

香港電燈有限公司
The Hongkong Electric Co., Ltd.



**Lamma Power Station Extension
Construction Phase
Monthly Environmental Monitoring & Audit Report**

November 2021

香港電燈有限公司
The Hongkong Electric Co., Ltd.



ENVIRONMENTAL IMPACT ASSESSMENT (EIA) ORDINANCE, CAP. 499

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**LAMMA POWER STATION EXTENSION
ENVIRONMENTAL MONITORING & AUDIT PROGRAMME
AT CONSTRUCTION PHASE**



Report Title	Lamma Power Station Extension – Unit L11 & L12 Monthly EM&A Report (November 2021)
Date	14 December 2021
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EXECUTIVE SUMMARY

This is the 139th monthly Environmental Monitoring and Audit (EM&A) report for the Project “Construction of Lamma Power Station Extension” prepared by the Environmental Team (ET). This report presents the results of impact monitoring on air quality and noise for the said project in November 2021.

The reclamation and submarine pipeline works were completed with the first gas-fired combined cycle unit (viz. Unit L9) commissioned in October 2006, working currently on base load operation. To cope with the scheduled retirement of the existing units at Lamma Power Station, the second gas-fired combined cycle unit (viz. Unit L10) L10 was commissioned for reliable operation in February 2020. The operational EM&A work for L9 and L10 is recorded in the separate monthly EM&A report for the Project “Operation of Lamma Power Station Extension”.

In September 2016, the Government approved HK Electric to construct the third combined cycle gas-fired generating unit (L11) to implement the 2020 Fuel Mix Target. L11 is planned for commercial operation in 2022 and the associated construction work commenced in November 2016. The Gas-in and Synchronization for L11 were carried out in mid-October and mid-November 2021 respectively to facilitate commissioning activities.

With the Government’s approval to build the fourth combined cycle gas-fired generating unit (L12) in July 2018, the associated construction work commenced in April 2019. When L12 is commissioned in 2023, the total gas-fired electricity generation will further rise to reach about 70% of our total output.

Air and noise monitoring were performed. The results were checked against the established Action/Limit (AL) levels. An on-site audit was conducted once per week. The implementation status of the environmental mitigation measures, Event/Action Plan and environmental complaint handling procedures were also checked.

Construction Activities Undertaken

Construction activities for Lamma Extension during the reporting month are tabulated as follows:

Item	Construction Activities
Unit L11 Civil and Building Works	Main Station Building external works and pipe jacking
Unit L11 Mechanical Erection	Testing and commissioning
Unit L11 Electrical, Instrumentation & Control Erection	Testing and commissioning
Unit L12 Civil and Building Works	Installation of columns and beam for Main Station Building, construction of No. 5 Chimney, construction of superstructure for ACB, installation of pipe and backfilling works for No. 5 C.W. Culvert, installation of precast beam for Cable Bridge (North & South), construction of pile cap for shunt reactor compound extension and soil nailing for No. 5 C.W. Intake.
Unit L12 Mechanical Erection	Condenser installation, HRSG installation and turbine block installation
Unit L12 Electrical, Instrumentation & Control Erection	Cable installation

Environmental Monitoring Works

All monitoring work at designated stations was performed as scheduled satisfactorily.

Air Quality

No exceedance of Action/Limit levels on 1-hour TSP and 24-hour TSP for air quality was recorded in the month.

Noise

No exceedance of Action and Limit levels for noise arising from the construction of Lamma Extension was recorded in the month.

Site Environmental Audit

Site audits were carried out on a weekly basis to monitor environmental issues on the construction site. The site conditions were generally satisfactory.

Environmental Licensing and Permitting

Description	Permit No.	Valid Period		Issued To	Date of Issuance
		From	To		
Varied Environmental Permit	EP-071/2000/D	28/09/20	-	HK Electric	28/09/20
Construction Noise Permit	GW-RS0436-21	01/07/21	31/12/21	Contractor	15/06/21
Construction Noise Permit	GW-RS0600-21	08/08/21	07/02/22	Contractor	06/08/21
Construction Noise Permit	GW-RS0790-21	23/10/21	21/04/22	Contractor	21/10/21
WPCO Discharge Licence	WT00034006-2019	08/08/19	31/08/24	Contractor	22/08/19
WPCO Discharge Licence	WT00037613-2021	15/04/21	30/04/26	Contractor	15/04/21
WPCO Discharge Licence	WT00037665-2021	06/05/21	31/05/26	Contractor	06/05/21
Registration of Chemical Waste Producer	WPN5213-912-P2781-22	22/02/16	-	Contractor	22/02/16
Registration of Chemical Waste Producer	WPN5517-912-T2007-02	17/03/05	-	Contractor	17/03/05
Waste Disposal Billing Account	Account No.: 7031135	21/06/18	-	Contractor	21/06/18
Waste Disposal Billing Account	Account No.: 7027672	24/04/17	-	Contractor	24/04/17
Waste Disposal Billing Account	Account No.: 7038672	27/10/20	-	Contractor	27/10/20
Waste Disposal Billing Account	Account No.: 7039272	08/01/21	-	Contractor	08/01/21

Implementation Status of Environmental Mitigation Measures

Environmental mitigation measures for the construction activities as recommended in the EM&A manual were implemented in the reporting month.

Environmental Complaints

No complaint against the construction activities was received in the reporting month.

Future Key Issues

The future key issues to be considered in the coming month are as follows:

Unit L11 Civil and Building Works

- to continue executing the preventive measures for avoiding noise exceedance and keep monitoring/ reviewing the performance;
- to monitor and review the sufficiency of the dust suppression measures provided and increase the resources accordingly if necessary;
- to treat wastewater in sedimentation pit and tanks before discharge and to ensure compliance with the WPCO discharge licence already obtained.

Unit L11 Mechanical Erection

- to continue monitoring the noise level during construction and to ensure compliance with the CNP's already obtained;
- to continue executing the preventive measures for avoiding noise exceedance and keep monitoring/ reviewing the performance;
- to monitor and review the sufficiency of the dust suppression measures provided and increase the resources accordingly if necessary.

Unit L11 Electrical, Instrumentation & Control Erection

- to continue monitoring the noise level during construction and to ensure compliance with the CNP's already obtained;
- to continue executing the preventive measures for avoiding noise exceedance and keep monitoring/ reviewing the performance;
- to monitor and review the sufficiency of the dust suppression measures provided and increase the resources accordingly if necessary.

Unit L12 Civil and Building Works

- to continue monitoring the noise level during construction and to ensure compliance with the CNP's already obtained;
- to monitor and review the sufficiency of the dust suppression measures provided and increase the resources accordingly if necessary;
- to treat wastewater in sedimentation pit and tanks before discharge and to ensure compliance with the WPCO discharge licence already obtained;

Unit L12 Mechanical Erection

- to continue executing the preventive measures for avoiding noise exceedance and keep monitoring/ reviewing the performance;
- to monitor and review the sufficiency of the dust suppression measures provided and increase the resources accordingly if necessary.

Unit L12 Electrical, Instrumentation & Control Erection

- to continue executing the preventive measures for avoiding noise exceedance and keep monitoring/ reviewing the performance;
- to monitor and review the sufficiency of the dust suppression measures provided and increase the resources accordingly if necessary.

Concluding Remarks

The environmental performance of the project was generally satisfactory.

1. INTRODUCTION

1.1 Background

The Environmental Team (hereinafter called the “ET”) was formed within the Hongkong Electric Co. Ltd (HEC) to undertake Environmental Monitoring and Audit for “Construction of Lamma Power Station Extension” (hereinafter called the “Project”). Under the requirements of Section 6 of Environmental Permit EP-071/2000/D, an EM&A programme for impact environmental monitoring set out in the EM&A Manual (Construction Phase) is required to be implemented. In accordance with the EM&A Manual, environmental monitoring of air quality, noise and water quality and regular environmental audits are required for the Project. With the completion of reclamation and submarine pipeline works, no further marine water quality monitoring would be required.

The Project involves the construction of a gas-fired power station employing combined cycled gas turbine technology, forming an extension to the existing Lamma Power Station. The key elements of the Project including the construction activities associated with the transmission system and submarine gas pipeline are outlined as follows.

- dredging and reclamation to form approximately 22 hectares of usable area;
- construction of six 300MW class gas-fired combined cycle units;
- construction of a gas receiving station;
- construction of a transmission system linking the Lamma Extension to load centres on Hong Kong Island;
- laying of a gas pipeline for the supply of natural gas to the new power station

This report summarizes the environmental monitoring and audit work for the Project for the month of November 2021.

1.2 Project Organisation

An Environmental Management Committee (EMC) has been set up in HEC to oversee the Project. The management structure includes the following:

- Environmental Protection Department (The Authority);
- Environmental Manager (The Chairman of the Environmental Management Committee);
- Engineer;
- Independent Environmental Checker (IEC);
- Environmental Team (ET);
- Contractor.

The project organisation chart for the construction EM&A programme is shown in [Appendix A](#).

1.3 Construction Works undertaken during the Reporting Month

Construction activities for Unit L11 civil and building works were, Main Station Building external works and pipe jacking. Construction activities for Unit L11 mechanical erection were testing and commissioning. Construction activity for Unit L11 electrical, instrumentation & control erection was testing and commissioning. Construction activities for Unit L12 civil and building works were, installation of columns and beam for Main Station Building, construction of No.5 Chimney, construction of superstructure for ACB, installation of pipe and backfilling

works for No. 5 C.W. Culvert, and installation of precast beam for Cable Bridge (North & South), construction of pile cap for shunt reactor compound extension and soil nailing for No. 5 C.W. Intake. Construction activities for Unit L12 mechanical erection were condenser installation, HRSG installation and turbine block installation. Construction activity for Unit L12 electrical, instrumentation & control erection was cable installation. Layout plan for construction site is shown in [Figure 1.1](#).

The main construction activities carried out during the reporting month and the corresponding environmental mitigation measures are summarized in [Table 1.1](#). The implementation of major mitigation measures in the month is provided in [Appendix I](#).

Table 1.1 Construction Activities and Their Corresponding Environmental Mitigation Measures

Item	Construction Activities	Environmental Mitigation Measures
Unit L11 Civil and Building Works		
1.	Main Station Building external works and pipe jacking	<p>Air</p> <ul style="list-style-type: none"> – All regulated machine attached with valid exception/approval NRMM labels. – Water truck and water sprinkler system was used. – Excavated slope and soil stock covered with cement or tarpaulin. – Backfilled surface was compacted. – Wheel washing facility was provided. <p>Wastewater</p> <ul style="list-style-type: none"> – Wastewater should be treated in desilting pit and tanks before discharge. Solution should be added to speed up the sedimentation process. Sediment in pit and tanks must be removed regularly. The frequency would be from every other day to weekly basis depends on the volume of sediment accumulated in order to maintain sufficient volume for wastewater treatment. <p>Waste Management</p> <ul style="list-style-type: none"> – Excavated soil was temporary stored for backfilling. – Scrape metal would be recycled. – Timber would be reused as much as possible.
Unit L11 Mechanical Erection		
2.	Testing and commissioning	<p>Air</p> <ul style="list-style-type: none"> – Dust suppression measures implemented according to the EMP.

Item	Construction Activities	Environmental Mitigation Measures
		<p>Noise</p> <ul style="list-style-type: none"> – General noise mitigation measures employed at all work sites throughout the construction phase. <p>Waste Management</p> <ul style="list-style-type: none"> – Waste Management Plan submitted and implemented
Unit L11 Electrical, Instrumentation & Control Erection		
3.	Testing and commissioning	<p>Air</p> <ul style="list-style-type: none"> – Dust suppression measures implemented according to the EMP. <p>Noise</p> <ul style="list-style-type: none"> – General noise mitigation measures employed at all work sites throughout the construction phase. <p>Waste Management</p> <ul style="list-style-type: none"> – Waste Management Plan submitted and implemented.
Unit L12 Civil and Building Works		
4.	<p><u>Unit L12 Main Station Building</u> Installation of Columns and beam</p> <p>Construction of No.5 Chimney</p> <p><u>ACB</u> Construction of superstructure</p> <p><u>No.5 C.W. Culvert</u> installation of pipe and backfilling works</p>	<p>Air</p> <ul style="list-style-type: none"> – All regulated machine attached with valid exception/approval NRMM labels. – Water truck, water sprinkler system and mist cannon would be used. – Water spraying for concrete breaking works. – Soil stock would be covered with cement or tarpaulin or keep the entire surface wet. Wheel washing facility was provided. <p>Noise</p> <ul style="list-style-type: none"> – Works conducted during restricted hours should comply with the valid CNP. – Noise emission label was provided for air compressor. <p>Wastewater</p> <ul style="list-style-type: none"> – Wastewater should be treated in desilting pit and tanks before discharge. Solution should be added to speed up the sedimentation process. Sediment in pit and tanks must be removed regularly. The frequency would be in weekly basis depends on the volume of sediment accumulated in order to maintain sufficient volume for wastewater treatment.

Item	Construction Activities	Environmental Mitigation Measures
		<p>Waste Management</p> <ul style="list-style-type: none"> - Excavated soil was temporary stored for backfilling and reuse in other projects. - Scrape metal would be recycled. - Chemical waste should be collected by licensed collector.
5.	<p>Cable Bridge (North & South): Installation of precast beam</p> <p><u>Shunt Reactor Compound Extension</u> Construction of pile cap</p> <p><u>No. 5 C.W. Intake</u> Soil nailing</p>	<p>Air</p> <ul style="list-style-type: none"> - All regulated machine attached with valid exception/approval NRMM labels. - Noise emission level was provided for air compressor. - Using canvas to cover 3 sides and top of the grouting station. - Water truck, water sprinkler system and mist cannon were used. - Excavated soil slop covered with tarpaulin. - Wheel washing facilities was provided. - Water spraying on haul road and during concrete breaking. <p>Waste Management</p> <ul style="list-style-type: none"> - Excavated soil would be stored for backfilling. <p>Wastewater</p> <ul style="list-style-type: none"> - Wastewater would be treated in desilting tanks before discharge.
Unit L12 Mechanical Erection		
6	<p>Condenser installation</p> <p>HRSG installation</p> <p>Turbine block installation</p>	<p>Air</p> <ul style="list-style-type: none"> - Dust suppression measures implemented according to the EMP. <p>Noise</p> <ul style="list-style-type: none"> - General noise mitigation measures employed at all work sites throughout the construction phase. <p>Waste Management</p> <ul style="list-style-type: none"> - Waste Management Plan submitted and implemented
Unit L12 Electrical, Instrumentation & Control Erection		
7	Cable installation	<p>Air</p>

Item	Construction Activities	Environmental Mitigation Measures
		<ul style="list-style-type: none"><li data-bbox="678 331 1366 398">– Dust suppression measures implemented according to the EMP. <p data-bbox="630 432 703 461">Noise</p> <ul style="list-style-type: none"><li data-bbox="678 477 1326 544">– General noise mitigation measures employed at all work sites throughout the construction phase. <p data-bbox="630 577 884 607">Waste Management</p> <ul style="list-style-type: none"><li data-bbox="678 622 1366 645">– Waste Management Plan submitted and implemented.

1.4 Summary of EM&A Requirements

The detailed EM&A monitoring work for air quality and noise are described in Sections 2 and 3 respectively. Regular environmental site audits for air quality, noise, water quality and waste management were carried out.

The following environmental audits are summarized in Section 4 of this report:

- Environmental monitoring results;
- Waste Management Records;
- Weekly site audit results;
- The status of environmental licensing and permits for the Project;
- The implementation status of environmental protection and pollution control/ mitigation measures.

Future key issues will be reported in Section 5 of this report.

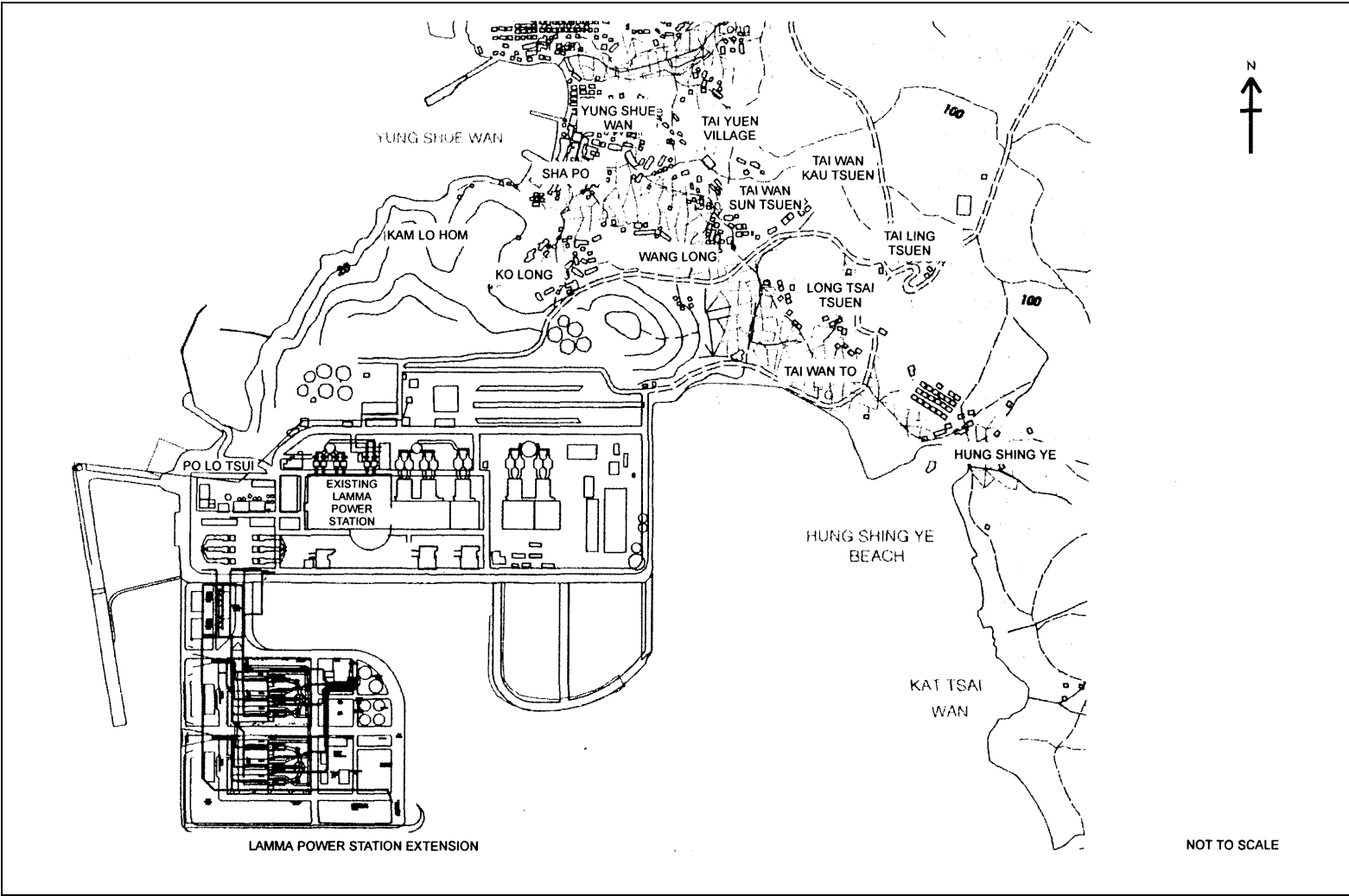


Figure 1.1 Layout of Work Site

2. AIR QUALITY

2.1 Monitoring Requirements

1-hour and 24-hour TSP monitoring at agreed frequencies were conducted to monitor air quality. The impact monitoring data were checked against the Action/Limit Levels as determined in the Baseline Monitoring Report (Construction Phase). [Appendix B](#) shows the established Action/Limit Levels for Air Quality.

2.2 Monitoring Locations

Three dust monitoring locations were selected for 1-hour TSP sampling (AM1, AM2 & AM3) while four monitoring locations were selected for 24-hour TSP sampling (AM1, AM2, AM3 and AM4). [Table 2.1](#) tabulates the monitoring stations. The locations of the monitoring stations are shown in [Figure 2.1](#).

Table 2.1 Air Quality Monitoring Locations

Location I.D.	Description
AM1	Reservoir
AM2	East Gate
AM3	Ash Lagoon
AM4	Tai Yuen Village

2.3 Monitoring Equipment

It is agreed with EPD that continuous 24-hour TSP air quality monitoring would be performed using TEOM continuous dust monitor and the MINIVOL Portable Sampler at AM1,2&3 and AM4 respectively. TEOM continuous dust monitors were used to carry out 1-hour TSP monitoring at AM1, AM2 and AM3. [Table 2.2](#) summarises the equipment used in dust monitoring.

Table 2.2 Air Quality Monitoring Equipment

Equipment	Model and Make
<i>24-hour sampling:</i>	
Continuous TSP Dust Meter	TEOM continuous dust monitor Thermo Scientific
MINIVOL Portable Sampler	AIRMETRICS
<i>1-hour sampling:</i>	
Continuous TSP Dust Meter	TEOM continuous dust monitor Thermo Scientific

2.4 Monitoring Parameters, Frequency and Duration

[Table 2.3](#) summarises the monitoring parameters, duration and frequency of air quality monitoring. The monitoring schedule for the reporting month is shown in [Appendix C](#).

Table 2.3 Air Quality Monitoring Parameter, Duration and Frequency

Monitoring Stations	Parameter	Duration	Frequency
AM1	1-hour TSP	1	3 hourly samples every 6 days
	24-hour TSP	24	Once every 6 days
AM2	1-hour TSP	1	3 hourly samples every 6 days
	24-hour TSP	24	Once every 6 days
AM3	1-hour TSP	1	3 hourly samples every 6 days
	24-hour TSP	24	Once every 6 days
AM4	24-hour TSP	24	Once every 6 days

2.5 Monitoring Procedures and Calibration Details

MINIVOL (24- hour TSP Monitoring):

Preparation of Filter Papers

- Visual inspection of filter papers was carried out to ensure that there were no pinholes, tears and creases;
- The filter papers were then labeled before sampling.
- The filter papers were equilibrated at room temperature and relative humidity < 50% for at least 24 hours before weighing.

Field Monitoring

- During collection of the sampled filter paper, the information on the elapse timer was logged. Site observations around the monitoring stations, which might have affected the monitoring results, were also recorded. Major pollution sources, if any, would be identified and reported.
- The post-sampling filter papers were removed carefully from the filter holder and folded to avoid loss of fibres or dust particles from the filter papers;
- The filter holder and its surrounding were cleaned;
- A pre-weighed blank filter paper for the next sampling was put in place and aligned carefully. The filter holder was then tightened firmly to avoid leakage;
- The programmable timer was set for the next 24 hrs sampling period;
- The post-sampling filter papers were equilibrated at room temperature and relative humidity < 50% for at least 24 hours before weighing.

TEOM continuous dust monitor (24- hour TSP and 1- hour TSP Monitoring):

- The following parameters of the TEOM model dust meters are regularly checked to ensure proper functionality:
 - Operation Mode;
 - Frequency of the tapered element;
 - Main flow;
 - Bypass flow.

Maintenance & Calibration

- The monitoring equipment and their accessories are maintained in good working conditions.

- Monitoring equipment is calibrated at monthly intervals. Calibration details are shown in [Appendix F](#).

2.6 Results and Observations

All dust monitoring works were conducted on schedule. All monitoring data and graphical presentation of the monitoring results are provided in [Appendix D](#). Key findings and observations are provided below:

1-hour TSP

No exceedance of 1-hour TSP Action/Limit Level was recorded in the month.

24-hour TSP

No exceedance of 24-hour TSP Action/Limit Level was recorded in the month.

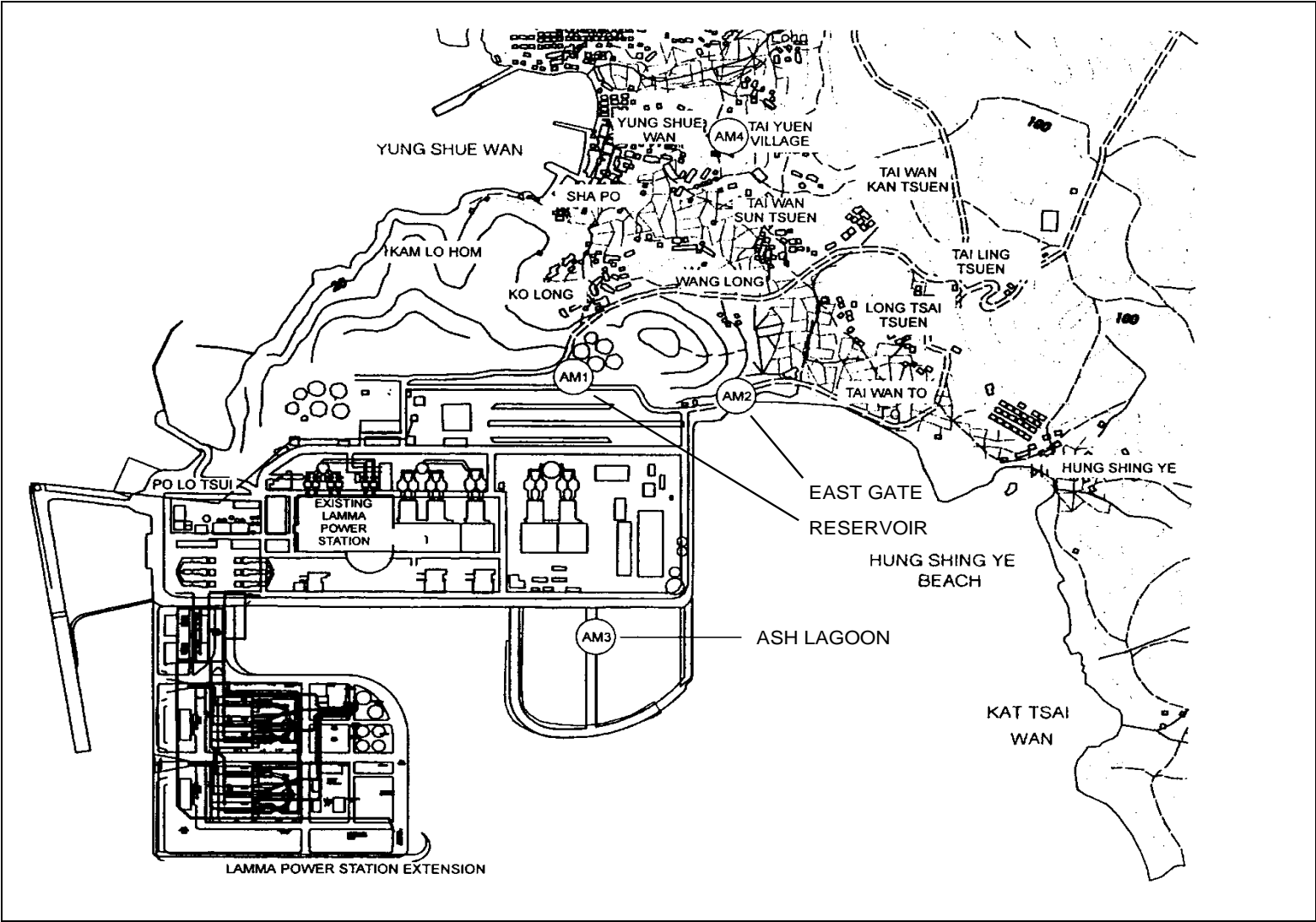


Figure 2.1 Location of Air Quality Monitoring Stations

3. NOISE

3.1 Monitoring Requirements

Continuous noise alarm monitoring at Ash Lagoon/Ching Lam were carried out to calculate the noise contributed by the construction activities at the two critical NSR's, viz. Long Tsai Tsuen/Hung Shing Ye and the school within the village of Tai Wan San Tsuen. The impact monitoring data for construction noise were checked against the limit levels specified in the EM&A Manual. With the availability of the construction noise permits, impact monitoring for the construction work during the restricted hours was also carried out. Section 3 presents the details of the construction noise permits.

The impact noise monitoring data were checked against the limit levels specified in the EM&A Manual. [Appendix B](#) shows the established Action/Limit Levels for noise.

3.2 Monitoring Locations

In accordance with the EM&A manual, the identified noise monitoring locations of Ash Lagoon and Ching Lam are shown in [Figure 3.1](#).

3.3 Monitoring Equipment

The sound level meters used for noise monitoring complied with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1). The noise monitoring equipment used is shown in [Table 3.1](#).

Table 3.1 Noise Monitoring Equipment

Equipment	Model
Sound level meters	B&K 2250
Sound level calibrator	B&K 4231

3.4 Monitoring Parameters, Frequency and Duration

Continuous alarm monitoring was carried out at Ash Lagoon and Ching Lam. The measurement duration and parameter of noise monitoring were presented in [Table 3.2](#) as follows:

Table 3.2 Noise Monitoring Duration and Parameter

Location	Time Period	Frequency	Parameter
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Ash Lagoon	Day-time: 0700-1900 hrs on normal weekdays	Day-time: 30 minutes	30-min L_{Aeq}
	Evening-time & holidays: 0700-2300 hrs on holidays; and 1900-2300 hrs on all other days	Evening-time & holidays: 5 minutes	5-min L_{Aeq}
Ching Lam	Night-time: 2300-0700 hrs of next day	Night-time: 5 minutes	5-min L_{Aeq}

3.5 Monitoring Procedures and Calibration Details

Monitoring Procedures

Continuous Noise Monitoring for Lamma Extension Construction

The measured noise levels (MNL's) were collected at the noise alarm monitoring stations at Ash Lagoon and Ching Lam. The notional background noise levels (viz. baseline noise data at Ash Lagoon and Ching Lam) were applied to correct the corresponding MNL's in 30-min/5-min L_{Aeq} .

A wind speed sensor was installed at Station Building Rooftop. The wind speed signal was used to determine whether the data from Ash Lagoon and Ching Lam noise alarm monitoring stations were affected. The instantaneous data was discarded in case the instantaneous wind speed exceeded 10 m/s. The 30-min/5-min L_{Aeq} was considered valid only if the amount of valid data was equal to or above 70%.

Equipment Calibration

The sound level meters and calibrators were verified by the manufacturer or accredited laboratory. With the endorsement of the Independent Environmental Checker, the enhancement of calibration of sound level meter at the noise monitoring stations was implemented. The monthly manual on-site calibration using sound level calibrator was replaced by the daily auto charge injection calibration function of the sound level meter. For additional quality assurance, manual on-site calibration would still be conducted for the noise monitoring stations once every 6 months. The manual on-site calibrations for Ash Lagoon and Ching Lam noise monitoring stations were carried out in September 2021. The next calibrations for the two noise monitoring stations were scheduled in March 2022.

3.6 Results and Observations

Continuous noise monitoring was conducted at the two monitoring stations at Ash Lagoon and Ching Lam.

All monitoring results and their graphical presentations are provided in [Appendix E](#). No exceedance of noise Action/Limit Level was recorded in the month.

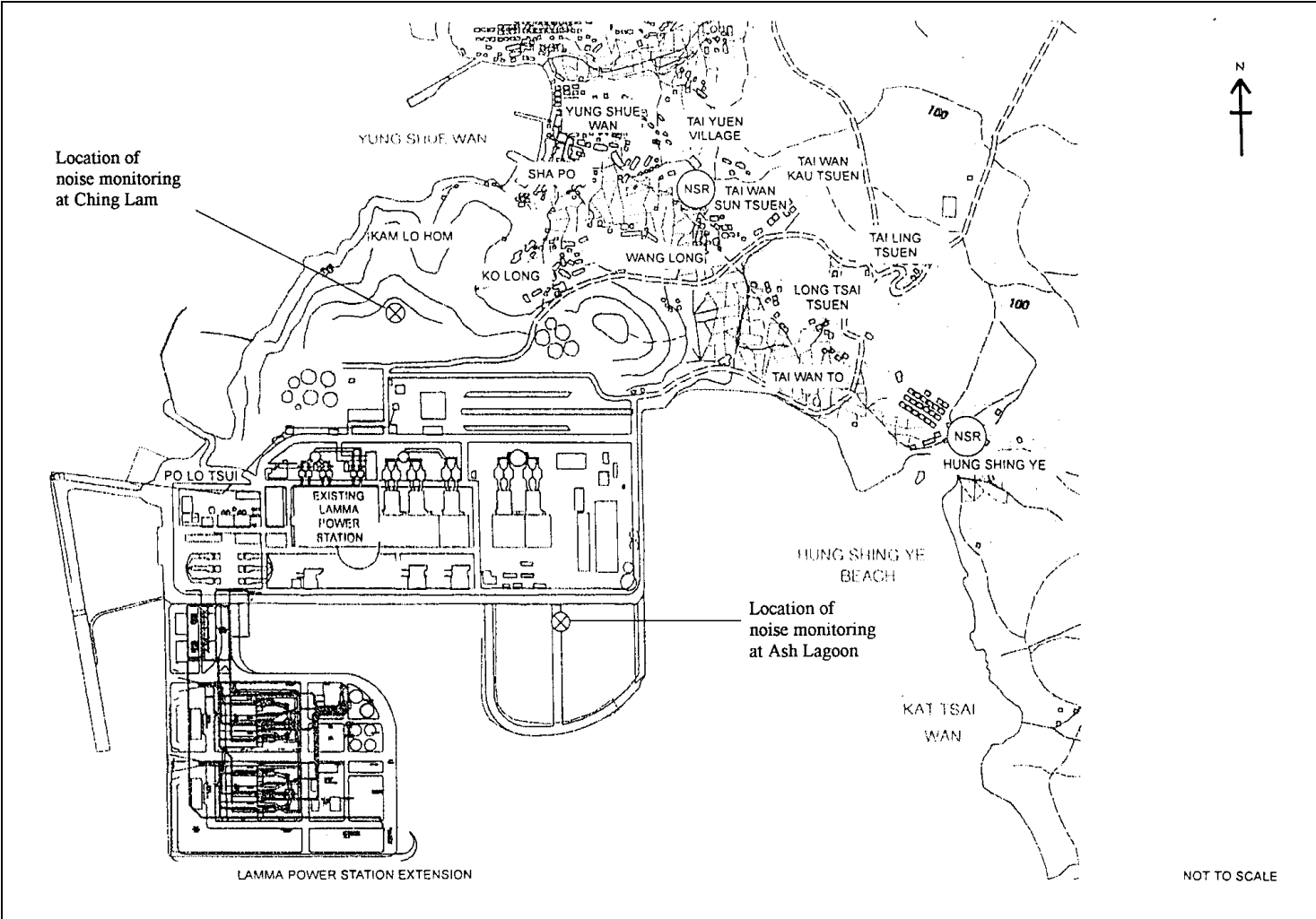


Figure 3.1 Location of Noise Monitoring Stations

4. ENVIRONMENTAL AUDIT

4.1 Review of Environmental Monitoring Procedures

The environmental monitoring procedures were regularly reviewed by the Environmental Team. No modification to the existing monitoring procedures was recommended.

4.2 Assessment of Environmental Monitoring Results

Monitoring results for Air Quality and Noise

The environmental monitoring results for Air Quality and Noise in the reporting month presented in Sections 2 and 3 respectively are summarized in [Table 4.1](#).

Table 4.1 Summary of AL Level Exceedances on Monitoring Parameters

Item	Parameter Monitored	Monitoring Period	No. of Exceedances In		Event/Action Plan Implementation Status and Results
			Action Level	Limit Level	
Air					
1	Ambient TSP (24-hour)	01/11/2021-30/11/2021	0	0	
2	Ambient TSP (1-hour)	01/11/2021-30/11/2021	0	0	
Noise					
1	Noise level at the critical NSR's predicted by the noise alarm monitoring system	01/11/2021-30/11/2021	0	0	

4.3 Waste Management

Wastes generated from this Project include inert construction and demolition (C&D) materials and non-inert C&D materials. Inert C&D materials comprise excavated materials and broken concrete. Non-inert C&D materials comprise general refuse, metals and paper/ cardboard packaging, plastics, chemical waste, etc.

Inert C&D material and non-inert C&D material disposed of in November 2021 are shown in [Table 4.2](#).

Table 4.2 Estimated Amounts of Waste in November 2021

Total Inert C&D Waste Materials	Non-inert C&D Materials		
	C&D Materials Recycled	C&D Waste Disposed of at Landfill	Chemical Waste

0 Tonnes	8.08 Tonnes	50.71 Tonnes	0 Litres
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The monthly waste flow tables prepared by the contractors are attached in [Appendix K](#)

4.4 Site Environmental Audit

Site audits were carried out by ET on a weekly basis to monitor environmental issues at the construction sites to ensure that all mitigation measures were implemented timely and properly. The site audit findings for the reporting month are summarized in [Appendix H](#). The site conditions were generally satisfactory. All required mitigation measures were implemented.

4.5 Status of Environmental Licensing and Permitting

All permits/licenses obtained for the project are summarised in [Table 4.3](#).

Table 4.3 Summary of Environmental Licensing and Permit Status

Description	Permit No.	Valid Period		Highlights	Status
		From	To		
Varied Environmental Permit	EP-071/2000/D	28/09/20	-	The whole construction work site	Valid
Construction Noise Permit	GW-RS0436-21	01/07/21	31/12/21	Power Block Facilities works for Unit L11. Operation of PME during restricted hours	Valid
Construction Noise Permit	GW-RS0600-21	08/08/21	07/02/22	Civil and Building Works for Unit L12. Operation of PME during restricted hours	Valid
Construction Noise Permit	GW-RS0790-21	23/10/21	21/04/22	Construction site of Unit L12. Operation of PME during restricted hours	Valid
WPCO Discharge Licence#	WT00034006-2019	08/08/19	31/08/24	Civil and Building Works for Unit L11	Valid
WPCO Discharge Licence##	WT00037613-2021	15/04/21	30/04/26	Civil and Building Works for No.5 C.W. Intake and Cable Bridge	Valid
WPCO Discharge Licence###	WT00037665-2021	06/05/21	31/05/26	Civil and Building Works for Unit L12	Valid
Registration of Chemical Waste Producer	WPN5213-912-P2781-22	22/02/16	-	Civil and Building Works	Valid

Description	Permit No.	Valid Period		Highlights	Status
		From	To		
Registration of Chemical Waste Producer	WPN5517-912-T2007-02	17/03/05	-	E&M Equipment Installation and Maintenance	Valid
Waste Disposal Billing Account	Account No.: 7031135	21/06/18	-	Civil and Building Works for Unit L11	Valid
Waste Disposal Billing Account	Account No.: 7027672	24/04/17	-	E&M Erection of Power Block Facilities – L11	Valid
Waste Disposal Billing Account	Account No.: 7038672	27/10/20	-	Civil works for Unit L12 No.5 C.W. intake and cable bridge	Valid
Waste Disposal Billing Account	Account No.: 7039272	08/01/21	-	Civil and building works for Unit L12	Valid

Notes: #, ## and ### - Water quality monitoring was carried out in November 2021 and the results of which would be reported separately by the contractor.

4.6 Implementation Status of Environmental Mitigation Measures

Mitigation measures detailed in the permits and the EM&A Manual (Construction Phase) are required to be implemented. An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is presented in [Appendix I](#).

4.7 Implementation Status of Event/Action Plans

The Event/Action Plans extracted from the EM&A Manual (Construction Phase) are presented in [Appendix G](#).

4.8 Implementation Status of Environmental Complaint Handling Procedures

In November 2021, no complaint against the construction activities was received.

Table 4.4 Environmental Complaints Received in November 2021

Case Reference / Date, Time Received / Date, Time Concerned	Descriptions / Actions Taken	Conclusion / Status
Nil	N/A	N/A

Table 4.5 Outstanding Environmental Complaints Carried Over

Case Reference / Date, Time Received / Date, Time Concerned	Descriptions / Actions Taken	Conclusion / Status
---	------------------------------	---------------------

Nil	N/A	N/A
-----	-----	-----

5. FUTURE KEY ISSUES

5.1 Key Issues for the Coming Month

Key issues to be considered in the coming month include:

Unit L11 Civil and Building Works

Noise Impact

- To continue executing the preventive measures for avoiding noise exceedance and keep monitoring/ reviewing the noise performance.

Air Impact

- To monitor and review the sufficiency of the dust suppression measures provided and increase the resources accordingly if necessary.

Water Impact

- To treat wastewater in sedimentation pit and tanks before discharge and to ensure compliance in accordance with the WPCO discharge licence already obtained.

Unit L11 Mechanical Erection

Noise Impact

- To continue monitoring the noise level during construction and to ensure compliance with the CNP's already obtained.
- To continue executing the preventive measures for avoiding noise exceedance and keep monitoring/ reviewing the noise performance.

Air Impact

- To monitor and review the sufficiency of the dust suppression measures provided and increase the resources accordingly if necessary.

Unit L11 Electrical, Instrumentation & Control Erection

Noise Impact

- To continue monitoring the noise level during construction and to ensure compliance with the CNP's already obtained.
- To continue executing the preventive measures for avoiding noise exceedance and keep monitoring/ reviewing the noise performance.

Air Impact

- To monitor and review the sufficiency of the dust suppression measures provided and increase the resources accordingly if necessary.

Unit L12 Civil and Building Works

Noise Impact

- To continue monitoring the noise level during construction and to ensure compliance with the CNP's already obtained.

Air Impact

- To monitor and review the sufficiency of the dust suppression measures provided and increase the resources accordingly if necessary.

Water Impact

- To treat wastewater in sedimentation pit and tanks before discharge and to ensure compliance in accordance with the WPCO discharge licence already obtained.

Unit L12 Mechanical Erection

Noise Impact

- To continue executing the preventive measures for avoiding noise exceedance and keep monitoring/ reviewing the noise performance.

Air Impact

- To monitor and review the sufficiency of the dust suppression measures provided and increase the resources accordingly if necessary.

Unit L12 Electrical, Instrumentation & Control Erection

Noise Impact

- To continue executing the preventive measures for avoiding noise exceedance and keep monitoring/ reviewing the noise performance.

Air Impact

- To monitor and review the sufficiency of the dust suppression measures provided and increase the resources accordingly if necessary.

5.2 Monitoring Schedules for the Next 3 Months

The tentative environmental monitoring schedules for the next 3 months are shown in [Appendix C](#).

5.3 Construction Program for the Next 3 Months

The tentative construction programs for the next 3 months are shown in [Appendix J](#).

6. CONCLUSION

All monitoring work at designated stations was performed as scheduled satisfactorily. The environmental monitoring works and site inspection were performed as scheduled in the reporting month. All monitoring results were checked and reviewed.

No Action/Limit level exceedance on 1-hour and 24-hour TSP level was recorded in the reporting month.

No Action/Limit level exceedance on noise was recorded in the reporting month.

Environmental mitigation measures recommended in the EM&A manual for the construction activities were implemented in the reporting month. No complaint against the construction activities was received in the reporting month. No prosecution was received for this Project in the reporting period.

The environmental performance of the Project was generally satisfactory.

Appendix A Organization Chart

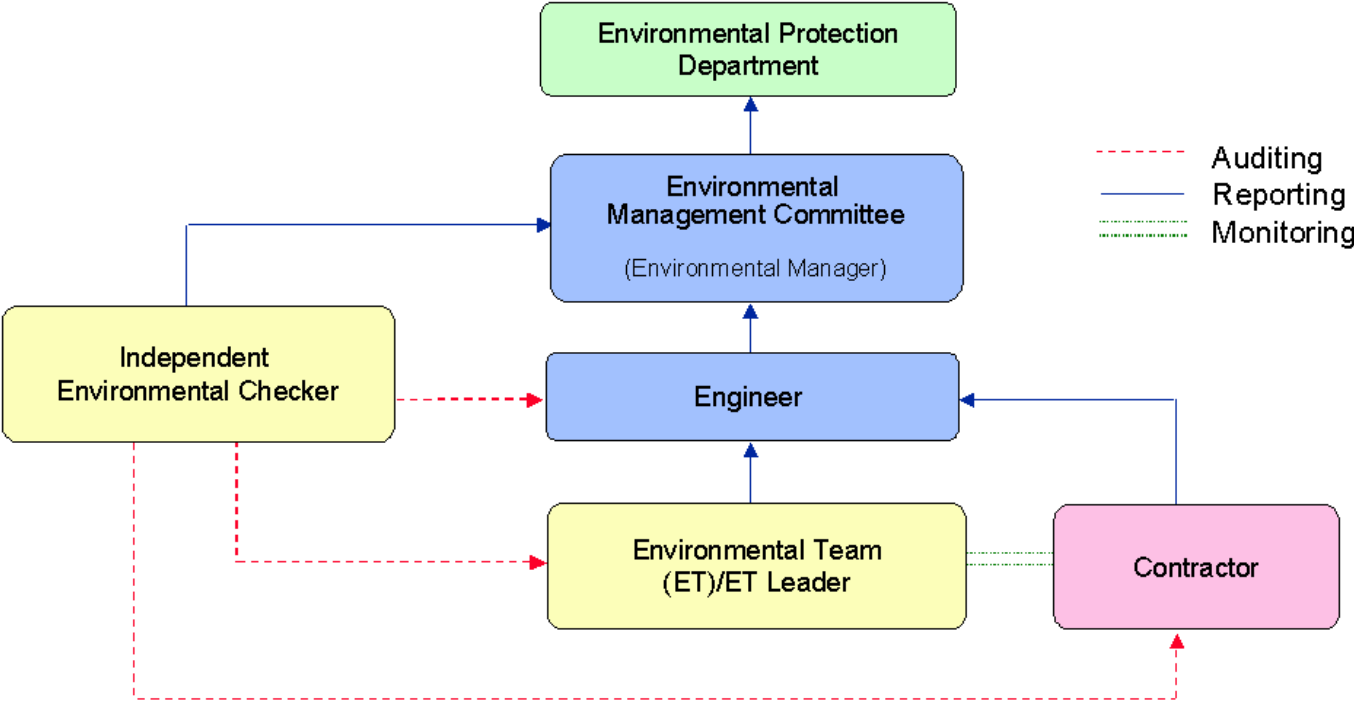


Figure A.1 Organisation of EM&A Programme at Construction Phase

Appendix B Action and Limit Levels for Air Quality and Noise Monitoring

B.1. Air

Table B.1 Action and Limit Levels for 1-hour and 24-hour TSP

	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
1-hour TSP*	340	500
24-hour TSP	190	260

* No Action/Limit Level for 1-hour TSP is applied to AM4 where no real time dust monitor is installed.

B.2. Noise

Table B.2 AL Levels for Construction Noise (Other than Percussive Piling)

Parameters	Action	Limit
Noise Levels at the NSR's at Long Tsai Tsuen/Hung Shing Ye and school within the village of Tai Wan San Tsuen predicted by the noise alarm monitoring system	When one or more documented complaints are received	a. 75 dB(A) in $L_{Aeq,30 \text{ min}}$ (07:00-19:00 hrs on normal weekdays) (Note 1)
Manual noise monitoring at the nearest Pak Kok Tsui residences to cable landing points N4 and N5		b. subject to statutory control under the Noise Control Ordinance (07:00-23:00 hrs on holidays and 19:00-23:00 hrs on all other days). Set to 60 dB(A) in $L_{Aeq,5 \text{ min}}$ c. subject to statutory control under the Noise Control Ordinance (23:00-07:00 hrs of next day). Set to 45 dB(A) in $L_{Aeq,5 \text{ min}}$
Note:		
1. For educational institution, the limit level shall be 70 dB(A), reduced to 65 dB(A) during examination periods.		

Appendix C Environmental Monitoring Schedule

Table C.1 Monitoring schedule for 24hr and 1hr TSP monitoring for Lamma Extension Construction (November 2021 to February 2022)

24hr TSP Monitoring	1hr TSP Monitoring
2/November/2021	2/November/2021 1500hr to 1800hr
8/November/2021	8/November/2021 1500hr to 1800hr
14/November/2021	14/November/2021 1500hr to 1800hr
20/November/2021	20/November/2021 1500hr to 1800hr
26/November/2021	26/November/2021 1500hr to 1800hr
2/December/2021	2/December/2021 1500hr to 1800hr
8/December/2021	8/December/2021 1500hr to 1800hr
14/December/2021	14/December/2021 1500hr to 1800hr
20/December/2021	20/December/2021 1500hr to 1800hr
26/December/2021	26/December/2021 1500hr to 1800hr
1/January/2022	1/January/2022 1500hr to 1800hr
7/January/2022	7/January/2022 1500hr to 1800hr
13/January/2022	13/January/2022 1500hr to 1800hr
19/January/2022	19/January/2022 1500hr to 1800hr
25/January/2022	25/January/2022 1500hr to 1800hr
31/January/2022	31/January/2022 1500hr to 1800hr
6/February/2022	6/February/2022 1500hr to 1800hr
12/February/2022	12/February/2022 1500hr to 1800hr
18/February/2022	18/February/2022 1500hr to 1800hr
24/February/2022	24/February/2022 1500hr to 1800hr

APPENDIX D AIR QUALITY MONITORING RESULTS

Site: Lamma Power Station Extension

Month: November 2021

24 hour TSP Measurement:-

Date	TSP concentration ($\mu\text{g}/\text{m}^3$)				Weather Information (From Hong Kong Observatory)		
	Reservoir (AM1)	East Gate (AM2)	Ash Lagoon (AM3)	Tai Yuen Village (AM4)	Mean Wind Speed (km/hr)	Prevailing Wind Dir. ($^{\circ}$)	Mean R.H. (%)
2/11/2021	39	38	30	36	37.1	80	76
8/11/2021	29	71	38	33	45.3	360	61
14/11/2021	40	39	34	33	24.1	80	59
20/11/2021	32	36	27	15	33.0	80	77
26/11/2021	58	58	47	42	25.3	80	64

1 hour TSP Measurement:-

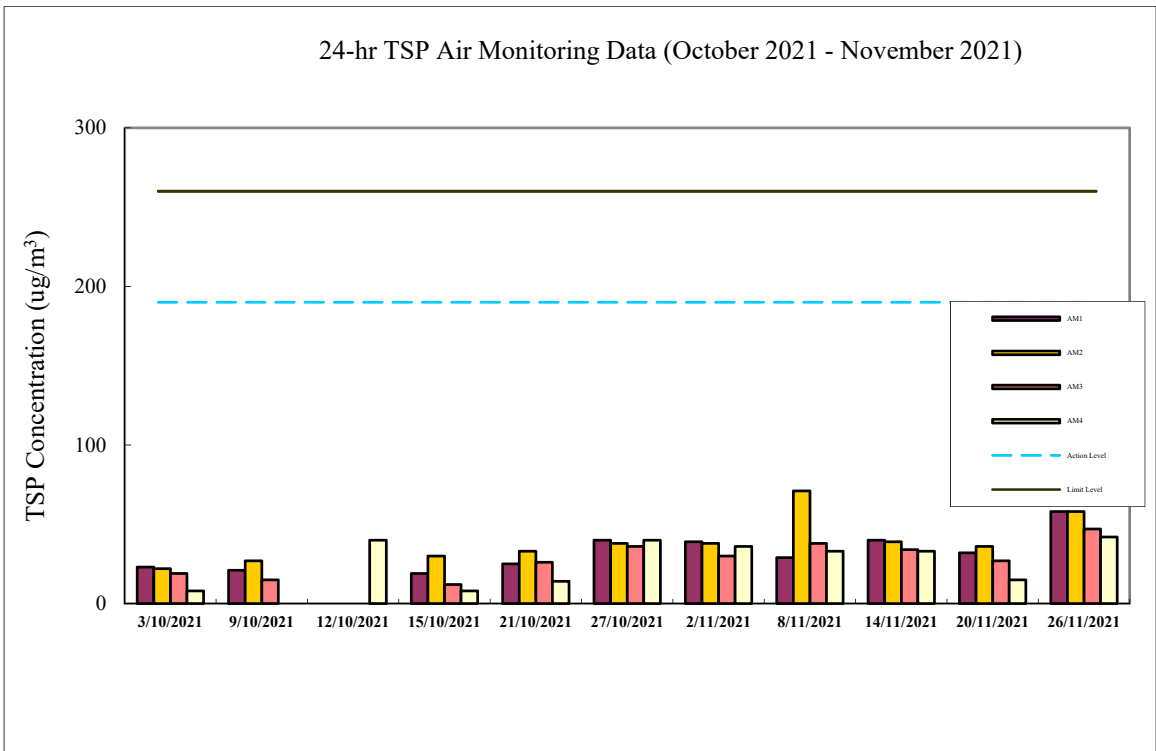
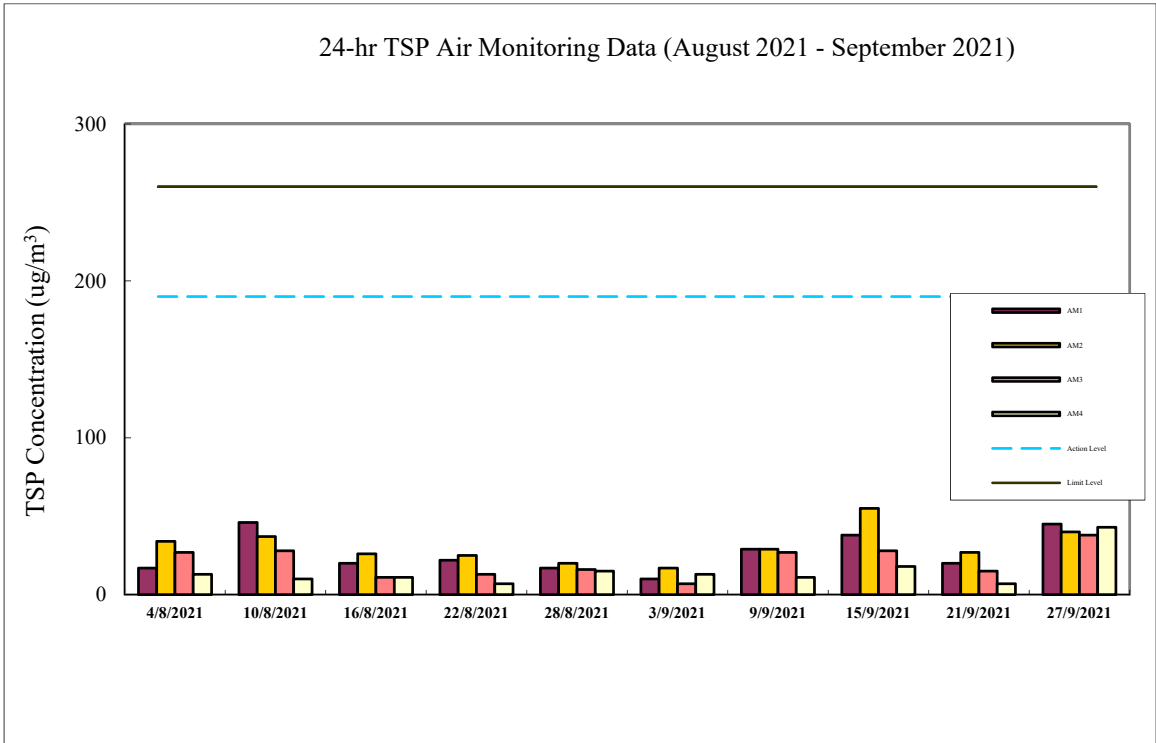
Date	Time	TSP concentration ($\mu\text{g}/\text{m}^3$)		
		Reservoir (AM1)	East Gate (AM2)	Ash Lagoon (AM3)
2/11/2021	15:00 - 15:59	37	37	30
	16:00 - 16:59	39	41	35
	17:00 - 17:59	44	44	36
8/11/2021	15:00 - 15:59	31	84	51
	16:00 - 16:59	39	85	54
	17:00 - 17:59	36	68	53
14/11/2021	15:00 - 15:59	37	44	34
	16:00 - 16:59	43	52	34
	17:00 - 17:59	45	63	34
20/11/2021	15:00 - 15:59	35	39	29
	16:00 - 16:59	38	42	31
	17:00 - 17:59	33	52	30
26/11/2021	15:00 - 15:59	60	66	54
	16:00 - 16:59	82	65	53
	17:00 - 17:59	60	54	48

	1-hr TSP ($\mu\text{g}/\text{m}^3$)	24-hr TSP ($\mu\text{g}/\text{m}^3$)
Action Level	340	190
Limit Level	500	260
Calibration:	Calibration details are shown in appendix F.	

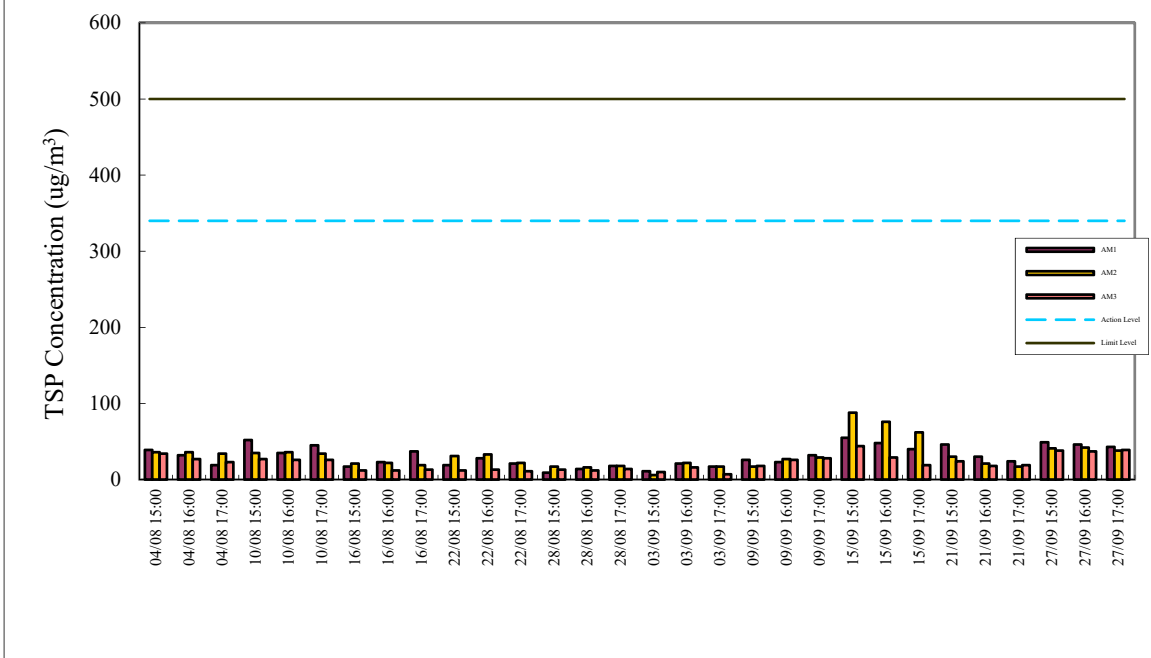
Equipment used:

Location	1-hr TSP	24-hr TSP
----------	----------	-----------

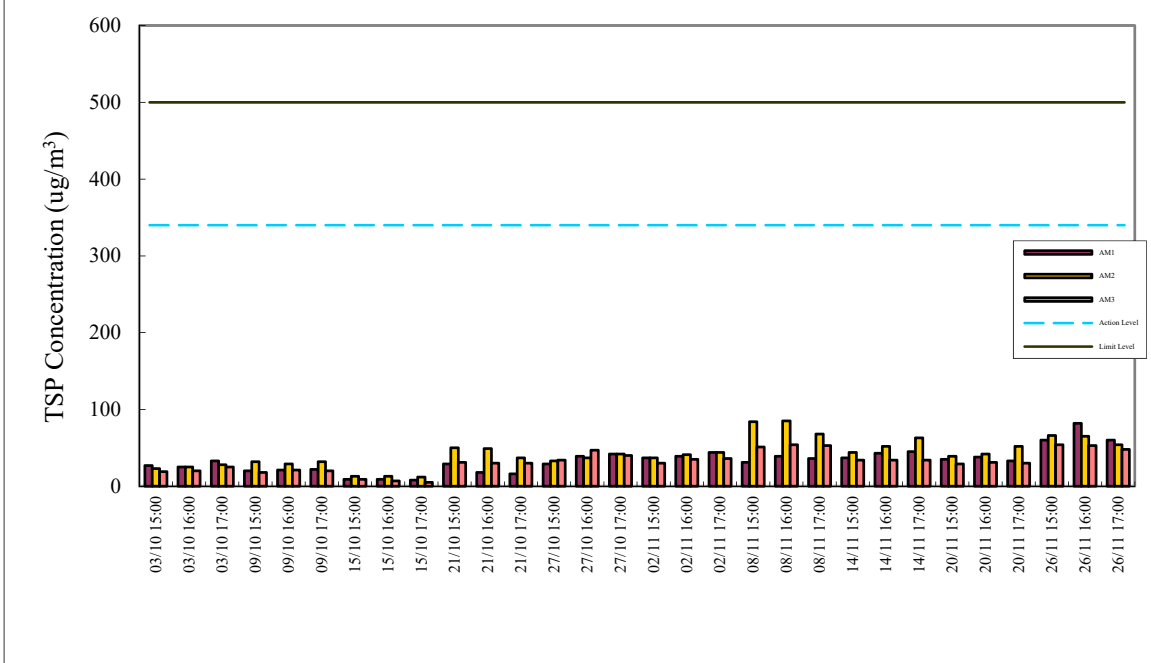
Reservoir, East Gate and Ash Lagoon	TEOM	TEOM
Tai Yuen Village	-	MINIVOL Portable Sampler



1-hr TSP Air Monitoring Data (August 2021 - September 2021)



1-hr TSP Air Monitoring Data (October 2021 - November 2021)



Appendix E

Continuous Noise Monitoring Results for November 2021

Site: Lamma Power Station Extension Construction
 Measurement Location: Ash Lagoon and Ching Lam
 Measurement Parameter: 30-min Leq (07:00-19:00 hrs on normal weekdays)
 5-min Leq (07:00-23:00 hrs on holidays and
 19:00-23:00 hrs on all other days, and 23:00-
 07:00 hrs of next day)
 Noise Equipment: B&K 2250 sound level meters and B&K 4231 sound
 Level calibrator
 Lab. Calibration Date: B&K 2250 sound level meters - 28/06/2020 (Ash Lagoon)
 03/09/2021 (Ching Lam)
 B&K 4231 calibrator (21/10/2021)

Date	Time	Calculated Noise Level at NSR at Long Tsai Tsuen/Hung Shing Ye (dB(A))		Limit Noise Level (dB(A))	Calculated Noise Level at NSR at the school within Tai Wan San Tsuen (dB(A))		Limit Noise Level (dB(A))
		Max	Avg		Max	Avg	
01/11/2021	07:00-19:00	---	---	75	52	41	70
01/11/2021	19:00-23:00	---	---	60	48	40	60
01/11/2021	23:00-07:00	37	33	45	44	39	45
02/11/2021	07:00-19:00	47	47	75	48	43	70
02/11/2021	19:00-23:00	31	31	60	46	41	60
02/11/2021	23:00-07:00	40	37	45	44	41	45
03/11/2021	07:00-19:00	---	---	75	50	45	70
03/11/2021	19:00-23:00	---	---	60	48	37	60
03/11/2021	23:00-07:00	41	39	45	44	41	45
04/11/2021	07:00-19:00	43	43	75	49	42	70
04/11/2021	19:00-23:00	---	---	60	44	40	60
04/11/2021	23:00-07:00	43	39	45	44	40	45
05/11/2021	07:00-19:00	46	46	75	47	41	70
05/11/2021	19:00-23:00	---	---	60	42	34	60
05/11/2021	23:00-07:00	43	42	45	43	37	45
06/11/2021	07:00-19:00	51	48	75	47	40	70
06/11/2021	19:00-23:00	29	29	60	51	39	60
06/11/2021	23:00-07:00	45	39	45	43	39	45
07/11/2021	07:00-23:00	56	52	60	49	39	60
07/11/2021	23:00-07:00	44	41	45	45	36	45
08/11/2021	07:00-19:00	43	40	75	46	41	70
08/11/2021	19:00-23:00	38	32	60	41	36	60
08/11/2021	23:00-07:00	44	39	45	42	36	45
09/11/2021	07:00-19:00	---	---	75	45	36	70
09/11/2021	19:00-23:00	---	---	60	42	39	60
09/11/2021	23:00-07:00	44	39	45	44	39	45
10/11/2021	07:00-19:00	---	---	75	56	43	70
10/11/2021	19:00-23:00	---	---	60	42	39	60
10/11/2021	23:00-07:00	37	31	45	44	40	45
11/11/2021	07:00-19:00	---	---	75	53	43	70
11/11/2021	19:00-23:00	---	---	60	43	41	60
11/11/2021	23:00-07:00	41	36	45	44	40	45
12/11/2021	07:00-19:00	---	---	75	52	42	70
12/11/2021	19:00-23:00	---	---	60	44	40	60
12/11/2021	23:00-07:00	45	41	45	44	40	45
13/11/2021	07:00-19:00	52	52	75	57	42	70

13/11/2021	19:00-23:00	---	---	60	50	35	60
13/11/2021	23:00-07:00	44	37	45	44	38	45
14/11/2021	07:00-23:00	49	40	60	47	39	60
14/11/2021	23:00-07:00	45	39	45	43	37	45
15/11/2021	07:00-19:00	---	---	75	46	38	70
15/11/2021	19:00-23:00	33	33	60	42	38	60
15/11/2021	23:00-07:00	43	33	45	43	36	45
16/11/2021	07:00-19:00	---	---	75	46	38	70
16/11/2021	19:00-23:00	---	---	60	43	39	60
16/11/2021	23:00-07:00	39	34	45	44	38	45
17/11/2021	07:00-19:00	---	---	75	49	37	70
17/11/2021	19:00-23:00	---	---	60	43	39	60
17/11/2021	23:00-07:00	44	39	45	44	39	45
18/11/2021	07:00-19:00	33	33	75	53	39	70
18/11/2021	19:00-23:00	---	---	60	43	40	60
18/11/2021	23:00-07:00	41	35	45	42	35	45
19/11/2021	07:00-19:00	---	---	75	50	39	70
19/11/2021	19:00-23:00	---	---	60	42	40	60
19/11/2021	23:00-07:00	44	39	45	42	38	45
20/11/2021	07:00-19:00	---	---	75	51	42	70
20/11/2021	19:00-23:00	---	---	60	46	38	60
20/11/2021	23:00-07:00	37	31	45	44	38	45
21/11/2021	07:00-23:00	46	36	60	47	37	60
21/11/2021	23:00-07:00	45	39	45	45	37	45
22/11/2021	07:00-19:00	---	---	75	55	42	70
22/11/2021	19:00-23:00	---	---	60	41	39	60
22/11/2021	23:00-07:00	43	40	45	41	37	45
23/11/2021	07:00-19:00	---	---	75	63	48	70
23/11/2021	19:00-23:00	---	---	60	51	39	60
23/11/2021	23:00-07:00	43	38	45	43	34	45
24/11/2021	07:00-19:00	---	---	75	50	38	70
24/11/2021	19:00-23:00	---	---	60	40	37	60
24/11/2021	23:00-07:00	44	34	45	41	34	45
25/11/2021	07:00-19:00	---	---	75	51	38	70
25/11/2021	19:00-23:00	26	26	60	42	37	60
25/11/2021	23:00-07:00	42	37	45	43	37	45
26/11/2021	07:00-19:00	---	---	75	41	31	70
26/11/2021	19:00-23:00	---	---	60	43	40	60
26/11/2021	23:00-07:00	44	40	45	42	37	45
27/11/2021	07:00-19:00	---	---	75	50	38	70
27/11/2021	19:00-23:00	---	---	60	41	36	60
27/11/2021	23:00-07:00	40	36	45	42	35	45
28/11/2021	07:00-23:00	45	36	60	48	37	60
28/11/2021	23:00-07:00	44	38	45	43	37	45
29/11/2021	07:00-19:00	---	---	75	41	36	70
29/11/2021	19:00-23:00	---	---	60	41	37	60
29/11/2021	23:00-07:00	45	40	45	44	36	45
30/11/2021	07:00-19:00	---	---	75	51	34	70
30/11/2021	19:00-23:00	43	35	60	43	37	60
30/11/2021	23:00-07:00	45	40	45	44	39	45

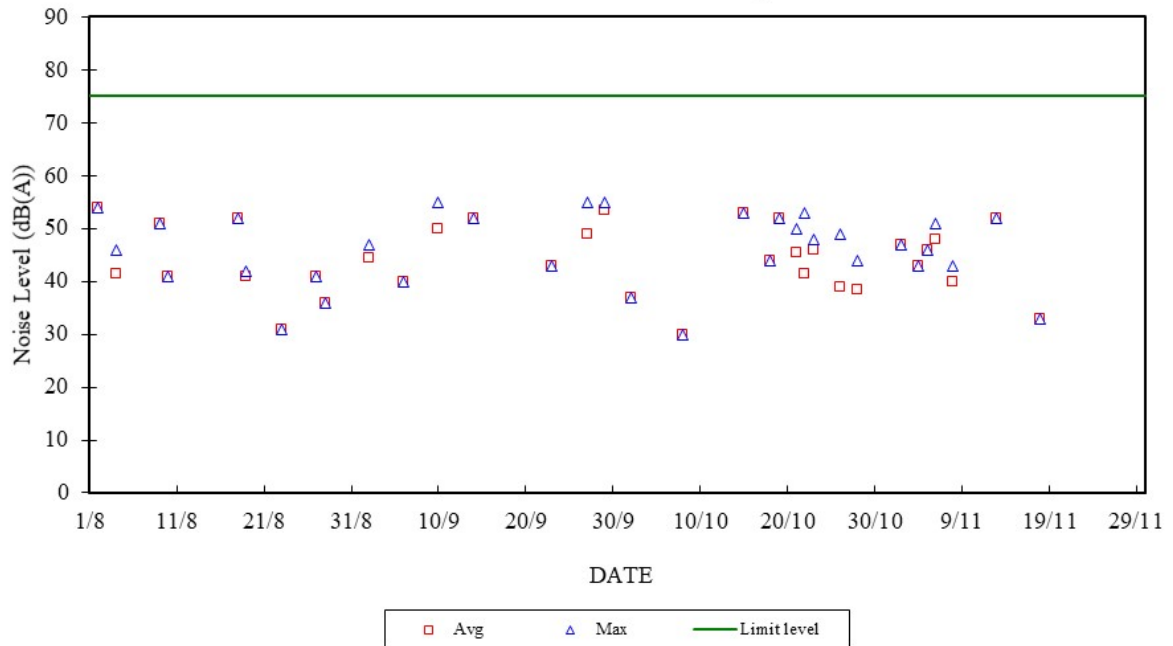
Note:

- a. "----" represents the measured noise monitoring data lower than the established notional background level/discarded under strong wind.
- b. Continuous noise monitoring was also carried out at holidays & evening-time (07:00-23:00 hrs on holidays and 19:00-23:00 hrs on all other days) and night-time (23:00-07:00 hrs of next day).

Construction Noise Monitoring in August - November 2021

NSR at Long Tsai Tsuen/Hung Shing Ye

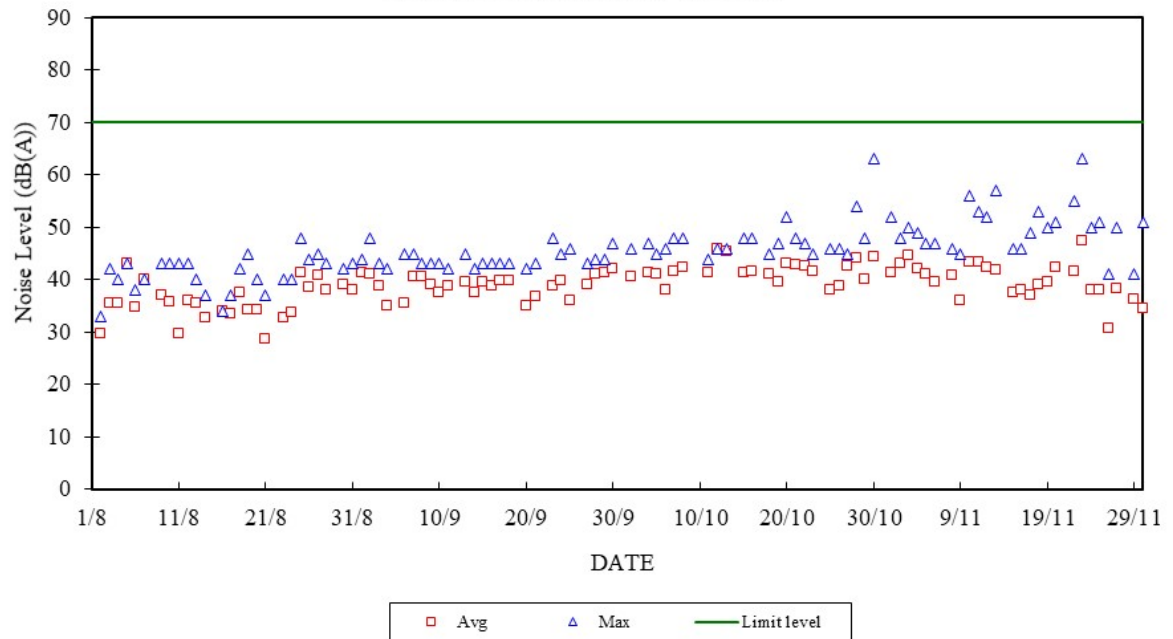
07:00-19:00 hrs on Normal Weekdays

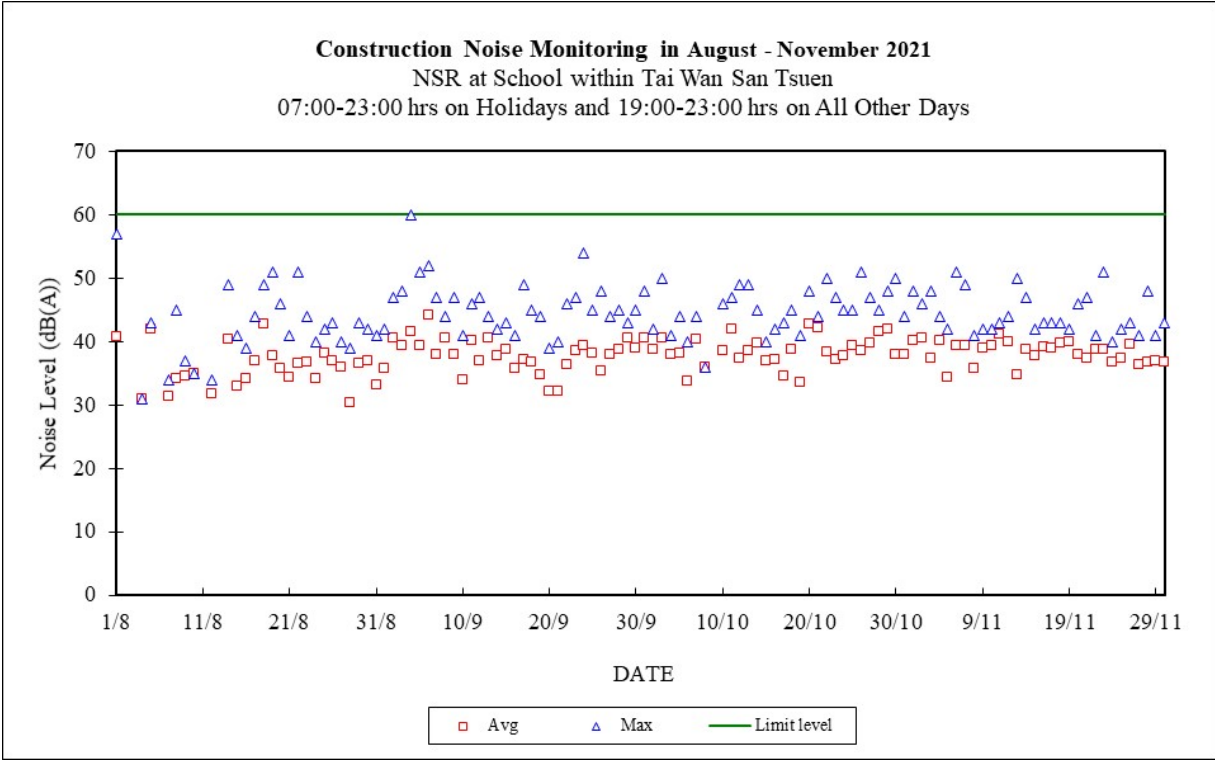
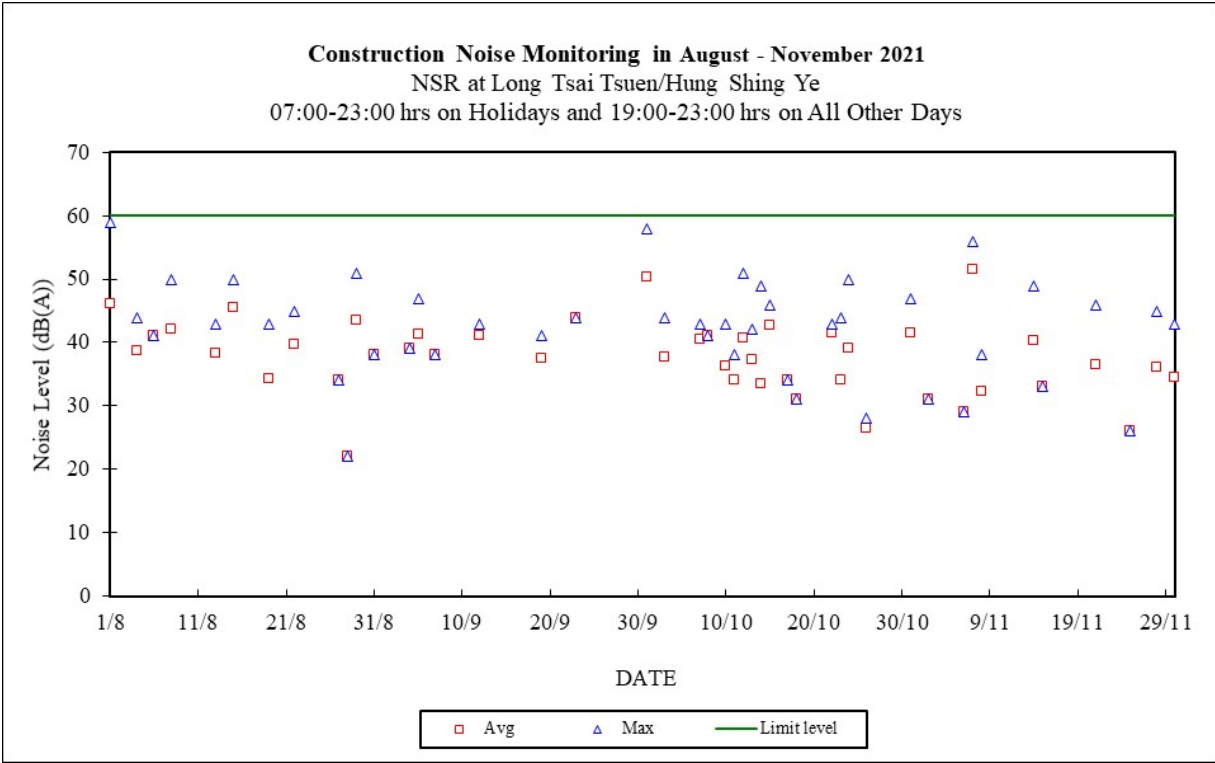


Construction Noise Monitoring in August - November 2021

NSR at School within Tai Wan San Tsuen

07:00-19:00 hrs on Normal Weekdays

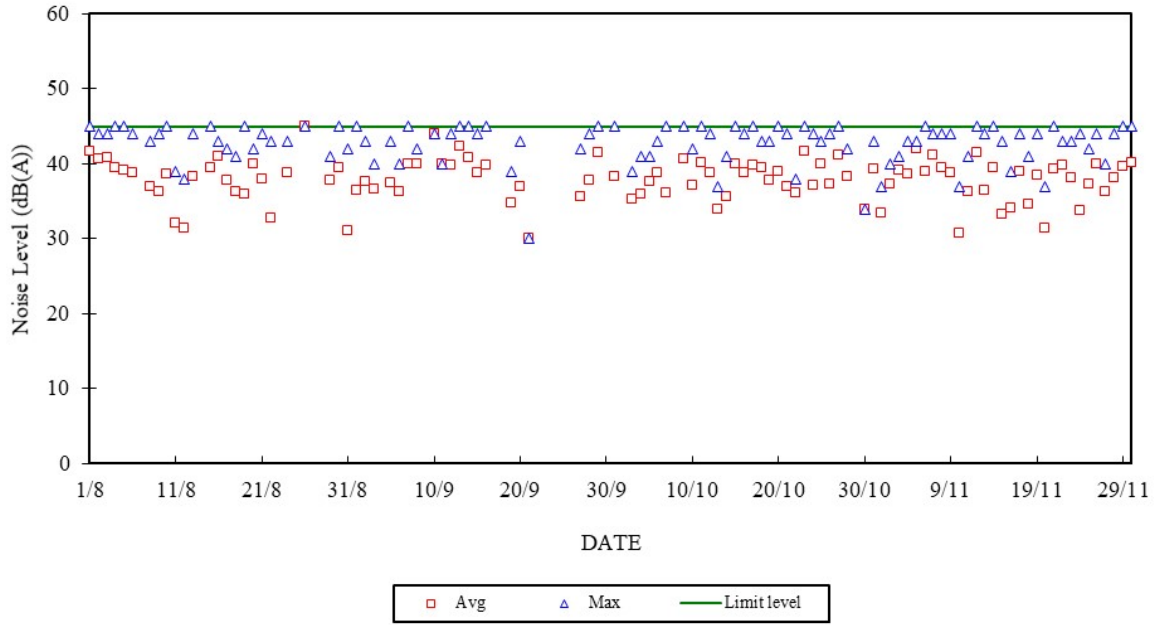




Construction Noise Monitoring in August - November 2021

NSR at Long Tsai Tsuen/Hung Shing Ye

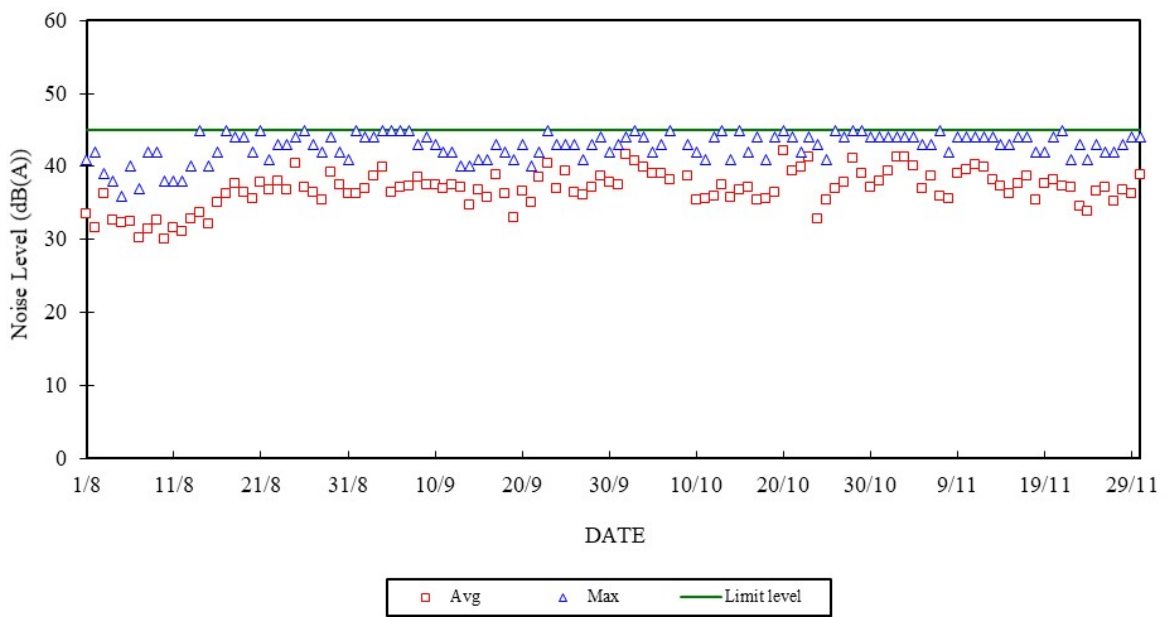
23:00-07:00 hrs of Next Day



Construction Noise Monitoring in August - November 2021

NSR at School within Tai Wan San Tsuen

23:00-07:00 hrs of Next Day



Appendix F

The QA/QC Procedures and Results

The Hongkong Electric Co., Ltd.
Lamma Power Station Extension
TEOM Continuous Dust Monitor
Data Quality Assurance Log Sheet

Month: November Year: 2021

Reservoir (AM1)				
Date	Frequency (Hz) (240 - 275)	Operation Mode (Mode 4)	Main Flow (l/min) (2.70 - 3.30)	Bypass Flow (l/min) (12.30 - 15.04)
2/11/2021	269.901	4	3.01	12.30
8/11/2021	269.441	4	3.00	13.02
14/11/2021	268.818	4	3.01	13.03
20/11/2021	268.149	4	2.99	12.96
26/11/2021	267.517	4	2.99	13.21

East Gate (AM2)				
Date	Frequency (Hz) (240 - 275)	Operation Mode (Mode 4)	Main Flow (l/min) (2.70 - 3.30)	Bypass Flow (l/min) (12.30 - 15.04)
2/11/2021	250.701	4	2.90	13.70
8/11/2021	249.864	4	3.04	13.83
14/11/2021	248.983	4	3.03	13.80
20/11/2021	248.334	4	2.93	13.72
26/11/2021	251.794	4	3.00	13.74

Ash Lagoon (AM3)				
Date	Frequency (Hz) (240 - 275)	Operation Mode (Mode 4)	Main Flow (l/min) (2.70 - 3.30)	Bypass Flow (l/min) (12.30 - 15.04)
2/11/2021	256.330	4	3.00	13.68
8/11/2021	255.961	4	3.00	13.68
14/11/2021	255.400	4	3.00	13.68
20/11/2021	256.802	4	3.00	13.68
26/11/2021	256.194	4	3.00	13.68

Maintenance Record			
	Reservoir	East Gate	Ash Lagoon
TEOM Filter Exchange	✓	✓	✓
Clean TSP Inlet	✓	✓	✓
Replace flow in-line filter	✓	✓	✓
Pump Repair			
Leak Check			
Flow audit			
Flow Controller Calibration			
A/C filter cleaning			

Remarks:

Prepared by: Chris Chan

Checked by: HY Chan

The Hongkong Electric Co., Ltd.
Mini Volume Air Sampler Site Visit Log Sheet

Attendance Log _____

Site Name: Tai Yuen Village (AM4)

Date/Time	Staff Name
16/11/2021 / 14:00	WM Tam / Brain So

Equipment / Item

Equipment / Item	Serial No. / No.
MINIVOL	5580
Used filter paper no.	MR69
New filter paper no.	MR70

Type of filter: Glass-fibre

- I. Calibration is performed by using Drycal DC-2 Flow Calibrator
5 std. L/min set point is recommended

Before: 4.983
After: 5.033

- II. General Services

1. Clean Rotameter: Yes
2. Clean / Replace Pump Valves: No
3. Clean / Replace Pump Diaphragms: No
4. Clean Impaction Inlet: Yes
5. Replace Timer Battery Every 6 months: No
6. Replace Inlet Filter: Yes

Remarks

N/A

Conducted by: WM Tam / Brain So

Checked by: SM Hon

The Hongkong Electric Co., Ltd.
Lamma Power Station Extension
Noise Monitoring Station
Daily Calibration Records

Date	Location: Ash Lagoon		Location: Ching Lam	
	Calibration Results	Deviation from Reference (dB)	Calibration Results	Deviation from Reference (dB)
01/11/2021	Passed	-0.10	Passed	-0.11
02/11/2021	Passed	-0.09	Passed	-0.08
03/11/2021	Passed	-0.09	Passed	-0.10
04/11/2021	Passed	-0.09	Passed	-0.09
05/11/2021	Passed	-0.08	Passed	-0.08
06/11/2021	Passed	-0.08	Passed	-0.10
07/11/2021	Passed	-0.14	Passed	-0.16
08/11/2021	Passed	-0.11	Passed	-0.13
09/11/2021	Passed	-0.11	Passed	-0.12
10/11/2021	Passed	-0.12	Passed	-0.12
11/11/2021	Passed	-0.10	Passed	-0.11
12/11/2021	Passed	-0.10	Passed	-0.11
13/11/2021	Passed	-0.12	Passed	-0.12
14/11/2021	Passed	-0.12	Passed	-0.11
15/11/2021	Passed	-0.10	Passed	-0.11
16/11/2021	Passed	-0.10	Passed	-0.09
17/11/2021	Passed	-0.11	Passed	-0.13
18/11/2021	Passed	-0.10	Passed	-0.11
19/11/2021	Passed	-0.10	Passed	-0.11
20/11/2021	Passed	-0.10	Passed	-0.10
21/11/2021	Passed	-0.13	Passed	-0.16
22/11/2021	Passed	-0.14	Passed	-0.15
23/11/2021	Passed	-0.12	Passed	-0.12
24/11/2021	Passed	-0.11	Passed	-0.12
25/11/2021	Passed	-0.11	Passed	-0.09
26/11/2021	Passed	-0.11	Passed	-0.13
27/11/2021	Passed	-0.11	Passed	-0.11
28/11/2021	Passed	-0.11	Passed	-0.11
29/11/2021	Passed	-0.11	Passed	-0.16
30/11/2021	Passed	-0.14	Passed	-0.15

Remarks:

1. The B&K sound level meter at the noise monitoring station has an advanced feature of internal calibration checking (viz. Charge Injection Calibration (CIC)). CIC is a B&K patented method for in situ verification of the integrity of the entire sound measurement chain (including microphone, preamplifier and cabling).
2. The acceptance criterion of deviation from reference is ± 0.5 dB.

Appendix G Event/Action Plans

Table G.1 Event and Action Plans for Air Quality

Event	Monitoring		Action	
	ET Leader	IEC	Engineer	Contractor
Action Level				
Exceedance of one sample	Identify source Inform Engineer and IEC verbally Repeat measurement to confirm finding	Check monitoring data submitted by ET and advise Engineer.	Notify Contractor Checking monitoring data and contractor's working methods	Rectify any unacceptable practice amend any working methods if appropriate
Exceedance of two or more consecutive samples	Identify source Inform Engineer and IEC verbally Repeat measurement to confirm finding Increase monitoring frequency Discuss with Engineer and Contractor on remedial actions required If exceedance continues, arrange meeting with Engineer If exceedance stops, discontinue additional monitoring	Check monitoring data submitted by ET and advise Engineer. Provide feedback to the Engineer on the remedial actions proposed by the ET / Contractor Advise Engineer on the effectiveness of the proposed remedial measures Verify the implementation of the remedial measures	Confirm receipt of notification of failure in writing Notify contractor Checking monitoring data and contractor's working methods Discuss proposed remedial actions with the ET and Contractor Ensure remedial actions properly implemented	Submit proposals for remedial actions to Engineer within 3 working days of notifications Implement the agreed proposals Amend proposal if appropriate
Limit level				
Exceedance of one sample	Repeat measurement to confirm finding. Identify the source(s) of the impact. If the exceedance is found to be valid and due to the Construction works, verbally advise the Contractor, Engineer and IEC, and inform the EPD of the exceedance, as soon as practicable. Increase monitoring frequency to daily Assess the effectiveness of the contractor's remedial actions and keep Engineer, IEC and EPD informed of the results	Check monitoring data submitted by ET and advise Engineer Provide feedback to the Engineer on the remedial actions proposed by the ET / Contractor Advise Engineer on the effectiveness of the proposed remedial measures Verify the implementation of the remedial measures	Confirm receipt of notification of failure in writing Notify Contractor Checking monitoring data and Contractor's working method Discuss with ET and Contractor on remedial actions to be provided Ensure remedial measures properly implemented	Take immediate action to avoid further exceedance Submit proposals for remedial actions to Engineer within 3 working days of notifications Implement the agreed proposals Amend proposal if appropriate
Exceedance of two or more	Identify source	Provide feedback to the Engineer on the remedial actions proposed by the	Confirm receipt of notification of	Take immediate action to

Event	Monitoring			Action		
	ET Leader	IEC	Engineer	Contractor		
consecutive samples	<p>If the exceedance is found to be valid and due to the construction works, verbally advise the Contractor, Engineer and IEC, and inform the EPD of the exceedance as soon as practicable.</p> <p>Repeat measurement to confirm finding</p> <p>Increase monitoring frequency to daily</p> <p>Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented</p> <p>Arrange meeting with Engineer and Contractor to discuss the remedial actions to be taken</p> <p>If exceedance stops, discontinue additional monitoring</p>	<p>ET / Contractor</p> <p>Advise Engineer on the effectiveness of the proposed remedial measures</p> <p>Verify the implementation of the remedial measures</p>	<p>failure in writing</p> <p>Checking monitoring data and Contractor's working methods</p> <p>Notify Contractor</p> <p>Discuss proposed remedial actions with ET and Contractor</p> <p>Ensure remedial measures properly implemented</p> <p>If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop the portion of work until the exceedance is abated</p>	<p>avoid further exceedance</p> <p>Submit proposals for remedial actions to Engineer within 3 working days of notifications</p> <p>Implement the agreed proposals</p> <p>Resubmit proposals if problem still not under control</p> <p>Stop the relevant portion of works as determined by the Engineer until the exceedance is abated</p>		

Table G.2 Event and Action Plans for Construction Noise

Exceedance	ET Leader	IEC	Engineer	Contractor
Action Level	Undertake noise measurement/check monitoring data to establish validity of complaint.	Review the analysed results submitted by the ET.	Notify Contractor of the complaint if proven.	Submit proposals for remedial actions to Engineer.
	If the complaint is valid, inform Engineer and IEC verbally.	Review the remedial measures proposed by the Contractor and advise the Engineer and ET accordingly.	Check Contractor's working methods and advise IEC and ET accordingly.	Amend proposals if required by the Engineer.
	Identify the source(s) of the noise.	Verify the implementation of the remedial measures.	Remind the Contractor of his contractual obligations and discuss remedial actions.	Implement the remedial actions immediately upon instruction from the Engineer.
	Discuss remedial actions required with Contractor and Engineer.		Keep the Contractor informed of the efficacy of remedial actions.	Liaise with the Engineer to optimise the effectiveness of the agreed mitigation.
	Increase manual monitoring frequency to assess efficacy of remedial measures.			
	If exceedance continues, review implementation of appropriate mitigation measures.			
Limit Level	Repeat manual measurement/check monitoring data to confirm findings.	Agree potential remedial actions with Engineer, ET and Contractor.	Notify Contractor of exceedance.	Take immediate action to avoid further exceedance.
	Identify the source(s) of the impact. If the exceedance is found to be valid and due to the Construction works, verbally advise the Contractor, Engineer and IEC, and inform the EPD of the exceedance, as soon as practicable.	Review Contractor's remedial actions / measures to ensure their effectiveness and advise the Engineer and ET accordingly.	Check Contractor's working methods and advise IEC and ET accordingly. Discuss with Contractor the remedial actions to be implemented.	Submit proposals for remedial actions to Engineer. Amend proposals if required by the Engineer.
	Discuss remedial actions required with Engineer.	Verify the implementation of the remedial measures	Keep the Contractor informed of the efficacy of remedial actions. If the exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop the portion of work until the exceedance is abated	Implement remedial actions immediately upon instruction from the Engineer. If the exceedance continues, consider what portion of the work is responsible and, as instructed by the Engineer, stop the portion of work until the exceedance is abated
	Increase manual monitoring frequency to assess efficacy of remedial measures.			

Table G.3 Event and Action Plans for Water Quality

Exceedance	ET Leader	IEC	Engineer	Contractor
Action level exceeded on one sampling day	Verbally inform the Contractor, and IEC. Repeat in-situ measurement to confirm findings; Identify source(s) of impact; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with Engineer and Contractor; Repeat measurement on next day of exceedance.	Provide feedback to the Engineer on the remedial actions proposed by the ET / Contractor Advise Engineer on the effectiveness of the proposed remedial measures Verify the implementation of the remedial measures	Discuss with Contractor the proposed mitigation measures; Make agreement on the mitigation measures to be implemented; Assess the effectiveness of the implemented mitigation measures.	Inform the Engineer and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Propose and discuss mitigation measures with Engineer; Implement the agreed mitigation measures.
Action level exceeded on more than one consecutive sampling day	Repeat in-situ measurements to confirm findings; Identify source(s) of impact; Inform Contractor and IEC; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measure with Engineer and Contractor; Ensure mitigation measures are implemented; Prepare to increase the monitoring frequency to daily; Repeat measurement on next day of exceedance.	Provide feedback to the Engineer on the remedial actions proposed by the ET / Contractor Advise Engineer on the effectiveness of the proposed remedial measures Verify the implementation of the remedial measures	Discuss with ET and Contractor on the proposed mitigation measures; Make agreement on the mitigation measures to be implemented; Assess the effectiveness of the implemented mitigation measures.	Inform the Engineer and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Propose mitigation measures to Engineer within 3 working days and discuss with ET and Engineer; Implement the agreed mitigation measures.
Limit level exceeded on one sampling day	Verbally inform the Contractor, IEC and the EPD of the exceedance; Repeat in-situ measurement to confirm findings; Identify source(s) of impact; Check monitoring data, all plant,	Provide feedback to the Engineer on the remedial actions proposed by the ET / Contractor Advise Engineer on the effectiveness of the proposed remedial measures Verify the implementation of the remedial measures	Discuss with Contractor on the proposed mitigation measures; Request Contractor to critically review the working methods; Make agreement on the mitigation measures to be implemented; Assess the effectiveness of the	Inform the Engineer and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Propose mitigation measures to Engineer

Exceedance	ET Leader	IEC	Engineer	Contractor
	<p>equipment and Contractor's working methods;</p> <p>Discuss mitigation measure with Engineer and Contractor;</p> <p>Ensure mitigation measures are implemented;</p> <p>Increase the monitoring frequency to daily until no exceedance of Limit level.</p>		implemented mitigation measures.	<p>within 3 working days and discuss with Engineer;</p> <p>Implement the agreed mitigation measures.</p>
<p>Limit level exceeded by more than one consecutive sampling day</p>	<p>Repeat in-situ measurement to confirm findings;</p> <p>Identify source(s) of impact;</p> <p>Inform Contractor, IEC and EPD;</p> <p>Check monitoring data, all plant, equipment and Contractor's working methods;</p> <p>Discuss mitigation measure with Engineer and Contractor;</p> <p>Ensure mitigation measures are implemented;</p> <p>Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days.</p>	<p>Provide feedback to the Engineer on the remedial actions proposed by the ET / Contractor</p> <p>Advise Engineer on the effectiveness of the proposed remedial measures</p> <p>Verify the implementation of the remedial measures</p>	<p>Discuss with Contractor on the proposed mitigation measures;</p> <p>Request Contractor to critically review the working methods;</p> <p>Make agreement on the mitigation measures to be implemented;</p> <p>Assess the effectiveness of the implemented mitigation measures;</p> <p>Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine works until no exceedance of the Limit Level.</p>	<p>Inform the Engineer and confirm notification of the non-compliance in writing;</p> <p>Rectify unacceptable practice;</p> <p>Check all plant and equipment; Consider changes of working methods;</p> <p>Propose mitigation measures to Engineer within 3 working days and discuss with Engineer;</p> <p>Implement the agreed mitigation measures..</p> <p>As directed by the Engineer, to slow down or to stop all or part of the marine work</p>

Appendix H Summary of Site Audit Findings

L11 Civil and Building Works

Dates of Inspection: 2/11/2021, 9/11/2021, 16/11/2021, 23/11/2021 and 30/11/2021.

Summary of Findings

General

- No environmental deficiency identified.

Air Quality

- No environmental deficiency identified.

Noise

- No environmental deficiency identified.

Water Quality

- No environmental deficiency identified.

Waste Management

- No environmental deficiency identified.

L11 Mechanical, Electrical, Instrumentation & Control Erection Works

Dates of Inspection: 4/11/2021, 11/11/2021, 18/11/2021 and 25/11/2021.

Summary of Findings

General

- No environmental deficiency identified.

Air Quality

- No environmental deficiency identified.

Noise

- No environmental deficiency identified.

Water Quality

- No environmental deficiency identified.

Waste Management

- No environmental deficiency identified.

L12 Civil and Building Works

Dates of Inspection: 2/11/2021, 9/11/2021, 16/11/2021, 23/11/2021 and 30/11/2021.

Summary of Findings

General

- No environmental deficiency identified.

Air Quality

- No environmental deficiency identified.

Noise

- No environmental deficiency identified.

Water Quality

- No environmental deficiency identified.

Waste Management

- No environmental deficiency identified.

L12 Mechanical, Electrical, Instrumentation & Control Erection Works

Dates of Inspection: 4/11/2021, 11/11/2021, 18/11/2021 and 25/11/2021.

Summary of Findings

General

- No environmental deficiency identified.

Air Quality

- No environmental deficiency identified.

Noise

- No environmental deficiency identified.

Water Quality

- No environmental deficiency identified.

Waste Management

- No environmental deficiency identified.

Summary of EMIS

Power Station – (Part B of EIA Report)

Construction Phase Mitigation Measures and their Implementation

EM&A Log Ref.	Mitigation Measures	Implementation Status
	AIR QUALITY	
A1	For general construction works, the dust control measures stipulated under the Air Pollution Control (Construction Dust) Regulation shall be complied with, such as: <ul style="list-style-type: none"> the haul roads shall be sprayed with water to keep the entire road surface wet. the load carried by vehicle shall be covered by impervious sheeting to ensure no leakage of dusty materials from the vehicle. the heights from which fill materials are dropped shall be controlled to a practical level to minimise the fugitive dust arising from unloading. 	C C C
A2	For the concrete batching plant, the following control measures are recommended: <ul style="list-style-type: none"> loading, unloading, handling, transfer or storage of any dusty materials shall be carried out in a totally enclosed system. The materials which may generate airborne dust emissions shall be wetted by water spray system. All receiving hoppers shall be enclosed on three sides up to 3m above unloading point. All conveyor transfer points shall be totally enclosed. 	C C C C
	WATER QUALITY	
B1	Silt curtains shall be installed on the eastern, southern and north western sides of the reclamation site during dredging for the reclamation construction. This is a required mitigation measure for the construction works and shall be implemented prior to the commencement of bulk dredging. **	N/A
B3	As a necessary operational constraint combined bulk dredging and sand filling for site formation shall not be permitted at any time. In addition, sand filling for site platform shall take place behind constructed sea walls which pierce the water surface. **	N/A
B4	HEC shall ensure design to divert all storm drains away from Hung Shing Ye Bay. **	N/A
B5	Sand fill for the rubble mound seawalls shall be placed by controlled pumping down the trailer arm. **	N/A
B6	EM&A shall confirm the acceptability of any impacts during construction and should any unacceptable impacts be found then one or more of the following mitigation measures shall be implemented: ** <ul style="list-style-type: none"> reducing the number of dredgers working at any one time; reducing the rate of working of the dredgers; temporary suspension of operations; phasing of the works so that dredging / filling is only undertaken at certain stages of the tidal cycle. 	N/A

EM&A Log Ref.	Mitigation Measures	Implementation Status
B7	<p>In addition to the above specific measures the following general working procedures shall be adopted. **</p> <ul style="list-style-type: none"> • fully-enclosed or watertight grabs shall be used to minimise loss of sediment during the raising of loaded grabs through the water column; • the descent speed of grabs shall be controlled to minimise the seabed impact speed and to reduce the volume of over dredging; • barges shall be loaded carefully to avoid splashing of material; • all barges used for the transport of dredged materials shall be fitted with tight bottom seals in order to prevent leakage of material during loading and transport; • all barges shall be filled to a level which ensures that material does not spill over during loading and transport to the disposal site and that adequate freeboard is maintained to ensure that the decks are not washed by wave action; • the speed of trailer dredgers shall be controlled to prevent propeller wash from stirring up the sea bed sediments; • "rainbowing" sand fill from trailer dredgers shall not be permitted; and • the works shall cause no visible foam, oil, grease or litter or other objectionable matter to be present in the water within and adjacent to the dredging site and along the route to the disposal site. 	
B8	<p>Cumulative impacts shall be assessed through EM&A. Co-ordination with the EM&A consultants for other projects to determine if any exceedances are caused by the other projects or by HEC's activities. Should monitoring results indicate exceedances at sensitive receivers due to HEC's activities, then the above described mitigation measures shall be implemented until impacts reduce to acceptable levels. **</p>	N/A
NOISE		
C1	<p>General noise mitigation measures shall be employed at all work sites throughout the construction phase.</p>	C
C2	<p>Mitigate against general construction noise during Sunday's and public holidays, either at source with portable noise barriers, or by rescheduling of some PME's to less sensitive time periods.</p>	C
C3	<p>Mitigate against night time noise from dredging equipment, with silencers or mufflers. **</p>	N/A
LANDSCAPE & VISUAL IMPACTS		
D1	<p>The following mitigation measures shall be allowed for landscape and visual improvement:</p> <ul style="list-style-type: none"> • Use rubble mound seawall along south and west edges of the reclamation to provide a more natural look. • Break the mass of main buildings by varying the height/division into smaller units. • Plant trees and vegetation for screening. • Adopt colour scheme to blend the buildings into the scenery. 	

EM&A Log Ref.	Mitigation Measures	Implementation Status
WASTE MANAGEMENT		
E1	HEC to submit a Waste Management Plan for the construction phase to EPD. The Plan shall be verified by the IEC and shall describe the arrangements for avoidance, reuse, recovery and recycling, storage, collection, treatment and disposal of different categories of waste to be generated from the construction activities and shall take into account the recommendations of the EIA report.	C
<i>Dredging Waste</i>		
E2	All vessels for marine transportation of dredged sediment shall be fitted with tight fitting seals to their bottom openings to prevent leakage of materials. In addition, loading of barges and hoppers shall be controlled to prevent splashing of dredged material into the surrounding water, and barges or hoppers should under no circumstances be filled to a level which shall cause the overflowing of materials or polluted water during loading or transportation**	N/A
<i>Storage, Collection and Transport of Waste</i>		
E3	<ul style="list-style-type: none"> • Minimise windblown litter and dust during transportation by either covering trucks or transporting wastes in enclosed containers. 	C
	<ul style="list-style-type: none"> • Obtain the necessary waste disposal permits from the appropriate authorities, if they are required, in accordance with the Waste Disposal Ordinance (Cap.354), Waste Disposal (Chemical Waste) (General) Regulation (Cap.354), the Crown Land Ordinance (Cap 28), Dumping at Sea Ordinance (Cap 466) and Work Branch Technical Circular No. 22/92, Marine Disposal of Dredged Mud. 	C
	<ul style="list-style-type: none"> • Disposal of waste at Licensed sites; 	C
	<ul style="list-style-type: none"> • Develop procedures such as a ticketing system to facilitate tracking of marine mud and chemical waste, and to ensure that illegal disposal does not occur; 	C
	<ul style="list-style-type: none"> • Segregate and sort the waste materials into 3 categories: <ul style="list-style-type: none"> • public fill (e.g. concrete and rubble) for re-use on-site or disposal at a public filling area; • re-use and/or recycling waste (e.g. steel and other metals); • waste which cannot be re-used and/or recycled (e.g. wood, glass and plastic) for landfill disposal. • The sorting process shall be carefully monitored to avoid missing of the 3 categories. Different types of wastes shall be stockpiled and stored in different containers or skips to enhance re-use or recycling of materials and their proper disposal. • Maintain records of the quantities of wastes generated and disposed off-site for each category of waste. 	C
E4	Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, shall be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes	C
LAND CONTAMINATION		
F1	No land Contamination mitigation measures are required during the construction phase.	N/A
MARINE ECOLOGY		

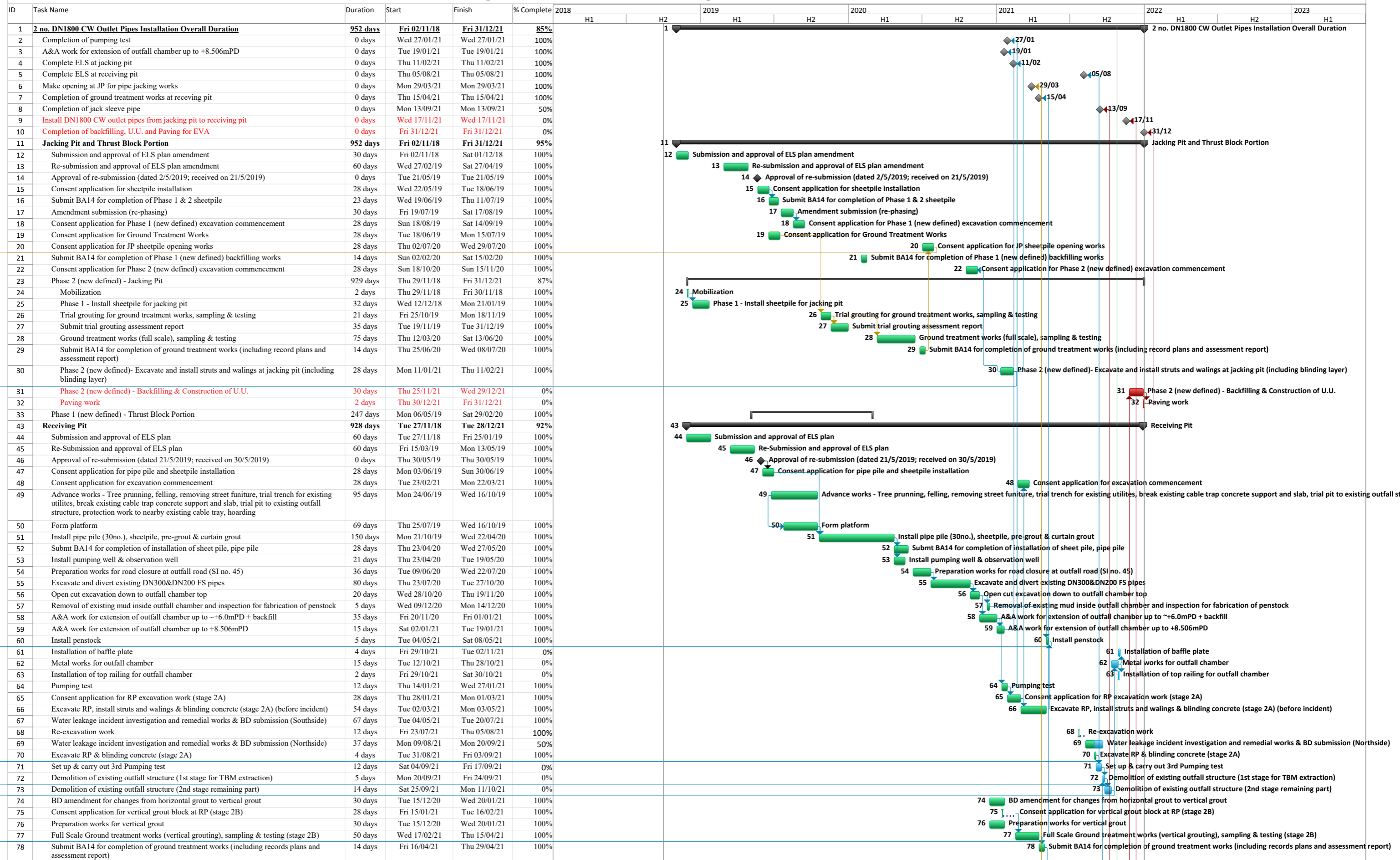
EM&A Log Ref.	Mitigation Measures	Implementation Status
G1	All percussive piling works shall be conducted on reclaimed land to avoid noise impact to marine mammals**	N/A
G2	All construction related vessels shall approach the extension site from the north and via the East Lamma Channel to avoid disturbance to the finless porpoise**	N/A
G3	Rubble mound seawall to the south and west edges of the reclamation to enhance recolonisation of marine organisms**	N/A
G4	Artificial Reefs of a volume not less than 400 m ³ shall be deployed in a location to be decided upon consultation with the Director of Agriculture and Fisheries to serve the purpose of an Additional Habitat Enhancement Measure.**	N/A
FISHERIES		
H1	No Fisheries-specific mitigation measures are required during the construction phase.	N/A
RISK ASSESSMENT		
I1	No risk mitigation measures are required during the construction phase.	N/A

Remarks:

- ** - No dredging and reclamation work would be involved for L11 & L12 construction
- C - Compliance with mitigation measure
- NC - Non-compliance with mitigation measure
- N/A - Not Applicable

Revised Works Programme for 2no. DN1800 CW Outlet Pipes Installation - Culvert Outfall No. 4 + GRS Works

No.4 Outfall A&A+GRS (Rev.17) (26-10-2021)



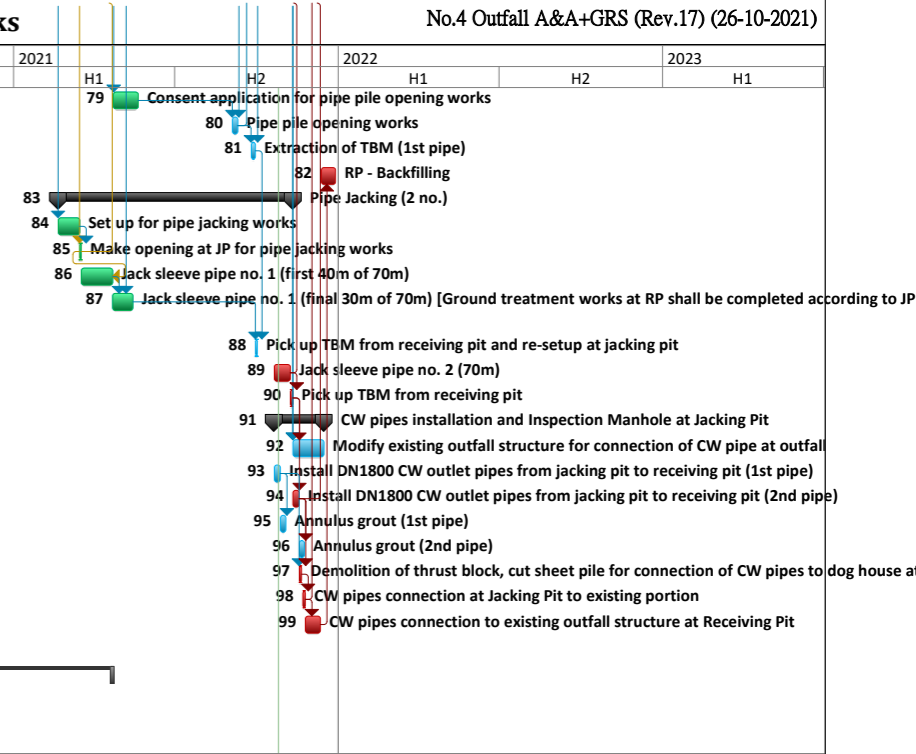
Paul Y Construction Co., Ltd.

Task ■ Split ■ Milestone ■ Summary ■ Project Summary ■ External Tasks ■ Critical ■ Critical Split ■ Progress ■

Revised Works Programme for 2no. DN1800 CW Outlet Pipes Installation - Culvert Outfall No. 4 + GRS Works

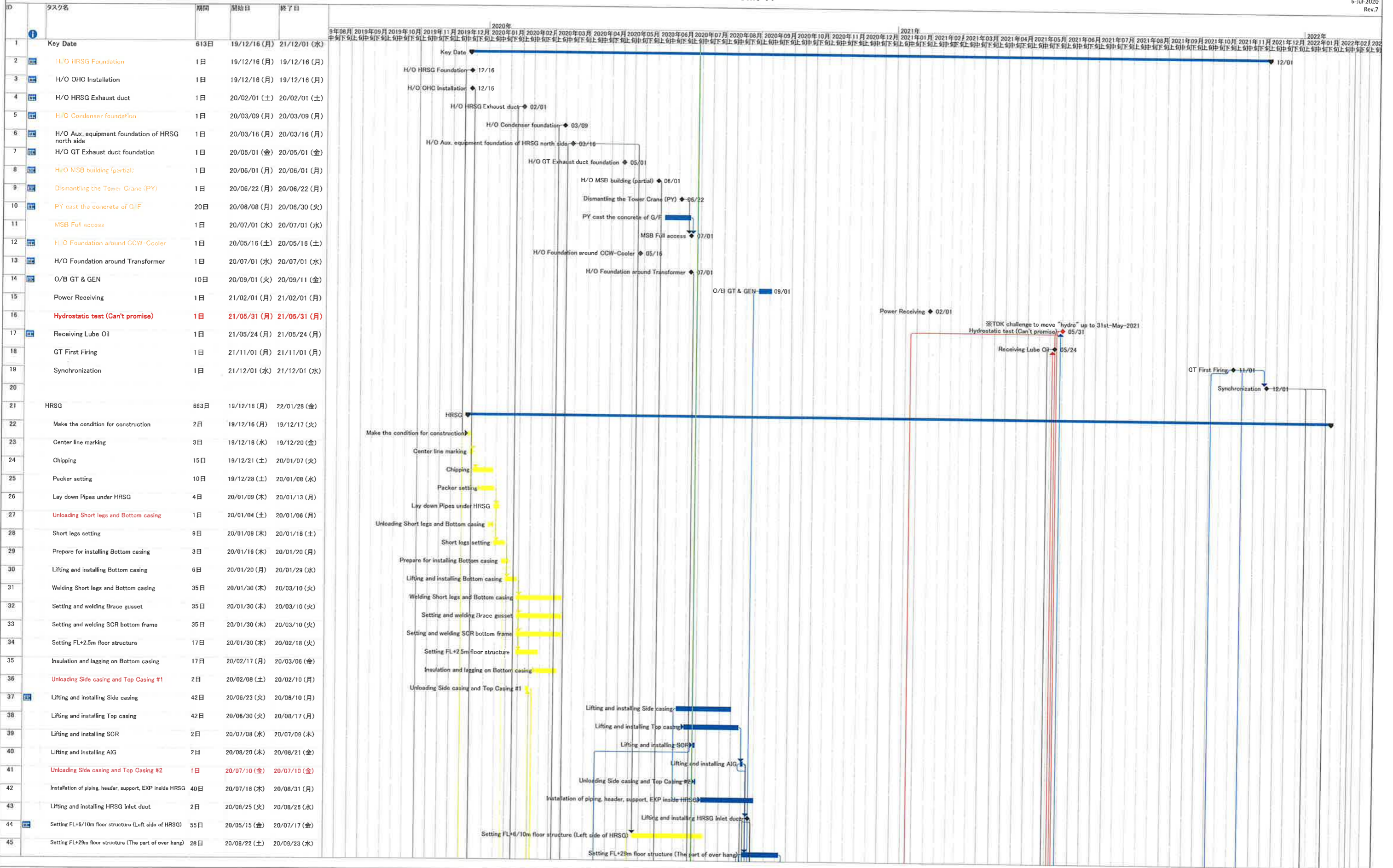
No.4 Outfall A&A+GRS (Rev.17) (26-10-2021)

ID	Task Name	Duration	Start	Finish	% Complete	2018		2019		2020		2021		2022		2023
						H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1
79	Consent application for pipe pile opening works	28 days	Fri 23/04/21	Thu 20/05/21	100%											
80	Pipe pile opening works	5 days	Sat 04/09/21	Thu 09/09/21	0%											
81	Extraction of TBM (1st pipe)	4 days	Sat 25/09/21	Wed 29/09/21	0%											
82	RP - Backfilling	14 days	Mon 13/12/21	Tue 28/12/21	0%											
83	Pipe Jacking (2 no.)	226 days	Sat 20/02/21	Wed 10/11/21	78%											
84	Set up for pipe jacking works	20 days	Sat 20/02/21	Mon 15/03/21	100%											
85	Make opening at JP for pipe jacking works	2 days	Tue 16/03/21	Wed 17/03/21	100%											
86	Jack sleeve pipe no. 1 (first 40m of 70m)	30 days	Thu 18/03/21	Wed 21/04/21	100%											
87	Jack sleeve pipe no. 1 (final 30m of 70m) [Ground treatment works at RP shall be completed according to JP approval plan.]	20 days	Thu 22/04/21	Fri 14/05/21	100%											
88	Pick up TBM from receiving pit and re-setup at jacking pit	2 days	Thu 30/09/21	Fri 01/10/21	0%											
89	Jack sleeve pipe no. 2 (70m)	15 days	Thu 21/10/21	Sun 07/11/21	0%											
90	Pick up TBM from receiving pit	3 days	Mon 08/11/21	Wed 10/11/21	0%											
91	CW pipes installation and Inspection Manhole at Jacking Pit	48 days	Thu 21/10/21	Wed 15/12/21	0%											
92	Modify existing outfall structure for connection of CW pipe at outfall	30 days	Thu 11/11/21	Wed 15/12/21	0%											
93	Install DN1800 CW outlet pipes from jacking pit to receiving pit (1st pipe)	6 days	Thu 28/10/21	Wed 03/11/21	0%											
94	Install DN1800 CW outlet pipes from jacking pit to receiving pit (2nd pipe)	6 days	Thu 11/11/21	Wed 17/11/21	0%											
95	Annulus grout (1st pipe)	5 days	Thu 04/11/21	Tue 09/11/21	0%											
96	Annulus grout (2nd pipe)	5 days	Thu 18/11/21	Tue 23/11/21	0%											
97	Demolition of thrust block, cut sheet pile for connection of CW pipes to dog house at Jacking	3 days	Thu 18/11/21	Sat 20/11/21	0%											
98	CW pipes connection at Jacking Pit to existing portion	3 days	Mon 22/11/21	Wed 24/11/21	0%											
99	CW pipes connection to existing outfall structure at Receiving Pit	15 days	Thu 25/11/21	Sat 11/12/21	0%											
100	Gas pipe support foundation and pipe trench and associated external works at Area E14	247 days	Mon 17/02/20	Sat 12/12/20	72%											
109	L12&L13 Outlet culvert(Connection to Jacking Pit) at Area E15(A) and associated external works at area E15(B)	357 days	Sat 15/02/20	Wed 21/04/21	59%											
117	Gas Receiving Station and L11 Gas Receiving Station Equipment Room(GRS) area extension at Area E16	202 days	Thu 12/03/20	Sat 14/11/20	90%											



Construction Schedule of Unit-11

6-Jul-2020
Rev.7

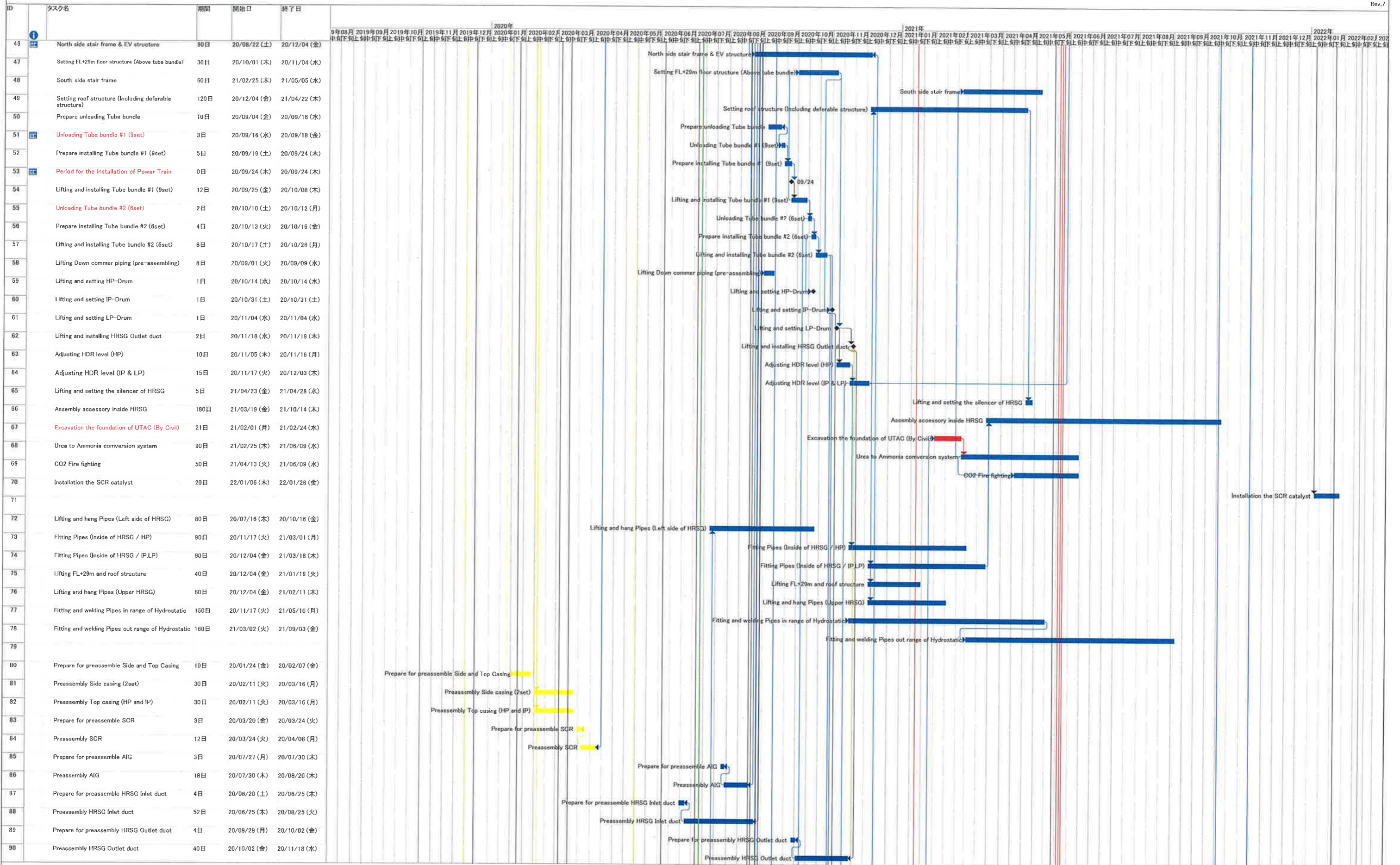


1. Change the starting date of installation below
 - ・ Installation HRSFG was re-started from 23rd-Jun
 - ・ Installation Exhaust duct was re-started from 15th-May
2. To consider that structure of Takasago portion is delayed

4. To consider the delay of H/O date from PDC
5. Add the schedule of the electric work and the replacement the gantry crane for CWP

Construction Schedule of Unit-11

6-Jul-2020
Rev.7

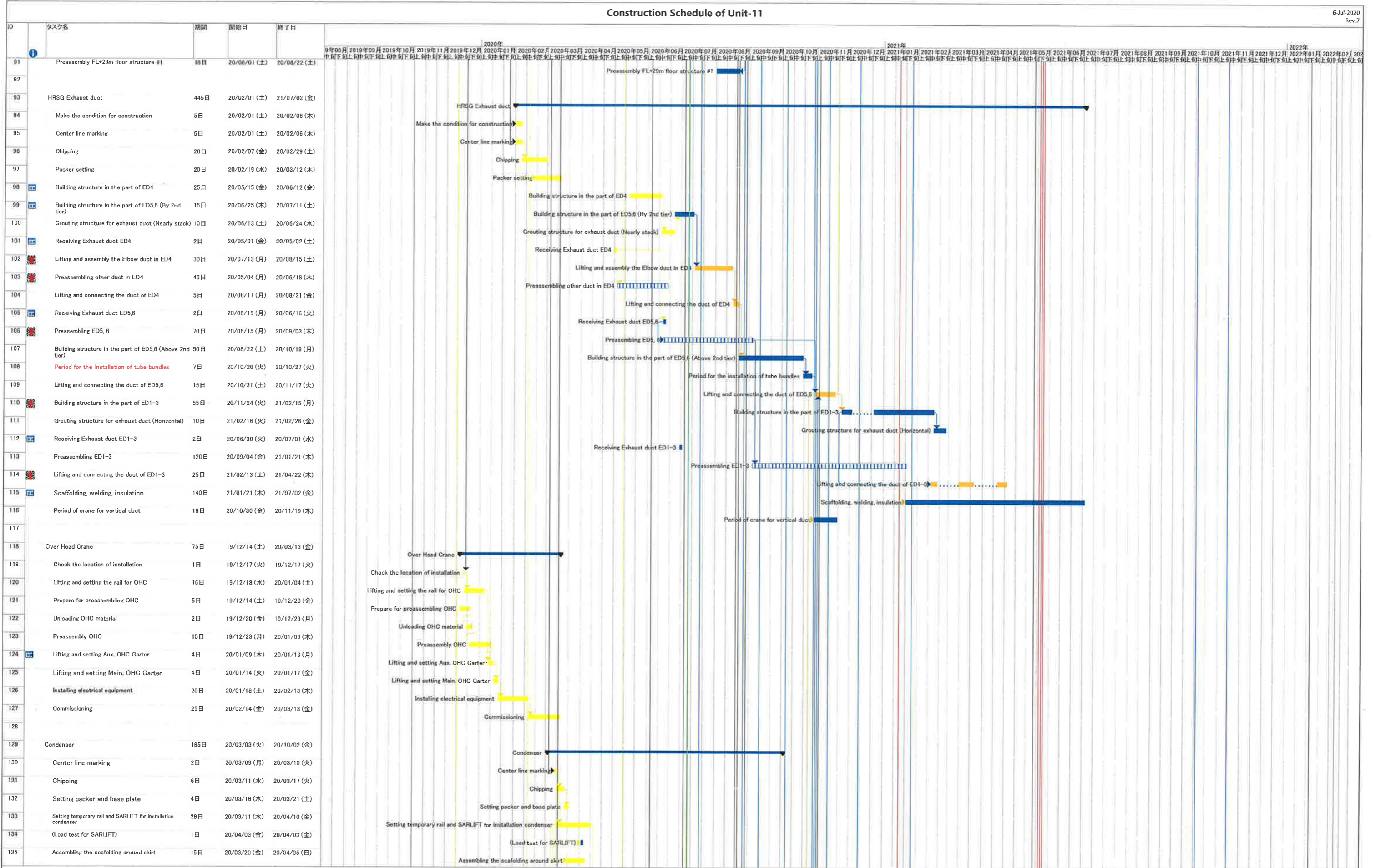


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Construction Schedule of Unit-11

6-Jul-2020
Rev.7

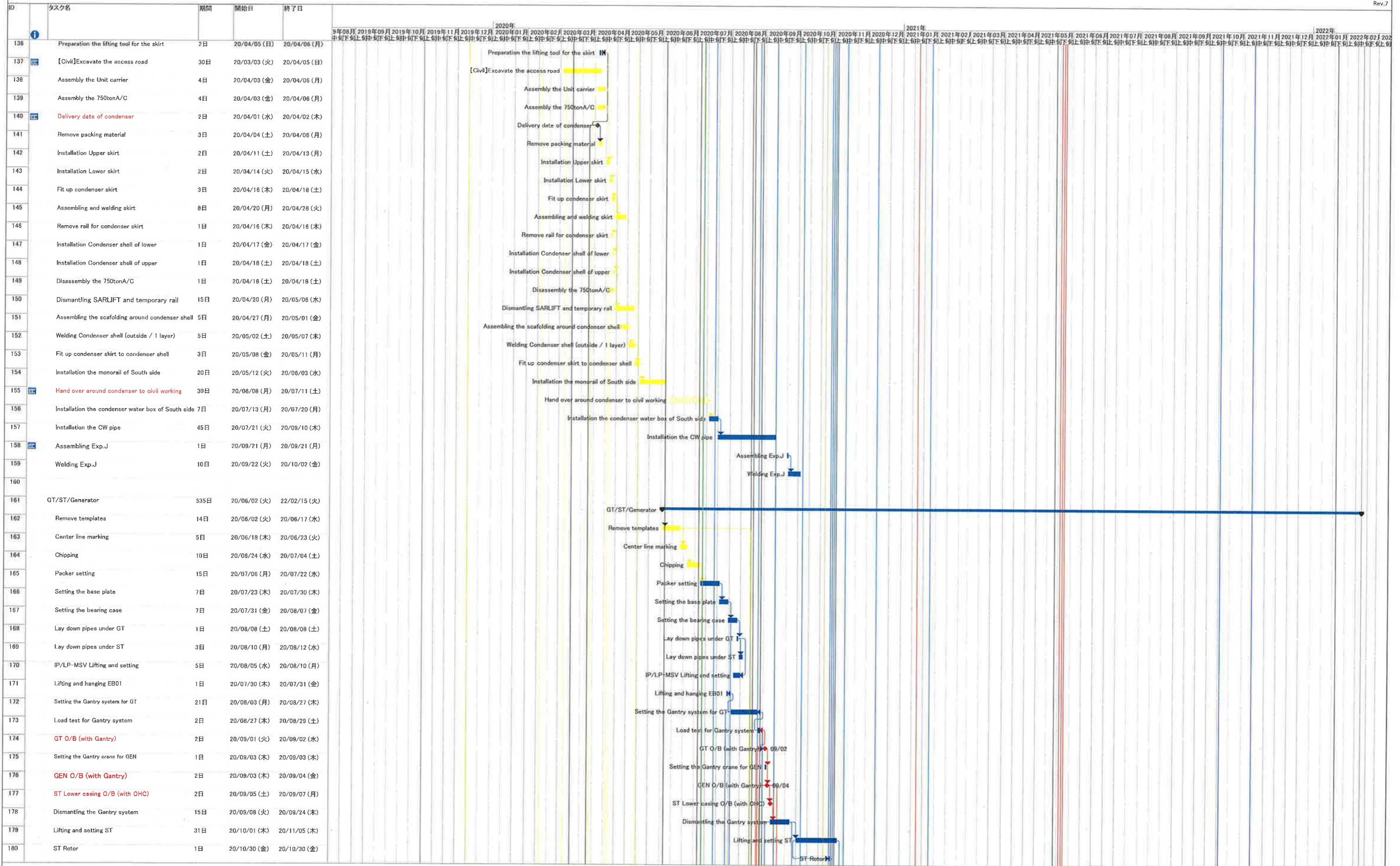


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Construction Schedule of Unit-11

6-Jul-2020
Rev.7

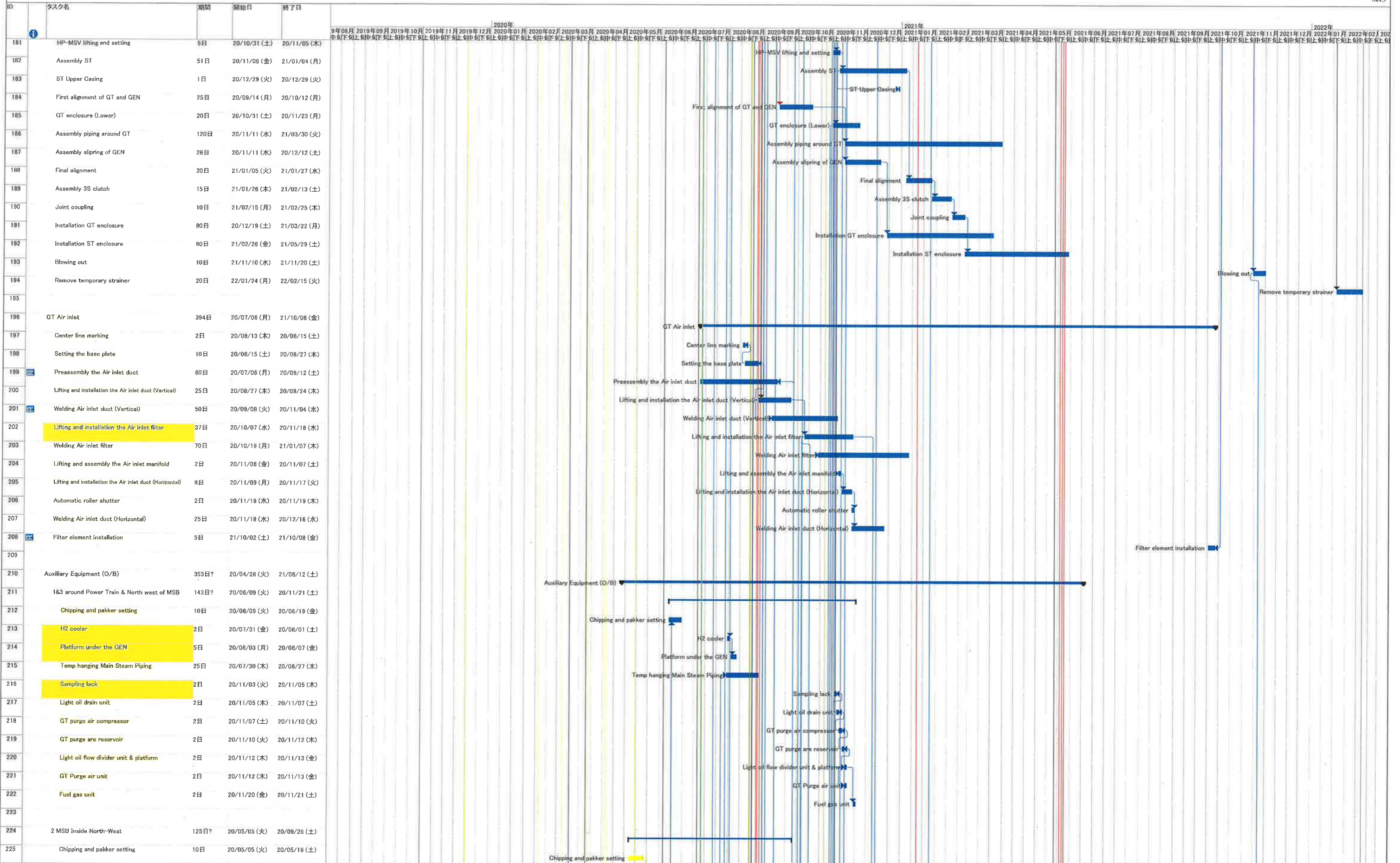


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 - ・ Installation Exhaust duct was re-started from 15st-May
2. To consider that structure of Takasago portion is delayed

4. To consider the delay of H/O date from PDC
5. Add the schedule of the electric work and the replacement the gantry crane for CWP

Construction Schedule of Unit-11

6-Jul-2020
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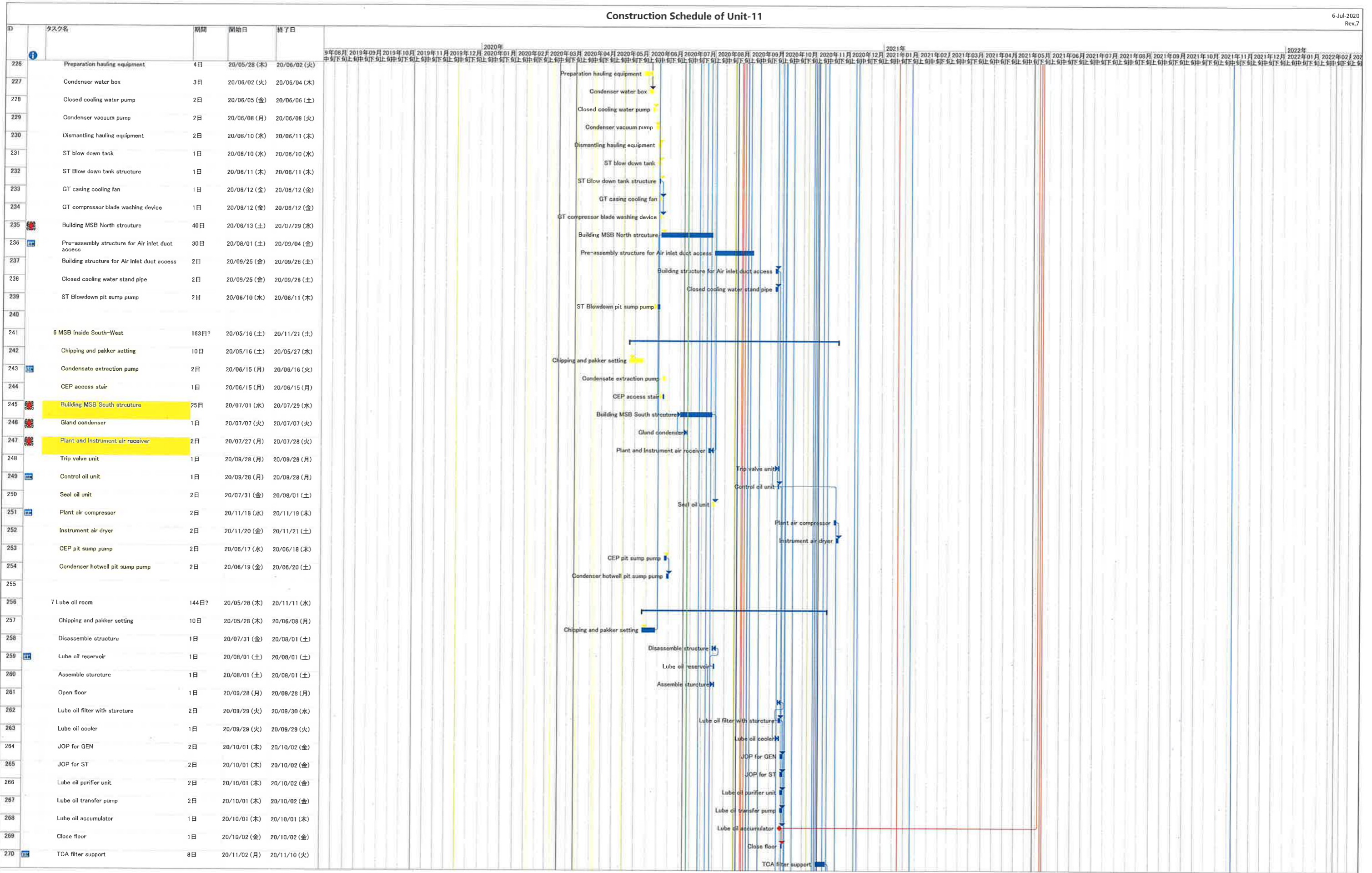


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6-Jul-2020 Rev.7

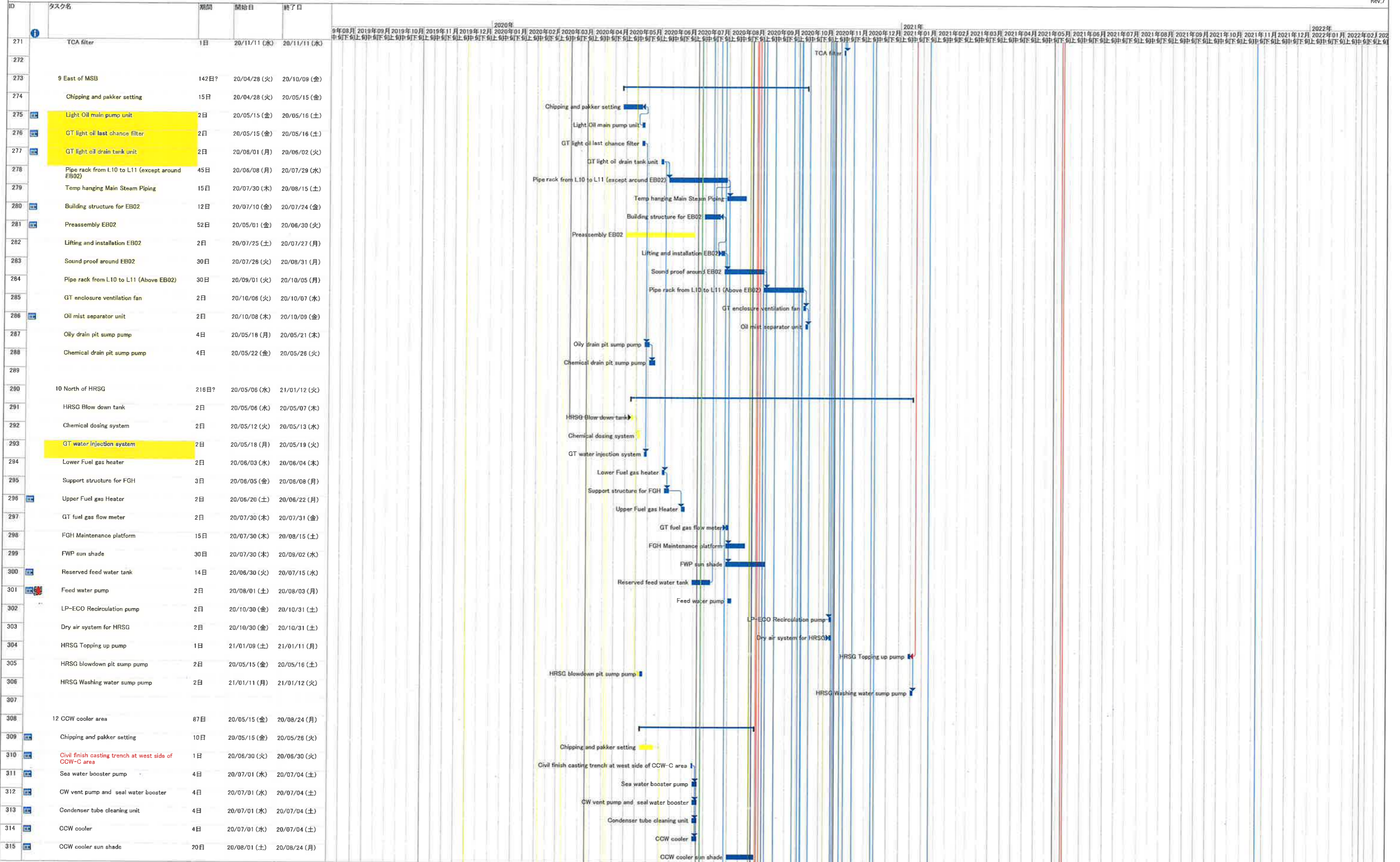


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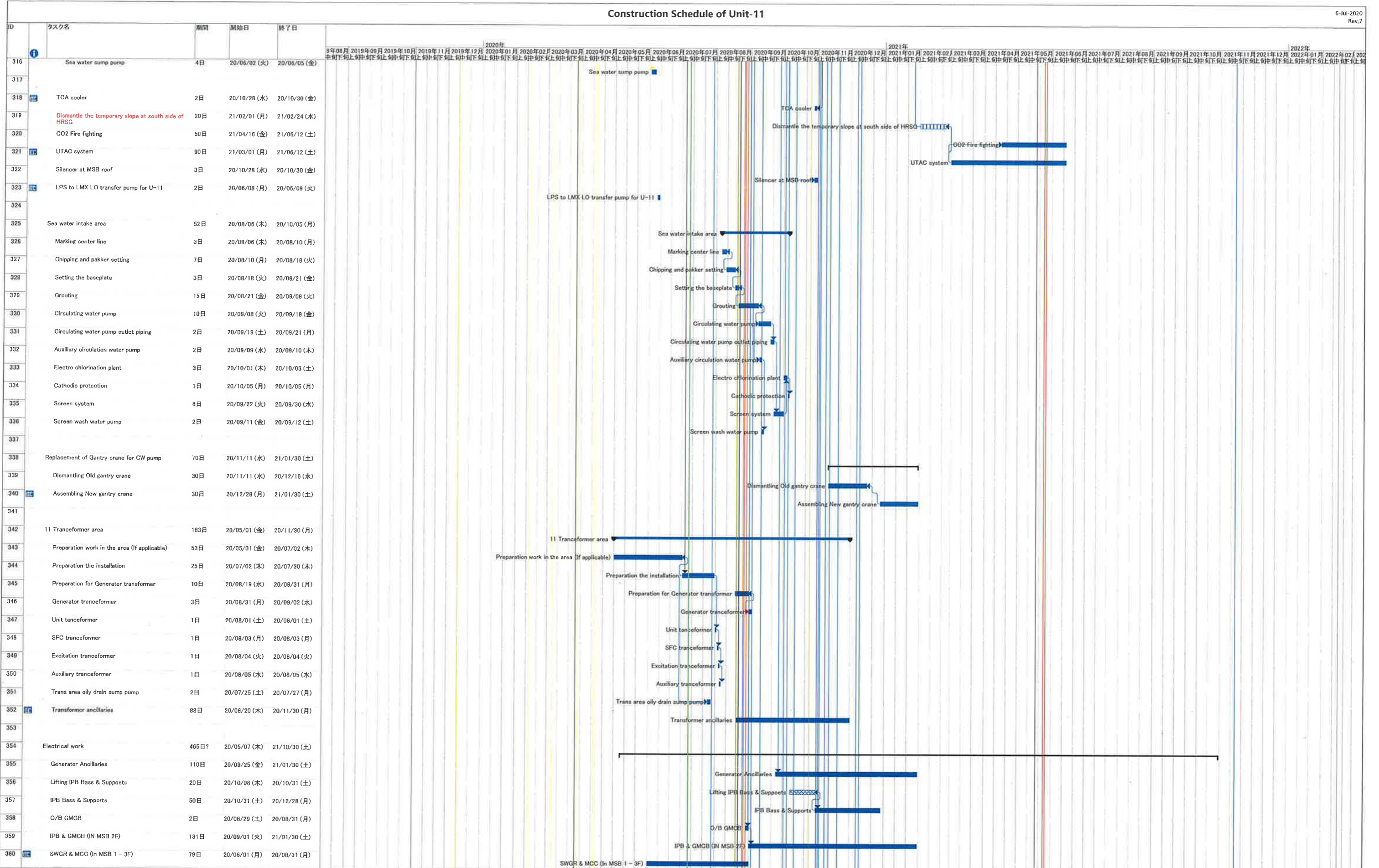


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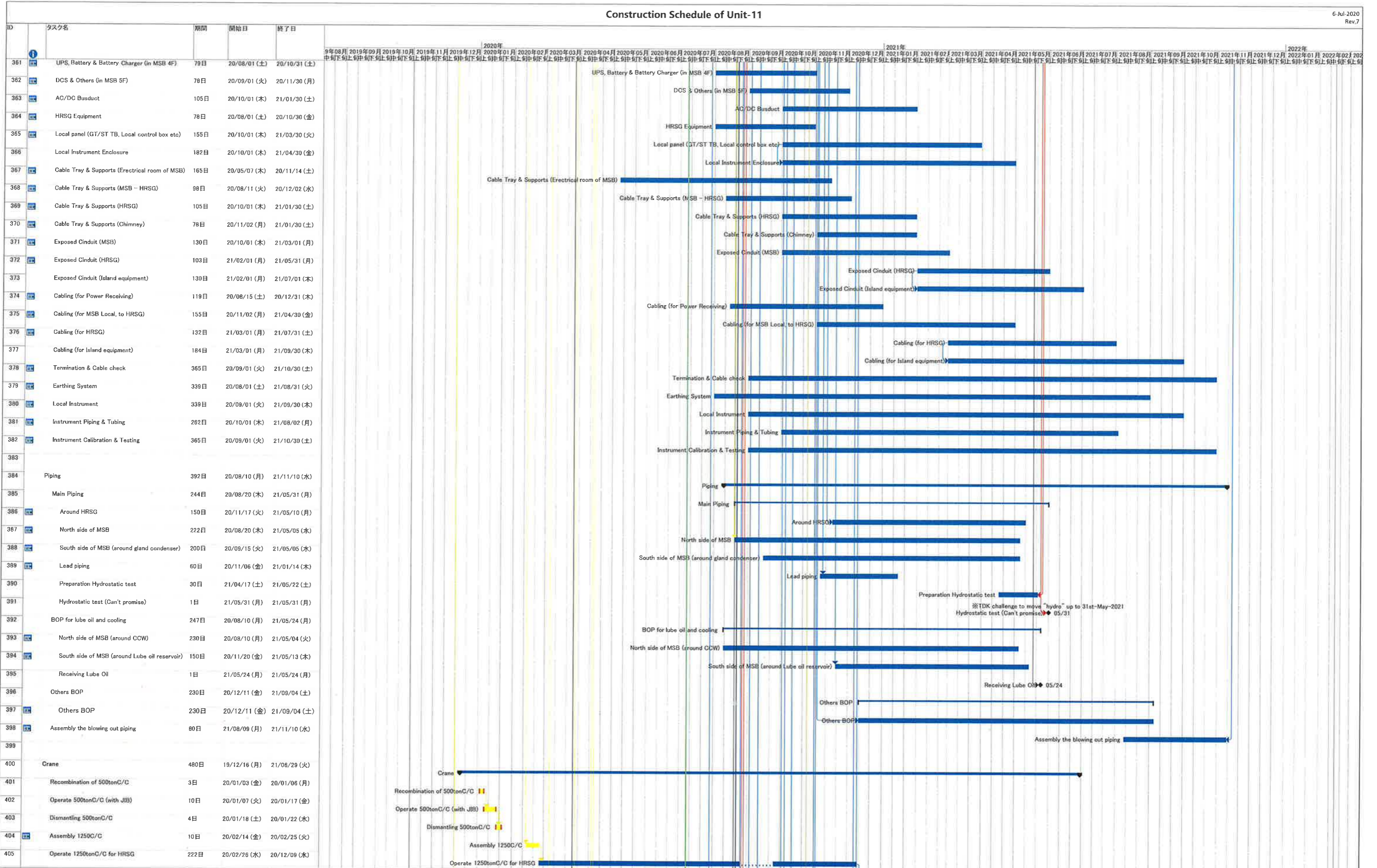


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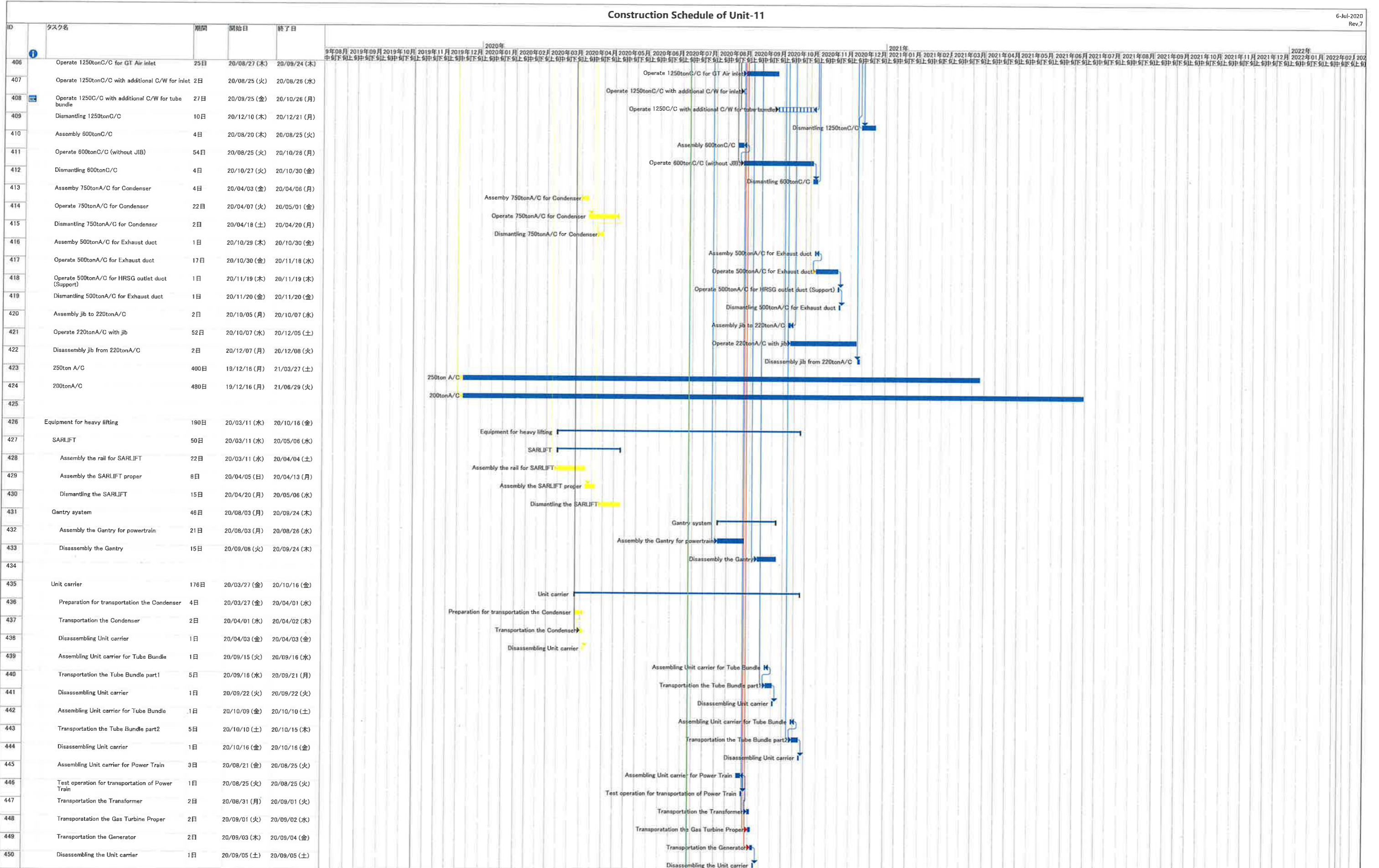


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Contract No. 19/83002 Lamma Power Station Extension Civil and Building Works for Unit L12

Master Programme

Table with columns: ID, Task Name, Duration, Start, Finish, Dec, Jan, Feb. Rows include sections like KEY DATES & MILESTONES, SITE POSSESSION DATES, COMPLETION DATES as per PS1.4.2 Time for Completion, GENERAL & PRELIMINARY, TECHNICAL SUBMISSION AND APPROVAL, CONSTRUCTION, and various sub-sections (A1, A2, B1, B2, C, D, E, F, G, H).

MASTER PROGRAMME Rev 1-B 23 Aug 2021



Task Split Milestone Summary

Contract No. 19/83002 Lamma Power Station Extension Civil and Building Works for Unit L12

Master Programme

ID	Task Name	Duration	Start	Finish	
136	Excavation & Construct Pile Caps & Tie Beams & Piers	86 days	Mon 8/3/21	Thu 19/8/21	
137	Installation of Pipe Pile for HRSG foundation (VO)	48 days	Thu 25/3/21	Tue 11/5/21	
138	Construction HRSG & Gas Duct foundations	112 days	Fri 7/5/21	Fri 3/9/21	
139	Construction of HRSG Equipment Room incl. ABWF & BS (except T&C)	64 days	Tue 4/5/21	Thu 30/9/21	
140	Construction underground utilities within HRSG	55 days	Mon 19/7/21	Sat 11/9/21	
141	Backfill & Construction on-grade slabs & RC plinths on top	14 days	Fri 30/7/21	Mon 27/9/21	
142	Backfill and Temporary paving	21 days	Fri 10/9/21	Thu 30/9/21	
143	Section B2 (ii) - Remaining northern part of L12 HRSG area and its surrounding at Area F6A and F6C	319 days	Fri 1/1/21	Mon 15/11/21	
144	Area Possession and Clearance at Area F6A	30 days	Fri 1/1/21	Sat 30/1/21	
145	Subletting / Fabrication / Delivery (for Area F6A and F6C civil)	90 days	Sat 2/1/21	Thu 1/4/21	
146	Construction of Underground pits (HRSG Blowdown sump pit)	110 days	Sat 2/1/21	Wed 21/4/21	
147	Excavation & Construct Pile Caps & Tie Beams & Piers	139 days	Mon 1/2/21	Sat 10/7/21	
148	Construction underground utilities within HRSG	55 days	Mon 19/7/21	Sat 11/9/21	
149	Construction of Underground pits (GT Oil & Chemical drain pits)	15 days	Thu 5/8/21	Thu 19/8/21	
150	Backfill & Construction on-grade slabs & RC plinths on top	45 days	Sun 12/9/21	Tue 26/10/21	
151	Construct RC Walls	90 days	Thu 22/4/21	Tue 20/7/21	
152	Construction of Underground utilities at F6C	21 days	Tue 19/10/21	Mon 8/11/21	
153	Backfill and Temporary paving	7 days	Tue 9/11/21	Mon 15/11/21	
154	Section B2 - (iii) L12 Turbo Block foundation including the L12 MSB ground floor together with the equipment foundations between GL 12-F to 12-H and 12-1 to 12-6 for the installation of power generator, air inlet duct and lube oil reservoir	452 days	Fri 4/12/20	Mon 28/2/22	
155	Area Possession & Clearance	45 days	Fri 4/12/20	Sun 17/1/21	
156	Subletting / Fabrication / Delivery (Civil+ABWF+BS for MSBL12)	150 days	Fri 25/12/20	Sun 23/5/21	
157	Complete excavation at Type A&C Construction Area	0 days	Sun 21/3/21	Sun 21/3/21	
158	Excavation & Pile Caps & Tie Beams + Slabs (Turbo Block North)	75 days	Sun 31/1/21	Thu 15/4/21	
159	Backfill and construction turbine block & equipment foundation	85 days	Tue 1/6/21	Tue 24/8/21	
160	Excavation & Pile Caps & Tie Beams + Slabs (Turbo Block South)	45 days	Sat 17/4/21	Mon 31/5/21	
161	Construction of internal drainage & on-grade slab	90 days	Wed 1/9/21	Mon 29/11/21	
162	Construction turbine block columns and upper portion for plant embed installation	83 days	Wed 25/8/21	Mon 15/11/21	
163	Concrete Turbine upper part foundation	15 days	Fri 31/12/21	Fri 14/1/22	
164	Construction of Lube Oil Room	14 days	Tue 30/11/21	Fri 28/1/22	
165	Concrete RC walls	115 days	Thu 7/9/21	Thu 30/12/21	
166	ABFW Works	60 days	Thu 4/11/21	Sun 2/1/22	
167	Building Services Works	45 days	Sat 15/1/22	Mon 28/2/22	
168	Remove temporary falsework and scaffolding for installation of power generator	13 days	Mon 7/2/22	Sat 19/2/22	
169	Section B2 - (iv) G/F of L12 MSB including the Condenser Pit, Circulating Water Pipe Pit and equipment foundations between GL 12-B to 12-C and 12-1 to 12-6 for the installation of condenser	377 days	Fri 4/12/20	Wed 15/12/21	
170	Area Possession & Clearance	45 days	Fri 4/12/20	Sun 17/1/21	
171	Subletting / Fabrication / Delivery (for MSB L12 civil)	150 days	Fri 25/12/20	Sun 23/5/21	
172	Excavation to foundation level at ELS SP Type A & C	80 days	Fri 1/1/21	Sun 21/3/21	
173	Install CW Outlet pipe	85 days	Mon 22/3/21	Mon 14/6/21	
174	Construction of CW Outlet Box + lowest tie beam & caps	40 days	Mon 22/3/21	Fri 30/4/21	
175	Construction of pile caps & tie beams & sump pits up to +2.7mPD	26 days	Sat 1/5/21	Wed 26/5/21	
176	Backfill & Construction of CW Inlet Box + tie beams	71 days	Thu 27/5/21	Thu 5/8/21	
177	Construction of pile caps & tie beams at SunShadeCover Area	45 days	Tue 15/6/21	Thu 29/7/21	
178	Backfill and Construction ground beams & trenches	28 days	Thu 27/5/21	Mon 5/7/21	
179	Construction of indoor underground drainage	14 days	Fri 13/8/21	Thu 26/8/21	
180	Backfill & construction on-grade slabs	60 days	Sun 1/8/21	Wed 29/9/21	
181	Construction Column casting and RC walls & equipment foundations	50 days	Thu 30/9/21	Thu 18/11/21	
182	ABFW Works	15 days	Fri 19/11/21	Fri 3/12/21	
183	Building Services Works	20 days	Fri 26/11/21	Wed 15/12/21	
184	Mis. Works and Ready for condenser move in	25 days	Wed 17/11/21	Wed 15/12/21	
185	Section C - (i) Roads and external grounds surrounding L12 MSB and L12 HRSG in addition to the southern & eastern areas mentioned above in Area F5	408 days	Fri 4/12/20	Sat 15/1/22	
186	Area Possession & Clearance	30 days	Fri 4/12/20	Sat 2/1/21	
187	Subletting / Fabrication / Delivery	210 days	Fri 25/12/20	Thu 22/7/21	
188	Complete substructure & Steel Erection works for MSB	0 days	Tue 17/8/21	Tue 17/8/21	
189	Construction all utilities deeper than 2m from future road level	30 days	Wed 18/8/21	Thu 16/9/21	
190	Construction of cable trenches	30 days	Fri 17/9/21	Sat 16/10/21	
191	Backfill and lay temporary paving	91 days	Sun 17/10/21	Sat 15/1/22	
192	Section C - (ii) Whole of L12 MSB including the pipe and cable rack along south façade of L12 MSB with all underground utilities at Area F4 including C.W. Inlet and Outlet Culvert except the deferred works	483 days	Fri 4/12/20	Thu 31/3/22	
193	Area Possession & Clearance	45 days	Fri 4/12/20	Sun 17/1/21	
194	Subletting / Fabrication / Delivery	120 days	Fri 25/12/20	Fri 23/4/21	
195	Construction of pile caps & tie beams at Transformer Area	180 days	Sun 31/1/21	Thu 29/7/21	
196	Backfill and on-grade slab at transformer Area	160 days	Sun 11/4/21	Thu 7/10/21	
197	Construction of Fire Walls at Transformer Area	45 days	Fri 8/10/21	Sun 21/11/21	
198	Excavation & Construction Blow Down Sum pit (SP Type B)	140 days	Wed 14/4/21	Tue 31/8/21	
199	Preparation for S.Steelwork Erection	7 days	Sat 5/6/21	Fri 11/6/21	
200	Structural Delivery & Erection (Turbine Hall North fr G.L. 1-3/H->B)	67 days	Sat 12/6/21	Tue 17/8/21	
201	Structural Delivery & Erection (Equipment Floors)	33 days	Wed 18/8/21	Sun 19/9/21	
202	Structural Delivery & Erection (Turbine Hall South + East Elevation)	47 days	Mon 20/9/21	Mon 15/11/21	
203	Joint Tightening and touch up coating	99 days	Sat 3/7/21	Wed 24/11/21	
204	External Scaffolding Erection	97 days	Thu 15/7/21	Mon 22/11/21	
205	Construction 1/F RC Slab	14 days	Mon 20/9/21	Sun 3/10/21	
206	Construction 2/F RC Slab	7 days	Mon 27/9/21	Sun 10/10/21	
207	Construction 3/F RC Slab	18 days	Thu 30/9/21	Sun 17/10/21	
208	Construction 4/F RC Slab	7 days	Thu 7/10/21	Sun 24/10/21	
209	Construction 5/F RC Slab	44 days	Mon 25/10/21	Tue 7/12/21	
210	Construction 6/F RC Slab	14 days	Wed 1/12/21	Tue 14/12/21	
211	Construction Upper Roof RC Slab	10 days	Sun 12/12/21	Fri 24/12/21	
212	Construction Main Roof RC Slab	39 days	Tue 12/10/21	Fri 19/11/21	
213	Construction Defer Roof RC Slab (G.L. G-H)	14 days	Wed 1/12/21	Tue 14/12/21	
214	Construction of Staircase ST-01 & lift shaft & machine room	130 days	Fri 27/8/21	Mon 3/1/22	
215	Construction M/F RC Slab	14 days	Wed 1/9/21	Tue 14/9/21	
216	Lift Installation	60 days	Tue 4/1/22	Fri 4/3/22	
217	Construction of Staircase ST-02 except defer work	68 days	Mon 11/10/21	Fri 24/12/21	
218	Construction of RC plinth, kerbs & parapet Walls	40 days	Sat 20/11/21	Wed 29/12/21	
219	Erection of Skylight & Roof Features	50 days	Fri 26/11/21	Fri 14/1/22	
220	Waterproofing & Flooring at Roof	34 days	Thu 30/12/21	Thu 17/2/22	
221	ABFW Works	100 days	Fri 8/10/21	Sat 15/1/22	
222	Building Services Works	105 days	Tue 16/11/21	Mon 28/2/22	
223	Metal Cladding, Windows and Louvres incl. roof feature	185 days	Mon 23/8/21	Wed 23/2/22	
224	Removal of external scaffolding	90 days	Wed 1/12/21	Mon 28/2/22	
225	Installation of Catwalk at south elevation	26 days	Mon 31/1/22	Tue 1/3/22	
226	Cladding, ABWF & BS Works	30 days	Wed 2/3/22	Thu 31/3/22	
227	Removal of temporary works & clearance for plant erection contractor	30 days	Sun 30/1/22	Mon 28/2/22	
228	Section C - (iii) Link Bridge between L11 and L12 MSB includin their associated A&A at L11 MSB	493 days	Fri 4/12/20	Sun 10/4/22	
229	BD Consent	0 days	Fri 4/12/20	Fri 4/12/20	
230	Subletting / Fabrication / Delivery (For BS and ABWF)	250 days	Fri 25/12/20	Tue 31/8/21	
231	Clearing Works and plant set-up	30 days	Fri 3/12/21	Sat 1/1/22	
232	Dismantle of north scaffold for link bridge erection	0 days	Tue 25/1/22	Tue 25/1/22	
233	A&A works at South of L11 MSB	30 days	Fri 3/12/21	Sat 1/1/22	
234	Erection of link bridge structural steel	30 days	Sun 2/1/22	Mon 31/1/22	
235	Casting of bridge deck	11 days	Tue 1/2/22	Fri 11/2/22	
236	Metal roofing installation	24 days	Sat 12/2/22	Mon 7/3/22	
237	ABWF work	30 days	Sun 20/2/22	Mon 21/3/22	
238	BS Works	20 days	Tue 22/3/22	Sun 10/4/22	
239	Ready for power cable laying work by others	0 days	Sun 10/4/22	Sun 10/4/22	
240	Section D - (ii) No. 5 Chimney with L12 Steel Flue Liner	810 days	Fri 1/1/21	Tue 21/3/23	
241	Area Possession & Clearance	45 days	Fri 1/1/21	Sun 14/2/21	
242	Subletting / Fabrication / Delivery (For Civil and BS for Microwave Antenna and Equipment)	120 days	Fri 8/1/21	Fri 7/5/21	
243	Excavation & Pile Cap & Backfill	90 days	Sat 2/1/21	Thu 1/4/21	
244	Tower Crane erection	30 days	Tue 11/5/21	Wed 9/6/21	
245	Construction of Wind Shiled + clearance for internal floors and flue+Ground slab	308 days	Fri 2/4/21	Mon 4/4/22	
246	Structural steel fabrication & Delivery for floors and staircase	201 days	Mon 3/1/22	Fri 22/7/22	
247	Erection of steel floors	79 days	Tue 19/4/22	Wed 6/7/22	
248	Construction of G/F room incl. Microwave Antenna Rm	45 days	Thu 7/7/22	Sat 20/8/22	
249	Construction of 1/F RC slab	8 days	Sat 13/8/22	Sat 20/8/22	
250	Construction of 2/F RC Slab	8 days	Fri 5/8/22	Fri 12/8/22	
251	Construction of 3/F RC slab	8 days	Thu 28/7/22	Thu 4/8/22	
252	Construction of 4/F RC slab	8 days	Thu 7/7/22	Thu 14/7/22	
253	Construction of Roof RC slab	61 days	Tue 21/6/22	Sat 20/8/22	
254	Removal of tower Crane	7 days	Sun 21/8/22	Sat 27/8/22	
255	Steel Flue fabrication and delivery	145 days	Sat 5/3/22	Wed 27/7/22	
256	Set up for steel flue installation	60 days	Tue 5/7/22	Fri 2/9/22	
257	Lift & install steel flue liner + cladding works	161 days	Thu 28/7/22	Wed 4/1/23	
258	Lift installation	100 days	Mon 12/12/22	Tue 21/3/23	
259	Installation Louvre & Doors	30 days	Thu 5/1/23	Fri 3/2/23	
260	Mis works, Demobilization and ready for gas duct connection	17 days	Thu 5/1/23	Sat 21/1/23	
261	Section D (i) - ABWF and BS Works at Microwave Antenna Room and Chimney Windshield for installation of microwave and antenna	102 days	Tue 1/3/22	Fri 10/6/22	
262	Completion of Microwave Antenna Room	0 days	Tue 1/3/22	Tue 1/3/22	
263	Remaining ABWF & BS Works	100 days	Thu 3/3/22	Fri 10/6/22	
264	Section E - (i) Administration and Control Building (Transformer Room)	332 days	Fri 4/12/20	Sun 31/10/21	
265	Area Possession & Clearance + BD consent	60 days	Fri 4/12/20	Mon 1/2/21	
266	Subletting / Fabrication / Delivery (For Civil+BS+ABWF)	100 days	Tue 2/2/21	Wed 12/5/21	
267	Excavation works	45 days	Fri 4/12/20	Sun 17/1/21	
268	Main Earth Grid Installation	45 days	Sun 3/1/21	Tue 16/2/21	
269	Pile cap and Tie Beam	45 days	Sun 3/1/21	Tue 16/2/21	
270	Tower Crane Erection and modification works	49 days	Wed 10/2/21	Tue 30/3/21	
271	Substructure + Bearing walls + On grade slabs	115 days	Wed 17/2/21	Fri 11/6/21	
272	Construction of RC up to 1/F incl. staircases	69 days	Sat 12/6/21	Thu 19/8/21	
273	ABWF at G/F	52 days	Fri 10/9/21	Sun 31/10/21	
274	Section E (ii) Handover G/F, 1/F, 2/F & Hoisting Well	452 days	Fri 4/12/20	Mon 28/2/22	
275	Clearing Works and plant set-up	21 days	Sun 31/10/21	Sat 20/11/21	
276	Subletting / Fabrication / Delivery (For NSC Lift)	180 days	Sun 3/1/21	Sat 31/7/21	
277	Construction of RC up to 2/F incl. staircases	25 days	Sat 14/8/21	Mon 13/9/21	
278	Construction of RC up to 3/F incl. staircases	20 days	Thu 2/9/21	Tue 21/9/21	
279	Tempoary Hoist erection	14 days	Wed 22/9/21	Tue 5/10/21	
280	Construction of RC up to 4/F incl. staircases	20 days	Thu 16/9/21	Tue 5/10/21	



Contract No. 19/83002 Lamma Power Station Extension Civil and Building Works for Unit L12

Master Programme

ID	Task Name	Duration	Start	Finish
281	Construction of RC up to R/F incl. staircases	25 days	Thu 30/9/21	Sun 24/10/21
282	Construction of RC up to lift machine room	21 days	Mon 25/10/21	Sun 14/11/21
283	Construction of RC up to UR/F	21 days	Mon 15/11/21	Sun 5/12/21
284	External Wall Finish, Cladding + Windows and Louvres + Features	138 days	Thu 30/9/21	Mon 14/2/22
285	ABWF at 1/F	95 days	Fri 8/10/21	Mon 10/1/22
286	ABWF at 2/F	96 days	Fri 15/10/21	Tue 18/1/22
287	Building Services Works at G/F, 1/F, 2/F & Hoisting Well	147 days	Tue 5/10/21	Mon 28/2/22
288	Section E (iii) Whole of Administration and Control Building	544 days	Fri 4/12/20	Tue 31/5/22
289	Subletting / Fabrication / Delivery (For BS-ABWF)	127 days	Sat 23/10/21	Sun 20/3/22
290	Construction of New UG Grey Water Tank	60 days	Mon 20/3/23	Thu 18/5/23
291	Submission of WW046 for commencement	60 days	Wed 19/1/22	Sat 19/3/22
292	ABWF at 3/F	120 days	Mon 25/10/21	Mon 21/2/22
293	ABWF at 4/F	90 days	Wed 24/11/21	Mon 21/2/22
294	ABWF at R/F	60 days	Wed 15/12/21	Sat 12/2/22
295	ABWF at UR/F + Lift Machine Room	45 days	Wed 5/1/22	Fri 18/2/22
296	Bridge Erection & Connection	28 days	Mon 7/2/22	Mon 28/3/22
297	Installation of Raised floors	60 days	Fri 7/1/22	Fri 29/4/22
298	Removal of external scaffolding	39 days	Mon 24/1/22	Wed 9/3/22
299	Waterproofing & screeding	60 days	Mon 6/12/21	Thu 3/2/22
300	Removal of Tower Crane	7 days	Thu 10/3/22	Wed 16/3/22
301	External utilities and road work	45 days	Tue 8/2/22	Thu 14/4/22
302	Building Services Works	160 days	Tue 7/12/21	Sun 15/5/22
303	False ceiling after BS works	54 days	Tue 29/3/22	Sat 21/5/22
304	Submission of WW046 for completion	30 days	Wed 9/3/22	Thu 7/4/22
305	Submission for FS inspection	14 days	Fri 13/5/22	Thu 26/5/22
306	Submission for OP Inspection	14 days	Wed 18/5/22	Tue 31/5/22
307	Section F (i) - Gas Receiving Station and L12 Gas Receiving Station Equipment Room (GRS) Area Extension at Area F14	548 days	Tue 1/6/21	Wed 30/11/22
308	Area Possession & Clearance + BD consent	90 days	Tue 1/6/21	Sun 29/8/21
309	Subletting / Fabrication / Delivery	30 days	Tue 22/6/21	Wed 21/7/21
310	Installation of pipe pile at north of GRS (VO)	134 days	Mon 5/7/21	Mon 15/11/21
311	Construction Equipment room extension	145 days	Sun 31/10/21	Thu 24/3/22
312	Modification of existing drainage	45 days	Fri 25/3/22	Sun 8/5/22
313	Excavation & earthing for Skid foundations	21 days	Mon 9/5/22	Sun 29/5/22
314	Construction of Skid foundation	45 days	Mon 30/5/22	Wed 13/7/22
315	Construct underground utilities and drainage	45 days	Thu 14/7/22	Sat 27/8/22
316	Backfill and road works	60 days	Sun 28/8/22	Wed 26/10/22
317	Relocate / install new fencing for completion	21 days	Thu 27/10/22	Wed 16/11/22
318	Mis. Work and ready for OP inspection	14 days	Thu 17/11/22	Wed 30/11/22
319	Section F (ii) - Pipe and Cable rack and external work at Area F9A and F9B	515 days	Sat 2/1/21	Tue 31/5/22
320	BD consent + Site Possession at Area F9A & F9B	90 days	Sat 2/1/21	Thu 1/4/21
321	Excavation & Plate load test	30 days	Mon 1/11/21	Tue 30/11/21
322	Construction new footing for pipe rack	30 days	Wed 1/12/21	Thu 30/12/21
323	Underground utilities and road works for completion	11 days	Thu 31/3/22	Tue 31/5/22
324	Structural Steel fabrication & Delivery	90 days	Sat 2/10/21	Thu 30/12/21
325	Erection of new pipe rack	70 days	Fri 31/12/21	Thu 10/3/22
326	Mis. Work and ready for OP inspection	21 days	Wed 11/5/22	Tue 31/5/22
327	Section F (iii) - No. 5 CW Equipment Room, pipe and cable rack, external works at Area F10	457 days	Tue 1/6/21	Wed 31/8/22
328	Area Possession & Clearance + BD consent	90 days	Tue 1/6/21	Sun 29/8/21
329	Subletting / Fabrication / Delivery For ABWF + BS	150 days	Wed 2/6/21	Fri 29/10/21
330	Installation of Sheet Pile (VO)	85 days	Tue 1/6/21	Tue 24/8/21
331	Consent for ELS Works	28 days	Wed 25/8/21	Tue 21/9/21
332	Excavation & Plate load test	30 days	Wed 22/9/21	Thu 21/10/21
333	Construction new footing for equipment room	68 days	Thu 23/12/21	Mon 28/2/22
334	Superstructure for equipment room	60 days	Tue 1/3/22	Fri 29/4/22
335	ABWF Works	45 days	Sat 30/4/22	Mon 13/6/22
336	BS Works	30 days	Wed 1/6/22	Thu 30/6/22
337	Construction RC Wall & plinths & drainage at Chlorinator area	45 days	Wed 30/3/22	Fri 13/5/22
338	External wall finish & remove scaffolding	30 days	Sat 14/5/22	Sun 12/6/22
339	Excavation & Plate load test for pipe rack extension (For F45-47 & F49)	30 days	Sat 16/10/21	Sun 14/11/21
340	Construction new footing for pipe rack (For F45-47 & F49)	45 days	Mon 15/11/21	Wed 29/12/21
341	Underground utilities and road works for completion	60 days	Thu 30/12/21	Sun 27/2/22
342	Structural Steel fabrication & Delivery	90 days	Sun 12/12/21	Fri 11/3/22
343	Backfilling and prepare for steel erection	12 days	Mon 28/2/22	Fri 11/3/22
344	Excavation & Plate Load test for pipe rack extension (For F48 & F56)	14 days	Wed 30/3/22	Tue 12/4/22
345	Construction of new footing for pipe rak (For F48 & F56)	14 days	Wed 13/4/22	Tue 26/4/22
346	Erection of new pipe rack (For F48 & F56)	65 days	Tue 3/5/22	Wed 6/7/22
347	Erection of new pipe rack (For F45-47 & F49)	70 days	Sat 12/3/22	Fri 20/5/22
348	Mis. Work and ready for OP inspection	56 days	Thu 7/7/22	Wed 31/8/22
349	Section G (i) - External Work surrounding Area F11	145 days	Sat 4/6/22	Wed 26/10/22
350	Area Possession & Clearance after handover from No. 5 Intake Contractor	30 days	Sat 4/6/22	Sun 3/7/22
351	Subletting / Fabrication / Delivery	30 days	Sat 4/6/22	Sun 3/7/22
352	Submission WW0046 for commencement	30 days	Sat 4/6/22	Sun 3/7/22
353	Construct Underground utilities and drainage	30 days	Mon 20/6/22	Tue 19/7/22
354	Install new FS Hydrant	20 days	Mon 20/6/22	Sat 9/7/22
355	Submission WW0046 for completion	30 days	Sat 30/7/22	Sun 28/8/22
356	Construction Road extension	58 days	Sat 30/7/22	Sun 25/9/22
357	Construction road paving and install fencing	30 days	Mon 26/9/22	Tue 25/10/22
358	Ready for OP inspection	14 days	Thu 13/10/22	Wed 26/10/22
359	Section G (ii) - External Works at Area F12 & F13	666 days	Fri 4/12/20	Fri 30/9/22
360	Area Possession & Clearance after handover from other	45 days	Fri 4/12/20	Sun 17/1/21
361	Subletting / Fabrication / Delivery	180 days	Thu 4/3/21	Mon 30/8/21
362	Excavation	21 days	Sat 23/10/21	Fri 12/11/21
363	Submission WW0046 for commencement	30 days	Sat 13/11/21	Sun 12/12/21
364	Construct Underground utilities and drainage	90 days	Mon 13/12/21	Sat 12/3/22
365	Install new FS Hydrant	30 days	Sun 13/3/22	Mon 11/4/22
366	Submission WW0046 for completion	30 days	Tue 12/4/22	Wed 11/5/22
367	Construction Road extension	127 days	Thu 12/5/22	Thu 15/9/22
368	Complete with Mis. Works for completion	15 days	Fri 16/9/22	Fri 30/9/22
369	Section G (iii) - FS Modification works along South Seafront Road at Area F15	183 days	Fri 1/4/22	Fri 30/9/22
370	Area Possession & Clearance after handover from other	45 days	Fri 1/4/22	Sun 15/5/22
371	Subletting / Fabrication / Delivery	21 days	Fri 1/4/22	Thu 21/4/22
372	Temporary Traffic Arrangement approval	14 days	Fri 1/4/22	Thu 14/4/22
373	Utilities scanning and expose existing FS	14 days	Fri 15/4/22	Thu 28/4/22
374	Determine new FS alignment	21 days	Fri 29/4/22	Thu 19/5/22
375	Submission to FSD	14 days	Fri 20/5/22	Thu 2/6/22
376	Modification of FS	60 days	Fri 3/6/22	Mon 1/8/22
377	Backfill and reinstatement + report to FSD	60 days	Tue 2/8/22	Fri 30/9/22
378	Section G (iv) - 275kV cable trenches and External Works at Area F16	518 days	Sat 1/5/21	Fri 30/9/22
379	Area Possession & Clearance	60 days	Sat 1/5/21	Tue 29/6/21
380	Subletting / Fabrication / Delivery	210 days	Wed 17/11/21	Tue 14/6/22
381	Temporary Traffic Arrangement approval	60 days	Sat 1/5/21	Tue 29/6/21
382	Removal of aboveground services	60 days	Wed 30/6/21	Sat 28/8/21
383	Utilities scanning and expose existing UU	30 days	Sun 29/8/21	Mon 27/9/21
384	Arrange of diversion existing UG utilities	90 days	Tue 29/9/21	Sun 26/12/21
385	Construct new cable trenches	173 days	Mon 27/12/21	Fri 17/6/22
386	Realign / install new UG utilities	60 days	Sat 18/6/22	Tue 16/8/22
387	Backfill and reinstatement + ready for cable laying by others	45 days	Wed 17/8/22	Fri 30/9/22
388	Section G (v) - Shunt Reactor Compound and External Works at Area F17	666 days	Fri 4/12/20	Fri 30/9/22
389	Temporary Traffic Arrangement approval	45 days	Fri 4/12/20	Sun 17/1/21
390	Subletting / Fabrication / Delivery	100 days	Fri 25/12/20	Sat 3/4/21
391	BD approval & consent for pipe pile installation	90 days	Fri 4/12/20	Wed 3/3/21
392	Area Possession & Clearance	14 days	Thu 4/3/21	Wed 17/3/21
393	Removal of aboveground services	21 days	Thu 18/3/21	Wed 7/4/21
394	Utilities scanning and expose existing UU	15 days	Thu 8/4/21	Thu 22/4/21
395	Arrange of diversion existing UG utilities	45 days	Fri 23/4/21	Sun 6/6/21
396	Install pipe piles	61 days	Sun 23/5/21	Thu 22/7/21
397	BA14 for pipepile and BD consent for ELS	28 days	Fri 23/7/21	Thu 19/8/21
398	Excavation & install earthing	35 days	Fri 20/8/21	Thu 23/9/21
399	Construct Pile Caps and Tie Beams	45 days	Fri 24/9/21	Sun 7/11/21
400	Backfill & Erect scaffold	21 days	Mon 8/11/21	Sun 28/11/21
401	Construction of SRC Walls	75 days	Mon 29/11/21	Fri 11/2/22
402	Wall finish and remove scaffolding	24 days	Sat 12/2/22	Mon 7/3/22
403	Construct new cable trenches	60 days	Tue 8/3/22	Fri 6/5/22
404	Install new UG Utilities, Backfill and reinstatement + ready for cable laying by Others for DAX1	55 days	Thu 7/4/22	Tue 31/5/22
405	Realign / install new UG utilities (for DAX2, APX1 & APX3)	117 days	Sat 7/5/22	Wed 31/8/22
406	Backfill and reinstatement + ready for cable laying by others (for DAX2, APX1, & APX3)	30 days	Thu 1/9/22	Fri 30/9/22
407	Section G (vi) - 275kV cable trenches and External Works at Area F18	397 days	Sat 1/5/21	Wed 1/6/22
408	Temporary Traffic Arrangement approval	45 days	Sat 1/5/21	Mon 14/6/21
409	Subletting / Fabrication / Delivery	60 days	Tue 15/6/21	Fri 13/8/21
410	Area Possession & Clearance	15 days	Sat 1/5/21	Sat 15/5/21
411	Removal of aboveground services	30 days	Sun 16/5/21	Mon 14/6/21
412	Utilities scanning and expose existing UU	45 days	Tue 15/6/21	Thu 29/7/21
413	Arrange of diversion existing UG utilities	60 days	Fri 30/7/21	Mon 27/9/21
414	Construct new cable trenches	172 days	Tue 28/9/21	Fri 18/3/22
415	Realign / install new UG utilities	45 days	Sat 19/3/22	Mon 2/5/22
416	Backfill and reinstatement + ready for cable laying by others	30 days	Tue 3/5/22	Wed 1/6/22
417	Section G (vii) - Flood wall at No. 5 CW Intake Area along HUA at Area F20A	521 days	Fri 4/12/20	Sun 8/5/22
418	Area Possession & Clearance	30 days	Fri 4/12/20	Sat 2/1/21
419	Subletting / Fabrication / Delivery	60 days	Fri 25/12/20	Mon 22/2/21
420	Temporary Traffic Arrangement approval	300 days	Fri 4/12/20	Wed 29/9/21
421	ELS BD approval & consent	90 days	Fri 18/12/20	Wed 17/3/21
422	Demolition of existing carriageway	30 days	Thu 11/11/21	Fri 10/12/21
423	Removal of aboveground services	21 days	Thu 30/9/21	Wed 20/10/21
424	Utilities scanning and expose existing UU	21 days	Thu 21/10/21	Wed 10/11/21
425	Arrange of diversion existing UG utilities	30 days	Sat 11/12/21	Sun 9/1/22
426	Excavation and construction of new Flood wall	65 days	Mon 10/1/22	Tue 15/3/22
427	Realign / install new UG utilities	30 days	Wed 16/3/22	Thu 14/4/22
428	Backfill and construct new carriageway	18 days	Fri 15/4/22	Mon 2/5/22
429	Mis. Work for completion	6 days	Tue 3/5/22	Sun 8/5/22
430	Section G (viii) - Flood wall at No. 5 CW Intake Area along HUA at Area F20B	365 days	Fri 1/10/21	Fri 30/9/22
431	Area Possession & Clearance	45 days	Fri 1/10/21	Sun 14/11/21
432	Subletting / Fabrication / Delivery	90 days	Fri 22/10/21	Wed 19/1/22
433	Temporary Traffic Arrangement approval	14 days	Fri 1/10/21	Thu 14/10/21
434	ELS BD approval & consent	90 days	Fri 15/10/21	Wed 12/1/22



Contract No. 19/83002 Lamma Power Station Extension Civil and Building Works for Unit L12

Master Programme

ID	Task Name	Duration	Start	Finish	
435	Demolition of existing carriageway	60 days	Fri 1/10/21	Mon 29/11/21	Demolition of existing carriageway
436	Removal of aboveground services	21 days	Tue 30/11/21	Mon 20/12/21	Removal of aboveground services
437	Utilities scanning and expose existing UU	21 days	Tue 21/12/21	Mon 10/1/22	Utilities scanning and expose existing UU
438	Arrange of diversion existing UG utilities	30 days	Tue 1/1/22	Wed 9/2/22	Arrange of diversion existing UG utilities
439	Install Sheetpiles	55 days	Thu 10/2/22	Tue 5/4/22	
440	BA14 for sheetpile and BD consent for ELS	28 days	Wed 6/4/22	Tue 3/5/22	
441	Excavation and construction of new Flood wall	90 days	Wed 4/5/22	Mon 1/8/22	
442	Realignment / install new UG utilities	30 days	Tue 2/8/22	Wed 31/8/22	
443	Backfill and construct new carriageway	21 days	Thu 1/9/22	Wed 21/9/22	
444	Mis. Work for completion	9 days	Thu 22/9/22	Fri 30/9/22	
445	Section G (ix) - Bund wall modification works at South Seafront Road at Area F21	316 days	Fri 4/12/20	Fri 15/10/21	
446	Area Possession & Clearance	45 days	Fri 4/12/20	Sun 17/1/21	
447	Subletting / Fabrication / Delivery	90 days	Fri 25/12/20	Wed 24/3/21	
448	Temporary Traffic Arrangement approval	165 days	Fri 4/12/20	Mon 17/5/21	
449	ELS BD approval & consent	0 days	Thu 17/12/20	Thu 17/12/20	
450	Demolition of existing carriageway	14 days	Tue 18/5/21	Mon 31/5/21	
451	Removal of aboveground services	14 days	Tue 1/6/21	Mon 14/6/21	
452	Utilities scanning and expose existing UU	21 days	Tue 15/6/21	Mon 5/7/21	
453	Arrange of diversion existing UG utilities (include FS pipe under 17/8002)	40 days	Tue 6/7/21	Sat 14/8/21	
454	Excavation and expose existing bund wall & demolish	18 days	Wed 28/7/21	Sat 14/8/21	
455	Construction new bund wall for road junction	21 days	Sat 4/9/21	Fri 24/9/21	
456	Realignment / install new UG utilities (include FS pipe under 17/8002)	60 days	Sun 1/8/21	Wed 29/9/21	
457	Backfill and construct new carriageway	16 days	Thu 30/9/21	Fri 15/10/21	
458	Mis. Work for completion	5 days	Mon 11/10/21	Fri 15/10/21	
459	Section G (x) - DAX Cable Diversion Works (from Part I to Part IV)	758 days	Fri 4/12/20	Sat 31/12/22	
460	Temporary Traffic Arrangement approval	14 days	Fri 4/12/20	Thu 17/12/20	
461	Subletting / Fabrication / Delivery	90 days	Fri 25/12/20	Wed 24/3/21	
462	Area Possession & Clearance	45 days	Fri 4/12/20	Sun 17/1/21	
463	Identification of existing cable trench	7 days	Mon 18/1/21	Sun 24/1/21	
464	Part 1 Re-excavation works incl.construction of joint bay (at Water Reservoir Road)	246 days	Mon 25/1/21	Mon 27/9/21	Part 1 Re-excavation works incl construction of joint bay (other than Reservoir road base on revised routing)
465	Part 1 Re-excavation works incl construction of joint bay (other than Reservoir road base on revised routing)	310 days	Mon 25/1/21	Tue 30/11/21	
466	Part 2 Re-excavation works incl. joint bay	120 days	Mon 1/11/21	Mon 28/2/22	
467	Part 3 Re-excavation works incl. joint bay	242 days	Mon 1/11/21	Thu 30/6/22	
468	Part 4 Re-excavation works incl. joint bay & new oil tank pits	92 days	Sat 1/10/22	Sat 31/12/22	
469	Backfill & Reinstatement Part 1	61 days	Mon 1/11/21	Fri 31/12/21	Backfill & Reinstatement Part 1
470	Backfill & Reinstatement Part 2	61 days	Sun 1/5/22	Thu 30/6/22	
471	Backfill & Reinstatement Part 3	61 days	Thu 1/9/22	Mon 31/10/22	
472	Section H - All remaining works shall be completed for reporting completion to BD and ready for OP inspection (PS1.4.4)	775 days	Wed 17/11/21	Sun 31/12/23	
473	Deferred works (MSB & HRSRG) Listed in PS 1.4.4	272 days	Wed 17/11/21	Mon 15/8/22	
474	Construction of L12 MSB roof between GL12-G to 12-H and 12-2 to 12-6 after the overhead crane installation by the Employer's Specialist Contractors	38 days	Wed 17/11/21	Fri 7/1/22	Construction of L12 MSB roof between GL12-G to 12-H and 12-2 to 12-6 after the overhead crane
475	Construction of walls of L12 MSB below 1/F along GL 12-6 from GL12-B to 12-C and the associated staircases including the enclosure walls between G/F and 1/F. The Contractor shall allow access for the Employer's Specialist Contractors to use the hoisting we	92 days	Mon 16/5/22	Mon 15/8/22	
476	Provision in associated with hoisting well	21 days	Mon 6/6/22	Sun 26/6/22	
477	Construction of internal partition wall at 1/F of L12 MSB along GL 12-C from GL 12-2 to 12-3 AND North Façade at 1/F of L12 MSB along GL 12-1 from GL 12-B to 12-C	30 days	Sat 16/4/22	Sun 15/5/22	
478	Construction of metal fence and the associated Fire Services (F.S.) installations and installation of removable shelter at Transformer Area	92 days	Mon 16/5/22	Mon 15/8/22	
479	Deferred works (DAX1 and DAX2) Listed in PS 1.4.4	334 days	Wed 1/2/23	Sun 31/12/23	
480	Backfilling of whole DAX1 compartment inside existing joint bay "STJ12" and the new oil tank pit A located aside existing joint bay "STJ12".	59 days	Wed 1/2/23	Fri 31/3/23	
481	Re-excavation of whole DAX2 compartment inside existing joint bay "STJ12".	61 days	Tue 1/8/23	Sat 30/9/23	
482	Backfilling of whole DAX2 compartment inside existing joint bay "STJ12" and the new oil tank pit B located aside existing joint bay "STJ12".	61 days	Wed 1/11/23	Sun 31/12/23	
483	Deferred works (External Work) Listed in PS 1.4.4	121 days	Thu 1/12/22	Fri 31/3/23	
484	Final reinstatement of access roads and pavement surrounding and within L12 MSB and L12 HRSRG area	62 days	Thu 1/12/22	Tue 31/1/23	
485	Installation of trench cover and road reinstatement of gas pipe and cable trenches within Area F5, F14, F16, F17 and F18.	90 days	Sun 1/1/23	Fri 31/3/23	
486	Backfilling and road-reinstatement of 275kV cable trenches	90 days	Sun 1/1/23	Fri 31/3/23	
487	All Remaining work ready for OP inspection	0 days	Tue 28/2/23	Tue 28/2/23	
488	STATUTORY SUBMISSION, INSPECTION & APPROVAL	560 days	Tue 16/11/21	Mon 29/5/23	
489	WSD Statutory Submission, Inspection and Approval WWO Part I to III Submission / Approval	256 days	Tue 16/11/21	Fri 29/7/22	
490	WSD: Submit to WSD Form WWO 046 Part I to II - FOR ACB Building (for Ext Works at later stage)	0 days	Tue 16/11/21	Tue 16/11/21	Form WWO 046 Part I to II - FOR ACB Building (for Ext Works at later stage)
491	WSD: Vetting Form WWO 046 Part I and II Submission	90 days	Wed 17/11/21	Mon 14/2/22	
492	WSD: Issued of Form WWO 046 Part III by WSD - FOR ACB Building	0 days	Tue 15/2/22	Tue 15/2/22	WSD: Issued of Form WWO 046
493	WSD: Prepare for 1st Amendment for Plumbing Plan	60 days	Tue 15/2/22	Fri 15/4/22	
494	WSD: Submit to WSD 1st Amendment for Plumbing Plan	0 days	Fri 15/4/22	Fri 15/4/22	
495	WSD: Vetting of Plumbing Plan by WSD	60 days	Sat 16/4/22	Tue 14/6/22	
496	WSD: 1st Approval for Plumbing Plan by WSD	0 days	Tue 14/6/22	Tue 14/6/22	
497	WSD: Prepare and Submit for Final Amendment for Plumbing Plan	45 days	Wed 15/6/22	Fri 29/7/22	
498	WSD: Vetting and Final Approval for Plumbing Plan by WSD	0 days	Fri 29/7/22	Fri 29/7/22	
499	WSD Statutory Submission, Inspection and Approval WWO Part IV to V Fire Services Water Submission / Approval	33 days	Fri 29/7/22	Wed 31/8/22	
500	WSD: Form WWO 046 Part IV Submission (FS)	0 days	Fri 29/7/22	Fri 29/7/22	
501	WSD: WSD Received Form WWO046 Part IV and arrange for inspection (FS)	7 days	Sat 30/7/22	Fri 5/8/22	
502	WSD: WSD Inspection (FS)	7 days	Sat 6/8/22	Fri 12/8/22	
503	WSD: WWO 046 Part V Endorsement by WSD (FS)	12 days	Sat 13/8/22	Wed 24/8/22	
504	WSD: WSD Processing Water Supply Connection Certificate (FS)	7 days	Thu 25/8/22	Wed 31/8/22	
505	WSD: Issue by WSD Water Supply Connection Certificate (FS)	0 days?	Wed 31/8/22	Wed 31/8/22	
506	WSD Statutory Submission, Inspection and Approval WWO Part IV to V Potable /Flush Water Submission / Approval	60 days	Fri 19/8/22	Tue 18/10/22	
507	WSD: Form WWO 046 Part IV Submission (Fresh/Flush)	0 days	Fri 19/8/22	Fri 19/8/22	
508	WSD: WSD Acknowledge Form WWO 046	6 days	Sat 20/8/22	Thu 25/8/22	
509	WSD: WSD Inspection with Testing to lead (Fresh/Fluhs)	12 days	Fri 26/8/22	Tue 6/9/22	
510	WSD: Cleansing/Disinfecting Water Tanks / Piping System (Fresh/Flush)	6 days	Wed 7/9/22	Mon 12/9/22	
511	WSD: Collection of Sample for Testing at Accredited Lab (Fresh/Flush)	12 days	Tue 13/9/22	Sat 24/9/22	
512	WSD: Accredited Lab Testing Report of Sample to WSD	12 days	Sun 25/9/22	Thu 6/10/22	
513	WSD: Vetting of Test Report by WSD	6 days	Fri 7/10/22	Wed 12/10/22	
514	WSD: Issue of WWO 046 Part V (Fresh/Flush)	0 days	Wed 12/10/22	Wed 12/10/22	
515	WSD: WSD Processing WWO1005 Water Certification (Fresh/Flush)	6 days	Thu 13/10/22	Tue 18/10/22	
516	WSD: Issue by WSD WWO 1005 Water Certification (Fresh/Flush)	0 days	Tue 18/10/22	Tue 18/10/22	
517	EMSD LIFT Statutory Submission, Inspection and Approval	45 days	Sat 26/3/22	Mon 9/5/22	
518	EMSD: Submission of Lift Form LE5 to EMSD	12 days	Sat 26/3/22	Wed 6/4/22	
519	EMSD: EMSD Makes arrangement for Lift Installation	5 days	Thu 7/4/22	Mon 11/4/22	
520	EMSD: EMSD Inspection to Lift Installation	14 days	Tue 12/4/22	Mon 25/4/22	
521	EMSD: Processing Lift Certificate (Form LE6)	14 days	Tue 26/4/22	Mon 9/5/22	
522	EMSD: Lift Issuance of Form 6 (Lift Certificate)	0 days	Mon 9/5/22	Mon 9/5/22	
523	HKE Transformer Final Inspection	120 days	Thu 30/6/22	Thu 27/10/22	
524	TX Room: Invite HKE For Transformer Room Inspection	7 days	Thu 30/6/22	Wed 6/7/22	
525	TX Room: Give Access to Transformer Room for HKE Contractor	0 days	Wed 6/7/22	Wed 6/7/22	
526	TX Room: Move-IN HKE Transformer Equipments	5 days	Thu 7/7/22	Mon 11/7/22	
527	TX Room: Install HKE Transformer, MEP Works & Testing	90 days	Tue 12/7/22	Sun 9/10/22	
528	TX Room: HKE Power Energization / Inspection	6 days	Mon 10/10/22	Sat 15/10/22	
529	TX Room: Metering Installation	12 days	Sun 16/10/22	Thu 27/10/22	
530	TX Room: HKE Power-ON Date	0 days	Thu 27/10/22	Thu 27/10/22	
531	DSD Drainage Completion Memo	65 days	Sun 2/10/22	Mon 5/12/22	
532	DSD: CCTV Survey Report on Completed Drainage	30 days	Sun 2/10/22	Mon 31/10/22	
533	DSD: Submitted CCTV Report & Form HPB1 of Completed Drainage to DSD For Technical Audit	7 days	Tue 1/11/22	Mon 7/11/22	
534	DSD: Completed Drainage System including TMC Inspection/Technical Audit by DSD	14 days	Tue 8/11/22	Mon 21/11/22	
535	DSD: Preparation of Drainage Connection Completion Memo by DSD	14 days	Tue 22/11/22	Mon 5/12/22	
536	DSD: Issue of Drainage Connection Completion Memo by DSD	0 days	Mon 5/12/22	Mon 5/12/22	
537	EPD Submission, Inspection and Approval	60 days	Thu 30/6/22	Mon 29/8/22	
538	EPD: License Application to EPD under APCO (Cap 311) for Generator Sets	0 days	Thu 30/6/22	Thu 30/6/22	
539	EPD: Vetting of Application by EPD under APCO (Cap 311) for Generator Sets	60 days	Fri 1/7/22	Mon 29/8/22	
540	EPD: Approval from EPD under APCO (Cap 311) for Generator Sets Installation	0 days	Mon 29/8/22	Mon 29/8/22	
541	FSD VAC Statutory Submission, Inspection and Approval	150 days	Wed 20/7/22	Fri 16/12/22	
542	Preparation of FSD VAC Drawings and Submission to HEC	60 days	Wed 20/7/22	Sat 17/9/22	
543	HEC: Review and Approval	30 days	Sun 18/9/22	Mon 17/10/22	
544	Preparation of VAC Drawings and Submission to FSD	30 days	Tue 18/10/22	Wed 16/11/22	
545	FSD: Review and Approval	30 days	Thu 17/11/22	Fri 16/12/22	
546	FSD Statutory Submission, Inspection and Approval	91 days	Tue 28/2/23	Mon 29/5/23	
547	Testing and Commissioning (Individual System - FSI Related)	45 days	Tue 28/2/23	Thu 13/4/23	
548	FSD: All Sections FS Ingration Test by NSC BS	15 days	Fri 14/4/23	Fri 28/4/23	
549	FSD: Completion of FS Integration Test by NSC BS for FS314/501	0 days	Fri 28/4/23	Fri 28/4/23	
550	FSD: Submit Form 213/314 & Form 501 Request for Inspection	0 days	Fri 28/4/23	Fri 28/4/23	
551	FSD: FSD Makes Arrangement for Inspection	7 days	Sat 29/4/23	Fri 5/5/23	
552	FSD: FSD Inspection	12 days	Sat 6/5/23	Wed 17/5/23	
553	FSD: Completion of FS Inspection	0 days	Wed 17/5/23	Wed 17/5/23	
554	FSD: FSD Processing FS Certificate Form 172	12 days	Thu 18/5/23	Mon 29/5/23	
555	FSD: Issue of Fire Services FS Certificate Form 172	0 days	Mon 29/5/23	Mon 29/5/23	
556	PRACTICAL COMPLETION	216 days	Tue 30/5/23	Sun 31/12/23	
557	BD Inspection	97 days	Tue 30/5/23	Sun 3/9/23	
558	BD: Application Form BA13 for OP Application	21 days	Tue 30/5/23	Mon 19/6/23	
559	BD: BD Inspection Date	15 days	Tue 20/6/23	Tue 4/7/23	
560	BD: Reinspection date with defects and rectification works	60 days	Wed 5/7/23	Sat 2/9/23	
561	BD: Obtain Occupation Permit (OP) from BD	1 day	Sun 3/9/23	Sun 3/9/23	
562	As-Built Drawings & Handover Documentation	120 days	Wed 14/6/23	Wed 11/10/23	
563	Prepare and Submit As-Built Drawings & Handover Documentation	45 days	Wed 14/6/23	Fri 28/7/23	
564	Review and Approval	45 days	Sat 29/7/23	Mon 11/9/23	
565	As-Built Drawings & Handover Documentation - Revision by MC	30 days	Tue 12/9/23	Wed 11/10/23	
566	Revised As-Built Drawings & Handover Documentation - Final Submission	0 days	Wed 11/10/23	Wed 11/10/23	
567	Completion of the Whole Contract Works	119 days	Mon 4/9/23	Sun 31/12/23	
568	1st Client Inspection for Review and Comments	30 days	Mon 4/9/23	Tue 3/10/23	
569	Defects and Rectification works	60 days	Wed 4/10/23	Sat 2/12/23	
570	2nd Client Inspection	14 days	Sun 3/12/23	Sat 16/12/23	
571	Minor Defects Rectification Works and Final Inspection	15 days	Sun 17/12/23	Sun 31/12/23	
572	PRACTICAL COMPLETION	0 days	Sun 31/12/23	Sun 31/12/23	

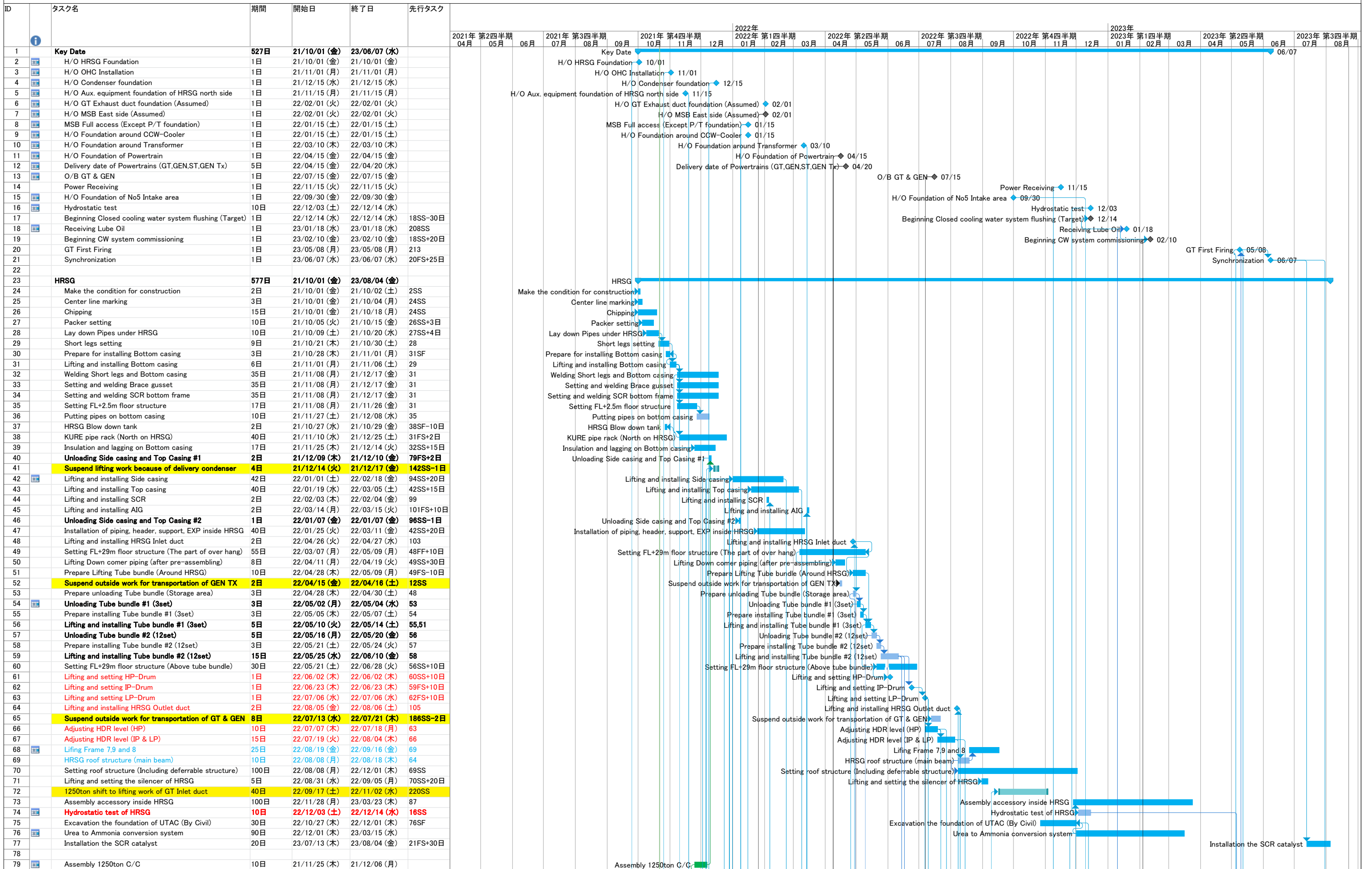


ID	Task Name	Duration	Start	Finish	December 2021												January 2022							February 2022									
					30	03	06	09	12	15	18	21	24	27	30	02	05	08	11	14	17	20	23	26	29	01	04	07	10	13	16	19	22
1	19-83014 - Civil Works for No. 5 C.W. Intake and Cable Bridge at Lamna Power Station Extension	614 days	Mon 10/05/20	Wed 10/26/22																													
2	Contract Details	518 days	Mon 10/05/20	Thu 07/07/22																													
15	Submission	308 days	Wed 10/28/20	Wed 11/10/21																													
36	Procurement	166 days	Mon 10/19/20	Thu 05/13/21																													
45	No.5 C.W. Intake	560 days	Mon 10/05/20	Wed 08/24/22																													
46	Erect of Hoarding and Door Gate	12 days	Mon 10/05/20	Sat 10/17/20																													
47	Install Monitoring Instrumentation	16 days	Sat 10/17/20	Fri 11/06/20																													
54	ELS works for No. C.W. Intake	359 days	Tue 12/29/20	Wed 03/16/22																													
55	Installation of pipe pile wall	121 days	Tue 12/29/20	Sat 05/29/21																													
63	BD Excavation Consent	0 days	Wed 06/30/21	Wed 06/30/21																													
64	BA8 of ELS of intake	25 days	Tue 07/27/21	Tue 08/24/21																													
65	Excavate upto +4.50mPD	6 days	Wed 08/25/21	Tue 08/31/21																													
66	Installation of 1st row of Tie Back	77 days	Wed 09/01/21	Thu 12/02/21																													
67	Pull Out Test for Tie Back	10 days	Wed 09/01/21	Sat 09/11/21																													
68	RW01 (72-77) - 6 nos	3 days	Mon 09/13/21	Wed 09/15/21																													
69	RW01 (50-71) - 22 nos	8 days	Thu 09/16/21	Sat 09/25/21																													
70	RW01 (11-49) - 39 nos	13 days	Mon 09/27/21	Tue 10/12/21																													
71	RW01F (23-70) - 48 nos	17 days	Thu 09/23/21	Wed 10/13/21																													
72	RW01F (1-22) - 22 nos	8 days	Mon 09/13/21	Tue 09/21/21																													
73	RW01 (1-10) - 10 nos	4 days	Mon 11/29/21	Thu 12/02/21																													
74	Installation the 1st row of waling (WT1) and strut (CS1)	12 days	Fri 10/15/21	Thu 10/28/21																													
75	Excavate upto +2.70mPD	6 days	Fri 10/29/21	Thu 11/04/21																													
76	Installation of 2nd row of Tie Back	41 days	Fri 11/05/21	Wed 12/22/21																													
77	Pull Out Test for Tie Back	10 days	Fri 11/05/21	Tue 11/16/21																													
78	RW02 (72-77) - 6 nos	3 days	Wed 11/17/21	Fri 11/19/21																													
79	RW02 (50-71) - 22 nos	8 days	Sat 11/20/21	Mon 11/29/21																													
80	RW02 (1-10) - 10 nos	4 days	Fri 12/03/21	Tue 12/07/21																													
81	RW02 (11-49) - 39 nos	13 days	Wed 12/08/21	Wed 12/22/21																													
82	RW02F (23-70) - 48 nos	17 days	Fri 11/26/21	Wed 12/15/21																													
83	RW02F (1-22) - 22 nos	8 days	Wed 11/17/21	Thu 11/25/21																													
84	Installation the 2nd row of waling (WT2) and strut (CS2)	12 days	Thu 12/23/21	Sat 01/08/22																													
85	Excavate upto +1.00mPD	6 days	Mon 01/10/22	Sat 01/15/22																													
86	Excavate upto -7.50mPD	48 days	Mon 01/17/22	Wed 03/16/22																													
87	Temporary removal of sea wall	206 days	Fri 07/09/21	Wed 03/16/22																													
88	Application of Marine Permit	78 days	Fri 07/09/21	Mon 10/11/21																													
89	Install silt curtain wall	2 days	Fri 01/14/22	Mon 01/17/22																													
90	Tempoary removal of sea wall (USS)	18 days	Mon 01/17/22	Wed 02/09/22																													
91	Removal of existing culvert off-site (USS)	18 days	Thu 02/10/22	Wed 03/02/22																													
92	Prepare formation level for intake chamber	12 days	Thu 03/03/22	Wed 03/16/22																													
93	Construction of No. 5 C.W. Intake Chamber	243 days	Sat 09/25/21	Fri 07/22/22																													
94	Off-site fabrication for Bottom Part of Intake Chamber (From -7.20mPD to +3.00mPD)	107 days	Sat 09/25/21	Sat 02/05/22																													
102	Delivery of Precast Intake Chamber	6 days	Thu 03/10/22	Wed 03/16/22																													
103	Installation of Precast intake Chamber	6 days	Thu 03/17/22	Wed 03/23/22																													
104	In-situ casting for Top Part of Intake Chamber (From +3.00mPD to +7.20mPD)	92 days	Wed 03/30/22	Fri 07/22/22																													
114	Backfilling Works and Strut removal	102 days	Thu 03/24/22	Thu 07/28/22																													
122	Reinstatement of sea wall	100 days	Thu 03/24/22	Tue 07/26/22																													
126	Steel Gantry Frame at No. 5 C.W. Intake Chamber	28 days	Sat 07/23/22	Wed 08/24/22																													
129	E&M Works	195 days	Thu 12/23/21	Mon 08/22/22																													
133	No 5 CW Equipment Room, pipe and cable rack, external works at Area F10	396 days	Wed 05/05/21	Wed 08/31/22																													
153	External Work Surrounding Area F11	124 days	Sat 06/04/22	Wed 10/26/22																													
160	CW Inlet Culvert at Area 8A	190 days	Fri 06/04/21	Thu 01/20/22																													
185	CW Inlet Culvert at Area 8B	107 days	Wed 06/09/21	Sat 10/16/21																													
205	CW Inlet Culvert at Area 8C	199 days	Tue 07/13/21	Fri 03/11/22																													
206	BD Consent for ELS	26 days	Tue 07/13/21	Wed 08/11/21																													
207	BA8 of ELS of intake	25 days	Tue 07/27/21	Tue 08/24/21																													
208	ELS Works	98 days	Wed 08/25/21	Mon 12/20/21																													
209	For Area 8C-1 (Eastern Side)	37 days	Wed 08/25/21	Fri 10/08/21																													
214	For Area 8C-2 (Connect to Intake)	98 days	Wed 08/25/21	Mon 12/20/21																													
215	Excavation to +4.50mPD	6 days	Wed 08/25/21	Tue 08/31/21																													
216	Pull Out Test for Tie Back	10 days	Wed 09/01/21	Sat 09/11/21																													
217	RW01F (71-95) - 25 nos	13 days	Mon 09/13/21	Tue 09/28/21																													
218	Install 1st Waling	6 days	Wed 09/29/21	Wed 10/06/21																													
219	Open Excavation to +2.20mPD	6 days	Thu 10/07/21	Wed 10/13/21																													
220	Pull Out Test for Tie Back	10 days	Fri 10/15/21	Tue 10/26/21																													
221	RW02F (71-95) - 25 nos	13 days	Wed 10/27/21	Wed 11/10/21																													
222	Install 2nd Waling	6 days	Thu 11/11/21	Wed 11/17/21																													
223	Install 1st Strutting	12 days	Thu 11/11/21	Wed 11/24/21																													
224	Excavation to +0.40mPD	6 days	Thu 11/25/21	Wed 12/01/21																													
225	Install 3rd Waling and Strutting	12 days	Thu 12/02/21	Wed 12/15/21																													
226	Bacfilling to +1.10mPD	3 days	Thu 12/16/21	Sat 12/18/21																													
227	Pouring of Blinding Layer	1 day	Mon 12/20/21	Mon 12/20/21																													
228	Install CW Inlet Pipe	85 days	Sat 10/09/21	Thu 01/20/22																													
233	Construction of Thrust Box & Manholes, etc.	24 days	Fri 01/21/22	Mon 02/21/22																													
234	Backfill, UG Utilities and Road Paving	16 days	Tue 02/22/22	Fri 03/11/22																													

Project: 19-83014 - No. 5 Intake and Cable Br
 Date: 04 Aug 2021
 Rev. 5 - Combined L12 Area (Draft 0)

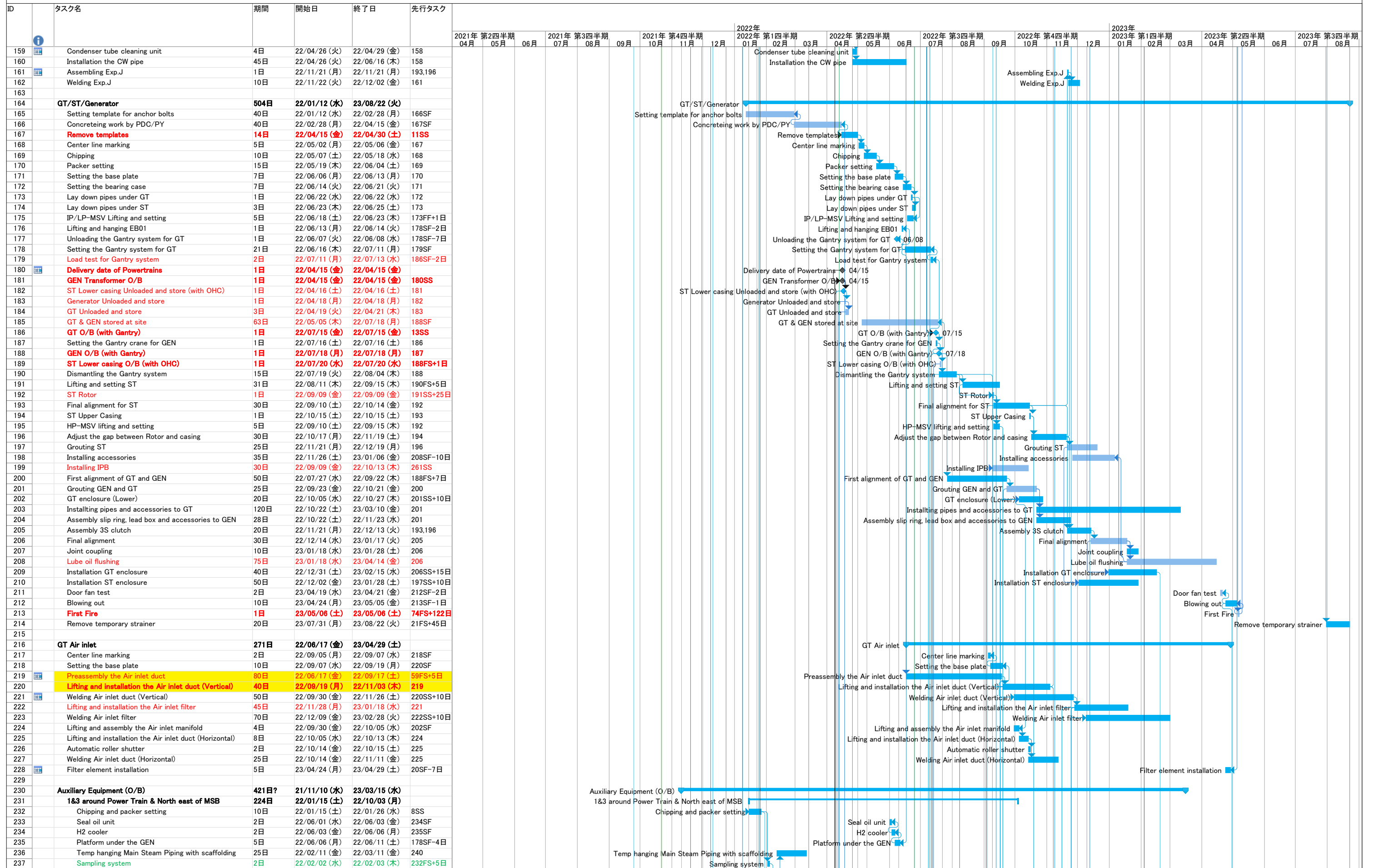
Task		Summary		External Milestone		Inactive Summary		Manual Summary Rollup		Finish-only	
Split		Project Summary		Inactive Task		Manual Task		Manual Summary		Progress	
Milestone		External Tasks		Inactive Milestone		Duration-only		Start-only		Deadline	

Construction Schedule of Unit-12



NOTE
 1. The key date is subjected in the KOM held on 30th-Sep.
 2. The east area on the MSB is assumed to be handovered before B-Feb-2022 according to the above key date changed.
 3. Considered the affection of KURE's schedule belows;
 i) Because of delaying the side casing, installation Inlet duct is postponed.
 ii) Because of delivery 12 TBs in one time, no enough area for pre-assy Outlet duct and GT Inlet duct on schedule.

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Monthly Waste Flow Table for Nov 2021

Project: Lamna Power Station Extension - Civil and Building Works for Unit L11

Contractor: Paul Y. Construction Company, Limited

Record by: Ben Lam

Year of Record: 2018, 2019, 2020 & 2021

MM.YYYY	Actual Quantities of Inert C&D Materials Generated Monthly								Actual Quantities of Non-inert C&D Materials Generated Monthly					
	Excavated Materials			Non-excavated Materials					Metals (steel bar / metal strip) ⁽¹⁾	Metals (aluminum can) ⁽¹⁾	Paper / cardboard packaging ⁽¹⁾	Plastics ^{(1),(4)}	Chemical waste (wasted lubricant oil/oil container)	Other, e.g. general refuse
	Disposed in Public Fill	Disposed in Sorting Facilities	Others (e.g. Reused in the Contract / Other Projects)	Broken Concrete or Construction Waste Collected by Recycled Company	Reused in the Contract	Reused in other Projects	Disposed in Public Fill	Disposed in Sorting Facilities						
(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000L)	(in '000kg)	
Jul 2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aug 2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sep 2018	3160.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oct 2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nov 2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.87
Dec 2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.67
Jan 2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feb 2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.66	0.00	0.00	0.00	0.60	0.00
Mar 2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.05	0.00	0.00	0.00	0.00	0.00
Apr 2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.08	0.00	0.00	0.00	0.00	19.09
May 2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.63	0.00	0.00	0.00	0.00	59.75
Jun 2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.64
Jul 2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.66
Aug 2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sep 2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27.31
Oct 2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.109	0.00	0.00	4.76
Nov 2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	4.87
Dec 2019	0.00	0.00	0.00	0.00	0.00	10226.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.19
Jan 2020	0.00	0.00	0.00	0.00	0.00	7981.09	0.00	0.00	0.00	0.00	0.157	0.00	0.00	26.89
Feb 2020	0.00	0.00	0.00	0.00	0.00	8782.98	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00
Mar 2020	0.00	0.00	0.00	0.00	0.00	23252.12	0.00	0.00	0.00	0.00	0.000	0.00	0.00	78.96
Apr 2020	0.00	0.00	0.00	0.00	0.00	12976.86	0.00	0.00	8.30	0.00	0.000	0.00	0.00	68.75
May 2020	0.00	0.00	0.00	0.00	0.00	20203.01	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00
Jun 2020	0.00	0.00	0.00	0.00	0.00	28030.33	0.00	0.00	0.00	0.00	0.000	0.00	0.00	58.49
Jul 2020	0.00	0.00	0.00	0.00	0.00	12481.37	0.00	0.00	0.00	0.00	0.000	0.00	0.00	33.88
Aug 2020	0.00	0.00	0.00	0.00	0.00	11179.56	0.00	0.00	0.00	0.00	0.000	0.00	0.60	73.73
Sep 2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.53	0.00	0.286	0.00	0.00	64.93
Oct 2020	0.00	0.00	0.00	0.00	0.00	10762.20	0.00	0.00	7.12	0.00	0.297	0.00	0.00	83.34
Nov 2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.46	0.00	0.000	0.00	0.20	61.21
Dec 2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	59.98
Jan 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	51.37
Feb 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	44.94
Mar 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	34.57
Apr 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	30.92
May 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	18.65
Jun 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	10.76
Jul 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00
Aug 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	24.19
Sep 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	14.90
Oct 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	27.62
Nov 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00
Total	3160.23	0.00	0.00	0.00	0.00	142875.75	0.00	0.00	74.83	0.00	0.849	0.00	2.00	1038.89

Total Inert C&D Waste Materials Generated	Non-inert C&D Materials		
	C&D Materials Recycled	C&D Waste Disposed of at Landfill	Chemical Waste
146035.98 tonnes	75.68 tonnes	1038.89 tonnes	2000 Liters

Where (A) Inert C&D materials include bricks, concrete, building debris, rubble and excavated spoil. In total, 146035.98 tonnes of inert C&D material were generated from the Project, of which 142875.75 tonnes were reused in this and other contracts, and the remaining 3160.23 tonnes were disposed as public fill to Fill Banks / Sorting Facilities.

(b) Non-inert C&D materials (construction wastes) include metals, paper / cardboard packaging waste, plastics and other wastes such as general refuse. Metals generated from the Project were grouped into construction wastes as the materials were not disposed of with others at the public fill.

(c) 0 kg of metals, 0 kg of papers/ cardboard packing and 0 kg of plastics were sent to recyclers for recycling during the reporting period.

(d) Construction wastes other than metals, paper/cardboard packaging, plastics and chemicals were disposed of at Landfill.

- Notes:
- (1) metal, paper & plastic were collected by recycler.
 - (2) The performance target of waste recycling are specified in the Contract.
 - (3) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
 - (4) Plastics refer to plastic bottles/ containers, plastic/ foam from packaging material.
 - (5) Broken concrete for recycling into aggregates.
 - (6) Disposal of inert waste to public fill or sorting facilities will NOT be considered as recycled waste.

Monthly Waste Flow Table for November 2021

Project: LAMMA POWER STATION EXTENSION – Unit 11 Complete Erection, Inspection, Testing & Commissioning of Power Block Facilities
 Contractor: Taihei Dengyo Kaisha, Ltd.
 Record by: Stephen Sin
 Year of Record: 2019, 2020, 2021

MM.YYYY	Actual Quantities of Inert C&D Materials Generated Monthly								Actual Quantities of Non-inert C&D Materials Generated Monthly					
	Excavated Materials				Non-excavated Materials				Metals (steel bar / metal strip) ⁽¹⁾	Metals (aluminum can) ⁽¹⁾	Paper / cardboard packaging ⁽¹⁾	Plastics ^{(1) & (4)}	Chemical waste (wasted lubricant oil/oil container)	Other, e.g. general refuse
	Disposed in Public Fill	Disposed in Sorting Facilities	Others (e.g. Reused in the Contract / Other Projects)	Broken Concrete or Construction Waste Collected by Recycled Company	Reused in the Contract	Reused in other Projects	Disposed in Public Fill	Disposed in Sorting Facilities						
(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in L)	(in '000kg)	
Nov 2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Dec 2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Jan 2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Feb 2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Mar 2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.35	
Apr 2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.61	
May 2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.39	
Jun 2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.03	
Jul 2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.32	
Aug 2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2600	10.38	
Sep 2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.20	
Oct 2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.02	
Nov 2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2400	26.18	
Dec 2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.38	
Jan 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.65	
Feb 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.40	
Mar 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.43	
Apr 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2400	20.24	
May 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.08	
Jun 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.43	
Jul 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.38	
Aug 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.38	
Sep 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.43	0.00	0.00	0.00	0.00	19.26	
Oct 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.35	
Nov 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.54	
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.43	0.00	0.00	0.00	7400	324.00	

Total Inert C&D Waste Materials Generated	Non-inert C&D Materials		
	C&D Materials Recycled	C&D Waste Disposed of at Landfill	Chemical Waste
5.43 tonnes	0.00 tonnes	324.00 tonnes	7400 Liters

- Where (A) Inert C&D materials include bricks, concrete, building debris, rubble and excavated spoil. In total, 5.43 tonnes of inert C&D material were generated from the Project, of which 0 tonnes were reused in this and other contracts, and the remaining 5.43 tonnes were disposed in Public Fill and Sorting Facilities.
- (b) Non-inert C&D materials (construction wastes) include metals, paper / cardboard packaging waste, plastics and other wastes such as general refuse. Metals generated from the Project were grouped into construction wastes as the materials were not disposed of with others at the public fill.
- (c) 0 kg of metals, 0 kg of papers/ cardboard packing and 0 kg of plastics were sent to recyclers for recycling during the reporting period.
- (d) Construction wastes other than metals, paper/cardboard packaging, plastics and chemicals were disposed of at Landfill.

- Notes:
- (1) metal, paper & plastic were collected by recycler
 - (2) The performance target of waste recycling are specified in the Contract.
 - (3) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
 - (4) Plastics refer to plastic bottles/ containers, plastic/ foam from packaging material.
 - (5) Broken concrete for recycling into aggregates.
 - (6) Disposal of inert waste to public fill or sorting facilities will **NOT** be considered as recycled waste.

Monthly Waste Flow Table for November 2021

Project: LAMMA POWER STATION EXTENSION – Unit 12 Complete Erection, Inspection, Testing & Commissioning of Power Block Facilities

Contractor: Taihei Dengyo Kaisha, Ltd.

Record by: Stephen Sin

Year of Record: 2021

MM.YYYY	Actual Quantities of Inert C&D Materials Generated Monthly								Actual Quantities of Non-inert C&D Materials Generated Monthly					
	Excavated Materials				Non-excavated Materials				Metals (steel bar / metal strip) ⁽¹⁾	Metals (aluminum can) ⁽¹⁾	Paper / cardboard packaging ⁽¹⁾	Plastics ^{(1) & (4)}	Chemical waste (wasted lubricant oil/oil container)	Other, e.g. general refuse
	Disposed in Public Fill	Disposed in Sorting Facilities	Others (e.g. Reused in the Contract / Other Projects)	Broken Concrete or Construction Waste Collected by Recycled Company	Reused in the Contract	Reused in other Projects	Disposed in Public Fill	Disposed in Sorting Facilities						
(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in L)	(in '000kg)	
Nov 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Total Inert C&D Waste Materials Generated	Non-inert C&D Materials		
	C&D Materials Recycled	C&D Waste Disposed of at Landfill	Chemical Waste
0.00 tonnes	0.00 tonnes	0.00 tonnes	0 Liters

- Where (A) Inert C&D materials include bricks, concrete, building debris, rubble and excavated spoil. In total, 0.00 tonnes of inert C&D material were generated from the Project, of which 0 tonnes were reused in this and other contracts, and the remaining 0.00 tonnes were disposed in Public Fill and Sorting Facilities.
- (b) Non-inert C&D materials (construction wastes) include metals, paper / cardboard packaging waste, plastics and other wastes such as general refuse. Metals generated from the Project were grouped into construction wastes as the materials were not disposed of with others at the public fill.
- (c) 0 kg of metals, 0 kg of papers/ cardboard packing and 0 kg of plastics were sent to recyclers for recycling during the reporting period.
- (d) Construction wastes other than metals, paper/cardboard packaging, plastics and chemicals were disposed of at Landfill.

Notes:

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