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 2020

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



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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 2020)
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EXECUTIVE SUMMARY

This is the 127th 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 2020.

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 gasfired 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.

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

Item	Construction Activities	
Unit L11 Civil and Building Works	275kV Station Building Extension works, Main Station Building external works, CW pipe installation, construction of link bridge, site formation works and pipe jacking works (grouting works)	
Unit L11 Mechanical Erection	Condenser installation, HRSG installation and turbine block installation	
Unit L11 Electrical, Instrumentation & Control Erection	Cable installation	
Foundation Works for Lamma Power Station Extension Unit L12 and Cable Bridge	Coring works	
Unit L12 Civil Works for No.5 C.W. Intake and Cable Bridge	Site Set up and Pipe piling preparation for No.5 C.W. Intake, Pipe Cap Construction for Cable Bridge	

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

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

EPD officials from Regional Office (South) visited Lamma Power Station on 25/11/2020. There was no adverse comment from EPD regarding the construction site.

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

Description	Description Permit No. Valid Period		Issued To	Date of	
		From	То		Issuance
Varied Environmental Permit	EP-071/2000/D	28/09/20	-	HK Electric	28/09/20
Construction Noise Permit	GW-RS0668-20	17/09/20	13/03/21	Contractor	15/09/20
Construction Noise Permit	GW-RS0391-20	01/07/20	31/12/20	Contractor	16/06/20
Construction Noise Permit	GW-RS0381-20	10/06/20	07/12/20	Contractor	08/06/20
WPCO Discharge Licence	WT00034006-2019	08/08/19	31/08/24	Contractor	22/08/19
WPCO Discharge Licence	WT00035428-2019	07/02/20	28/02/25	Contractor	07/02/20
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
Registration of Chemical Waste Producer	WPN5113-912- S3180-23	16/04/19	-	Contractor	16/04/19
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.: 7033637	01/04/19	-	Contractor	01/04/19
Waste Disposal Billing Account	Account No.: 7038672	27/10/20	-	Contractor	27/10/2020

Environmental Licensing and Permitting

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 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;
- 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.

Foundation Works for Lamma Power Station Extension Unit L12 & Cable Bridge

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

Unit L12 Civil Works for No.5 C.W. Intake and Cable Bridge

- 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 2020.

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, 275kV Station Building Extension works, Main Station Building external works, CW pipe installation, construction of link bridge, site formation works and pipe jacking works (grouting works). Construction activities for Unit L11 mechanical erection were condenser installation, HRSG installation and turbine block installation. Construction activity for Unit L11 electrical, instrumentation & control erection was cable installation. Construction activities for foundation works for Lamma

Power Station Extension Unit L12 and cable bridge were coring works. Construction activities for L12 civil works for No.5 C.W. intake and cable bridge were site set up and pipe piling preparation for No. 5 C.W. intake, and pipe cap construction for cable bridge. 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 L1	l Civil and Building	Works	
1.	275kV Station Building Extension Works	 Air All regulated machine attached with valid exception/approval NRMM labels. Wheel washing facility was provided. Noise Works conducted during holiday should comply with the valid CNP. Wastewater Wastewater should be treated in desilting pit and tanks for reuse on water spraying. Waste Management Scrape metal will be recycled. Timber will be reused as much as possible. Chemical waste should be collected by licensed collector 	
2.	Main Station Building external works, CW Pipe Installation, Construction of Link bridge, Site Formation Works and Pipe Jacking Works (Grouting works)	 Air All regulated machine attached with valid exception/approval NRMM labels. Water truck and water sprinkler system was used. Water spraying for concrete breaking of pile head. Excavated slope and soil stock covered with cement or tarpaulin. Backfilled surface was compacted. Wheel washing facility was provided. Noise Works conducted during holiday should comply with the valid CNP. 	

Item	Construction Activities	Environmental Mitigation Measures		
		 Wastewater 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. Waste Management Excavated soil was temporary stored for backfilling. Scrape metal will be recycled. Timber will be reused as much as possible. 		
Unit L1	1 Mechanical Erection	on		
3.	Condenser installation HRSG installation Turbine block installation	 Air Dust suppression measures implemented according to the EMP. Noise General noise mitigation measures employed at all work sites throughout the construction phase. 		
		Waste Management – Waste Management Plan submitted and implemented		
Unit L1	1 Electrical, Instrume	entation & Control Erection		
4.	Cable installation	 Air Dust suppression measures implemented according to the EMP. Noise General noise mitigation measures employed at all work sites throughout the construction phase. Waste Management Waste Management Plan submitted and implemented. 		
Foundat	ion Works for Lamn	na Power Station Extension Unit L12 & Cable Bridge		
5.	Coring works	 Noise General noise mitigation measure employed at all work sites throughout the construction phase. Routine checking should be carried out to ensure the requirements as stipulated in the CNP have been 		

Item	Construction Activities	Environmental Mitigation Measures	
	<u> </u>	 fulfilled. Wastewater All wastewater will be pumped to the sedimentation ponds for desilting process. After that, wastewater will be re-used for construction activities or pumped for storage. Waste Management Waste Management Plan submitted and implemented. 5 C.W. Intake and Cable Bridge 	
6.	No. 5 C.W. Intake: Site set up and Pipe Piling Preparation	 Air All regulated machine attached with valid exception/approval NRMM labels. Water truck and water sprinkler system will be used Soil stock will be covered with cement or tarpaulin or keep the entire surface wet Wheel washing facilities will be relocated Noise General noise mitigation measures employed at all work sites throughout the construction phase. Waste Management Excavated soil was temporary stored for backfilling. Scrape metal will be recycled. Chemical waste should be collected by licensed collector. 	
7.	Cable Bridge: Pipe Cap Construction	 Air All regulated machine attached with valid exception/approval NRMM labels. Water spraying for concrete breaking of pile head. Waste Management Scrape metal will be recycled. Timber will be reused as much as possible. Chemical waste should be collected by licensed collector 	

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.

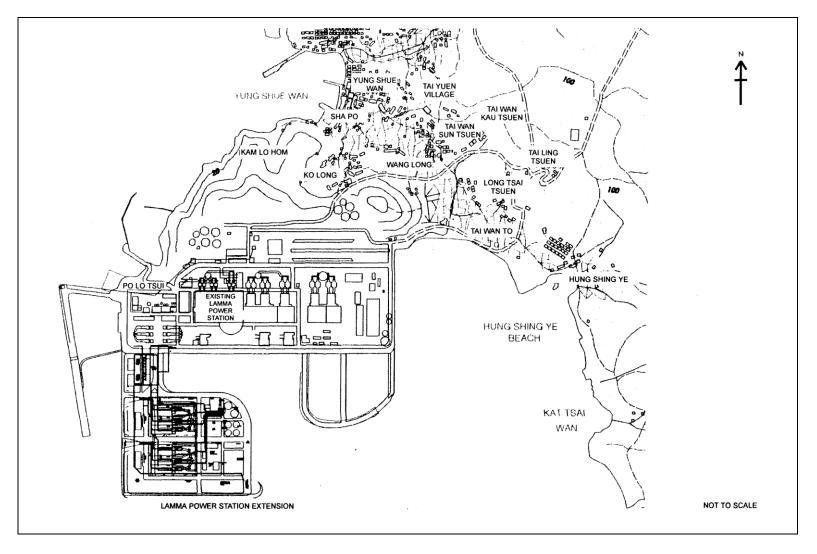


Figure 1.1 Layout of Work Site

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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.

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

Table 2.1	Air Quality Monitoring Locations
1 4010 2.1	The Quality Monitoring Locations

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 2.2Air Quality Monitoring Equipment

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

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

 Table 2.3
 Air Quality Monitoring Parameter, Duration and Frequency

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;
 - o Main flow;
 - o Bypass flow.

Maintenance & Calibration

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

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• 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.

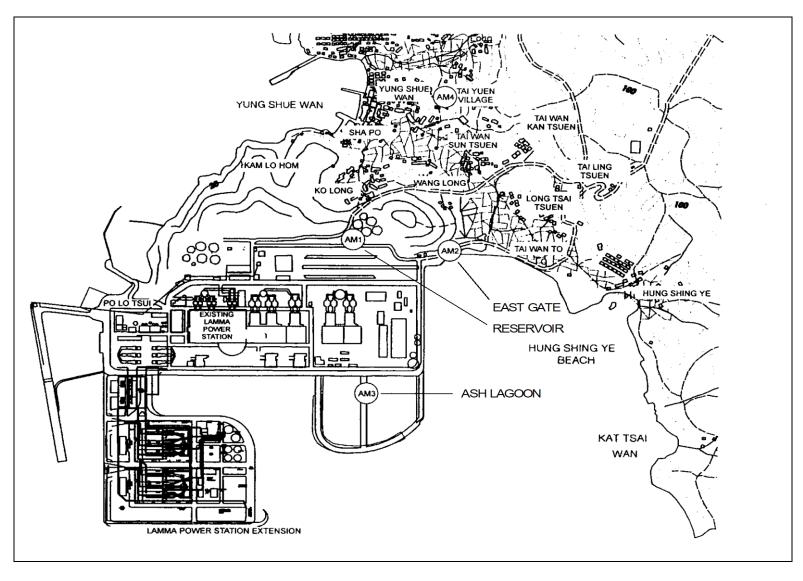


Figure 2.1 Location of Air Quality Monitoring Stations

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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 3.2Noise Monitoring Duration and Parameter

Location Time Period Frequency Parame	
---------------------------------------	--

	Day-time: 0700-1900 hrs on normal weekdays	Day-time: 30 minutes	30-min L _{Aeq}
Ash Lagoon Ching Lam	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}
	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 for the two noise monitoring stations were scheduled in March and April 2021.

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.

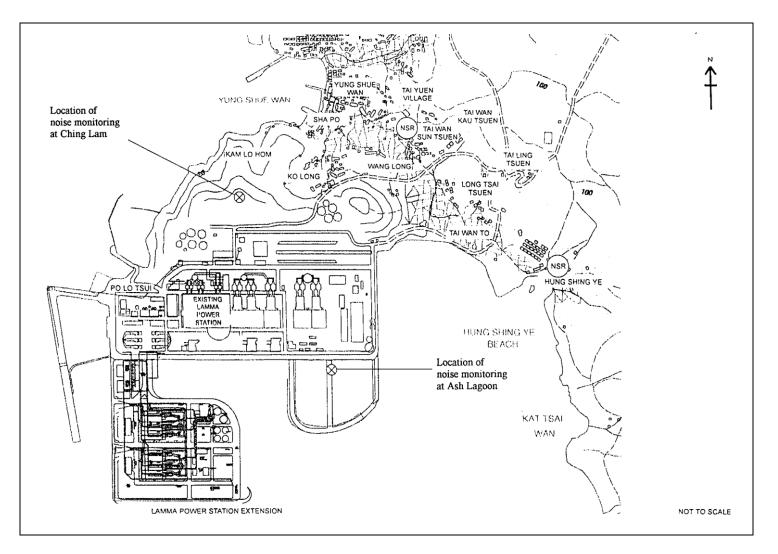


Figure 3.1 Location of Noise Monitoring Stations

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.

Item	Parameter Monitored	Monitoring Period	No. of Exceedances In		Event/Action Plan Implementation Status
			Action Level	Limit Level	and Results
Air					
1	Ambient TSP (24-hour)	01/11/2020- 30/11/2020	0	0	
2	Ambient TSP (1-hour)	01/11/2020- 30/11/2020	0	0	
Noise	•				
1	Noise level at the critical NSR's predicted by the noise alarm monitoring system	01/11/2020- 30/11/2020	0	0	

 Table 4.1
 Summary of AL Level Exceedances on Monitoring Parameters

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 2020 are shown in Table 4.2.

Table 4.2	Estimated Amounts of Waste in November 2020

	Ν	on-inert C&D Material	S
Total Inert C&D Waste Materials	C&D Materials Recycled	C&D Waste Disposed of at Landfill	Chemical Waste

0 Tonnes	16.46 Tonnes	87.39 Tonnes	3,000 Litres
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The monthly waste flow tables prepared by the contractors are attached in Appendix K

4.4 Site Environmental Audit

EPD officials from Regional Office (South) visited Lamma Power Station on 25/11/2020. There was no adverse comment from EPD regarding the construction site.

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
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Description	Permit No.	Valid	Period	Highlights	Status
-		From	То		
Varied Environmental Permit	EP-071/2000/D	28/09/20	-	The whole construction work site	Valid
Construction Noise Permit	GW-RS0668-20	17/09/20	13/03/21	Civil and Building Works for Unit L11. Operation of PME during restricted hours	Valid
Construction Noise Permit	GW-RS0391-20	01/07/20	31/12/20	Power Block Facilities works for Unit L11. Operation of PME during restricted hours	Valid
Construction Noise Permit	GW-RS0381-20	10/06/20	07/12/20	Foundation work for Unit L12 at Station Road. 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##	WT00035428- 2019	07/02/20	28/02/25	Foundation work for Cable Bridge	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	То		
Registration of Chemical Waste Producer	WPN5517-912- T2007-02	17/03/05	-	E&M Equipment Installation and Maintenance	Valid
Registration of Chemical Waste Producer	WPN5113-912- S3180-23	16/04/19	-	Foundation works for Unit L12	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.: 7033637	01/04/19	-	Foundation works for Unit L12	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

Notes: # - Water quality monitoring was carried out in November 2020 and the results of which had been reported separately by the contractor.

- Water quality monitoring was carried out in October 2020 and the results of which had been 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 2020, no complaint against the construction activities was received.

Table 4.4	Environmental Complaints Received in November 2020
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Case Reference / Date, Time Received / Date, Time Concerned	Descriptions / Actions Taken	Conclusion / Status
Nil	N/A	N/A

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

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 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.

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.

Foundation Works for Lamma Power Station Extension Unit L12 and Cable Bridge

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.

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 Civil Works for No.5 C.W. Intake and Cable Bridge

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

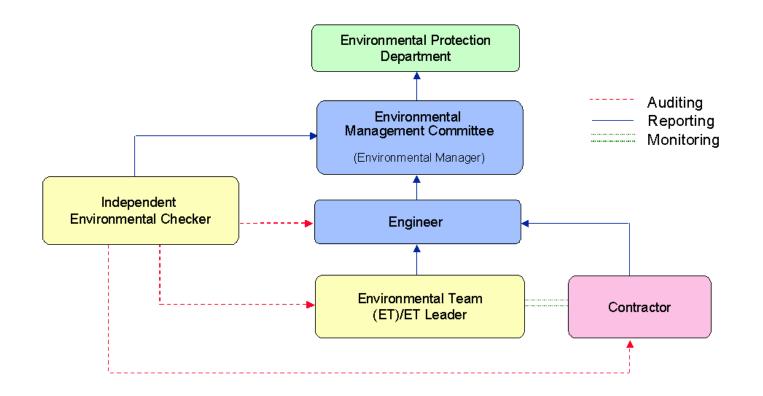


Figure A.1 Organisation of EM&A Programme at Construction Phase

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 TS

	Action Level, µg/m ³	Limit Level, µg/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 Pe	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 Manual noise monitoring at the nearest Pak Kok Tsui residences to cable landing points N4 and N5	When one or more documented complaints are received	 a. 75 dB(A) in L_{Aeq,30 min} (07:00-19:00 hrs on normal weekdays) (Note 1) 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 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 min}
Note: 1. For educational instituted B(A) during examination of the second seco	· · · · · · · · · · · · · · · · · · ·	hall be 70 dB(A), reduced to 65

Appendix C Environmental Monitoring Schedule

1hr TSP Monitoring
2/November/2020 1500hr to 1800hr
8/November/2020 1500hr to 1800hr
14/November/2020 1500hr to 1800hr
20/November/2020 1500hr to 1800hr
26/November/2020 1500hr to 1800hr
2/December/2020 1500hr to 1800hr
8/December/2020 1500hr to 1800hr
14/December/2020 1500hr to 1800hr
20/December/2020 1500hr to 1800hr
26/December/2020 1500hr to 1800hr
1/January/2021 1500hr to 1800hr
7/January/2021 1500hr to 1800hr
13/January/2021 1500hr to 1800hr
19/January/2021 1500hr to 1800hr
25/January/2021 1500hr to 1800hr
31/January/2021 1500hr to 1800hr
6/February/2021 1500hr to 1800hr
12/February/2021 1500hr to 1800hr
18/February/2021 1500hr to 1800hr
24/February/2021 1500hr to 1800hr

Table C.1Monitoring schedule for 24hr and 1hr TSP monitoring for Lamma
Extension Construction (November 2020 to February 2021)

APPENDIX D AIR QUALITY MONITORING RESULTS

Site: Lamma Power Station Extension

Month: November 2020

24 hour TSP Measurement:-

	TSP concentration ($\mu g/m^3$)			Weather Information (From Hong Kong Observatory)			
Date	Reservoir (AM1)	East Gate (AM2)	Ash Lagoon (AM3)	Tai Yuen Village (AM4)	Mean Wind Speed (km/hr)	Prevailing Wind Dir. (°)	Mean R.H. (%)
2/11/2020	56	69	54	46	21.4	360	64
8/11/2020	63	69	62	57	25.8	70	59
14/11/2020	44	55	40	25	28.9	60	65
20/11/2020	22	24	14	29	9.9	50	84
26/11/2020	47	48	36	51	21.8	70	77

1 hour TSP Measurement:-

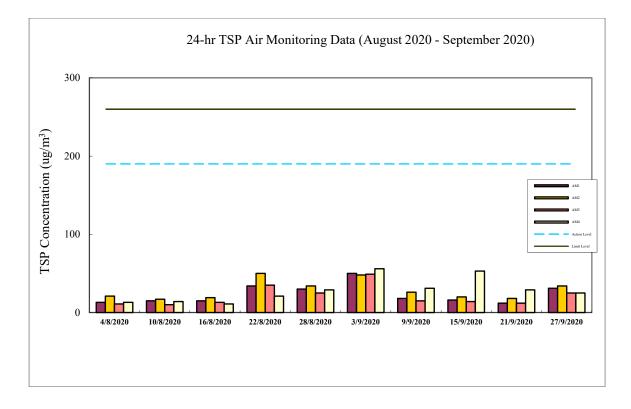
		TSF	concentration (ug/m ³)
Date	Time	Reservoir (AM1)	East Gate (AM2)	Ash Lagoon (AM3)
2/11/2020	15:00 - 15:59	77	106	62
2/11/2020	16:00 - 16:59	70	90	66
	17:00 - 17:59	74	76	65
0/11/2020	15:00 - 15:59	71	64	52
8/11/2020	16:00 - 16:59	44	69	60
	17:00 - 17:59	72	78	68
1.4/11/2020	15:00 - 15:59	66	98	75
14/11/2020	16:00 - 16:59	73	64	38
	17:00 - 17:59	62	62	38
20/11/2020	15:00 - 15:59	22	19	16
20/11/2020	16:00 - 16:59	24	21	15
	17:00 - 17:59	15	22	14
	15:00 - 15:59	63	55	44
26/11/2020	16:00 - 16:59	59	53	42
	17:00 - 17:59	55	51	40

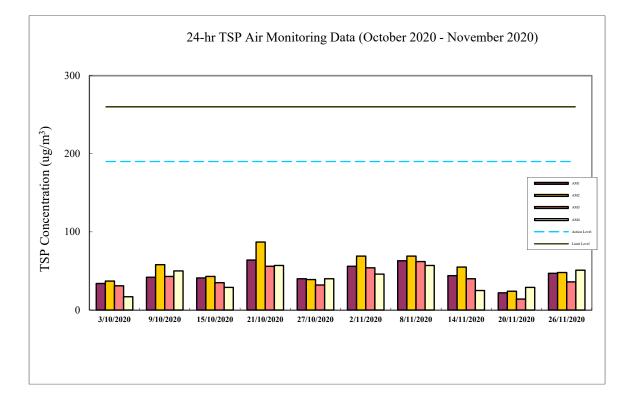
	1-hr TSP	24-hr TSP	
	$(\mu g/m^3)$	$(\mu g/m^3)$	
Action Level	340	190	
Limit Level	500	260	

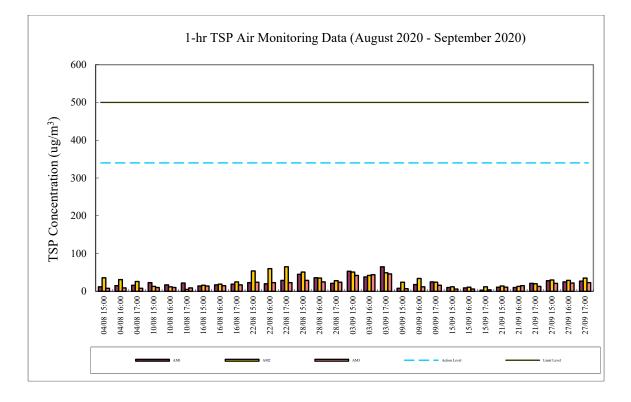
Calibration: Calibration details are shown in appendix F.

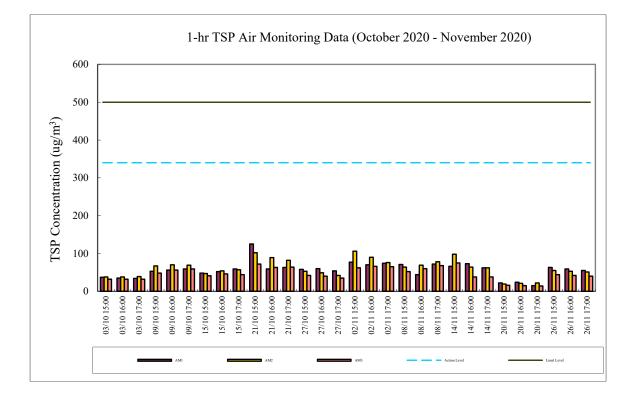
Equipment used:

Location	1-hr TSP	24-hr TSP
Reservoir, East Gate and Ash Lagoon	TEOM	TEOM
Tai Yuen Village	-	MINIVOL Portable Sampler









Appendix E Cont	inuous Noise Monitoring Results for November 2020
Site: Measurement Location: Measurement Parameter:	Lamma Power Station Extension Construction Ash Lagoon and Ching Lam 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) 19/08/2019 (Ching Lam) B&K 4231 calibrator - 02/09/2020

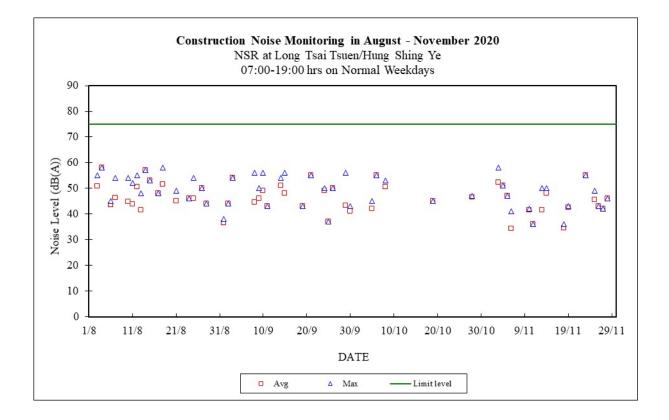
Date	Time	Calculated Noise Level at NSR at Long Tsai Tsuen/Hung Shing Ye (dB(A))		Limit Noise Level (dB(A))	Calculated Noise Level at NSR at the school within Tai Wan San Tsuen (dB(A))		Limit Noise Level (dB(A))
01/11/0000	0	Max	Avg	<u> </u>	Max	Avg	6.0
01/11/2020	07:00-23:00	49	40	60	50	40	60
01/11/2020	23:00-07:00 07:00-19:00	44	40	45 75	45 48	40 43	45 70
02/11/2020							
02/11/2020	19:00-23:00			60	49	40	60
02/11/2020	23:00-07:00	45	40	45	44	39	45
03/11/2020	07:00-19:00	58	52	75	47	42	70
03/11/2020	19:00-23:00			60	49	40	60
03/11/2020	23:00-07:00	45	40	45	45	40	45
04/11/2020	07:00-19:00	51	51	75	46	43	70
04/11/2020	19:00-23:00			60	45	39	60
04/11/2020	23:00-07:00	45	41	45	44	39	45
05/11/2020	07:00-19:00	47	47	75	49	40	70
05/11/2020	19:00-23:00			60	48	35	60
05/11/2020	23:00-07:00	44	40	45	43	39	45
06/11/2020	07:00-19:00	41	34	75	40	35	70
06/11/2020	19:00-23:00			60	50	37	60
06/11/2020	23:00-07:00	45	41	45	45	36	45
07/11/2020	07:00-19:00			75	40	36	70
07/11/2020	19:00-23:00			60	46	38	60
07/11/2020	23:00-07:00	30	30	45	44	37	45
08/11/2020	07:00-23:00	56	44	60	44	37	60
08/11/2020	23:00-07:00	45	40	45	45	37	45
09/11/2020	07:00-19:00			75	42	37	70
09/11/2020	19:00-23:00			60	44	37	60
09/11/2020	23:00-07:00	45	40	45	44	37	45
10/11/2020	07:00-19:00	42	42	75	41	38	70
10/11/2020	19:00-23:00			60	50	37	60
10/11/2020	23:00-07:00	38	32	45	44	38	45
11/11/2020	07:00-19:00	36	36	75	45	40	70
11/11/2020	19:00-23:00			60	43	38	60
11/11/2020	23:00-07:00	45	42	45	42	39	45
12/11/2020	07:00-19:00			75	47	42	70
12/11/2020	19:00-23:00			60	44	39	60
12/11/2020	23:00-07:00	45	41	45	45	39	45
13/11/2020	07:00-19:00	50	42	75	42	38	70
13/11/2020	19:00-23:00			60	44	37	60

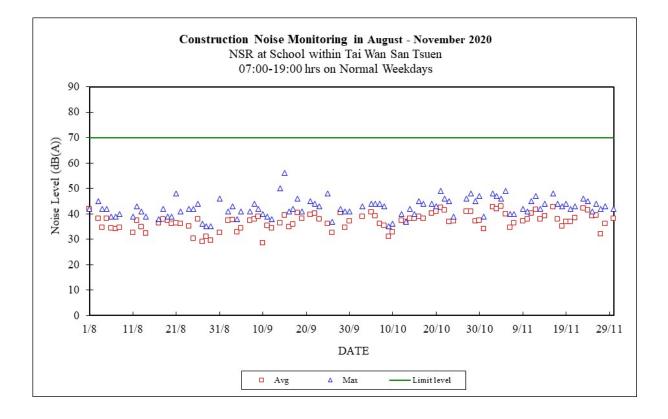
13/11/2020	23:00-07:00	41	34	45	45	39	45
14/11/2020	07:00-19:00	50	48	75	44	39	70
14/11/2020	19:00-23:00			60	41	34	60
14/11/2020	23:00-07:00			45	44	40	45
15/11/2020	07:00-23:00	60	45	60	48	39	60
15/11/2020	23:00-07:00	45	38	45	45	41	45
16/11/2020	07:00-19:00			75	48	43	70
16/11/2020	19:00-23:00			60	45	40	60
16/11/2020	23:00-07:00	43	36	45	45	40	45
17/11/2020	07:00-19:00			75	44	38	70
17/11/2020	19:00-23:00			60	45	39	60
17/11/2020	23:00-07:00	45	40	45	44	37	45
18/11/2020	07:00-19:00	36	35	75	43	35	70
18/11/2020	19:00-23:00			60	48	39	60
18/11/2020	23:00-07:00	38	38	45	41	35	45
19/11/2020	07:00-19:00	43	43	75	44	37	70
19/11/2020	19:00-23:00			60	44	38	60
19/11/2020	23:00-07:00	41	36	45	40	36	45
20/11/2020	07:00-19:00			75	41	30	70
20/11/2020	19:00-23:00	46	39	60	39	35	60
20/11/2020	23:00-07:00			45	45	36	45
21/11/2020	07:00-19:00			75	43	39	70
21/11/2020	19:00-23:00			60	45	42	60
21/11/2020	23:00-07:00	43	41	45	45	39	45
22/11/2020	07:00-23:00	57	47	60	51	40	60
22/11/2020	23:00-07:00	42	36	45	45	40	45
23/11/2020	07:00-19:00	55	55	75	46	42	70
23/11/2020	19:00-23:00			60	50	40	60
23/11/2020	23:00-07:00	45	41	45	43	40	45
24/11/2020	07:00-19:00			75	45	41	70
24/11/2020	19:00-23:00			60	42	38	60
24/11/2020	23:00-07:00	45	41	45	43	38	45
25/11/2020	07:00-19:00	49	46	75	41	39	70
25/11/2020	19:00-23:00			60	43	39	60
25/11/2020	23:00-07:00	45	39	45	44	39	45
26/11/2020	07:00-19:00	43	43	75	44	39	70
26/11/2020	19:00-23:00			60	50	40	60
26/11/2020	23:00-07:00	41	32	45	42	36	45
27/11/2020	07:00-19:00	42	42	75	42	32	70
27/11/2020	19:00-23:00			60	36	32	60
27/11/2020	23:00-07:00	45	40	45	41	35	45
28/11/2020	07:00-19:00	46	46	75	43	36	70
28/11/2020	19:00-23:00			60	36	34	60
28/11/2020	23:00-07:00	37	32	45	41	36	45
29/11/2020	07:00-23:00	52	41	60	42	37	60
29/11/2020	23:00-07:00	45	41	45	43	39	45
30/11/2020	07:00-19:00			75	42	38	70
30/11/2020	19:00-23:00	-		60	39	33	60
30/11/2020	23:00-07:00	45	36	45	41	34	45

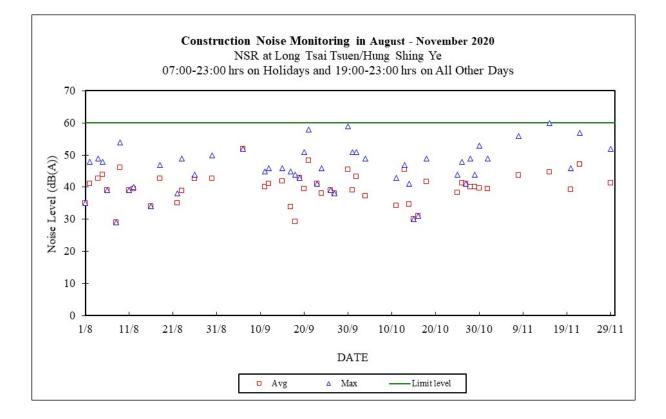
Note:

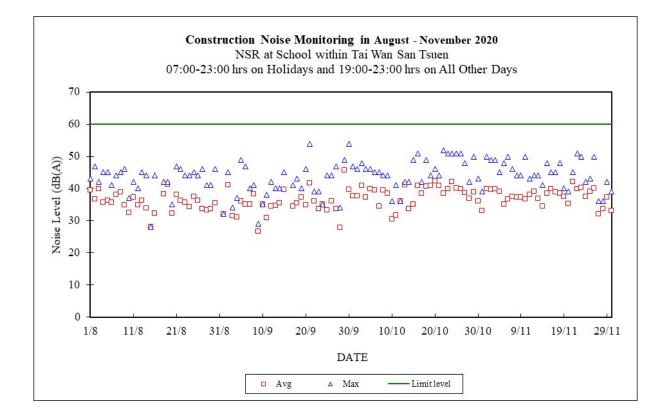
a. "---" represents the measured noise monitoring data lower than the established notional background level/discarded under strong wind.

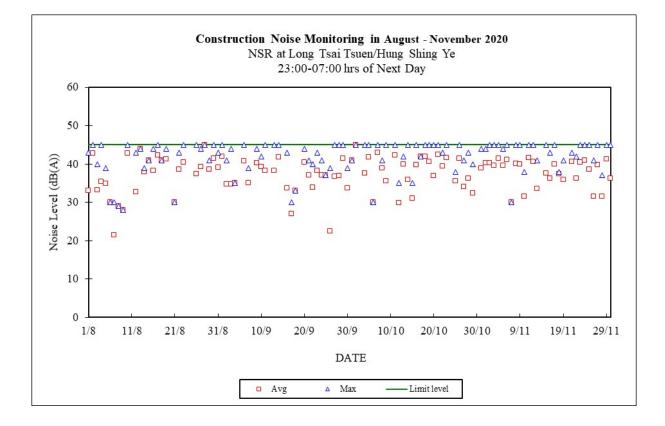
b. Continuous noise monitoring was also carried out at holidays & eveningtime (07:00-23:00 hrs on holidays and 19:00-23:00 hrs on all other days) and night-time (23:00-07:00 hrs of next day).

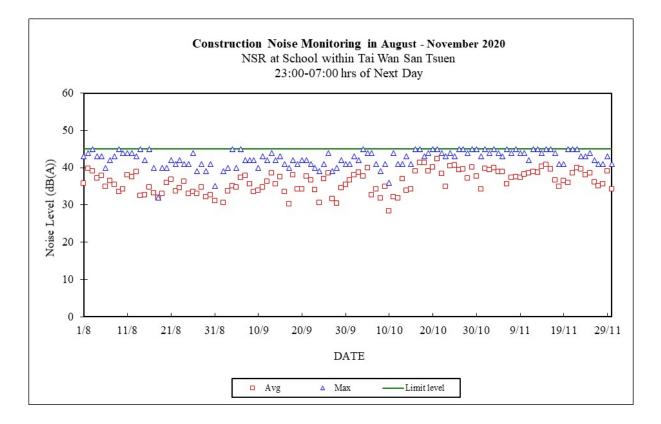












Appendix F

The QA/QC Procedures and Results

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

			Reservoir (AM1)	
Date	Frequency (240 - 27		Operation Mode (Mode 4)	Main Flow (I/min) (2.70 - 3.30)	Bypass Flow (I/min) (12.30 - 15.04)
02/11/2020	269.51	0	4	2.95	13.42
08/11/2020	268.60	5	4	2.98	13.33
14/11/2020	269.09	1	4	3.00	13.34
20/11/2020	268.68	2	4	2.93	13.24
26/11/2020	268.23	3	4	2.96	13.37
			East Gate (AM2)	
Date	Frequency (240 - 27		Operation Mode (Mode 4)	Main Flow (I/min) (2.70 - 3.30)	Bypass Flow (I/min) (12.30 - 15.04)
02/11/2020	251.39	1	4	2.95	13.46
08/11/2020	250.46	2	4	3.01	13.66
14/11/2020	249.51	7	4	3.11	13.76
20/11/2020	251.25	1	4	2.96	13.48
26/11/2020	250.77	3	4	2.99	13.64
			Ash Lagoon	(AM3)	
Date	Frequency	(Hz)	Operation Mode	Main Flow (I/min)	Bypass Flow (I/min)
	(240 - 27		(Mode 4)	(2.70 - 3.30)	(12.30 - 15.04)
02/11/2020	255.44	1	4	3.00	13.67
08/11/2020	254.66	2	4	3.00	13.67
14/11/2020	253.93	6	4	3.00	13.67
20/11/2020	253.63	1	4	3.00	13.67
26/11/2020	255.97	6	4	3.00	13.67
			Maintenance	Record	
			Reservoir	East Gate	Ash Lagoon
TEOM Filter Exch	ange		1	1	1
Clean TSP Inlet		1	1	Ĩ	
Replace flow in-line filter			1	1	1
Pump Repair					
Leak Check					
Flow audit					
Flow Controller C	alibration				
· · · · · · · · · · · · · · · · · · ·					1

Remarks:

A/C filter cleaning

Prepared by: Chris Chan

Month: November Year: 2020

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
16/11/2020 / 14:15	WM Tam

Equipment / Item

Equipment / Item	Serial No. / No.
MINIVOL	5580
Used filter paper no.	MR07
New filter paper no.	MR08

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:	<u>5.085</u>
After:	5.035

II. General Services

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

<u>Remarks</u>

<u>N/A</u>

Conducted by: WM Tam

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

Date	Location:	Ash Lagoon	Location: (Location: Ching Lam		
	Calibration Results	Deviation from	Calibration Results	Deviation from		
		Reference (dB)		Reference (dB)		
01/11/2020	Passed	-0.05	Passed	0.11		
02/11/2020	Passed	-0.06	Passed	0.13		
03/11/2020	Passed	-0.06	Passed	0.09		
04/11/2020	Passed	-0.08	Passed	0.09		
05/11/2020	Passed	-0.06	Passed	0.11		
06/11/2020	Passed	-0.06	Passed	0.13		
07/11/2020	Passed	-0.05	Passed	0.12		
08/11/2020	Passed	-0.07	Passed	0.10		
09/11/2020	Passed	-0.07	Passed	0.08		
10/11/2020	Passed	-0.08	Passed	0.09		
11/11/2020	Passed	-0.07	Passed	0.09		
12/11/2020	Passed	-0.09	Passed	0.10		
13/11/2020	Passed	-0.08	Passed	0.08		
14/11/2020	Passed	-0.08	Passed	0.10		
15/11/2020	Passed	-0.07	Passed	0.12		
16/11/2020	Passed	-0.07	Passed	0.11		
17/11/2020	Passed	-0.08	Passed	0.12		
18/11/2020	Passed	-0.06	Passed	0.12		
19/11/2020	Passed	-0.06	Passed	0.13		
20/11/2020	Passed	-0.06	Passed	0.13		
21/11/2020	Passed	-0.06	Passed	0.13		
22/11/2020	Passed	-0.07	Passed	0.13		
23/11/2020	Passed	-0.06	Passed	0.10		
24/11/2020	Passed	-0.06	Passed	0.10		
25/11/2020	Passed	-0.08	Passed	0.12		
26/11/2020	Passed	-0.08	Passed	0.10		
27/11/2020	Passed	-0.10	Passed	0.08		
28/11/2020	Passed	-0.10	Passed	0.09		
29/11/2020	Passed	-0.08	Passed	0.08		
30/11/2020	Passed	-0.09	Passed	0.08		

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

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	

Table G.1Event and Action Plans for Air Quality

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

Table G.2Event 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	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.	Submit proposals for remedial actions to Engineer.
	the Construction works, verbally advise the Contractor, Engineer and IEC, and inform the EPD of the exceedance, as soon as practicable.		Discuss with Contractor the remedial actions to be implemented.	Amend proposals if required by the Engineer.
	Discuss remedial actions required with	Verify the implementation of the remedial measures	Keep the Contractor informed of the efficacy of remedial actions.	Implement remedial actions immediately upon instruction from the Engineer.
	Engineer.		If the exceedance continues, consider what portion of the work is	If the exceedance continues, consider
	Increase manual monitoring frequency to assess efficacy of remedial measures.		responsible and instruct the Contractor to stop the portion of work until the exceedance is abated	what portion of the work is responsible and, as instructed by the Engineer, stop the portion of work until the exceedance is abated

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

Appendix H Summary of Site Audit Findings

L11 Civil & Building Superstructure Work

Dates of Inspection: 3/11/2020, 13/11/2020, 17/11/2020 and 24/11/2020.

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

L11 Mechanical, Electrical, Instrumentation & Control Erection Work

Dates of Inspection: 5/11/2020, 12/11/2020, 19/11/2020 and 26/11/2020.

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

L12 Civil Works for No.5 C.W. Intake and Cable Bridge

Dates of Inspection: 3/11/2020, 13/11/2020, 17/11/2020 and 24/11/2020.

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

L12 Foundation Work

Dates of Inspection: 3/11/2020

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

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:	
	• the haul roads shall be sprayed with water to keep the entire road surface wet.	С
	• the load carried by vehicle shall be covered by impervious sheeting to ensure no leakage of dusty materials from the vehicle.	С
	• the heights from which fill materials are dropped shall be controlled to a practical level to minimise the fugitive dust arising from unloading.	С
A2	For the concrete batching plant, the following control measures are recommended:	
	• loading, unloading, handling, transfer or storage or any dusty materials shall be carried out in a totally enclosed system.	С
	• The materials which may generate airborne dust emissions shall be wetted by water spray system.	С
	• All receiving hoppers shall be enclosed on three sides up to 3m above unloading point.	С
	• All conveyor transfer points shall be totally enclosed.	С
	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
В5	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: **	N/A
	 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. 	

EM&A Log Ref.	Mitigation Measures	Implementation Status
B7	In addition to the above specific measures the following general working procedures shall be adopted. **	
	• fully-enclosed or watertight grabs shall be used to minimise loss of sediment during the raising of loaded grabs through the water column;	N/A
	• the descent speed of grabs shall be controlled to minimise the seabed impact speed and to reduce the volume of over dredging;	N/A
	• barges shall be loaded carefully to avoid splashing of material;	N/A
	• 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;	N/A
	• 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;	N/A
	• the speed of trailer dredgers shall be controlled to prevent propeller wash from stirring up the sea bed sediments;	N/A
	• "rainbowing" sand fill from trailer dredgers shall not be permitted; and	N/A
	• 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.	N/A
B8	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. **	N/A
	NOISE	
C1	General noise mitigation measures shall be employed at all work sites throughout the construction phase.	С
C2	Mitigate against general construction noise during Sunday's and public holidays, either at source with portable noise barriers, or by rescheduling of some PMEs to less sensitive time periods.	С
C3	Mitigate against night time noise from dredging equipment, with silencers or mufflers. **	N/A
	1	
	LANDSCAPE & VISUAL IMPACTS	
D1	The following mitigation measures shall be allowed for landscape and visual improvement:	
	• Use rubble mound seawall along south and west edges of the reclamation to provide a more natural look.	С
	• Break the mass of main buildings by varying the height/division into smaller units.	С
	Plant trees and vegetation for screening.	С
	• Adopt colour scheme to blend the buildings into the scenery.	С

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.	С
	Dredging Waste	
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
	Storage, Collection and Transport of Waste	
E3	• Minimise windblown litter and dust during transportation by either covering trucks or transporting wastes in enclosed containers.	С
	• 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.	С
	• Disposal of waste at Licensed sites;	С
	• 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;	С
	 Segregate and sort the waste materials into 3 categories: 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. 	С
	 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.	С
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	С
	LAND CONTAMINATION	
F1	No land Contamination mitigation measures are required during the construction phase.	N/A
	·	
	MARINE ECOLOGY	
	MANINE EUULUGI	

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
С	-	Compliance with mitigation measure
NC	-	Non-compliance with mitigation measure
N/A	-	Not Applicable

Contract No. 17/8002 Lamma Power Station Extension Civil and Building Works			17-0002 100	aster Prog Rev 3	Refer to CEM dated 26M		
e	Duration	Start	Finish	Dec 2020	Jan 2021	Feb 2	
1 Building Works for Unit 11 and Assoicated Works	1197 days	Fri 1/6/18	Thu 30/9/21	Dec 2020	Jan 2021	Teb 21	
act Key Dates	<u>1197 days</u>	<u>Fri 1/6/18</u>	Thu 30/9/21				
ntract Commencement Date	0 days	Fri 1/6/18	Fri 1/6/18				
npletion Dates	1044 days	Wed 31/10/18	Thu 30/9/21				
Section A1 - Ground treatment installation works at Zone 1A	0 days	Wed 31/10/18	Wed 31/10/18				
Section A2 - Ground treatment installation works at Zone 1B	0 days		Wed 31/10/18				
Section A3 - Ground treatment installation works at Zone 2	0 days		Sun 17/3/19				
Section A4 - Ground treatment installation works at Zone 3	0 days		Thu 21/3/19				
Section A5 (i) - Ground treatment installation works at Zone 5							
nstallation	0 days		Thu 28/3/19				
Section A5 (ii) - Ground treatment installation works at Zone 4 - Surcharge illing	0 days	Wed 30/9/20	Wed 30/9/20				
Section A6 (i) - A&A Works for No. 4 C.W. Outfall at Area E18	0 days	Sat 28/3/20	Sat 28/3/20				
Section A6 (ii) - External works at Area E15	0 days	Sat 15/2/20	Sat 15/2/20				
Section B1 (i) - Area south of L11 MSB and HRSG from GL11-F eastwards eading to Chimney Road at Area E1 & E2	0 days		Sun 1/3/20				
Section B1 (ii) - Supporting structures for overhead cranes of L11 MSB	0 days	Tue 17/3/20	Tue 17/3/20				
ncluding the associated roof structure except the roof deferred works							
Section B1 (iii) - FSRU Civil works at Area E13	0 days	Mon 31/5/21	Mon 31/5/21				
Section B2 - Retractable Cover D at Area E22	0 days		Tue 31/3/20				
Section B3 - External works at Area B1, D2 and D4	0 days		Thu 30/4/20				
			Sun 1/3/20				
Section C1 - Area south of L11 MSB from GL11-F westwards leading to Station Road at Area E3(A) & E3(B)	0 days						
Section C2 - (i) Southern part of L11 HRSG area and its surrounding at Area 27 except the deferred works for Lube Oil Storage Tank	0 days		Sun 1/12/19				
Section C2 - (ii) L11 Turbo Block foundation including the L11 MSB ground loor together with the equipment foundations between GL 11-F to 11-H and 11-1 to 11-6 for the installation of power generator, air inlet duct and lube oil eservoir	0 days	Thu 30/4/20	Thu 30/4/20				
Section C2 - (iii) G/F of L11 MSB including the Condenser Pit, Circulating Water Pipe Pit and equipment foundations between GL 11-B to 11-C and 11-J	0 days	Sun 1/3/20	Sun 1/3/20				
o 11-6 for the installation of condenser Section D - (i) Roads and external grounds surrounding L11 MSB and L11	0 days	Tue 31/12/19	Tue 31/12/19				
HRSG in addition to the southern & eastern areas mentioned above in Area E and E6							
Section D - (ii) Remaining northern part of L11 HRSG area and its surroundin n Area E6	g 0 days	Sun 1/3/20	Sun 1/3/20				
Section D - (iii) Whole of L11 MSB including the pipe and cable rack along south façade of L11 MSB with all underground utilities at Area E4 including C.W. Inlet and Outlet Culvert except the deferred works	0 days	Thu 30/4/20	Thu 30/4/20				
Section D - (iv) Link Bridge between L10 and L11 MSB and at the south of L11 MSB including their associated alternations & additions (A&A) Works at L10 MSB	0 days	Thu 30/4/20	Thu 30/4/20				
Section D - (v) Gas Duct Foundation, Pipe and Cable Rack and associated rench in Area E20	0 days	Sat 1/2/20	Sat 1/2/20				
Section E1 - (i) Link Brldge and Pipe and Cable Rack connecting L11 MSB to he western area of L11 MSB at Area E3	0 days	Mon 28/9/20	Mon 28/9/20 rea E	3			
Section E1 - (ii) Gas Receiving Station and L11 Gas Receiving Station Equipment Room (GRS) Area Extension at Area E16	0 days	Tue 30/6/20	Tue 30/6/20				
Section E1 - (iii) External Works at Area E15 (C)	0 days	Sun 28/2/21	Sun 28/2/21				
				F10			
Section E2 - Pipe and Cable Rack and trench at west of Chimney Road and	0 days	1 nu 1 //9/20	Thu 17/9/20 B and	u = 1 <i>3</i>			
Pipe and Cable Rack at south of Middle Road at Area E8 and E19	0.1						
Section E3 - Gas Pipe Support Foundation and Pipe Trench and associated external works at Area E14, E15 (A) and E15 (B)	0 days		Tue 30/6/20				
Section E4 - 275kV cable trenching works connecting the 275kV Switching Station Extension and L11 MSB at Area E9 (A)	0 days	Sun 15/9/19	Sun 15/9/19				
Section F - 275kV Station Building Extension and associated works at Area E17	0 days	Sat 30/5/20	Sat 30/5/20				
Section G - A&A Works at No. 4 C.W. Intake at Area E12	0 davs	Sun 31/5/20	Sun 31/5/20				
Section H - L11 Steel flue liner at No. 4 Chimney							
E17 Section G - A&A Works at No. 4 C.W.	Intake at Area E12	Intake at Area E12 0 days	Intake at Area E12 0 days Sun 31/5/20	Intake at Area E12 0 days Sun 31/5/20 Sun 31/5/20	Intake at Area E12 0 days Sun 31/5/20 Sun 31/5/20	Intake at Area E12 0 days Sun 31/5/20 Sun 31/5/20	

Contract No. 17/8002 Lamma Power Station Extension Civil and Building Works for Unit L11 Refer to CEM dated 26March2019 17-8002 Master Prog Rev 3 ID Task Name Start Finish Duration Dec 2020 Jan 2021 Feb 2021 36 Section I - (i) 275kV cable trenching works connecting the 275kV Switching Fri 15/5/20 Fri 15/5/20 0 days Station Extension and L11 MSB at Area E9 (B) 37 Section I - (ii) Interconnector 2 Trench Modification Works at Area E10 0 days Fri 15/5/20 Fri 15/5/20 38 Section J - (i) Demolition of Retractable Cover A&B & (ii) Foundation of 0 days Fri 30/4/21 Fri 30/4/21 LMX Light Oil Storage Tank Nos. 3 & 4 and A&A for Existing Bund Wall at 39 Section K1 - External works at Area 15 (E) and 15(F) 0 days Mon 31/5/21 Mon 31/5/21 40 Section K2 - Removal of Southern Bund and External Works at Area D5, D6 0 days Mon 31/5/21 Mon 31/5/21 and D7 41 Section K3 - All remaining works shall be completed for reporting completion 0 days Thu 30/9/21 Thu 30/9/21 to BD and ready for OP inspection 42 **General & Preliminary** Fri 1/6/18 Wed 24/4/19 318 days 43 Set up Temporary Site Office and Utilities 90 davs Fri 1/6/18 Wed 29/8/18 44 Permit Applications & Statuary Submissions 120 days Thu 30/8/18 Thu 27/12/18 45 Existing Utilities scanning & Excavation Permit 45 days Tue 13/11/18 Thu 27/12/18 46 Tower Crane erection 2@MSB, 1@ 275 50 days Wed 6/3/19 Wed 24/4/19 47 Submission and Approval Fri 1/6/18 Mon 16/12/19 554 days 48 Method Statement / Temp Work Submission & Approval from HEC for General 240 days Fri 1/6/18 Sat 26/1/19 Works 49 BD Approval & Consent (If required) 120 days Fri 1/6/18 Fri 28/9/18 50 BIM Model, CSD & CBWD Submission & Approval from HEC 200 days Sat 29/9/18 Fri 26/4/19 51 Sat 29/9/18 Tue 27/11/18 Structure Steelwork Connection Design Submission & BD Approval 60 days 52 Structure Steelwork Shop Drawing & Approval 60 days Sat 13/10/18 Tue 11/12/18 53 Metal Cladding, louvre & windows submission & BD Approval 60 days Wed 28/11/18 Sat 26/1/19 54 Metal Cladding, louvre & windows shop drawing submission 60 days Wed 12/12/18 Tue 19/2/19 55 Order, Off Site Fabrication and Delivery (S. Steel & Cladding & louvres) 180 days Sat 27/10/18 Sat 4/5/19 56 Retractable Cover D BD Submission & Approval Wed 20/2/19 Mon 20/5/19 90 davs 57 No. 4 C.W. Outfall A&A BD 1st Submission 90 davs Thu 30/8/18 Tue 27/11/18 58 Sumission & Approval of Steel Flue Assessment Report and Design Drawings 60 days Sun 30/9/18 Wed 28/11/18 59 Submission and Approval of Steel Flue Design from BD 60 days Sun 30/9/18 Wed 28/11/18 60 Material Fabrication & Delivery for L11 Flue 100 days Mon 15/10/18 Tue 22/1/19 61 Folding Shutters Shop Drawing Submission & Approval 120 days Wed 20/2/19 Wed 19/6/19 62 Fabrication & Delivery of Folding Shutters Thu 20/6/19 Sat 16/11/19 150 davs 63 Sewage Pump System Design submission & approval 90 davs Fri 22/3/19 Wed 19/6/19 64 Fabrication & Delivery of Sewage Pump 180 days Thu 20/6/19 Mon 16/12/19 65 Other material submission & approval & delivery 300 days Thu 30/8/18 Fri 5/7/19 66 Coordination with the Employer's Specialist Contractors 478 days Mon 20/5/19 Sat 19/9/20 K 67 Installation of Puddle Pipes at C.W. outlet Culvert 7 days Mon 20/5/19 Sun 26/5/19 68 Installation of Puddle Pipes at C.W. Inlet Culvert 7 days Sun 7/7/19 Sat 13/7/19 69 Template setting at L11 Turbo Block Foundation Wed 1/1/20 Mon 9/3/20 60 days 70 Template setting of holding down bolts at HRSG column base 46 days Tue 23/7/19 Fri 6/9/19 71 I-beam / channel base installation on top of transformer foundations at 30 days Fri 17/4/20 Sat 16/5/20 Transformer Area 72 Overhead crane erection at turbine hall using access through a temporary opening 36 days Sun 1/12/19 Tue 7/1/20 at L11 MSB roof between GL11-G to 11-H and 11-2 to 11-6 73 Condenser assembly and erection using access through a temporary facade 127 days Sun 1/3/20 Sun 5/7/20 opening at L11 MSB below 1/F along GL 11-6 from GL11-B to 11-C including a clear space below 1/F between GL 11-B to 11-C 74 Sat 19/9/20 w 1/F along GL 11-6 from GL11-F to 11-H including a clear space below 1/F of the above area Installation of power train equipment including air inlet duct using access through 142 days Fri 1/5/20 a temporary facade opening at L11 MSB below 1/F along GL 11-6 from GL11-F to 11-H including a clear space below 1/F of the above area 75 Installation of embedded materials such as holding down bolts for equipment 30 days Sun 23/6/19 Mon 22/7/19 foundations - Commencement 76 Section A1 & A2 - Ground treatment at Zone 1A & 1B Wed 1/8/18 Wed 31/10/18 92 days 77 Plant establishment for earthworks 7 days Wed 1/8/18 Tue 7/8/18 78 Backfilling and compaction from existing ground +4.5mPD to +5.5mPD 45 days Wed 8/8/18 Fri 21/9/18 79 Wed 29/8/18 Sun 2/9/18 Delivery of band drain 5 days 80 Mon 3/9/18 Wed 12/9/18 Plant establishment for band drain (1st rig) 10 days 81 Plant establishment for band drain (2nd rig) 7 days Thu 20/9/18 Wed 26/9/18 82 Plant establishment for band drain (3rd rig) 7 days Thu 11/10/18 Wed 17/10/18 17-8002 Master Prog Rev 3 Task Split Milestone ♦ Summarv 🛡

ontra	-	Duration	Start	17-8002 Finish						Refer to CEM dated 26M		
18	sk Name	Duration				Dec 2020	Ja	an 2021		Feb 2		
	Vert. Band drain installation (1023 nos. x 44m)	45 days		Sat 27/10/18								
	Deposition of surcharge up to +8.3mPD	45 days		Wed 31/10/18								
	Section A3 - Ground treatment installation works at Zone 2 Backfilling and compaction from existing ground +4.5mPD to +5.5mPD	158 days		Sun 17/3/19								
_	Delivery of band drain	30 days 6 days		Tue 30/10/18 Tue 23/10/18								
-	Vert. Band drain installation (1787 nos. x 44m)		Wed 24/10/18									
-	Deposition of surcharge up to +8.3mPD	60 days		Thu 31/1/19								
	Additional Concrete Blocks + Extra Surcharge	60 days		Sun 17/3/19								
	Section A4 - Ground treatment installation works at Zone 3	131 days		Thu 21/3/19								
	Backfilling and compaction from existing ground +4.5mPD to +5.5mPD	12 days		Mon 12/11/18								
	Vert. Band drain installation	60 days		Mon 7/1/19								
	Deposition of surcharge up to +8.3mPD	45 days	Tue 18/12/18	Thu 31/1/19								
	Possession of Part 1 Defer portion at Zone 3	0 days		Wed 20/2/19								
_	Vert. Band drain installation	10 days	Wed 20/2/19	Fri 1/3/19								
-	Possession of Part 2 Defer portion at Zone 3 Vert. Band drain installation	0 days 7 days	Fri 1/3/19 Fri 1/3/19	Fri 1/3/19 Thu 7/3/19								
	Surcharge at deferred portion	14 days	Fri 8/3/19	Thu 21/3/19								
	Section A5 (i) - Ground treatment installation works at Zone 4	<u>83 days</u>		Thu 28/3/19								
	Site Preparation for Vertical Band Drain	3 days		Thu 3/1/19								
	Band drain installation	21 days	Wed 26/12/18									
	Possession of Defer portion at Zone 4	0 days	Fri 1/3/19	Fri 1/3/19								
	Vert. Band drain installation Section A5 (ii) - Surcharge works at Zone 4	28 days 30 days	Fri 1/3/19	Thu 28/3/19 Wed 30/9/20	c A5(ii)							
-	Deposition of surcharge up to +8.3mPD	30 days		Wed 30/9/20 Wed 30/9/20								
	Section A6 (i) - A&A Works for No. 4 C.W. Outfall at Area E18	493 days		Sat 28/3/20								
	BD Amendment, resubmission & approval for Jacking Pit	170 days		Mon 29/4/19								
+	Consent for Jacking Pit ELS	28 days		Fri 17/5/19								
	Mobilization	0 days		Sat 15/12/18								
	Jacking Pit Sheetpile Installation (incl. Stop work notice + CNY)	60 days	Sun 16/12/18									
	Protective screen and preventive measure for U9 gas pipeline (VO)	28 days	Sun 24/2/19									
_	Provision of temp support for U10 gas pipeline (VO) upon RMA allow access	28 days	Sun 14/4/19									
	ELS of jacking pit	30 days		Sun 16/6/19								
+	Pipe Jacking set up & ground strengthing	18 days	Mon 17/6/19									
	Pipe Jacking	90 days		Sun 8/12/19								
+	Receiving Pit BD Approval Consent for Pipe & Sheet pile	170 days 28 days		Thu 23/5/19 Mon 10/6/19								
1	Receiving Pit Pipe & Sheet pile installation	30 days		Wed 10/7/19								
1	Consent for Receiving Pit ELS	28 days		Wed 31/7/19								
	ELS of Receiving pit	40 days	Thu 1/8/19	Mon 9/9/19								
	Allow modify existing outfall manhole for pipe jacking receiving	18 days	Tue 10/9/19	Fri 27/9/19								
	Culvert Pipe Intallation & water test	55 days	Mon 9/12/19	Wed 12/2/20								
	Inspection Manhole at Jacking Pit + backfill (Area E3(A))	18 days	Thu 13/2/20	Sun 1/3/20								
	Manhole extension at Outfall no. 4 + backfill + Reinstate of Outfall Rd	45 days		Sat 28/3/20								
	Sheetpile for L12 Outlet culvert (Connection to Jacking Pit)	45 days		Wed 28/8/19								
-	Consent + ELS for remaining jacking pit Outlet Culvert pipe installation + Thrust Box (remaining portion at A1 Area)	75 days 45 days		Mon 11/11/19 Sat 28/12/19								
+	Sheet pile for future extension along GRS	60 days		Sun 27/10/19								
	Section A6 (ii) - External works at Area E15(D)	37 days		Sat 15/2/20								
	Arae possession & Clearance	6 days		Mon 6/1/20								
1	Road & Surface Works	31 days		Sat 15/2/20								
	Section B1 (i) - Area south of L11 MSB and HRSG from GL11-F eastwards	375 days		Sun 1/3/20								
	leading to Chimney Road at Area E1 & E2											
	Area Possession & Clearance	0 days	Thu 31/1/19	Thu 31/1/19								
	Excavation for CW Inlet Culvert (South of L11 HRSG)	21 days	Tue 16/4/19	Mon 6/5/19								
	Installation CW Inlet Culvert pipe	30 days		Wed 5/6/19								
	Construction of Thrust Box & Manholes,etc	14 days		Wed 19/6/19								
	Backfill	21 days		Wed 10/7/19								
	Install underground utilities	45 days		Wed 13/11/19								
	Backfill and Temporary paving for Condensor Move in (E1)	14 days		Sun 1/3/20								
-	Backfill and Temporary paving for Condensor Move in (others)	30 days		Sun 1/3/20								
	Section B1 (ii) - Supporting structures for overhead cranes of L11 MSB including the associated roof structure except the roof deferred works	<u>482 days</u>	<u>Thu 1/11/18</u>	<u>Tue 17/3/20</u>								
	Area possession & Clearance	0 days	Thu 1/11/18	Thu 1/11/18								
		-						-	-			

ontract No. 17/8002 Lamma Power Station Extension Civil and Building Works	for Unit L	11	Refer to CEM dated	
D Task Name	Duration	Start	Finish	
Erection of turbine hall roof except defer work	0 days	Wed 13/11/19 V	Wed 13/11/19	Jan 2021 Fe
15 Installation of crane griders	21 days	Mon 11/11/19		
16 Turbine hall wall claddings	60 days	Thu 9/1/20		
¹⁷ Section B1 (iii) - FSRU Civil works at Area E13 (GRS)	151 days	Fri 1/1/21		1 Jan '21 🛡 Sec.B1(ii)
¹⁸ Submission and approval for consent to work	0 days		Fri 1/1/21	Submission and approval for consent to work
Section of the terror of terror				
crim et 2 chiente	130 days	Fri 1/1/21		
	21 days	Tue 11/5/21		
Section B2 - Retractable Cover D at Area E22	<u>435 days</u>	<u>Tue 1/1/19</u>		
52 Area Possession, Demolition and clearance work	60 days	Tue 1/1/19		
53 Revise Structural Form and BD resubmission & approval	150 days		Thu 8/8/19	
54 Foundation construction	60 days	Fri 9/8/19		
5 Backfill & Ground reinstatement	30 days	Tue 8/10/19	Wed 6/11/19	
56 Superstructure fabrication & delivery	90 days	Fri 9/8/19	Wed 6/11/19	
57 Superstructure erection	90 days	Thu 7/11/19	Sat 15/2/20	
E&M Installation and T&C	45 days	Sun 16/2/20		
⁵⁹ Section B3 - External works at Area B1, D2 and D4	416 days	Fri 1/3/19		
Section D5 - External works at Area D1, D2 and D4 50 Receive Area from HKE, Area Possession & Clearance	0 days		Fri 1/3/19	
Removal of existing paving for band drain under Section A5(i)	30 days	Fri 1/3/19		
iteme in or encoding paring for come area and second in (i)				
	0 days	Thu 28/3/19		
Ground preparation for B1, D2 & D4 for handover to Plant contractor	90 days	Sat 1/2/20		
4 Section C1 - Area south of L11 MSB from GL11-F westwards leading to Station	<u>466 days</u>	<u>Thu 1/11/18</u>	<u>Sun 1/3/20</u>	
Road at Area E3(A) & E3(B)				
Area Possession & Clearance	0 days	Thu 1/11/18		
Excavation for Type C (Area E3A)	21 days	Tue 26/3/19	Mon 15/4/19	
7 Installation CW Outlet Culvert Pipe connect to Type C1	21 days	Tue 16/4/19		
 B Installation CW Inlet Culvert pipe (South of L11 Condensor) 	21 days	Mon 20/5/19		
9 Construction of Thrust Box	10 days	Mon 10/6/19		
0 Construction of Access Manhole	21 days	Mon 10/6/19		
71 Backfill	14 days	Mon 1/7/19		
72 Construction of Underground drainage and utilities	60 days		Tue 7/1/20	
 Construct Temp Paving for Condenser move in Section C2 - (i) Southern part of L11 HRSG area and its surrounding at Area 	45 days	Wed 8/1/20		
4 <u>Section C2 - (i) Southern part of L11 HRSG area and its surrounding at Area</u> E7 (No Defer Foundations)	<u>295 days</u>	<u>Thu 31/1/19</u>	Sun 1/12/19	
5 Area Possession & Clearance	0 days	Thu 31/1/19	Thu 31/1/19	
6 Excavation & Pile Caps & Tie Beams (HRSG South Area E7)	45 days	Sun 19/5/19		
 Construction RC foundations 	45 days	Tue 9/7/19		
'8 Construction RC plinths	30 days	Fri 23/8/19		
	45 days	Fri 23/8/19		
Backfill & Construction on-grade slabs	35 days	Mon 7/10/19 S		
Backfill and Temporary paving	21 days	Mon 11/11/19		
32 Section C2 - (ii) L11 Turbo Block foundation including the L11 MSB ground	<u>496 days</u>	Sat 1/12/18	Thu 30/4/20	
floor together with the equipment foundations between GL 11-F to 11-H and				
<u>11-1 to 11-6 for the installation of power generator, air inlet duct and lube oil</u>				
reservoir				
33 Area Possession & Clearance	0 days	Sat 1/12/18	Sat 1/12/18	
Excavation & Pile Caps & Tie Beams (MSBL11 - Turbo Block North)	70 days	Mon 14/1/19	Wed 3/4/19	
5 Excavation & Pile Caps & Tie Beams (MSBL11 - Turbo Block South)	30 days	Wed 10/7/19		
Backfill and construction turbine block foundations	21 days	Fri 9/8/19		
7 Construction of internal drainage	60 days	Fri 9/8/19		
Conduction file wand filen of footild	90 days	Tue 8/10/19		
9 Construction turbine block columns and upper portion for plant embed installation	21 days	Mon 9/9/19	Sun 29/9/19	
Concrete Turbine upper part foundation & clear falsework	52 days	Tue 10/3/20	Thu 30/4/20	
Section C2 - (iii) G/F of L11 MSB including the Condenser Pit, Circulating	466 days	Thu 1/11/18		
Water Pipe Pit and equipment foundations between GL 11-B to 11-C and 11-1		<u>Inu 1/11/10</u>	<u>San 1/3/20</u>	
to 11-6 for the installation of condenser				
Area Possession & Clearance	0 days	Thu 1/11/18	Thu 1/11/18	
Excavation to foundation level at ELS Type A	18 days	Sat 13/4/19		
Construction of CW Outlet Box + lowest tie beam & caps	40 days	Wed 1/5/19		
Construction of pile caps & tie beams & hot well sump pit up to +2.5mPD	30 days	Mon 10/6/19		
Backfill & Construction of CW Inlet Box + tie beams	18 days	Wed 10/7/19		
Dacking & Construction of C w milet D0A + tic Ucallis	10 uays	- mcu 10/ //19	Sut 21/117	

17/8002 Lamma Power Station Extension Civil and Building Works			17-8002	aster Prog Rev 3		Refer to C
	Duration	Start	Finish	Dec 2020	Jan 2021	
cfill and Construction ground beams & trenches	18 days	Sun 28/7/19	Wed 14/8/19	Dec 2020	Jan 2021	
struction of indoor underground drainage	12 days		Mon 26/8/19			
cfill & construction on-grade slabs	10 days		Thu 5/9/19			
struction Column casting and RC walls	30 days		Tue 29/10/19			
al Cladding & Louvres for GLB-C/1-6	60 days	Thu 28/11/19				
Works for plant erection	24 days	Fri 7/2/20	Sun 1/3/20			
1 D - (i) Roads and external grounds surrounding L11 MSB and L11	414 days		Tue 31/12/19			
in addition to the southern & eastern areas mentioned above in Area E5	<u>-111 uujs</u>	<u></u>	<u></u>			
Possession & Clearance	14 days	Thu 1/11/18	Wed 14/11/18			
vation for Type C1 and open sheet pile	75 days		Mon 8/4/19			
Il CW Outlet pipe & connect to prevous	21 days		Mon 6/5/19			
cfill	10 days	Tue 7/5/19	Thu 16/5/19			
eground utilities and trenches	60 days		Sat 31/8/19			
struction of plant drainage, trenches & RC plinths	45 days		Tue 15/10/19			
aining Undeground utilities & backfill (West of Tx Bay)	75 days		Tue 31/12/19			
1 D - (ii) Remaining northern part of L11 HRSG area and its	375 days	Thu 31/1/19				
nding in Area E6						
Possession & Clearance	0 days	Thu 31/1/19	Thu 31/1/19			
avation & Pits & Pile Caps & Tie Beams (HRSG north Area E6)	45 days	Thu 4/4/19	Sat 18/5/19			
struction RC foundations	45 days		Tue 2/7/19			
struction RC plinths & HRSG Lift Pit & internal drainage	60 days		Wed 7/8/19			
cfill Construction on-grade slabs	28 days		Wed 4/9/19			
struction underground utilities	45 days		Sat 19/10/19			
cfill, Remaining utilities and temporary paving	85 days		Mon 17/2/20			
h up and site clearance	13 days		Sun 1/3/20			
1 D - (iii) Whole of L11 MSB including the pipe and cable rack along acade of L11 MSB with all underground utilities at Area E4 including	<u>526 days</u>		<u>Thu 30/4/20</u>			
nlet and Outlet Culvert except the deferred works						
Possession & Clearance	0 days	Thu 1/11/18	Thu 1/11/18			
struction of pile caps & tie beams at Transformer Area	60 days	Thu 15/11/18	Sun 13/1/19			
avation & Construction Blow Down Sum pit (Type B)	45 days	Thu 4/4/19	Sat 18/5/19			
struction of pile caps & tie beams at SunShadeCover Area	45 days		Fri 23/8/19			
paration for S.Steelwork Erection	14 days		Tue 16/7/19			
ctural Delivery & Erection (Turhine Hall North fr G.L. 1-3/H->B)	30 days		Thu 15/8/19			
ctural Delivery & Erection (Equipment Floors)	45 days		Sun 29/9/19			
ctural Delivery & Erection (Turbine Hall South)	45 days		Wed 13/11/19			
Coating Application at Joint	120 days		Fri 13/12/19			
rnal Scaffolding Erection	150 days		Sun 29/12/19			
struction 1/F RC Slab	14 days		Sun 13/10/19			
struction M/F RC Slab		Mon 14/10/19				
struction 2/F RC Slab		Mon 14/10/19				
struction 3/F RC Slab	-	Mon 14/10/19				
		Mon 11/11/19				
struction 4/F RC Slab						
struction 5/F RC Slab (Roof of turbine hall, except defer portion)		Mon 25/11/19				
struction Roof RC Slab	14 days		Sun 22/12/19			
struction Upper Roof RC Slab	12 days	Fri 27/12/19				
struction Defer Roof RC Slab (G.L. G-H)	30 days		Sat 15/2/20			
struction of Staircase ST-01 & lift shaft & machine room	120 days		Sun 29/12/19			
struction of Staircase ST-02 except defer work		Mon 28/10/19				
struction of RC plinth, kerbs & parapet Walls	30 days		Sat 7/3/20			
tion of Skylight & Roof Features	45 days	Fri 21/2/20	Sun 5/4/20			
erproofing & Flooring at Roof		Wed 8/1/20	Mon 16/3/20			
W Works from 1/F to 5/F equipment rooms		Mon 21/10/19				
al Cladding, Windows and Louvres incl. roof feature		Thu 28/11/19				
oval of external scaffolding	60 days	Mon 17/2/20				
ding Services E&M Access & Installation		Mon 4/11/19				
aining and Mis. works for Plant erection Full Access	18 days		Thu 30/4/20			
D - (iv) Link Bridge between L10 and L11 MSB and at the south of L11	526 days					
ncluding their associated alternations & additions (A&A) Works at L10						
1 D - (iv) Link Bridge between L10 and L11 MSB and at the south of L11 g their associated alternations & additions (A&A) Works at L10) Link Bridge between L10 and L11 MSB and at the south of L11 526 days g their associated alternations & additions (A&A) Works at L10) Link Bridge between L10 and L11 MSB and at the south of L11 526 days their associated alternations & additions (A&A) Works at L10) Link Bridge between L10 and L11 MSB and at the south of L11 526 days Thu 1/11/18 Thu 30/4/20 g their associated alternations & additions (A&A) Works at L10 526 days Thu 1/11/18 Thu 30/4/20) Link Bridge between L10 and L11 MSB and at the south of L11 526 days z their associated alternations & additions (A&A) Works at L10 526 days) Link Bridge between L10 and L11 MSB and at the south of L11 526 days z their associated alternations & additions (A&A) Works at L10 526 days

ontract No. 17/8002 Lamma Power Station Extension Civil and Building Works	s for Unit L1	11	17-800	Master Prog Rev 3 Refer to	CEM dated 26March2
D Task Name	Duration	Start	Finish	D 0000	Feb 2021
51 Area Possession & Clearance	0 days	Thu 1/11/18	Thu 1/11/18	Dec 2020 Jan 2021	Feb 2021
A&A works at South of L10 MSB	60 days	Thu 28/11/19			
53 Erection of link bridge structural steel	21 days		Thu 27/2/20		
54 Casting of bridge deck	7 days		Thu 5/3/20		
55 Metal roofing installation	14 days		Thu 19/3/20		
56 ABWF work	21 days		Thu 9/4/20		
Form new opening at MSB for final connection	14 days	Fri 27/3/20			
58 E&M Work for completion	21 days		Thu 30/4/20		
 Section D - (v) Gas Duct Foundation, Pipe and Cable Rack and associated 	345 days	Mon 11/2/19			
trench in Area E20					
Area Possession & Clearance + CNY	0 days		Mon 11/2/19		
1 Sheet pile installation & submit as-built	75 days	Mon 11/2/19			
52 Consent for excavation	28 days		Fri 24/5/19		
3 Excavation & plate load test	45 days		Mon 15/7/19		
64 Construction of foundation	45 days	Tue 16/7/19	Thu 29/8/19		
B5 Backfill & Underground utilties	30 days	Fri 30/8/19	Sat 28/9/19		
Remaining Pipe & cable rack and associated trenchs in Area E20	115 days	Sun 29/9/19	Sat 1/2/20		
³⁷ Section E1 - (i) Link BrIdge and Pipe and Cable Rack connecting L11 MSB to	263 days	Wed 1/1/20	Mon 28/9/20	sc.E1(i)	
the western area of L11 MSB at Area E3					
Area Possession	0 days	Wed 1/1/20	Wed 1/1/20		
59 Excavation & construction of new foundation	40 days	Wed 1/1/20	Tue 18/2/20		
70 Backfill	10 days	Wed 19/2/20	Fri 28/2/20		
71 Erection of Structural steel	30 days	Mon 6/7/20	Tue 4/8/20		
72 Backfill & Ground works	55 days		Mon 28/9/20		
73 <u>Section E1 - (ii) Gas Receiving Station and L11 Gas Receiving Station</u> Equipment Room (GRS) Area Extension at Area E16	<u>173 days</u>		<u>Tue 30/6/20</u>		
	0.4	W-11/1/20	W-11/1/20		
	0 days		Wed 1/1/20		
	14 days		Tue 14/1/20		
76 Modification of Site Drainage	45 days	Wed 15/1/20			
77 Construction of new RC for GRS Equipment Room	75 days		Mon 6/4/20		
ABWF for GRS Equipment room	45 days		Thu 21/5/20		
79 E&M Installation	45 days		Tue 30/6/20		
30 Construction of new Gas pipe plinths & racks	45 days		Mon 6/4/20		
Backfill and construction site drainage	21 days		Mon 27/4/20		
32 External Paving and install new fencing	60 days		Tue 30/6/20		
33 <u>Section E1 - (iii) External Works at Area E15 (C)</u>	<u>273 days</u>		Sun 28/2/21	c.E1(iii)	
Removal of Surcharge and excavation	45 days		Wed 15/7/20		
35 Underground drianage, Utilities and RC plinths	123 days			ilities and RC plinths	
Backfill and install surface utilities	45 days	Mon 16/11/20		Backfill and install surface utilities	
7 Roadwork	60 days	Thu 31/12/20	Sun 28/2/21		
8 <u>Section E2 - Pipe and Cable Rack and trench at west of Chimney Road and</u> Pipe and Cable Rack at south of Middle Road at Area E8 and E19	<u>495 days</u>	Wed 1/5/19	<u>Thu 17/9/20</u>	c.E2	
BD consent + Site Possession @ Area E8	0 days	Wed 1/5/19	Wed 1/5/19		
Excavation & Plate load test	60 days	Wed 1/5/19	Sat 29/6/19		
1 Foundation and Trench constructions	90 days	Sun 30/6/19	Fri 27/9/19		
Backfill & underground utitiles + temp paving	60 days	Sat 28/9/19	Tue 26/11/19		
B3 Excavation & plate load test @ E19	60 days	Wed 27/11/19	Wed 5/2/20		
Construction of foundations & trenches	45 days	Thu 6/2/20	Sat 21/3/20		
95 Backfill & underground utitiles	60 days	Sun 22/3/20	Wed 20/5/20		
Pipe & cable rack Erection	60 days	Thu 21/5/20			
7 Ground reinstatement	60 days	Mon 20/7/20			
¹⁸ Section E3 - Gas Pipe Support Foundation and Pipe Trench and associated external works at Area E14, E15 (A) and E15 (B)	<u>173 days</u>		<u>Tue 30/6/20</u>		
9 Removal of surcharge / site clearance	21 days	Wed 1/1/20	Tue 21/1/20		
0 Excavation & construction of pipe trench	30 days		Sat 29/2/20		
1 Construction of gas pipe support foundation	30 days		Mon 30/3/20		
	60 days		Fri 29/5/20		
	~		Tue 30/6/20		
Construction of underground drainage and utilities	32 dave				
D2 Construction of underground drainage and utilities D3 Backfill & road work	32 days				
O2 Construction of underground drainage and utilities O3 Backfill & road work O4 Section E4 - 275kV cable trenching works connecting the 275kV Switching	32 days 185 days		<u>Sun 15/9/19</u>		
22 Construction of underground drainage and utilities 33 Backfill & road work		<u>Fri 15/3/19</u>			

ontract No. 17/8002 Lamma Power Station Extension Civil and Building Works for Unit L11				ster Prog Rev 3		r to CEM dated 2	
D Task Name		Duration	Start	Finish	Dec 2020	Jan 2021	Feb
6	Obtain Permit to work & Road close permit	10 days	Fri 15/3/19	Sun 24/3/19	Dec 2020	Jan 2021	l eu
7	Excavation & construction new cable trench to 275kV	45 days		Wed 8/5/19			
;	Excavation & construction new cable trench to L11MSB	130 days	Thu 9/5/19	Sun 15/9/19			
'	Section F - 275kV Station Building Extension and associated works at Area E17	<u>709 days</u>	<u>Fri 1/6/18</u>	Sat 30/5/20			
	Jackellation of ELC for 2751// Cultabian Challen and Challena CT 2 and CT 2	11 days	E-1 4/0/40	Thu: 14/6/19			
)	Installation of ELS for 275kV Switching Station near Staircase ST-3 and ST-6 Construction of Staircase ST-3	14 days 110 days	Fri 1/6/18 Fri 15/6/18	Thu 14/6/18 Tue 2/10/18			
2	BD Amendment Approval on A&A	0 days	Mon 17/12/18				
3	BD Amendment Approval on A&A ST3 & Drainage	0 days	Mon 4/2/19	Mon 4/2/19			
1	OP inspection of Staircase ST-3	14 days	Mon 11/2/19				
5	Consent of New Foundation Works (Stage 1)	0 days	Fri 19/10/18	Fri 19/10/18			
6 7	Consent & BA10 for Demolition of Existing Staircase Demolition of Exisiting Staircase and Submit BA14A	0 days	Fri 8/3/19 Sat 9/3/19	Fri 8/3/19			
;	BD inspection for BA14A & Issue OP	14 days 28 days	Sat 23/3/19	Fri 22/3/19 Fri 19/4/19			
1	Consent & BA10 for New Foundation Work (Stage 2)	28 days	Sat 13/4/19	Fri 10/5/19			
0	Hoarding Modification	7 days	Fri 19/10/18	Thu 25/10/18			
1	Pile Cap & Tie Beam Construction (Stage 1)	98 days	Fri 26/10/18	Thu 31/1/19			
2	Erection of Tower Crane	40 days	Mon 11/2/19	Fri 22/3/19			
3 4	Pile Cap and Tie Beam (Stage 2)	21 days	Sat 11/5/19	Fri 31/5/19			
5	RC Construction up to 1/F (Stage 1) RC Construction up to 1/F (Stage 2)	30 days 75 days	Sat 11/5/19 Sat 1/6/19	Sun 9/6/19 Wed 14/8/19			
5	Construction of Staircase ST6	90 days	Sun 15/9/19	Fri 13/12/19			
7	Shop Drawing Submission & Approval of Structural Steel	45 days	Wed 27/2/19	Fri 12/4/19			
3	Structural Steel fabrication & Delivery	60 days	Sat 13/4/19	Tue 11/6/19			
)	Erection of Structural Steel GL 17~18	30 days	Fri 16/8/19	Sat 14/9/19			
)	Erection of Structural Steel GL 8~17	60 days		Wed 13/11/19			
	Metal Cladding Delivery	60 days	Wed 7/8/19	Sat 5/10/19			
2	Metal Door, Window & Lourve Delivery Erection of Working Platform and Scaffold	45 days 150 days		Tue 19/11/19 Wed 27/11/19			
	Install Decking	60 days	Wed 9/10/19				
5	RC Walls from 1/F @ GIS Hall	40 days		Mon 9/12/19			
	Construction of 2/F RC slab	14 days	Tue 10/12/19				
·	Construction of R/F RC slab	21 days		Wed 15/1/20			
3	Construction of UR/F RC slab	14 days	Thu 16/1/20	Fri 7/2/20			
)	Construction of GIS Hall Floor Installation of Overhead Crane (By JEC)	60 days 60 days	Tue 24/12/19 Wed 4/3/20	Tue 3/3/20 Sat 2/5/20			
) 1	Construction of staircase ST4, ST5, Lift Shaft & Equip Floors	150 days	Sun 15/9/19	Sat 2/3/20 Sat 22/2/20			
2	Lift Installation	90 days	Sun 23/2/20	Fri 22/5/20			
3	Concrete of RC walls, plinths, kerb & parapet walls & New trench for LV Power	30 days	Tue 24/12/19				
4	ABWF Works @ G/F	50 days		Mon 2/12/19			
5	ABWF Works @ 1/F	50 days	Wed 13/11/19				
6	ABWF Works @ 2/F ABWF Works @ R/F	75 days	Fri 13/12/19 Tue 14/1/20	Sat 7/3/20 Fri 21/2/20			
7 8	ABWF Works @ UR/F	30 days 21 days	Mon 3/2/20	Sun 23/2/20			
3	Waterproofing Works at R/F & UR/F	45 days	Thu 16/1/20	Mon 9/3/20			
)	Building Services E&M Access & Installation & T&C	150 days	Wed 13/11/19				
1	Metal Cladding, Windows and Louvres incl. Roof Feature	90 days	Tue 24/12/19				
2	Shutter Erection	30 days	Fri 3/4/20	Sat 2/5/20			
3	Removal of External Scaffolding + Tower Crane External Underground Drainage and Utilities	35 days	Fri 3/4/20 Fri 17/4/20	Thu 7/5/20 Sat 16/5/20			
4 5	Road & Paving Reinstatement	30 days 30 days	Fri 1/5/20	Sat 16/5/20 Sat 30/5/20			
, ;	Ready for FSD & OP Inspection	0 days	Sat 30/5/20	Sat 30/5/20			
	Section G - A&A Works at No. 4 C.W. Intake at Area E12	143 days		Sun 31/5/20			
	Permit to work	0 days		Wed 1/1/20			
	Erection of temp. platform	14 days		Tue 14/1/20			
+	Demolition work	30 days		Sat 22/2/20			
_	Modify existing slab openings	75 days		Thu 7/5/20			
1							
<u>-</u> 3	Curing + Removal of platform	24 days		Sun 31/5/20			
5 	Section H - L11 Steel flue liner at No. 4 Chimney	<u>186 days</u>		Mon 15/7/19			
_	Complete erection of L10 Steel flue		Tue 1/1/19				
5	Modification of erection equipment	21 days		Mon 21/1/19			
6	Erection temp. platform and demolition work	30 days		Sat 2/3/19			
7	Structural steel delivery & Erection	85 days		Sun 26/5/19			
8	Removal of temp. work	5 days		Fri 31/5/19			
69	Reinstate G/F louvre wall and access door	45 days	Sat 1/6/19	Mon 15/7/19			
70	Section I - (i) 275kV cable trenching works connecting the 275kV Switching	232 days		Fri 15/5/20			
	Station Extension and L11 MSB at Area E9 (B)						
71	Obtain Permit to work & Road close permit	0 days	Sun 15/9/19	Sun 15/9/19			
			Mon 16/9/19				
2	Excavation & construction new cable trench	100 uavs	WI0H 10/9/19	wea 4/5/20 1			

ntract No. 17/8002 Lamma Power Station Extension Civil and Building	Works for Unit L11			Master Prog Rev 3	Refer to CEM dated 26March201
Task Name	Duration	Start	Finish	Dec 2020 Jan	2021 Feb 2021
Re-excavate cable trench for cable laying	72 days	Thu 5/3/20	Fri 15/5/20	Jan	
Section I - (ii) Interconnector 2 Trench Modification Works at Area E10	<u>275 days</u>	Wed 1/4/20	Thu 31/12/20	.l(ii) 🛛 🤍 31 Dec '20	
Obtain Permit to work & Road close permit	0 days	Wed 1/4/20			
Re-excavate & new cable trench for cable laying	275 days	Wed 1/4/20	Thu 31/12/20	Re-excavate & new cable trer	nch for cable laying
Section J - (i) Demolition of Retractable Cover A&B & (ii) Construction of LOT 3 & 4	of new <u>426 days</u>	<u>Sun 1/3/20</u>	<u>Fri 30/4/21</u>	J	
B Obtain permit to work & Road close permit	0 days	Sun 1/3/20	Sun 1/3/20		
Erection of Hoarding	21 days	Sun 1/3/20			
Removal of existing cover & structural steel	30 days	Sun 22/3/20			
Demolish of existing bund wall and staircases	45 days	Tue 21/4/20			
Demolish of existing slab & foundation	60 days		Mon 3/8/20		
Consent for new work	30 days	Tue 4/8/20			
Construction of new bund wall and foundation	100 days	Thu 3/9/20		Construction of new bund wall and foundation	
Construction of new oil separator	80 days	Wed 23/9/20	Fri 11/12/20	Construction of new oil separator	
Construct underground drainage and surface channel	40 days	Sat 12/12/20	Wed 20/1/21		Construct underground drainage and surface channel
Construction on-grade slab		Thu 21/1/21			
Removal of hoarding and ground reinstatement		Mon 22/3/21			
Section K1 - External works at Area 15 (E) and 15(F)	<u>365 days</u>	<u>Mon 1/6/20</u>		К1	
Removal of surcharge	30 days	Mon 1/6/20			
Construct new drainage and utilities work	200 days	Wed 1/7/20			Construct new drainage and utilities work
Road & Paving	135 days	Sun 17/1/21		K3	
Section K2 - Removal of Southern Bund and External Works at Area D5, and D7	<u>D6</u> <u>365 days</u>	<u>Mon 1/6/20</u>	Mon 31/5/21		
Demolition work	30 days	Mon 1/6/20	Tue 30/6/20		
Construct new drainage and utilities work	200 days	Wed 1/7/20			Construct new drainage and utilities work
Road & Paving	135 days	Sun 17/1/21			
Section K3 - All remaining works shall be completed for reporting completed		Wed 8/1/20		K3	
to BD and ready for OP inspection (PS1.4.4)	<u></u>				
Completion of remaining roof after over headcrane move in	30 days	Wed 8/1/20	Sat 15/2/20		
Construction of G/F Lube Oil Tank Room (BY TDK)	61 days	Tue 6/10/20		Construction of G/F Lube Oil Tank Room (BY TDK)	
Construction of wall and staircase at G/F after Condensor Move in	90 days	Mon 6/7/20			
Construction of Durasteel Steel wall panel after IBP installation	30 days	Sun 20/9/20			
Construction of Transformer fence wall, cladding & associated FS services		Tue 1/9/20			fence wall, cladding & associated FS services
Final restatement of road & paving around MSB & HRSG	122 days		Thu 31/12/20	Final restatement of road & p	Daving around MSB & HRSG
Installation of trench covers and gratings after plant installation Backfill and reinstatement after 275kV cable laying	151 days 122 days	Thu 1/10/20 Tue 1/6/21			
Backfill and reinstatement after 275kV cable laying	122 days	Tue 1/0/21	1 nu 30/9/21		
8002 Master Prog Rey 3 Task Split	Milestc	ne 🔶	Sun	ary 🛡 🖤 Page 8 ത് 8	

	タスク名	网络约3	開始日	轻了日	
		104468	- THOMASHY	Constant of C	
1	Key Date	613日	19/12/16(月)	21/12/01 (水	
2	H. O HRSG Foundation	1日	19/12/16(月)	19/12/16 (月))
3 📖	H/O OHC Installation	1日	19/12/16(月)	19/12/16 (月)	
	H/O HRSG Exhaust duct	1日	20/02/01 (土)	20/02/01 (土)	
5 📾	H O Condenser foundation	1日	20/03/09(月)	20/03/09 (月)	
5 🛄	H/O Aux. equipment foundation of HRSG	1日	20/03/16(月)	20/03/16 (月)	
	north side H/O GT Exhaust duct foundation	1日	20/05/01 (金)	20/05/01 (金)	H/O Aux, equipment foundation of HRSG north side 🔶 03/16
	H_O MSB building (partial)	1日	20/06/01 (月)	20/06/01 (月)	H/O GT Exhaust duct foundation 🗢 05/01
	Dismantling the Tower Grane (PY)	1日	20/06/22(月)	20/06/22 (月)	H/O MSB building (partial) ♠ 06/01
0 003	PY cast the concrete of G_F	20日	20/06/08(月)	20/06/30 (火)	Dismantling the Tower Crane (PY) -06/22
1	MSB Full access	1日	20/07/01 (水)	20/07/01 (水)) PY cast the concrete of G/F
2 1113	H O Foundation around CCW-Cooler	1日	20/05/16(土)	20/05/16 (土)	MSB Full access 🐨 07/01
3	H/O Foundation around Transformer	18	20/07/01 (水)		H/O Foundation around CCW-Cooler 👁 05/15
1 00	O/B GT & GEN	10日	20/09/01 (火)		H/O Foundation arbund Truinsformer 🔷 07/01
5	Power Receiving	1日	21/02/01 (月)		O/B GT & GEN- ==== 09/01
5, i	Hydrostatic test (Can't promise)	1日	21/05/31 (月)		Power Receiving
	Receiving Lube Oil	1日	21/05/24(月)		*TDK challenge to move "hydr
1	GT First Firing	1日	21/11/01 (月)		
	Synchronization	1日	21/12/01 (7)		
0					
н	IRSG	663日	19/12/16(月)	22/01/28 (金)	
	Make the condition for construction	2日	19/12/16 (月)	19/12/17 (火)	HRSCI 🕶
6	Center line marking	3日	19/12/18 (水)	19/12/20(金)	Make the condition for construction
	Chipping	15日	19/12/21(土) ;	20/01/07 (火)	Center line marking.
	Packer setting	10日	19/12/28(土) :	20/01/08 (水)	Chipping
_	Lay down Pipes under HRSG	4日	20/01/09(木)	20/01/13(月)	Packer setting
-	Unloading Short legs and Bottom casing	1日	20/01/04(土) 2	20/01/06(月)	Lay down Pipes under HRSG 😑
	Short legs setting	9日	20/01/09(木) 2	20/01/18(土)	Unloading Short legs and Bottom clasing 🗕
-	Prepare for installing Bottom casing	3日	20/01/16(木) 2	20/01/20(月)	Short logs setting
-	Lifting and installing Bottom casing	6日	20/01/20(月) 2		Prepare for installing Bottom casing
-	Welding Short legs and Bottom casing	35日	20/01/30(木) 2		Lifting and installing Bottom casing
_	Setting and welding Brace gusset	35日	20/01/30(木) 2		Welding Short legs and Bottom casing
_	Setting and welding SCR bottom frame	35日	20/01/30(木) 2		Setting and welding Brace guisset
-	Setting FL+2.5m floor structure	17日	20/01/30(木) 2		Setting and welding SCR bottom frame
	Insulation and lagging on Bottom casing	17日	20/02/17(月) 2		Setting FL+2.Sm floor structure
_	Unloading Side casing and Top Casing #1	2日	20/02/08(±) 2		Insulation and lagging on Bottom casing
	Lifting and installing Side casing	42日	20/06/23(火) 2		Unloading Side casing and Top Casing #1
0.29	Lifting and installing Top casing	42日	20/06/30(火) 2		Lifting and installing Side (casing-
_	Lifting and installing SCR	42日	20/06/30(火) 2		Lifting and installing Top cashrg/ and installing Top cashrg/
	Lifting and installing AIG	2日	20/08/20(木) 2		Lifting and installing SORPI
	Unloading Side casing and Top Casing #2	18			Lifting and installing AIG
-			20/07/10(金) 2 20/07/16(士) 2		Unloading Side casing and Top Casing #20
	Installation of piping, header, support, EXP inside HRSG		20/07/16(木) 2		Installation of piping, header, support, EXP inside HITSG)
	Lifting and installing HRSG inlet duct	2日	20/08/25(火) 2		Lifting and installing HRSG Inlet duct
ETT	Setting FL+6/10m floor structure (Left side of HRSG)	55日	20/05/15(金) 2	0/07/17(金)	Sotting FL+6/10m floor structure (Left side of HRSQ)

Installation HRSG was re-started from 23rd-Jun

Installation Exhaust duct was re-started from15st-May

2. To consider that structure of Takasago portion is delayed

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

1229 1507	φ 12/01 π to 31∎t-May-2021						6-Jul-20 Rev
ψι to 31st-May-2021 31	φ 12/01 π to 31∎t-May-2021	1年06月2021年07月2 中旬下旬上旬中旬下旬上	021年08月 2021年09 何中旬下旬上旬中旬下	月2021年10月 旬上旬中旬下旬	2021年11月203 上旬中旬下旬上旬	2022年 1年12月 2022年 中旬下旬上旬中旬	01月 2022年02月 下旬上旬中旬下旬
GT First Firing. ◆ 11/01	GT First Firing ◆ 11/01						
GT First Firing. ◆ 11/01	GT First Firing ◆ 11/01			80			
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		up to 31st-May-2021 11					
Synchronization + 12/01	Synchronization +19/91	n e s	GT	First Firing ◆	-h1/01		
				Synchr	onization 🍝 12/	'01]	
		1114					
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	92.08	期間	网络日	核プロ
	1078 1010	-4951m]	091903 E1	終了日
	North side stair frame & EV structure	90日	20/08/22(土)	20/12/04 (金)
		30日	20/10/01 (木)	
	South side stair frame	60日	21/02/25(木)	21/05/05 (水)
	Setting roof structure (Including deferable structure)	120日	20/12/04 (金)	21/04/22 (木)
		10日	20/09/04(金)	20/09/16 (水)
	Unloading Tube bundle #1 (9set)	3日	20/09/16(水)	20/09/18 (金)
-	Prepare installing Tube bundle #1 (9set)	5日	20/09/19 (土)	20/09/24 (木)
	Period for the installation of Power Train	0日	20/09/24 (木)	20/09/24 (木)
1	Lifting and installing Tube bundle #1 (9set)	12日	20/09/25(金)	20/10/08 (木)
	Unloading Tube bundle #2 (6set)	2日	20/10/10(土)	20/10/12(月)
1	Prepare installing Tube bundle #2 (6set)	4日	20/10/13 (火)	20/10/16 (金)
	Lifting and installing Tube bundle #2 (6set)	8日	20/10/17(土)	20/10/26(月)
-	Lifting Down commer piping (pre-assembling)	8日	20/09/01 (火)	20/09/09 (水)
	Lifting and setting HP-Drum	1日	20/10/14(水)	20/10/14 (水)
1	Lifting and setting IP-Drum	1日	20/10/31(土)	20/10/31 (土)
1	Lifting and setting LP-Drum	1日	20/11/04 (水)	20/11/04 (水)
	Lifting and installing HRSG Outlet duct	2日	20/11/18 (水)	20/11/19 (木)
	Adjusting HDR level (HP)	10日	20/11/05 (木)	20/11/16(月)
	Adjusting HDR level (IP & LP)	15日	20/11/17 (火)	20/12/03 (木)
	Lifting and setting the silencer of HRSG	5日	21/04/23(金)	21/04/28(水)
		180日	21/03/19(金)	21/10/14 (木)
	Excavation the foundation of UTAC (By Civil)	21日	21/02/01 (月)	
	Urea to Ammonia conversion system	90日	21/02/25(木)	21/06/09(水)
		50日	21/04/13 (火)	
	Installation the SCR catalyst	20日	22/01/06 (木)	22/01/28 (金)
		80日	20/07/16(木)	
		90日	20/11/17 (火)	
		90日	20/12/04(金)	
		40日	20/12/04(金)	
		60日	20/12/04(金)	
	Fitting and welding Pipes in range of Hydrostatic		20/11/17 (火)	
	Fitting and welding Pipes out range of Hydrostatic	100日	21/03/02 (火)	1/03/03(金)
	Prepare for preassemble Side and Top Casing	10日	20/01/24 (金)	0/02/07 (全)
		30日	20/01/24 (金) 20/02/11 (火)	
		30日	20/02/11(火)	
		30日	20/02/11(灭) 20/03/20(金)	
-		12日	20/03/20(金) 20/03/24(火)	
		3日	20/03/24 (火)	
		18日	20/07/30(木)	
		4日	20/06/20(土)	
-		52日	20/06/25 (木)	
-		4日	20/09/28(月)	
		40日	20/10/02(金)	

Installation HRSG was re-started from 23rd-Jun

Installation Exhaust duct was re-started from15st-May

2. To consider that structure of Takasago portion is delayed

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

-	92.08	期間	開始日	特了日
12.4		STORES .		new a
0	Preassembly FL+29m floor structure #1	18日	20/08/01 (土)	20/08/22(±)
	HRSG Exhaust duct	445日	20/02/01 (土)	21/07/02 (金)
	Make the condition for construction	5日	20/02/01 (土)	20/02/06 (木)
	Center line marking	5日	20/02/01 (土)	20/02/06 (木)
	Chipping	20日	20/02/07 (金)	20/02/29(土)
1	Packer setting	20日	20/02/19 (水)	20/03/12 (木)
	Building structure in the part of ED4	25日	20/05/15(金)	20/06/12(金)
	Building structure in the part of ED5,6 (By 2nd tier)	15日	20/06/25(木)	20/07/11(土)
	Grouting structure for exhaust duct (Nearly stack)10日	20/06/13(土)	20/06/24 (水)
	Receiving Exhaust duct ED4	2日	20/05/01 (金)	20/05/02(土)
	Lifting and assembly the Elbow duct in ED4	30日	20/07/13(月)	20/08/15(土)
**	Preassembling other duct in ED4	40日	20/05/04(月)	
	Lifting and connecting the duct of ED4	5日	20/08/17(月)	
	Receiving Exhaust duct ED5,6	2日	20/06/15(月)	
*	Preasembling ED5, 6	70日	20/06/15(月)	
	Building structure in the part of ED5,6 (Above 2nd tier)		20/08/22 (土)	
	Period for the installation of tube bundles	7日	20/10/20 (火)	
010	Lifting and connecting the duct of ED5,6	15日	20/10/31(土)	
	Building structure in the part of ED1-3	55日	20/11/24 (火)	
	Grouting structure for exhaust duct (Horizontal)		21/02/16 (火)	
	Receiving Exhaust duct ED1-3	2日	20/06/30(火)	
	Preassembling ED1-3	120日	20/09/04(金)	
		25日	21/02/13(土)	- 2 - 1
1225	Scaffolding, welding, insulation Period of crane for vertical duct	140日	21/01/21(木) 20/10/30(金)	
		18日	20/10/30(亚)	20711719(7)
	Over Head Grane	75日	19/12/14(土)	20/02/12(会)
_	Check the location of installation	1日	19/12/14(土)	
	Lifting and setting the rail for OHC	16日	19/12/18 (水)	
-		5日	19/12/14(土)	
-		2日	19/12/20(金)	
	Preassembly OHC	15日	19/12/23(月)	
		4日	20/01/09 (木)	
-		4日	20/01/14 (火)	
	Installing electrical equipment	20日	20/01/18(土)	
		25日	20/02/14(金)	
-				
	Condenser	185日	20/03/03 (火)	20/10/02(余)
		2日	20/03/03 (久)	
-		6日	20/03/03 (A)	
		4日	20/03/11 ()K) 20/03/18 (7K)	
-		4日 28日	20/03/18 (八) 20/03/11 (八)	
-	condenser	28日	20/03/11(水)	
-		15日	20/03/20(金)	
	Assembling the scalolding around skirt	13日	20/03/20(金)	20/04/05(日)

Installation HRSG was re-started from 23rd-Jun

Installation Exhaust duct was re-started from15st-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

	h7 h8		100.00	470	Construction Schedule of Unit-11
	92.08	100 miles	開始日	終了日	2020年
1 0	Preparation the lifting tool for the skirt	2日	20/04/05(日)	20/04/06 (日)	2020年 9年03月 2019年10月 2019年10月 2019年11月 2019年12月 2020年02月 2020年03月 2020年03月 2020年04月 2020年05月 2020年10月 2020年10月 2020年10月 2020年11月 2020年11月 2020年12月 2021年01月 2021年03月 2021年03月 2021年05月 2021年05月 2021年05月 2021年07月 2021年06月 2021年09月 2021年10月 2021年11月 2021年03月 2021年03月 2021年05月 2021年05月 2021年07月 2021年06月 2021年09月 2021年10月 2021年11月
7	[Civil]Excavate the access road	30日	20/03/03 (火)		Preparation the lifting tool for the skirt IN
8	Assembly the Unit carrier	4日	20/04/03(金)		[Civil]Excavate the access road
9	Assembly the 750tonA/C	4日	20/04/03(金)		Assembly the Unit carrier
0 [112	Delivery date of condenser	2日	20/04/03(亚)		Assembly the 750tonA/G
1	Remove packing material	2日 3日			Delivery date of condenses
2			20/04/04(土)		Remove packing material
3	Installation Upper skirt	2日	20/04/11(土)		Installation Upper akint
4	Installation Lower skirt	2日	20/04/14 (火)		Installation Lower skirt
5	Fit up condenser skirt	3日	20/04/16(木)		Fit up condenser skirt
6	Assembling and welding skirt	8日	20/04/20(月)		Assembling and weiging skirt
7	Remove rail for condenser skirt	18	20/04/16(木)		Removo nil for condensor skirt
8	Installation Condenser shell of lower	1日	20/04/17(金)		Installation Condepart shell of Jower 1
	Installation Condenser shell of upper	18	20/04/18(土)		Installation Condensar shell of upper
9	Disassembly the 750tonA/C	1日	20/04/18(土)		Disassembly the 75CtonA/C
0	Dismantling SARLIFT and temporary rail	15日	20/04/20(月)		Dismantling SARLIFT and temporary rail
1	Assembling the scafolding around condenser shel		20/04/27 (月)		Assembling the scafelding around condenser shell
2	Welding Condenser shell (outside / 1 layer)	5日	20/05/02 (土)		Welding Condenser shell (outside / 1 layer)
3	Fit up condenser skirt to condenser shell	3日	20/05/08(金)		Fit up condenser skirt to condensor shell
•	Installation the monorail of South side	20日	20/05/12 (火)		Installation the monoral of South side
i 💷	Hand over around condenser to civil working		20/06/08(月)	20/07/11 (土)	Hand over around condenser to civil working
3	Installation the condenser water box of South side	27日	20/07/13(月)	20/07/20(月)	Installation the condenser water box of South sida
	Installation the CW pipe	45日	20/07/21 (火)	20/09/10(木)	Installation the GW pipe
	Assembling Exp.J	1日	20/09/21(月)	20/09/21(月)	Assembling Exp.J h
1	Welding Exp.J	10日	20/09/22 (火)	20/10/02 (金)	Welding Eng.J 🎽
	GT/ST/Generator	535日	20/06/02 (火)	22/02/15 (火)	GT/ST/Generator
14	Remove templates	14日	20/06/02 (火)	20/06/17(水)	Remove templates
5	Center line marking	5日	20/06/18 (木)		Center line makking
5 -	Chipping	10日	20/06/24 (水)	20/07/04 (土)	Chipping
	Packer setting	15日	20/07/06(月)	20/07/22 (水)	
2	Setting the base plate	7日	20/07/23 (木)	20/07/30 (木)	Setting the base plate 📥
	Setting the bearing case	7日	20/07/31 (金)		Setting the bowing case 📥
81	Lay down pipes under GT	1日	20/08/08(土)	20/08/08 (土)	
	Lay down pipes under ST	3日	20/08/10(月)	20/08/12 (水)	
	IP/LP-MSV Lifting and setting	5日	20/08/05 (水)		IP/LP-1MSV Lifting and setting ■
	Lifting and hanging EB01	1日	20/07/30 (木)	20/07/31 (金)	
8	Setting the Gantry system for GT	21日	20/08/03 (月)	20/08/27 (木)	
	Load test for Gantry system	2日	20/08/27 (木)	20/08/29(土)	
	GT O/B (with Gantry)	2日	20/09/01 (火)	20/09/02 (水)	
1	Setting the Gantry orane for GEN	1日	20/09/03 (木)	20/09/03 (木)	
8	GEN O/B (with Gantry)	2日	20/09/03 (木)	20/09/04 (金)	(CEN D/B) (with Gantagy - 09/04
	ST Lower casing O/B (with OHC)	2日	20/09/05 (±)	20/09/07(月)	
	Dismantling the Gantry system	15日	20/09/08 (火)	20/09/24 (木)	ST Lower basing O/B (with 0Hd) Dismituting the Gantry system
	Lifting and setting ST	31日	20/10/01 (木)	20/11/05 (木)	
-	ST Rotor	1日	20/10/30(金)	20/10/30(全)	Lifting and petting ST-

Installation HRSG was re-started from 23rd-Jun

Installation Exhaust duct was re-started from15st-May

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	タスク名	2010	開始日	將了日	Construction Schedule of Unit-11
	RECEIME	, and the second s	100.051.04	TA / H	2020年 2022年 2022年
0	HP-MSV lifting and setting	5日	20/10/31(土)	20/11/05 (木)	2022年 9年08月 2019年19月 2019年10月 2019年11月 2019年11月 2019年11月 2029年01月 2020年05月 2020年03月 2020年03月 2020年05月 2021年05月 2021年10月 2021年10月 2021年11月 2022年11月 2022年11月 2022年 中旬下旬上旬中旬下旬
-	Assembly ST	51日	20/11/06 (金)	21/01/04(月)	H ⁰⁺ -MSV lifting and setting
	ST Upper Casing	1日	20/12/29(火)	20/12/29 (火)	Assembly SY
5	First alignment of GT and GEN	25日	20/09/14(月)	20/10/12(月)	
8	GT enclosure (Lower)	20日	20/10/31 (土)	20/11/23 (月)	Firs; alignment of QT and QEN
	Assembly piping around GT	120日	20/11/11(水)	21/03/30 (火)	GT enclosure (Lower)
	Assembly slipring of GEN	28日	20/11/11 (水)	20/12/12 (土)	Assembly piping around GT
-	Final alignment	20日	21/01/05(火)	21/01/27 (水)	Assembly alipping of GEN
-	Assembly 3S clutch	15日	21/01/28(木)		Final digrament
-	Joint coupling	10日	21/02/15(月)	21/02/25 (木)	Assembly 35 clutch
-	Installation GT enclosure	80日	20/12/19(土)		. Joint coupling 🎽
	Installation ST enclosure	80日	21/02/26 (金)		Installation (GT enclosure
	Blowing out	10日	21/11/10 (水)	21/11/20(土)	Installation ST enclosure
	Remove temporary strainer	20日	22/01/24 (月)		
					Remove temporary strainer
-	GT Air inlet	394日	20/07/06(月)	21/10/08 (金)	
-	Center line marking	2日	20/08/13 (木)		GT Air inlet.
	Setting the base plate	10日	20/08/15(土)		Center line marking B
	Preassembly the Air inlet duct	60日	20/07/06(月)		Setting the base plate and
	Lifting and installation the Air inlet duct (Vertical)	25日	20/08/27 (木)		Pressambly the Air inlet duct I
(11)	Welding Air inlet duct (Vertical)	50日	20/09/08 (火)		Ufting and installation the Air inlet duct (Vertical)
	Lifting and installation the Air inlet filter	37日	20/10/07 (水)	20/11/18 (水)	Welding Air iniet duct (Vertiebi)
	Welding Air inlet filter	70日	20/10/19(月)	21/01/07 (木)	Lifting and installation the Air rolet Filter
1	Lifting and assembly the Air inlet manifold	2日	20/11/06 (金)	20/11/07 (土)	Weiding Air inist Filter)
	Lifting and installation the Air inlet duct (Horizontal)	8日	20/11/09(月)	20/11/17 (火)	Lifting and assembly the Air infet manifold Man
	Automatic roller shutter	2日	20/11/18 (水)	20/11/19 (木)	tifting and installation the Air inlet duct (Horizonta) 🚈
	Welding Air inlet duct (Horizontal)	25日	20/11/18 (水)	20/12/16 (水)	Automotic roller shutter
	Filter element installation	5日	21/10/02(土)	21/10/08 (金)	Weldsing Air Inlet duct (Horizontal)
					Filter element installation 🗮
- ,	Auxiliary Equipment (O/B)	353日?	20/04/28 (火)	21/06/12(土)	
	1&3 around Power Train & North west of MSB	143日?	20/06/09 (火)	20/11/21 (土)	Auxiliary Equipment (Q/B) 😎
	Chipping and pakker setting	10日	20/06/09 (火)	20/06/19(金)	
	H2 cooler	2日	20/07/31 (金)	20/08/01 (±)	Chipping and pakker setting 🜉
-	Platform under the GEN	5日	20/08/03(月)	20/08/07 (金)	H2 cooler 🖌
-	Temp hanging Main Steam Piping	25日	20/07/30(木)	20/08/27 (木)	Platform under the GEN 🚡
	Sampling lack	2日	20/11/03 (火)	20/11/05 (木)	Temp hanging Main Steam Piping 🗤 👘 👘
	Light oil drain unit	2日	20/11/05 (木)	20/11/07(土)	Sampling lack
	GT purge air compressor	2日	20/11/07 (土)	20/11/10 (火)	Light di drain unit M
	GT purge are reservoir	2日	20/11/10(火)	20/11/12 (木)	GT purge air compressor
	Light oil flow divider unit & platform		20/11/12 (木)		GT purge an reserver 🛀
	GT Purge air unit	22	20/11/12 (木)		Light oil flow divider unit & platform)
	Fuel gas unit		20/11/20 (金)		Off Purge air united
					Fuel zas unit 🖌
	2 MSB Inside North-West	125日?	20/05/05 (火)	20/09/26 (土)	
	Chipping and pakker setting		20/05/05 (火)		

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Appendix J

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F 1	タスク名	网络	開始日	終了日	Construction Schedule of Unit-11
		A.1141	1 III III	76 J H	2020 00
226					2020年 9年08月 2019年09月 2019年10月 2019年11月 2019年11月 2020年01月 2020年01月 2020年05月 2020年05月 2020年05月 2020年05月 2020年01月 2020年05月 2020年05月 2020年05月 2020年05月 2020年10月 中旬下旬上旬中旬下旬上旬中旬下旬上旬中旬下旬上旬中旬下旬上旬中旬下旬上旬中旬下旬上旬中旬下旬上旬中旬下旬上旬中旬下旬上旬中旬下旬上旬中旬下旬上旬中旬下旬上旬中旬下旬上旬中旬下旬上
	Preparation hauling equipment	4日		20/06/02(火)	Preparation hauling equipment
227	Condenser water box	3日		20/06/04 (木)	Condenser water box
228	Closed cooling water pump	2日	20/06/05(金)	20/06/06(土)	Closed cooling water pump
229	Condenser vacuum pump	2日	20/06/08(月)	20/06/09(火)	Condenser, vacuum pump
230	Dismantling hauling equipment	2日	20/06/10 (水)	20/06/11(木)	Dismantling having equipment
231	ST blow down tank	1日	20/06/10 (水)	20/06/10 (水)	
132	ST Blow down tank structure	1日	20/06/11 (木)	20/06/11(木)	ST blow down tank
33	GT casing cooling fan	1日	20/06/12(金)	20/06/12 (金)	ST Blow down tank structure
34	GT compressor blade washing device	1日	20/06/12 (金)	20/06/12(金)	GT casing cooling fan
35 鯼	Building MSB North strcuture	40日	20/06/13(土)	20/07/29 (水)	GT compressor blade washing device
36 📻	Pre-assembly structure for Air inlet duct	30日	20/08/01 (土)	20/09/04 (金)	Building MSB North structure
37	access Building structure for Air inlet duct access	2日	20/09/25 (金)		Pre-assembly structure for Air inlet duct access.
38	Closed cooling water stand pipe	2日	20/09/25(金)		Building structure for Air inles duct access 🕅
39	ST Blowdown pit sump pump	2日			Closed cooling water stand pipe 👔
40	o - elongonn pic aguip pdilip	<u>~н</u>	20/06/10 (水)	20/00/11(小)	ST Blowdown pit sump pump 0
	R MCD Inside Cauth III	101 2 -			
41	6 MSB Inside South-West	163日?	20/05/16(土)		
42	Chipping and pakker setting	10日	20/05/16(土)		Chipping and palker setting
43 🛄	Condensate extraction pump	2日	20/06/15(月)	20/06/16(火)	Condensate extraction pump
44	CEP access stair	1日	20/06/15(月)	20/06/15(月)	CEP access star 1
45 🎆	Building MSB South strouture	25日	20/07/01 (水)	20/07/29 (水)	Building MSB South streature/all manual
46 🎇	Gland condenser	1日	20/07/07 (火)	20/07/07 (火)	Cland contenserN
\$7 🞆	Plant and Instrument air receiver	2日	20/07/27 (月)	20/07/28 (火)	Plant and Instrument air roceiver 14
18	Trip valve unit	1日	20/09/28(月)	20/09/28(月)	
19 📷	Control oil unit	1日	20/09/28(月)	20/09/28(月)	Pop Valve united
i0	Seal oil unit	2日	20/07/31 (金)	20/08/01(土)	Contrial di unit-1
51	Plant air compressor	2日	20/11/18 (水)	20/11/19(木)	Séel oil unit.
i2	Instrument air dryer	2日	20/11/20 (金)	20/11/21 (土)	Plant air compressor 🖡
3	CEP pit sump pump	2日	20/06/17 (水)	20/06/18 (木)	Instrument air diyer
4	Condenser hotwell pit sump pump	2日	20/06/19 (金)	20/06/20 (土)	CEP pit sump pump #
5					Condenzer hotwell pit sump pump
6	7 Lube oil room	144日?	20/05/28 (木)	20/11/11 (水)	
7	Chipping and pakker setting	10日	20/05/28 (木)		
8	Disassemble structure	1日	20/07/31(金)		Chipping and pakker setting
9	Lube oil reservoir	1日	20/08/01(土)		Disassemble structure
0	Assemble sturcture	1日	20/08/01(土)		Lube oil reservoir 1
1	Open floor				Assemble sturcture
2		1日	20/09/28(月)		
	Lube oil filter with sturcture	2日	20/09/29 (火)		Lube oli filter with starcture
3	Lube oil cooler	1日	20/09/29 (火)		Halooo liio edu.
4	JOP for GEN	2日	20/10/01 (木)		JOP for GEN T
5	JOP for ST	2日	20/10/01 (木)	20/10/02 (金)	JOP for ST 置
3	Lube oil purifier unit	2日	20/10/01 (木)	20/10/02 (金)	Lube et purifier unit 👔
7	Lube oil transfer pump	2日	20/10/01 (木)	20/10/02 (金)	Lube of transfer pump
3	Lube oil accumulator	1日	20/10/01 (木)	20/10/01 (木)	Lube el accumulator
3	Close floor	1日	20/10/02 (金)	20/10/02 (金)	Close floor T
-	TCA filter support	8日	20/11/02(月)	20/11/10 (火)	www.bbgc.a

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6-Jul-2020 Rev_e7 2022年 2021年06月2021年07月2021年06月2021年09月2021年10月2021年11月2021年12月2022年01月2022年02月202 5初生旬下旬上旬中旬下旬上旬中旬下旬上旬中旬下旬上旬中旬下旬上旬中旬下旬上旬中旬下旬上旬中旬下旬上旬中旬下旬上旬中旬下旬上旬中旬下旬上旬中

Appendix J

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3	タスク名	20100	開始日	終了日	Construction Schedule of Unit-11	
					2020年 9年98月 2019年10月 2019年10月 2019年11月 2019年11月 2020年02月 2020年02月 2020年03月 2020年03月 2020年04月 2020年05月 2020年05月 2020年05月 2020年05月 2020年05月 2020年05月 2020年05月 2021年04月 2021年05月 2021年05月 2021年05月 2021年05月 2021年05月 2021年06月 2021年06月 2021年09月 2021年10月 2021年11月 2021年11月 2021年11月 2021年11月 2021年05月 2021年05月 2021年05月 2021年05月 2021年06月 2021年06月 2021年06月 2021年09月 2021年09月 2021年11月 2021年11月 2021年11月 2021年11月 2021年11月 2021年11月 2021年05月 2021年05月 2021年05月 2021年06月 2021年06月 2021年09月 2021年09月 2021年10月 2021年11月 2021年11月 2021年11月 2021年05月 2021年05月 2021年05月 2021年06月 2021年06月 2021年09月 2021年09月 2021年10月 2021年11月 2021年11月 2021年11月 2021年05月 2021年05月 2021年06月 2021年06月 2021年06月 2021年09月 2021年10月 2021年11月 2021年11月 2021年11月 2021年05月 2021年06月 2021年06月 2021年06月 2021年06月 2021年07月 2021年07月 2021年10月 2021年11月 2021年11月 2021年11月 2021年11月 2021年11日	20224F
	TCA filter	1日	20/11/11 (冰)	20/11/11 (水)	一中如下新上和中却下新上和中却下新上和中却下新上和中却下新上和中的一种的下新上和中的一种的下新上和中的下新上和中的下新上和中的下新上和中的下新上和中的下新上和中的下新上和中的下新上和中的下新上和中的下新上和中的下新上和中的一种的一种。	订2月 2022年01月 訂下旬上旬中旬下旬
2						118
3	9 East of MSB	142日?	20/04/28 (火)	20/10/09 (金)		1151
4	Chipping and pakker setting	15日	20/04/28 (火)	20/05/15(金)	Chipping and pokker setting	
5 📆	Light Oil main pump unit	2日	20/05/15(金)	20/05/16 (土)		
6	GT light oil last chance filter	2日	20/05/15(金)	20/05/16 (土)		6121
7 📾	GT light oil drain tank unit	2日	20/06/01(月)	20/06/02 (火)		
3	Pipe rack from L10 to L11 (except around EB02)	45日	20/06/08(月)	20/07/29 (水)		Et la
	Temp hanging Main Steam Piping	15日	20/07/30 (木)	20/08/15 (土)		
	Building structure for EB02	12日	20/07/10 (金)	20/07/24 (金)		
	Preassembly E802	52日	20/05/01 (金)	20/06/30 (火)		
	Lifting and installation EB02	2日	20/07/25 (土)	20/07/27 (月)		111
10 C	Sound proof around EB02	30日	20/07/28(火)	20/08/31(月)		8 T -
	Pipe rack from L10 to L11 (Above EB02)	30日	20/09/01 (火)	20/10/05(月)	Sound proof around EB02 E	1111
	GT enclosure ventilation fan	2日	20/10/06 (火)	20/10/07 (水)		
	Oil mist separator unit	2日	20/10/08 (木)	20/10/09 (金)		
	Oily drain pit sump pump	4日	20/05/18(月)	20/05/21 (木)	Oil milt teparator unit 1	4 U T
	Chemical drain pit sump pump	4日	20/05/22(金)	20/05/26(火)		h
-					Chemical drain pit; sump pump 💼	(-0 h
	10 North of HRSG	216日?	20/05/06 (水)	21/01/12 (火)		
	HRSG Blow down tank	2日	20/05/06 (水)	20/05/07 (木)		
	Chemical dosing system	2日	20/05/12 (火)	20/05/13 (水)	HRSG Blow down tankb	
	GT water injection system	2日	20/05/18(月)	20/05/19 (火)	Chemical dozing system	
	Lower Fuel gas heater	2日	20/06/03 (水)	20/06/04 (木)	GT water injection system	
	Support structure for FGH	3日	20/06/05(金)	20/06/08(月)	Lower Fuel gas heater: 1	11.1
	Upper Fuel gas Heater	2日	20/06/20 (土)	20/06/22(月)	Support structure for FGH	
	GT fuel gas flow meter	2日	20/07/30 (木)	20/07/31(金)	Upper Fuel gas Heater 🗋	Lit E
	FGH Maintenance platform	15日	20/07/30 (木)	20/08/15(土)	GT fuel gas flow moteries	
	FWP sun shade	30日	20/07/30 (木)	20/09/02 (水)	FGH Maintenance platform	
	Reserved feed water tank	14日	20/06/30(火)	20/07/15 (水)	FWP sun shade a	
**	Feed water pump	2日	20/08/01(土)	20/08/03(月)	Reserved feed water tank	
	LP-ECO Recirculation pump	2日	20/10/30(金)	20/10/31 (土)	Feed water pump	
	Dry air system for HRSG	2日	20/10/30(金)	20/10/31 (土)	LP=ECO Recirculation pump-i	1140
-	HRSG Topping up pump	1日	21/01/09 (土)	21/01/11(月)	Ory air system for HRSGH	1.1.1
	HRSG blowdown pit sump pump	2日	20/05/15 (金)	20/05/16 (土)	HRSG Topping up pump 🛃	1116
-	HRSG Washing water sump pump	2日	21/01/11(月)	21/01/12(火)	HRSG blowdown pit sump pump I	
				-	HRSG Weishing water sump pump	
1.	12 CCW cooler area	87日	20/05/15(金)	20/08/24(月)		
	Chipping and pakker setting	10日	20/05/15(金)	20/05/26 (火)		
	Civil finish casting trench at west side of CCW-C area	1日	20/06/30 (火)	20/06/30 (火)	Chipping and pakker setting	
	Sea water booster pump	4日	20/07/01 (水)	20/07/04 (土)	Civil finish casting trench at west side of COW-C area 1	
	CW vent pump and seal water booster	4日	20/07/01 (水)	20/07/04 (土)	Sea water booster pump	
	Condenser tube cleaning unit	4日	20/07/01 (水)	20/07/04 (土)	¢W vent pump and seal water booster	
œ	CCW cooler	4日	20/07/01 (水)	20/07/04 (土)	Condenser tube cleaning unit	
	CCW cooler sun shade	20日	20/08/01(土)	20/08/24(月)	CCW cooler	

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	タスク名	期間	開始日	終了日		
			1000000	and the set	2020年 9年08日 2019年10日 2019年11日 2019年11月	年
0	Sea water sump pump	4日	20/06/02 (火)	20/06/05 (金)	2022年 9年08月 2019年09月 2019年10月 2019年11月 2019年11月 2019年11月 2020年03月 2020年03月 2020年03月 2020年03月 2020年05月 2020年11月 2020年11月 2020年12月 2021年05月 2021年11月 2021年12月 2022年11月 2022年11月 2021年12月 2022年11月 2021年12月 2022年11月 2021年11月 2021年11日	#01月 202 何下句上句
					Sea water tump pump	
603	TCA cooler	2日	20/10/28 (水)	20/10/30 (金)		
1	Dismantle the temporary slope at south side of HRSG	20日	21/02/01 (月)	21/02/24 (水)	TCA dooler M	15
	CO2 Fire fighting	50日	21/04/16 (金)	21/06/12(土)	Dismantie the temporary slope at south side of HRSO-IIIIIIIIA	
	UTAC system	90日	21/03/01 (月)	21/06/12(土)	1002-Fire-fighting	
	Silencer at MSB roof	3日	20/10/28 (水)	20/10/30 (金)	UTAC system	
	LPS to LMX LO transfer pump for U-11	2日	20/06/08(月)	20/06/09 (火)	Silencer at MSB roof/#	
d.					LPS to LMX LO transfer pump for U=11	
0	Sea water intake area	52日	20/08/06 (木)	20/10/05(月)		
8	Marking center line	3日	20/08/06 (木)	20/08/10(月)	Ses waterivitako area 🐨	1.1.1
	Chipping and pakker setting	7日	20/08/10(月)	20/08/18(火)	Marking conter line	
	Setting the baseplate	3日	20/08/18(火)	20/08/21(金)	Chipping and pakker setting	
	Grouting	15日	20/08/21 (金)	20/09/08 (火)	Setting the baseplate the	
	Circulating water pump	10日	20/09/08 (火)	20/09/18(金)	Grouting	
	Circulating water pump outlet piping	2日	20/09/19(±)	20/09/21(月)	Circulating water purch	
	Auxiliary circulation water pump	2日	20/09/09(水)	20/09/10 (木)	Circulating water pump ceithet piping	
-	Electro chlorination plant	3日	20/10/01 (木)	20/10/03 (土)	Auxiliary circulation water pump 1	
	Cathodic protection	1日	20/10/05(月)		Electro chlorintidei plant 👷	
	Screen system	8日	20/09/22 (火)		Carthodic protection T	113
	Screen wash water pump	2日	20/09/11(金)	20/09/12(土)	Scrpen system 🏜	
		2			Screen wash water pump	
-	Replacement of Gantry crane for CW pump	70日	20/11/11(水)	21/01/30(土)		1.14
	Dismantling Old gantry crane	30日	20/11/11(水)	20/12/16(水)		
	Assembling New gantry crane	30日	20/12/28(月) :	21/01/30(土)	Dismantling Old gentry crane	1.1
					Assembling: New gamery crane-	
	11 Tranceformer area	183日	20/05/01(金) :	20/11/30(月)		
-	Preparation work in the area (If applicable)	53日	20/05/01(金) 2	20/07/02 (木)	11 Tranceformer area	
	Preparation the installation	25日	20/07/02(木) 2	20/07/30(木)	Preparation work in the area (If applicable)	1.1
-	Preparation for Generator transformer	10日	20/08/19 (水) 2	20/08/31(月)	Preparation the installation at the second	
	Generator tranceformer	3日	20/08/31(月) 2		Preparation for Generator transformer	
			20/08/01(土) 2		Generator tranceformet#	
			20/08/03(月) 2		Unit tanceformer	
-			20/08/04(火) 2		SFC transformer	(th
			20/08/05(水) 2		Excitation transformer 1	
			20/07/25(土) 2		Auxiliary transformer 1	
			20/08/20(木) 2		Trans area oliy drain sump.pump¥II	
					Transformer ancillaries. Transformer ancillaries de la construction de la construction de la construction de la	
E	lectrical work	165日?	20/05/07(木) 2	1/10/30 (±.)		
			20/09/25(金) 2			
			20/10/08(木) 2		Generator: Arcellaries	
			20/10/31(土) 2		Lifting IPB Bass & Supports SSEXXXX	
			20/08/29(土) 2		IHB Bass & Supports	111
-			20/08/29(上) 2 20/09/01(火) 2		D/B GMCB 📕	
			20/09/01(反) 2 20/06/01(月) 2		IPB & GMCB(UN MSB:26)	

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Installation Exhaust duct was re-started from15st-May

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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

Appendix J

8

92.0%	XH DA	開始目	終了日	Construction Schedule of Unit-11
	100015	NOSTION .	2.95724	2020年 会任 RB 目 2019年 11月 2
UPS, Battery & Battery Charger (in MSB 4F)	79日	20/08/01 (土)	20/10/31(土)	2022年 9年08月 2019年09月2019年10月 2019年11月2019年11月2019年11月2019年11月2020年03月2020年03月2020年03月2020年05月2020年05月2020年05月2020年05月2020年05月2020年05月2020年05月2020年05月2020年05月2020年05月2020年05月2020年05月2020年11月2020年11月2020年11月2020年11月2020年11月2020年11月2021年03月2021年03月2021年05月2021年05月2021年05月2021年05月2021年09月2021年05月2021年09月2021年10月2021年11月2021年11月2021年11月2021年11月2021年11月2021年05月2021年05月2021年05月2021年05月2021年05月2021年05月2021年05月2021年05月2021年05月2021年05月2021年05月2021年05月2021年05月2021年10月2021年10月2021年11月2021年11月2021年11月2021年05月2021年05月2021年05月2021年05月2021年05月2021年05月2021年05月2021年05月2021年10月2021年11月2021年11月2021年05月2021年05月2021年05月2021年05月2021年05月2021年05月2021年05月2021年10月2021年11月2021年11月2021年05月2021年05月2021年05月2021年05月2021年05月2021年05月2021年10月2021年11月2021年11月2021年05月2021年05月2021年05月2021年05月2021年05月2021年10月2021年11月2011年11月2011年11月2011年11月2011年11月2011年11月2011年11月2011年11月1
DCS & Others (in MSB 5F)	78日	20/09/01 (火)	20/11/30(月)	UPS, Battery & Battery Charger (in MSB 4F)
AC/DC Busduct	105日	20/10/01 (木)	21/01/30(土)	DCS & Others (in MSB 5 ¹⁷)
HRSG Equipment	78日	20/08/01(土)	20/10/30 (金)	AC/DC Bunduct, and an and a
Local panel (GT/ST TB, Local control box etc	155日	20/10/01 (木)	21/03/30(火)	HRSG Equipment
Local Instrument Enclosure	182日	20/10/01 (木)	21/04/30(金)	Local panel (GT/ST TB, Local control box etc)
Cable Tray & Supports (Erectrical room of MS	3) 165日	20/05/07 (木)	20/11/14(土)	Local Instrument Enclosure)
Cable Tray & Supports (MSB - HRSG)	98日	20/08/11(火)	20/12/02 (水)	Cable Tray & Supports (Erectrical room of MSB)
Cable Tray & Supports (HRSG)	105日	20/10/01 (木)	21/01/30(土)	Cable Tray & Supports (MSB - HiRSG)
Cable Tray & Supports (Chimney)	78日	20/11/02(月)	21/01/30(土)	Cable Tray & Supports (HRSG) English and an an
Exposed Cinduit (MSB)	130日	20/10/01 (木)	21/03/01(月)	Cable Tray & Supports (Chimney).
Exposed Cinduit (HRSG)	103日	21/02/01(月)		Exposed Criduit (MSB)
Exposed Cinduit (Island equipment)	130日	21/02/01(月)		Exposed Cinduit (HRSC)
Cabling (for Power Receiving)	119日	20/08/15(土)		Exosed Cinduit (Island equipment))
Cabling (for MSB Local, to HRSG)	155日	20/11/02(月)		Cabling (for Power Receiving)
Cabling (for HRSG)				Cabling (for MSB Local, to HRSG)
		21/03/01(月)		Cabling (for HRSQ)-
		21/03/01(月)		Cabling (for Island equipment)
Termination & Cable check	365日	20/09/01 (火)		Termination & Cable check
Earthing System	339日	20/08/01(土)		Earthing System
Local Instrument	339日	20/09/01 (火)	21/09/30(木)	Local Instrument
Instrument Piping & Tubing	262日	20/10/01 (木)	21/08/02(月)	Instrument Pring & Tubing
Instrument Calibration & Testing	365日	20/09/01 (火)	21/10/30(土)	Instrument Calibration & Testing
Piping	392日	20/08/10(月)	21/11/10(7K)	Piele -
Main Piping	244日	20/08/20(木)	21/05/31(月)	Mairi Piping
Around HRSG	150日	20/11/17 (火)	21/05/10(月)	Around (HRSO)
North side of MSB	222日	20/08/20(木)	21/05/05 (水)	North side of MSB
South side of MSB (around gland condenser)	200日	20/09/15(火) :	21/05/05 (水)	South side of MSB (around gland condenser)
Lead piping	60日	20/11/06(金)	21/01/14(木)	Lead piping
Preparation Hydrostatic test	30日	21/04/17(土) :	21/05/22(土)	Preparation Hydrostatio test
Hydrostatic test (Can't promise)	1日	21/05/31(月) 2	21/05/31(月)	%TDK challenge to move "hydro" up to 31st-May-2021 Hydrostatic test (Can't promise) → 05/31
BOP for lube oil and cooling	247日	20/08/10(月) 2	21/05/24 (月)	BOP for lube oil and cooling:
North side of MSB (around CCW)	230日	20/08/10(月) 2	21/05/04 (火)	North side of MSB (irround CCW)
South side of MSB (around Lube oil reservoir)150日	20/11/20(金) 2	21/05/13 (木)	
Receiving Lube Oil	1日	21/05/24(月) 2	21/05/24(月)	South side of MSE (around Lube oil resurvoir)
Others BOP	230日	20/12/11(金) 2	21/09/04 (土)	Receiving Lube Oil 94 05/24
Others BOP	230日	20/12/11(金) 2	21/09/04(土)	Others BOP
Assembly the blowing out piping	80日	21/08/09(月) 2	1/11/10 (水)	Others BOP
				Assembly the blowing out piping
Crane	480日	19/12/16(月) 2	1/06/29 (火)	
Recombination of 500tonC/C	3日	20/01/03(金) 2	0/01/06(月)	Crane 👻
Operate 500tonC/C (with JIB)	10日	20/01/07 (火) 2	0/01/17(金)	Recombination of 500tonC/C 11
Dismantling 500tonC/C	4日	20/01/18(土) 2	0/01/22 (水)	Operate 500tonC/C (with JtB)
Assembly 1250C/C		20/02/14 (金) 2		Dismantling 500ton//C
Operate 1250tonC/C for HRSG		20/02/26 (水) 2		Assembly 1250C/C

Installation HRSG was re-started from 23rd-Jun

Installation Exhaust duct was re-started from15st-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

32	スク名	网络新闻	開始日	終了日												
				9年08月 2019年09月 2019年1	2020年 月 2019年11月 2019年12月 2020年	02 E 2020 # 02 E 2020 # 04 E 2020 # 01	E 2020 GEALE RODON GEAR B 2020 GEAR B OD	notena B annate in B' antete in B	2021年		(- <u></u>					2022年
	Operate 1250tonC/C for GT Air Inlet	25日	20/08/27 (木)	中旬下旬上旬中旬下旬上旬中旬 20/09/24(木)	2020年 月 2019年11月 2019年12月 2020年01月 2020年0 創上 旬中 如下 旬上 旬中 町下 旬上 旬中 町下 旬上 旬中 町下			20年09月2020年10月2020年11月2 钟旬下旬上旬中旬下旬上旬中旬下旬上	020年12月2021年01月2021年 旬中旬下旬上旬中旬下旬上旬中1	F02并2021年03月2021年 证在上旬中旬下旬上旬中旬	04月2021年05月202 [F旬上旬中旬下旬上旬]	1年06月2021年07月: 2旬下旬上旬中旬下旬上	2021年08月 2021年09月 二旬中旬下旬上旬中旬下旬	2021年10月 202 上旬中旬下旬上旬	21年11月2021年12 中旬下旬上旬中旬下	月 2022年01月 2 旬上旬中旬下旬上
	Operate 1250tonC/C with additional C/W for inlet	2日	20/08/25 (火)	20/08/26 (水)			Operate 1250tonG/C for GT Air inlet					1111			ri i Pi	
3	Operate 1250C/C with additional C/W for tube bundle	27日	20/09/25(金)	20/10/26 (月)			tonC/C with additional C/W for inlet									
	Dismantling 1250tonC/C	10日	20/12/10 (木)	20/12/21 (月)		Opera	ate 1250C/C with additional C/W for tebr b			6.111						
	Assembly 600tonC/C	4日	20/08/20 (木)	20/08/25 (火)			Assembly 600tonC/C	Dismantling 1250tonC/0				1111				
	Operate 600tonC/C (without JIB)	54日	20/08/25 (火)	20/10/26(月)			Operate 600tonC/C (without JE)					1111				
	Dismantling 600tonC/C	4日	20/10/27 (火)	20/10/30 (金)										11.0		
	Assemby 750tonA/C for Condenser	4日	20/04/03 (金)	20/04/06(月)	Assemby 750tonA/C	C for Condenner	Ciam	intling 600tonC/C					1.1.2.1.1	× .		
	Operate 750tonA/C for Condenser	22日	20/04/07 (火)	20/05/01 (金)	Operate 750tonA/0									L I I		
	Dismantling 750tonA/C for Condenser	2日	20/04/18 (土)	20/04/20(月)	201 how 2002 and 20	tunA/C for Condenser							1011			
	Assemby 500tonA/C for Exhaust duct	1日	20/10/29 (木)	20/10/30 (金)	- Printer of the second		Assessed as EDDs and A	C for Exhaust duct N								
	Operate 500tonA/C for Exhaust duct	17日	20/10/30(金)	20/11/18 (水)												
	Operate 500tonA/C for HRSG outlet duct (Support)	1日	20/11/19(木)	20/11/19 (木)				C for Exhaust duct								
	Dismantling 500tonA/C for Exhaust duct	1日	20/11/20 (金)	20/11/20 (金)			and the second	IRSG outlet duct (Support)								
	Assembly jib to 220tonA/C	2日	20/10/05(月)	20/10/07 (水)				00tonA/C for Exhaust duct								
	Operate 220tonA/C with jib	52日	20/10/07 (水)	20/12/05 (土)			Assembly jib to 22 Operate 220tonA/									
	Disassembly jib from 220tonA/C	2日	20/12/07(月)	20/12/08 (火)			Operate 220000			14 f 1 H H						
	250ton A/C	400日	19/12/16(月)	21/03/27 (土)	250ton A/C			Disassembly jib from 220tonA/C								
	200tonA/C	480日	19/12/16(月)	21/06/29 (火)	200tonA/C						17 18		111 R		14	
Equ	uipment for heavy lifting	190日	20/03/11 (水)	20/10/16 (金)	Equipment for heavy life					Sec. 1. 1. 1.						
	SARLIFT	50日	20/03/11 (水)	20/05/06 (水)		RLDFT 1			111111							
	Assembly the rail for SARLIFT	22日	20/03/11 (水)	20/04/04 (土)	Assembly the roll for SAR									115		
	Assembly the SARLIFT proper	8日	20/04/05(日)	20/04/13 (月)		SARLIFT proper										
	Dismantling the SARLIFT	15日	20/04/20(月)	10/05/06 (水)									1 11 14			
(Gantry system	46日	20/08/03(月)	20/09/24 (木)	Usm	smontling the SARLIFT					1011		1. [33]	10.19	1135	
	Assembly the Gantry for powertrain	21日	20/08/03(月)	0/08/26 (水)			Gantry system			2.1				111	141	
	Disassembly the Gantry	15日	20/09/08 (火)	0/09/24 (木)		Assembly	the Gantry for powertrain				(e. c.) .					
							Disassembly the Gantry							1111		
ι	Unit carrier	176日	20/03/27 (金)	0/10/16(金)						1.14.11				10.13		
	Preparation for transportation the Condenser	4日	20/03/27(金)	0/04/01 (水)	Preparation for transportation the (Unit carrier					11 f f					
	Transportation the Condenser	2日	20/04/01 (水)	0/04/02 (木)	#2 1090 million						i e e					
	Disassembling Unit carrier	日	20/04/03 (金)	0/04/03 (金)	Transportation the					11111	81811			1111		
	Assembling Unit carrier for Tube Bundle	IE	20/09/15 (火)	0/09/16 (水)	USAISEMOUN	ling Unit carrier										
	Transportation the Tube Bundle part1	58	20/09/16 (水)	0/09/21 (月)			Assembling Unit carrier for Tube Bundle									
	Disassembling Unit carrier	Ħ	20/09/22 (火)	0/09/22 (火)			Transportation the Tube Bund's part									
	Assembling Unit carrier for Tube Bundle	日	20/10/09(金)	0/10/10 (土)			Disassembling Unit carr									
	Transportation the Tube Bundle part2 5	H	20/10/10 (土)	0/10/15 (木)	- Man		Assembling Unit carrier for Tut								1111	
	Disassembling Unit carrier 1	B	20/10/16 (金)	0/10/16 (金)			Transportation the Tube Bu									
	Assembling Unit carrier for Power Train 3	B	20/08/21 (金)	0/08/25 (火)				Unit carrier								
	Test operation for transportation of Power 1 Train	日	20/08/25 (火)	0/08/25 (火)		and a second second	bling Unit carrie: for Power Train									
	Transportation the Transformer 2	Ħ	20/08/31 (月)	0/09/01 (火)		Test operation	for transportation of Power Train 1							1 01		
	Transporatation the Gas Turbine Proper 2	F	20/09/01 (火)	3/09/02 (水)			Transportation the Transformer							1111		
	Transportation the Generator 2	E	20/09/03 (木))/09/04 (金)		Tra	maporatation the Gas Turbine Proper									
	Disassembling the Unit carrier 1	E .	20/09/05(土) :	0/09/05(+)			Transportation the Generator									

Installation HRSG was re-started from 23rd-Jun

Installation Exhaust duct was re-started from15st-May

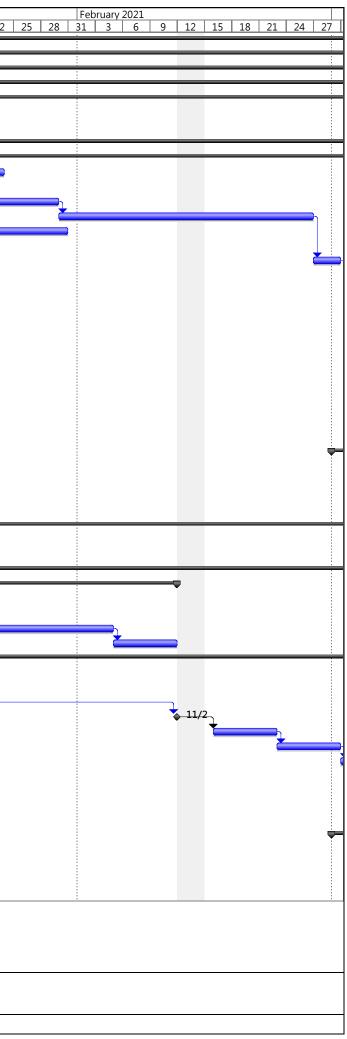
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6-Ju	1-2020

ID	0	Task Name	Duration	Start	Finish		ecembe				2 26 20	January 2021	7 10 10	16 10 22
1	-	19-83014 - Civil Works for No. 5 C.W. Intake and Cable Bridge at Lamma Power Stat	526 davs	Mon 5/10/20	Thu 4/8/2	29	2	5	8 11 14 2	17 20 2	5 26 29		/ 10 13	16 19 22
2		Contract Details	-	Mon 5/10/20										
15		Submission		Wed 28/10/20										
36		Procurement		Mon 19/10/20			_							
45		No.5 C.W. Intake	-	Mon 5/10/20										
46		Erect of Hoarding and Door Gate		Mon 5/10/20		1 1								
47		Install Monitoing Instrumentation	-	Sat 17/10/20										
54		ELS works for No. C.W. Intake	-	Tue 8/12/20		1 1		- b -						
55		Installation of pipe pile wall	92 days		Wed 31/3/2			- -						
56		Temporary diversion of existing drainage system (from MH807 to MH	12 days	Mon 11/1/21	Sat 23/1/2			4						
57		PP1-PP30 (30 nos)	15 days	Tue 8/12/20	Thu 24/12/2									
58		PP31-PP85 (55 nos)	28 days	Mon 28/12/20	Fri 29/1/2						*	:		
59	1	PP86-PP127 (42 nos)	21 days	Sat 30/1/21	Fri 26/2/2									
60	1	PP128-PP183 (56 nos)	28 days	Tue 29/12/20	Sat 30/1/2							:		
61	1	PP184-PP214 (31 nos)	16 days	Tue 8/12/20	Mon 28/12/2			*			Ţ			
62		Submission of BA14, as-built plan and record	2 days	Sat 27/2/21	Mon 1/3/2									
63		BD Excavation Consent	0 days	Wed 31/3/21										
64		Excavate upto +4.50mPD	6 days		Mon 12/4/2	1 1								
65		Installation the 1st row of waling (WT1) and strut (CS1)	12 days		Mon 26/4/2									
66		Installation of 1st row of Tie Back	42 days											
73		Excavate upto +2.70mPD	6 days	Thu 3/6/21										
74		Installation the 2nd row of waling (WT2) and strut (CS2)	12 days											
75		Installation of 2nd row of Tie Back	42 days			- i - i								
82		Excavate uoto +1.00mPD	6 days											
83		Installation the 3rd row of waling (WT3) and strut (CS3)	12 days											
84		Installation of 3rd row of Tie Back (TBC)	42 days	Sat 7/8/21										
91		Excavate upto -7.50mPD	-	Mon 27/9/21										
92		Temporary removal of sea wall	80 days		Thu 30/12/2									
97		Construction of No. 5 C.W. Intake Chamber	381 days		Mon 4/7/2									
120 124		Reinstatement of sea wall	104 days		Thu 2/6/2 Thu 24/3/2	1 1								
124		Backfilling Works and Strut removal Steel Gantry Frame at No. 5 C.W. Intake Chamber	56 days	Thu 23/6/22										
131		E&M Works	-	Thu 23/6/22 Thu 23/6/22		1 1								
134		Cable Bridge	-	Mon 19/10/20										
		Erect of Hoarding and Door Gate	-	Mon 19/10/20										
140		Install Monitoing Instrumentation		Mon 2/11/20										
148		Pile Cap Construction	164 days		Tue 29/6/2	1 1	ė,							
149		LPS Pile Cap (PC5)	56 days				- è-							
150		Excavation to F.E.L. by open cut (From +4.50mPD to +1.95mPD)	12 days				- ¥							
151		Socket H-pile head treatment (14 nos)	12 days							-				
152		Construction of Pile Cap PC5	26 days							-				
153		Backfilling to pile cap level	6 days		Thu 11/2/2									
154	1	LMX Pile Cap (PC6)	164 days		Tue 29/6/2									
155	1	Expose existing 275kV cable trench by hand dig method	12 days	Sat 5/12/20	Fri 18/12/2	D	- Y							
156		Install pipe pile (P1-P47)	16 days	Sat 19/12/20	Sat 9/1/2					*		:		
157	1	Submission of BA14, as-built plan and record	2 days	Mon 11/1/21	Tue 12/1/2								*	
158		BD Excavation Consent	0 days	Thu 11/2/21	Thu 11/2/2									
159		Excavate to 500mm below strut level	6 days		Mon 22/2/2									
160		Install waling system (W1)	6 days											
161		Excavate to F.E.L.	12 days		Mon 15/3/2									
162		Timming to COL for Dia 2180mm Bored Pile (8nos)	26 days		Mon 19/4/2									
163		Constrcution of Pile Cap PC6	52 days		Tue 22/6/2									
164		Backfilling to pile cap level	-	Wed 23/6/21										
165		Exisiting Seawall modification works (USS)		Wed 23/6/21		1 1								
166		Construction of Cable Bridge	-	Mon 1/3/21										
191		Construction of Abutment at LPS	-	Wed 17/11/21		1 1								
198		Construction of Abutment at LMX	-	Wed 17/11/21										
		Stormwater Drainage	40 days	Mon 7/3/22	Tue 26/4/2	2								
205 207		E&M works		Mon 7/3/22			÷							

Project: 19-83014 - No. 5 Intake and Cable Br Date: 22 Oct 2020 Rev. 0	Task Split	 Progress Milestone	•	Summary Project Summary	↓ ↓	External Tasks Dead External Milestone 🔷	adline	Û
						Page 1		



Sunley Engineering & Construction Co., Ltd.

Contract No. 18/8004 Lamma Power Station Extension Foundation Works for Unit L12

Short Term Programme

Ionth Day <u>activity</u>	## 1	1	2		1	-	-													
			4	3 4	4 5	5 6	7	8	9	10	11 1	2 13	14 1	5 16	17 18 1	9 20 21	1 22	23 24 2	5 26 27	28 29
ite Clearence																				
1:	:	·	: ■																	

- Sunday or Holiday

Monthly Waste Flow Table for November 2020

Project: Lamma 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

MM.YYYY		Act	ual Quanti	ties of Inert (C&D Materia	Is Generated	Monthly		Actual Qu	antities of N	Ion-inert C&I	D Materials	Generated	Monthly
	Exca	avated Mate	erials		Non-	excavated M	aterials							
	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	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
	(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	20252.12	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
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	720.99

Note: Updated

Total Inert C&D Waste Materials		Non-inert C&D Materials	3
Generated	C&D Materials Recycled	C&D Waste Disposed of at Landfill	Chemical Waste
146035.98 tonnes	75.68 tonnes	720.99 tonnes	2000 Liters

 Where
 (A)
 Inert C&D materials include bricks, concrete, building debris, rubble and excavated spoil. In total, were generated from the Project, of which
 142875.75
 Inones were reused in this and other contracts, and the remaining

 3160.23
 Storage as public fill to Fill Barks / 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) <u>16460</u> kg of metals, <u>0</u> kg of papers/ cardboard packing and <u>0</u> 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.

Appendix K

Monthly Waste Flow Table for November 2020

Project: LAMMA POWER STATION EXTENSION – Unit 11 Complete Erection, Inspection, Testing & Commissioning of Power Block Facilities

Contractor:	Taihei Dengyo Kaisha, Ltd.
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Record by: Stephen Sin

Year of Record: 2019, 2020

MM.YYYY		Actua	Quantities	of Inert C&D	Materials C	Generated N	lonthly		Actual Q	uantities of	Non-inert Ci	&D Materials	s Generated	Monthly
	Exc	avated Mate	rials		Non-e	xcavated M	aterials							
	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	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
	(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	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	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	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	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	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	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	0.00	12.39
June 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	13.03
July 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	16.32
August 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	2600	10.38
September 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	10.20
October 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	12.02
November 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	2400	26.18
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	5000	115.48

Total Inert C&D Waste Materials	Non-inert C&D Materials									
Generated	C&D Materials Recycled	C&D Waste Disposed of at Landfill	Chemical Waste							
0.00 tonnes	0.00 tonnes	115.48 tonnes	5000 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.
 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 Contractt.
 (3) The waste flow table shall also include G&D materials that are specified in the Contract to be imported for use at the Site.
 (4) Plastics teffet containers, plastic/ floam 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 2020

Project: Civil Works for No. 5 C.W. Intake and Cable Bridge at Lamma Power Station Extension

Contractor: Paul Y. Construction Company, Limited

Record by: Ben Lam

Year of Record: 2020

MM.YYYY		Ac	tual Quanti	ities of Inert (C&D Materia	Is Generated	Monthly		Actual C	uantities of N	Ion-inert C&I	O Materials	Generated	Monthly
	Exc	avated Mate	erials		Non	-excavated Ma	aterials							
	Disposed in Public Fill	Disposed in Sorting Facilities	Reused in the Contract	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	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
	(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)
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	0.00	0.00
Nov 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	0.00
	l													
	l													
	1													
Total	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
rotai	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 Inert C&D Waste Material		Non-inert C&D Materials	
Generated	C&D Materials Recycle	d 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
 0.00
 tonnes were reused in this and other contracts, and the remaining

 0.00
 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 2020

 Project:
 Foundation Works for Lamma Power Station Extension Unit L12

 Contractor:
 Sunley Engineering & Construction Co Ltd.

 Record by:
 Eric Liu

 Year of Record:
 2019 & 2020

		Actual Quar	ntities of Ind	ert C&D Mat	erials Ger	nerated M	onthly		Actual Q	uantities of N	Ion-inert C&I	O Materials	Generated	Monthly
	E	xcavated Materia	als		Non-exc	cavated M	aterials							
MM/YYYY	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	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
	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in L)	(in tonne)
Apr/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
May/2019	7417.96	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
Jun/2019	8470.29	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
Jul/2019	5056.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.29
Aug/2019	9705.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.51
Sep/2019	5432.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	400.00	2.96
Oct/2019	10767.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55.79	0.00	0.00	0.00	0.00	0.00
Nov/2019	8646.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	400.00	4.75
Dec/2019	11100.84	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	2996.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.53	0.00	0.00	0.00	0.00	0.00
Feb/2020	5063.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.73
Mar/2020	4365.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.00	0.00	0.00	0.00	0.00	10.07
Apr/2020	3271.86	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
May/2020	4064.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.58
Jun/2020	1222.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.06
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	0.00	0.00
Aug/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	1800.00	0.00
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	0.00	2.16
Oct/2020	3191.80	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/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	400.00	0.00
Total	90775.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73.32	0.00	0.00	0.00	3000.00	44.11

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	
90775.56	tonnes	73.32	tonnes	44.11	tonnes	3000.00	liter

 Where
 (a) Inert C&D materials include bricks, concrete, building debris, rubble and excavated spoil. In total, were generated from the Project, of which
 <u>0.00</u> tonnes were reused in this and other contracts, and the remaining

 90775.56
 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) 0.00 tonne of metals, 0.00 tonne of paper / cardboard packing and 0.00 tonne 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.

(7) Quantity of metal recycled is revised.