance of domestic waste generated in the temporary sanitary facilities to avoid waste water spillage.</li> </ul>	✓



### Water Quality Mitigation Measures during construction

### Implementation Status

<ul style="list-style-type: none"> <li>• Temporary sanitary facilities to be provided for on-site workers during construction;</li> </ul>	✓
<ul style="list-style-type: none"> <li>• Temporary drainage channel and associated facilities will be provided to collect the surface runoff generated within the Project Area during the construction phase;</li> </ul>	✓
<ul style="list-style-type: none"> <li>• Sandbags or silt traps will need to be placed to avoid silt runoff to the drainage channel draining the water in the northern ditch. Draining of the ditches should avoid rainy weather; and</li> </ul>	✓
<ul style="list-style-type: none"> <li>• Excavated soil which needs to be temporarily stockpiled should be stored in a specially designated area and provided with a tarpaulin cover to avoid runoff into the drainage channels.</li> </ul>	✓

### Waste Management – Recommended Mitigation Measures

#### Waste Management Mitigation Measures during construction

#### Implementation Status

<p><i>Site Clearance Waste</i></p> <ul style="list-style-type: none"> <li>• The major construction works of Wo Shang Wai is in the development of residential buildings and other associated facilities (club house, tennis courts, etc.). The amount of site clearance works will be limited with the exception of the excavated materials. The thin layer of vegetation removed can be stored and reused for landscaping.</li> </ul>	✓
<p><i>Excavated Materials</i></p> <p>The intention is to maximize the reuse of the excavated materials on-site as fill materials.</p>	✓
<p><i>Imported Filling Material</i></p> <p>The excavated/imported filling material may have to be temporarily stockpiled on-site for the construction of road embankment and foundation of viaduct substructure. Control measures should be taken at the stockpiling area to prevent the generation of dust and pollution of stormwater channels. However, to eliminate the risk of blocking drains in the wet season, it is recommended that stockpiling of excavated materials at during wet season should be avoided as far as practicable.</p>	✓
<p><i>Construction and Demolition Materials</i></p> <p>Careful design, planning and good site management can minimise over-ordering and generation of waste materials such as concrete, mortars and cement grouts. The design of formwork should maximise the use of standard wooden panels so that high reuse levels can be achieved. Alternatives such as steel formwork of plastic facing should be considered to increase the potential for reuse.</p>	✓
<p>The Contractor should reuse any C&amp;D material on-site. C&amp;D waste should be segregated and stored in different containers to other wastes to encourage the re-use or recycling of materials and their proper disposal.</p>	✓
<p><i>Chemical Waste</i></p> <p>For those processes which generate chemical waste, it may be possible to find alternatives which generate reduced quantities or even no chemical waste, or less dangerous types of chemical waste.</p> <p>Containers used for the storage of chemical wastes should:</p> <ul style="list-style-type: none"> <li>• be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed;</li> <li>• have a capacity of less than 450 litres unless the specification has been approved by the EPD; and</li> <li>• display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations.</li> </ul> <p>The storage area for chemical wastes should:</p> <ul style="list-style-type: none"> <li>• be clearly labelled and used solely for the storage of chemical waste;</li> <li>• be enclosed on at least 3 sides;</li> <li>• have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area whichever is the greatest;</li> <li>• have adequate ventilation;</li> <li>• be covered to prevent rainfall entering (water collected within the bund must be tested and disposed as chemical waste if necessary); and</li> <li>• be arranged so that incompatible materials are adequately separated.</li> </ul>	N/A
	P
	✓
	✓
	✓
	✓
	✓
	✓

Waste Management Mitigation Measures during construction	Implementation Status
Disposal of chemical waste should:	
<ul style="list-style-type: none"> <li>be via a licensed waste collector; and</li> </ul>	N/A
<ul style="list-style-type: none"> <li>be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Facility which also offers a chemical waste collection service and can supply the necessary storage containers, or</li> </ul>	N/A
<ul style="list-style-type: none"> <li>to be reuser of the waste, under approval from the EPD.</li> </ul>	N/A
<i>General Refuse</i>	P
Should be stored in enclosed bins or compaction units separate from C&D and chemical wastes. The Contractor should employ a reputable waste collector to remove general refuse from the site, separate from C&D and chemical wastes, on a regular basis to minimise odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law.	
<b>Disposal of Excavated Sediment at Sea</b>	
The requirements and procedures for excavated sediment disposal are specified under the ETWB TCW No. 34/2002 and PNAP 252. The management of the excavation, use and disposal of sediment is monitored by Fill Management Committee, whilst the licensing of marine dumping is the responsibility of the Director of Environmental Protection (DEP).	N/A
The excavated sediment would be loaded onto barges or other appropriate vessel and transported to the designated marine disposal site. Category L sediment and Category M sediment passing the biological test would be suitable for disposal at a gazetted open sea disposal ground. Category M sediment failing the biological test and Category H sediment passing the biological test would require confined marine disposal.	N/A
During transportation and disposal of the dredged sediment, the following measures should be taken to minimize potential impacts on water quality:	N/A
<ul style="list-style-type: none"> <li>Bottom opening transport vessels should be fitted with tight fitting seals to prevent leakage of material. Excess material should be cleaned from the decks and exposed fittings of vessels before the vessel is moved.</li> </ul>	N/A
<ul style="list-style-type: none"> <li>Monitoring of the barge loading should be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels should be equipped with automatic self-monitoring devices as specified by the DEP.</li> </ul>	N/A

## Ecology – Recommended Mitigation Measures

Ecology Mitigation Measures during construction	Implementation Status
<i>Clear Definition of Site Limit</i>	
Clear definition of the site limit should be provided in order to minimize and confine the disturbance during the construction period, especially the northern limit of the Site which is adjacent to fishponds within the Conservation Area (CA) zone and are considered to be ecological sensitive receivers.	✓
During wetland construction stage the WRA boundary will be delineated using a temporary hoarding in order to reduce disturbance to off-site habitats and wildlife. During the establishment phase this hoarding will be replaced with a 1 m high chain-link fence in order to reduce disturbance to the WRA through access by humans and dogs, and a hoarding will be established around the residential construction site.	N/A (WRA construction completed)
<i>Dust and Noise Suppression and Avoidance of Water Pollution</i>	
Good site practices of dust and noise suppression should be strictly implemented to ensure that disturbance is minimized to acceptable levels. Mitigation measures for the off-site disturbance impacts on the fishponds in the CA include hoarding at the northern site boundary during construction of the WRA to reduce noise and dust impacts to the adjacent habitats. Through the use of quieter plant and temporary/movable noise barriers, the noise level would be reduced significantly to an acceptable level. Hoarding at the northern boundary should be replaced with a 1 m high chain-link fence following construction and the WRA will then act as a buffer between the existing wetland areas and the residential part of the site until construction is completed. Hoarding will be retained between the WRA and ongoing construction work to avoid visual disturbance and reduce noise and dust emissions. Pollution of watercourses and sedimentary runoff will be minimized by good site practice, especially the containment of water and sediment within the site for removal.	✓

### Ecology Mitigation Measures during construction

### Implementation Status

These standard noise and air and water quality site practices are considered to be effective measures for minimizing the disturbance impact during the construction period.		
<i>Planning of Construction Schedule</i>		
The construction of the proposed project should be scheduled in phases. Because mitigation is preferably carried out in advance of the main works rather than after the completion of works, the construction of the WRA will commence at the start of the project. Construction work within the WRA is scheduled to take place in a single wet season, followed by 1.5 years of wetland establishment. During the wetland establishment period no noisy work will be undertaken within the WRA to minimize the disturbance to off-site habitats and wildlife.		N/A (WRA construction completed)
<i>Reusing Onsite Materials</i>		
Soil and plants on-site should be reused (e.g. used as fill material) as far as practical. Stock piles of these reusable materials should be stored in an appropriate area on-site. In particular, the re-use of the wetland soils and topsoil should be considered.		✓
<i>Construction of the Wetland Restoration Area</i>		
The WRA will be operational within 2.5 years from the commencement of construction (1 year for site formation and 1.5 years for establishment) and will compensate for the predicted ecological impacts of the proposed development.		✓

## Landscape and Visual – Recommended Mitigation Measures

### Landscape and Visual Mitigation Measures during construction

### Implementation Status


CM1 - The construction area and contractor's temporary works areas should be minimised to avoid impacts on adjacent landscape.		✓
CM2 - Screening of construction works by hoarding / noise barriers.		✓ (see Appendix G Photo 1 & 3 *)
CM3 - Reduction of construction period to practical minimum.		✓
CM4 - Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where the soil material meets acceptable criteria and where practical. The Contract Specification shall include storage and reuse of topsoil as appropriate.		✓
CM5 - Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone).		✓
CM6 - Advance screen planting of noise barriers		✓ (see Appendix G Photo 3 *)
CM7 - Control night-time lighting and glare by hooding all lights.		N/A
CM8 - Ensure no run-off into streams adjacent to the Project Area.		✓
CM9 - Protection of existing trees on boundary of site shall be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. (Tree protection measures will be detailed at S16 and Tree Removal Application stage).		✓
CM10 - Trees unavoidably affected by the works shall be transplanted where practical. Trees should be transplanted straight to their destinations and not held in a nursery. A detailed Tree Transplanting Specification shall be provided in the Contract Specification, if applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme.		✓

Legend:

- ✓ Implemented
- x Not implemented
- P Partially implemented
- N/A Not applicable
- \* Representative photos showing the implementation of mitigation measures are presented in Appendix G



## G. Landscape and Visual Audit Photos

	
<p>Photo 1: The Construction works have been screened by hoarding / noise barriers. (CM2)</p>	<p>Photo 2: The wetland areas have been established and the ponds are seasonally filled with rainwater (OM4)</p>
	
<p>Photo 3: Advance screen planting of noise barrier has been undertaken (CM6, OM2)</p>	