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



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

August 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 (August 2020)
Date	14 September 2020
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EXECUTIVE SUMMARY

This is the 124^{rh} 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 August 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 Building Station, CW pipe installation, installation of columns and beams, Site formation works and pipe jacking 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

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

Construction work for Lamma Extension was carried out during the restricted hours including evening-time, holidays and night-time under valid Construction Noise Permit. No exceedance of Action and Limit levels for noise arising from the construction of Lamma Extension was recorded in the month.

Site Environmental Audit

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

Description	Permit No.	Valid	Period	Issued To	Date of
-		From	То	-	Issuance
Varied Environmental Permit	EP-071/2000/C	18/05/05	-	HK Electric	18/05/05
Construction Noise Permit	GW-RS0132-20	15/03/20	13/09/20	Contractor	12/03/20
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

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.

Unit L12 Foundation 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.

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/C, 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 August 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, CW pipe installation, installation of columns and beams, site formation works and pipe jacking 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 was coring works. Layout plan for construction site is shown in Figure 1.1.

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

Table 1.1 Construction Activities and Their Corresponding Environmental Mitigation Measures

Item	Construction Activities	Environmental Mitigation Measures
Unit L11	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, CW Pipe Installation, Installation of Columns and Beams, Site Formation Works and Pipe Jacking Works (Set up of jacking and receiving pit)	 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.
l		– Wastewater should be treated in desilting pit and

Item	Construction Activities	Environmental Mitigation Measures
		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	Air
	HRSG installation	 Dust suppression measures implemented according to the EMP.
	Turbine block installation	 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 Lamm	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 fulfilled.
		Wastewater

Item	Construction Activities	Environmental Mitigation Measures
		 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.

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.

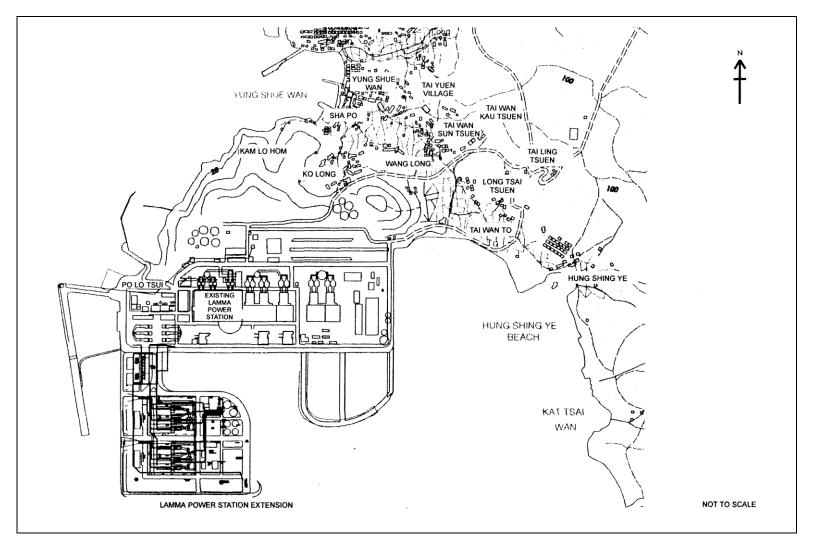


Figure 1.1 Layout of Work Site

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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 All Quality Molitoling Locations	Table 2.1	Air Quality Monitoring Locations
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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
Alvi I	24-hour TSP	24	Once every 6 days
AM2	1-hour TSP	1	3 hourly samples every 6 days
AlVIZ	24-hour TSP	24	Once every 6 days
AM3	1-hour TSP	1	3 hourly samples every 6 days
AIVIS	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.

• 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.

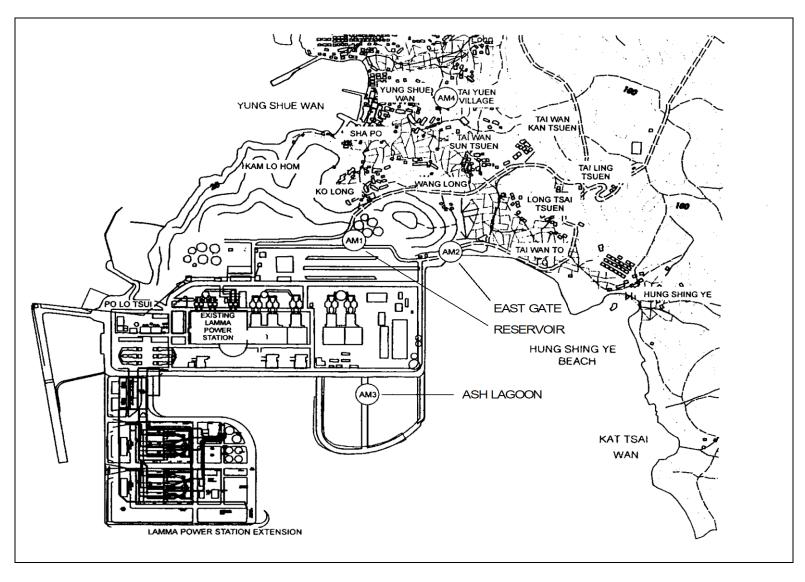


Figure 2.1 Location of Air Quality Monitoring Stations

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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

LocationTime PeriodFrequencyParameter	
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	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 Ching Lam and Ash Lagoon noise monitoring stations for the two noise monitoring stations were scheduled in October 2020 and February 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.

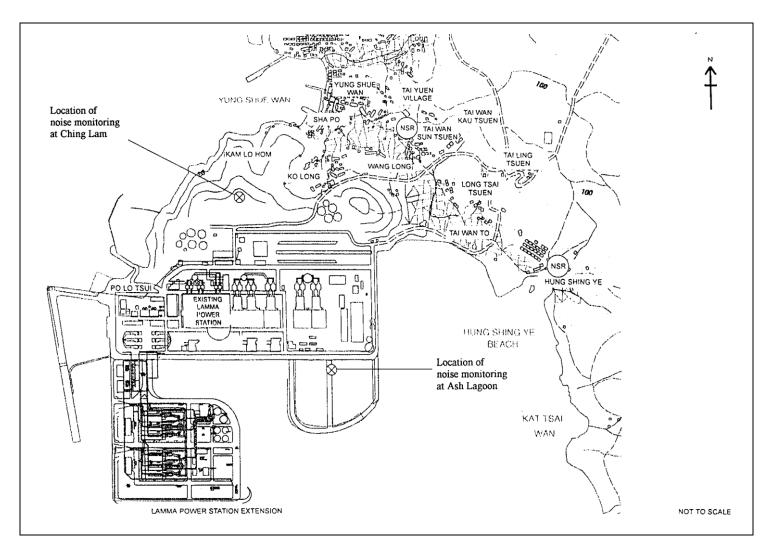


Figure 3.1 Location of Noise Monitoring Stations

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						Event/Action Plan Implementation Status
			Action Level	Limit Level	and Results		
Air							
1	Ambient TSP (24-hour)	01/08/2020- 31/08/2020	0	0			
2	Ambient TSP (1-hour)	01/08/2020- 31/08/2020	0	0			
Noise	·	·			•		
1	Noise level at the critical NSR's predicted by the noise alarm monitoring system	01/08/2020- 31/08/2020	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 August 2020 are shown in Table 4.2.

Table 4.2	Estimated Amounts of Waste in August 2020
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	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	0 Tonnes	84.11 Tonnes	5,000 Litres
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The monthly waste flow tables prepared by the contractors are attached in Appendix K

4.4 Site Environmental Audit

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

4.5 Status of Environmental Licensing and Permitting

All permits/licenses obtained for the project are summarised in Table 4.3.

Table 4.3 Summary of Environmental Licensing and Permit Status

Description	Description Permit No. Valid Period		Highlights	Status	
-		From	То		
Varied Environmental Permit	EP-071/2000/C	18/05/05	-	The whole construction work site	Valid
Construction Noise Permit	GW-RS0132-20	15/03/20	13/09/20	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
Registration of Chemical Waste Producer	WPN5517-912- T2007-02	17/03/05	-	E&M Equipment Installation and Maintenance	Valid

Description	Permit No.	Valid	Period	Highlights	Status
_		From	То		
Registration of Chemical Waste	WPN5113-912- S3180-23	16/04/19	-	Foundation works for Unit L12	Valid
Producer					
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

Notes: # - Water quality monitoring works were carried out in August 2020 and the results of which had been reported under a separate cover 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 August 2020, no complaint against the construction activities was received.

Table 4.4Environmental Complaints Received in August 2020

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

Table 4.5 Outstanding Environmental Complaints Carried Over

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

5. FUTURE KEY ISSUES

5.1 Key Issues for the Coming Month

Key issues to be considered in the coming month include:

Unit L11 Civil and Building Works

Noise Impact

- To continue 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.

Unit L12 Foundation Works

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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.

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

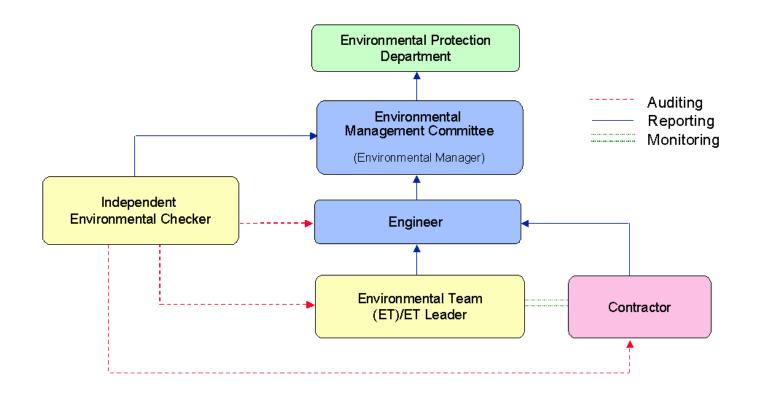


Figure A.1 Organisation of EM&A Programme at Construction Phase

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 Table
--

	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 institution, the limit level shall be 70 dB(A), reduced to 65 dB(A) during examination periods. 							

Appendix C Environmental Monitoring Schedule

r
1hr TSP Monitoring
4/August/2020 1500hr to 1800hr
10/August/2020 1500hr to 1800hr
16/August/2020 1500hr to 1800hr
22/August/2020 1500hr to 1800hr
28/August/2020 1500hr to 1800hr
3/September/2020 1500hr to 1800hr
9/September/2020 1500hr to 1800hr
15/September/2020 1500hr to 1800hr
21/September/2020 1500hr to 1800hr
27/September/2020 1500hr to 1800hr
3/October/2020 1500hr to 1800hr
9/October/2020 1500hr to 1800hr
15/October/2020 1500hr to 1800hr
21/October/2020 1500hr to 1800hr
27/October/2020 1500hr to 1800hr
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

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

APPENDIX D AIR QUALITY MONITORING RESULTS

Site: Lamma Power Station Extension

Month: August 2020

24 hour TSP Measurement:-

		TSP concentr	ation (μ g/m ³)		Weather Information om 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. (%)
4/8/2020	13	21	11	13	11.5	130	87
10/8/2020	15	17	10	14	11.8	190	76
16/8/2020	15	19	13	11	14.3	80	76
22/8/2020	34	50	35	21	3.0	160	77
28/8/2020	30	34	25	29	9.3	220	82

1 hour TSP Measurement:-

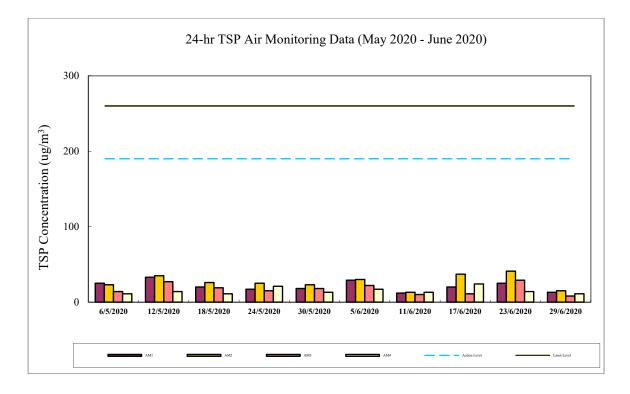
		TSP concentration ($\mu g/m^3$)				
Date	Time	Reservoir (AM1)	East Gate (AM2)	Ash Lagoon (AM3)		
1/0/2020	15:00 - 15:59	12	36	8		
4/8/2020	16:00 - 16:59	15	31	9		
	17:00 - 17:59	16	26	8		
10/0/2020	15:00 - 15:59	23	13	10		
10/8/2020	16:00 - 16:59	17	12	10		
	17:00 - 17:59	22	5	9		
1.(10/2020	15:00 - 15:59	14	16	14		
16/8/2020	16:00 - 16:59	17	19	15		
	17:00 - 17:59	19	25	17		
22/0/2020	15:00 - 15:59	23	54	24		
22/8/2020	16:00 - 16:59	20	60	23		
	17:00 - 17:59	29	65	23		
	15:00 - 15:59	45	51	29		
28/8/2020	16:00 - 16:59	36	35	25		
	17:00 - 17:59	21	28	24		

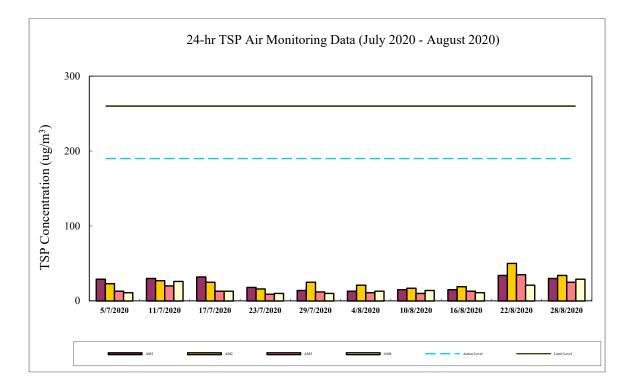
	1-hr TSP	24-hr TSP
	$(\mu g/m^3)$	$(\mu g/m^3)$
Action Level	340	190
Limit Level	500	260

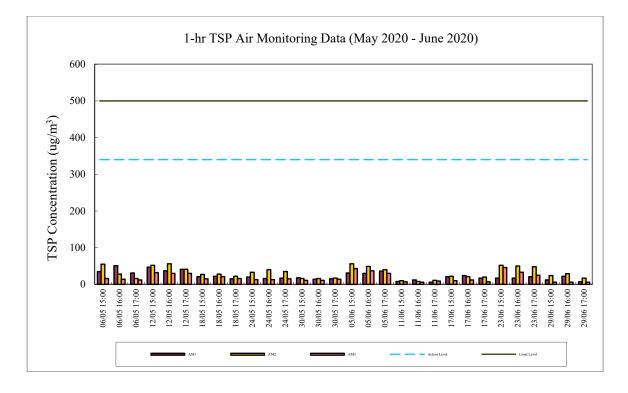
Calibration: Calibration details are shown in appendix F.

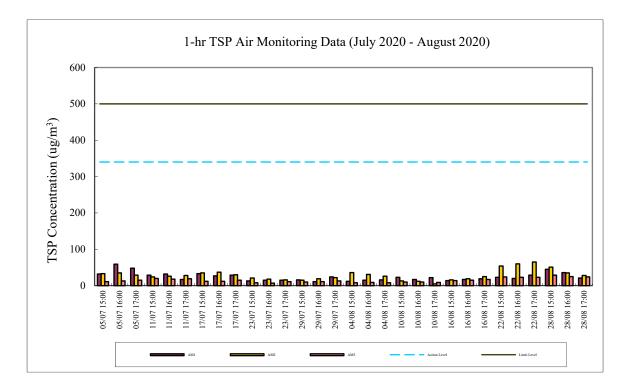
Equipment used:

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









Appendix E Cor	ntinuous Noise Monitoring Results for August 2020
Site:	Lamma Power Station Extension Construction
Measurement Location:	Ash Lagoon and Ching Lam
Measurement Parameter	: 30-min Leq (07:00-19:00 hrs on normal weekdays)
	5-min Leq (07:00-23:00 hrs on holidays and
	19:00-23:00 hrs on all other days, and 23:00-
	07:00 hrs of next day)
Noise Equipment:	B&K 2250 sound level meters and B&K 4231 sound
	Level calibrator
Lab. Calibration Date	: B&K 2250 sound level meters - 28/06/2020 (Ash Lagoon)
	19/08/2019 (Ching Lam)
	B&K 4231 calibrator - 02/10/2019

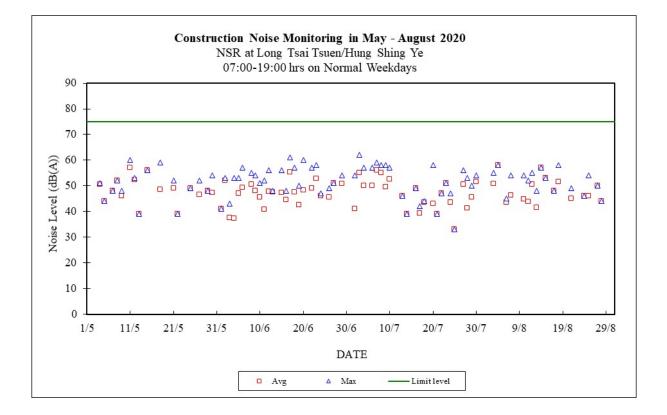
	Calculated Noise Level at NSR at Long		Limit	Calculated Noise Level at NSR at the		Limit	
Date	Time	NSR at Tsai	Long	Noise	school		Noise
Date	TTUG	Tsuen/H	Juna	Level	within		Level
		Shing N	-	(dB(A))	Wan Sar	l	(dB(A))
		(dB(A))			Tsuen		
					(dB(A))		-
	0 - 0 0 1 0 0 0	Max	Avg		Max	Avg	= 0
01/08/2020	07:00-19:00			75	42	42	70
01/08/2020	19:00-23:00	35	35	60	43	40	60
01/08/2020	23:00-07:00	43	33	45	43	36	45
02/08/2020	07:00-23:00	48	41	60	47	37	60
02/08/2020	23:00-07:00	45	43	45	44	40	45
03/08/2020	07:00-19:00	55	51	75	45	38	70
03/08/2020	19:00-23:00			60	42	40	60
03/08/2020	23:00-07:00	40	33	45	45	39	45
04/08/2020	07:00-19:00	58	58	75	42	35	70
04/08/2020	19:00-23:00	49	43	60	45	36	60
04/08/2020	23:00-07:00	45	35	45	43	37	45
05/08/2020	07:00-19:00			75	42	38	70
05/08/2020	19:00-23:00	48	44	60	45	36	60
05/08/2020	23:00-07:00	39	35	45	43	38	45
06/08/2020	07:00-19:00	45	44	75	39	34	70
06/08/2020	19:00-23:00	39	39	60	41	36	60
06/08/2020	23:00-07:00	30	30	45	40	35	45
07/08/2020	07:00-19:00	54	46	75	39	34	70
07/08/2020	19:00-23:00			60	44	38	60
07/08/2020	23:00-07:00	30	22	45	42	36	45
08/08/2020	07:00-19:00			75	40	35	70
08/08/2020	19:00-23:00	29	29	60	45	39	60
08/08/2020	23:00-07:00	29	29	45	43	35	45
09/08/2020	07:00-23:00	54	46	60	46	35	60
09/08/2020	23:00-07:00	28	28	45	45	34	45
10/08/2020	07:00-19:00	54	45	75			70
10/08/2020	19:00-23:00			60	37	33	60
10/08/2020	23:00-07:00	45	43	45	44	34	45
11/08/2020	07:00-19:00	52	44	75	39	33	70
11/08/2020	19:00-23:00	39	39	60	42	37	60
11/08/2020	23:00-07:00			45	44	38	45
12/08/2020	07:00-19:00	55	51	75	43	37	70
12/08/2020	19:00-23:00	40	40	60	40	35	60
12/08/2020	23:00-07:00	43	33	45	44	38	45
13/08/2020	07:00-19:00	48	42	75	41	35	70
13/08/2020	19:00-23:00			60	45	36	60

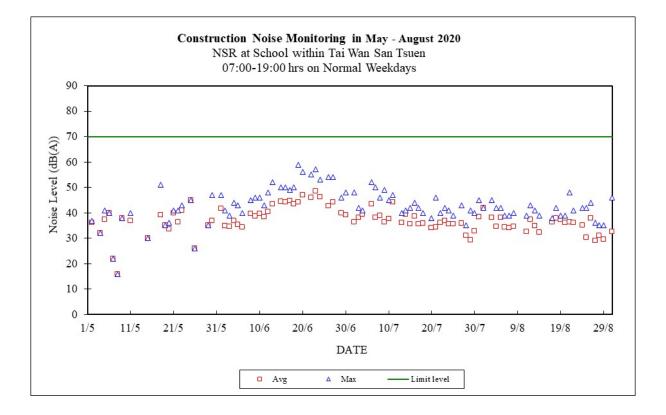
13/08/2020	23:00-07:00	44	44	45	43	39	45
14/08/2020	07:00-19:00	57	57	75	39	39	70
14/08/2020	19:00-23:00			60	44	34	60
14/08/2020	23:00-07:00	39	38	45	44	34	45
	07:00-19:00	53	53	75			70
15/08/2020	19:00-23:00						-
15/08/2020				60	28	28	60
15/08/2020	23:00-07:00	41	41	45	42	33	45
16/08/2020	07:00-23:00	34	34	60	44	32	60
16/08/2020	23:00-07:00	44	38	45	45	35	45
17/08/2020	07:00-19:00	48	48	75	38	37	70
17/08/2020	19:00-23:00			60			60
17/08/2020	23:00-07:00	45	42	45	40	33	45
18/08/2020	07:00-19:00	58	52	75	42	38	70
18/08/2020	19:00-23:00	47	43	60	42	38	60
18/08/2020	23:00-07:00	41	41	45	32	32	45
19/08/2020	07:00-19:00			75	39	38	70
19/08/2020	19:00-23:00			60	42	41	60
19/08/2020	23:00-07:00	44	41	45	40	33	45
20/08/2020	07:00-19:00			75	39	36	70
20/08/2020	19:00-23:00			60	35	32	60
20/08/2020	23:00-07:00			45	40	36	45
21/08/2020	07:00-19:00	49	45	75	48	37	70
21/08/2020	19:00-23:00			60	47	38	60
21/08/2020	23:00-07:00	30	30	45	42	37	45
22/08/2020	07:00-19:00			75	41	36	70
22/08/2020	19:00-23:00	38	35	60	46	36	60
22/08/2020	23:00-07:00	43	39	45	41	34	45
23/08/2020	07:00-23:00	49	39	60	44	36	60
23/08/2020	23:00-07:00	45	41	45	42	35	45
24/08/2020	07:00-19:00	46	46	75	42	35	70
24/08/2020	19:00-23:00			60	44	34	60
24/08/2020	23:00-07:00			45	41	36	45
25/08/2020	07:00-19:00	54	46	75	42	30	70
25/08/2020	19:00-23:00			60	45	38	60
25/08/2020	23:00-07:00			45	41	33	45
26/08/2020	07:00-19:00			75	44	38	70
26/08/2020	19:00-23:00	44	43	60	44	36	60
26/08/2020	23:00-07:00	45	38	45	44	33	45
27/08/2020	07:00-19:00	50	50	75	36	29	70
27/08/2020	19:00-23:00			60	46	34	60
27/08/2020	23:00-07:00	44	39	45	39	33	45
28/08/2020	07:00-19:00	44	44	75	35	31	70
28/08/2020	19:00-23:00			60	41	33	60
28/08/2020	23:00-07:00	45	45	45	41	35	45
29/08/2020	07:00-19:00			75	35	30	70
29/08/2020	19:00-23:00			60	41	34	60
29/08/2020	23:00-07:00	41	39	45	39	32	45
30/08/2020	07:00-23:00	50	43	60	46	36	60
30/08/2020	23:00-07:00	45	41	45	41	33	45
31/08/2020	07:00-19:00			75	46	33	70
31/08/2020	19:00-23:00			60			60
31/08/2020	23:00-07:00	43	39	45	35	31	45
JI/00/2020	23.00-01.00	υr	59	L	رد	JT	L L L

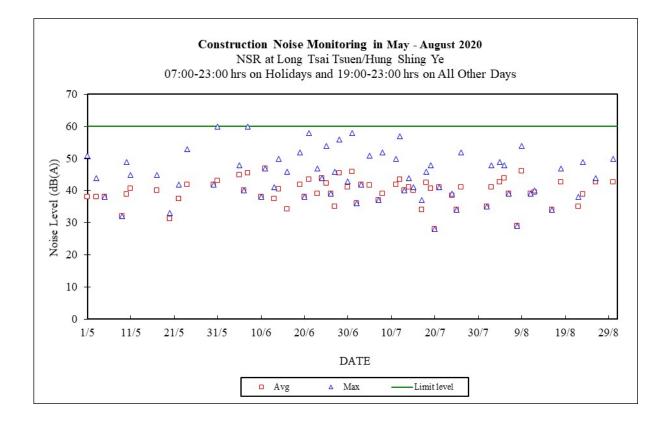
Note:

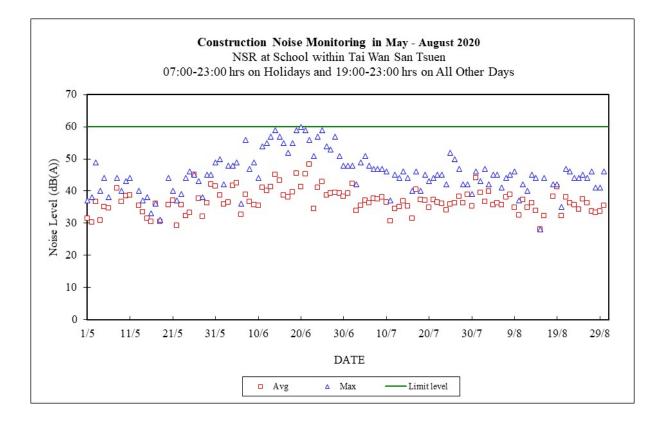
a. "---" represents the measured noise monitoring data lower than the established notional background level/discarded under strong wind.

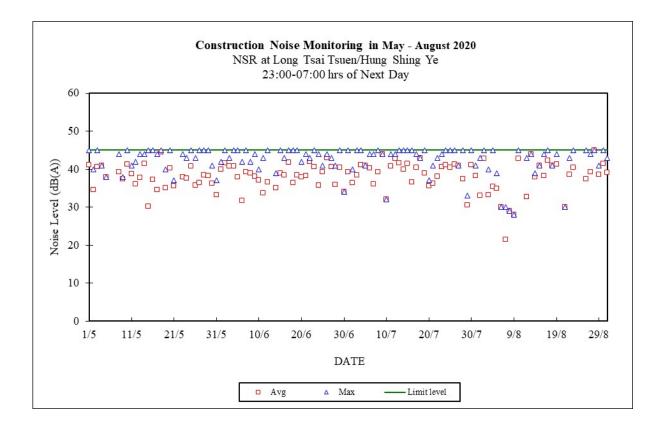
b. Continuous noise monitoring was also carried out at holidays & eveningtime (07:00-23:00 hrs on holidays and 19:00-23:00 hrs on all other days) and night-time (23:00-07:00 hrs of next day) with construction noise permit.

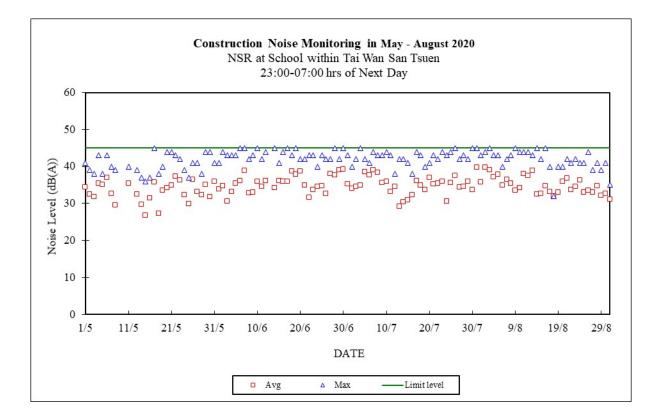












Appendix F

The QA/QC Procedures and Results

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

		Reser∨oir (AN	1)	
Date	Frequency (Hz) (240 - 275)	Operation Mode (Mode 4)	Main Flow (l/min) (2.70 - 3.30)	Bypass Flow (l/min) (12.30 - 15.04)
04/08/2020	269.272	4	2.95	13.44
10/08/2020	269.060	4	2.90	13.23
16/08/2020	269.714	4	2.92	13.30
22/08/2020	269.397	4	2.91	13.28
28/08/2020	269.030	4	2.89	13.18

East Gate (AM2)				
Date	Frequency (Hz) (240 - 275)	Operation Mode (Mode 4)	Main Flow (l/min) (2.70 - 3.30)	Bypass Flow (I/min) (12.30 - 15.04)
04/08/2020	256.770	4	2.99	13.60
10/08/2020	256.547	4	2.95	13.44
16/08/2020	257.042	4	2.97	13.52
22/08/2020	256.689	4	2.96	13.49
28/08/2020	256.211	4	2.94	13.37

Ash Lagoon (AM3)					
Date	Frequency (Hz) (240 - 275)	Operation Mode (Mode 4)	Main Flow (I/min) (2.70 - 3.30)	Bypass Flow (l/min) (12.30 - 15.04)	
04/08/2020	256.367	4	3.00	13.67	
10/08/2020	256.221	4	3.00	13.67	
16/08/2020	256.088	4	3.00	13.67	
22/08/2020	256.028	4	3.00	13.21	
28/08/2020	255.736	4	3.00	12.50	

Maintenance Record					
	Reservoir	East Gate	Ash Lagoon		
TEOM Filter Exchange	1	1	1		
Clean TSP Inlet	1	1	1		
Replace flow in-line filter	1	1	1		
Pump Repair					
Leak Check					
Flow audit					
Flow Controller Calibration					
A/C filter cleaning					

Remarks:

Prepared by: Chris Chan

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

Attendance Log

Site Name: Tai Yuen Village (AM4)

Date/Time	Staff Name
17/08/2020 / 10:30	WM Tam

Equipment / Item

Equipment / Item	Serial No. / No.
MINIVOL	5580
Used filter paper no.	MQ92
New filter paper no.	MQ93

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>5.021</u>
After:	5.021

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 Site Visit Log Sheet

Location: Ash Lagoon

Date/Time	Staff Attended
14/8/2020 / 15:30	TL Chu

Equipment	Serial No.
B&K 2250	3024699

B&K 4231 (S/N: 3014754)

<u>94.0</u> (94 ±1.0 dBA)

1. Calibration

Acoustic calibrator:

Noise level measured in calibration:

- 2. Weather Conditions
 - a. Cloudy
 - b. Calm
- 3. <u>Beacon</u>

Function normally: Yes

4. <u>Remark/Observation</u>

N/A

Prepared by: TL Chu

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

	Ching Lam	
Date	Calibration Results	Deviation from
		Reference (dB)
01/08/2020	Passed	-0.01
02/08/2020	Passed	-0.01
03/08/2020	Passed	0.01
04/08/2020	Passed	-0.06
05/08/2020	Passed	0.04
06/08/2020	Passed	0.01
07/08/2020	Passed	0.02
08/08/2020	Passed	0.01
09/08/2020	Passed	0.05
10/08/2020	Passed	0.02
11/08/2020	Passed	0.02
12/08/2020	Passed	0.00
13/08/2020	Passed	0.00
14/08/2020	Passed	0.02
15/08/2020	Passed	0.02
16/08/2020	Passed	-0.01
17/08/2020	Passed	-0.01
18/08/2020	Passed	-0.03
19/08/2020	Passed	0.00
20/08/2020	Passed	0.00
21/08/2020	Passed	0.02
22/08/2020	Passed	0.01
23/08/2020	Passed	0.03
24/08/2020	Passed	0.02
25/08/2020	Passed	0.02
26/08/2020	Passed	0.02
27/08/2020	Passed	-0.01
28/08/2020	Passed	0.01
29/08/2020	Passed	0.01
30/08/2020	Passed	0.04
31/08/2020	Passed	0.03

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 the Construction works, verbally advise the Contractor, Engineer and IEC, and inform the EPD of the exceedance, as soon as practicable.	Review Contractor's remedial actions / measures to ensure their effectiveness	Check Contractor's working methods and advise IEC and ET accordingly.	Submit proposals for remedial actions to Engineer.
		and advise the Engineer and ET accordingly.	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 responsible and instruct the	If the exceedance continues, consider what portion of the work is responsible
	Increase manual monitoring frequency to assess efficacy of remedial measures.		Contractor to stop the portion of work until the exceedance is abated	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	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;
consecutive	Inform Contractor, IEC and EPD;	Advise Engineer on the effectiveness of the	review the working methods;	Rectify unacceptable practice;
sampling day	Check monitoring data, all plant, equipment and Contractor's	proposed remedial measures 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;		the Contractor to slow down or to stop all or part of the marine works	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: 4/8/2020, 11/8/2020, 18/8/2020 and 27/8/2020.

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

- No environmental deficiency identified.

L11 Mechanical, Electrical, Instrumentation & Control Erection Work

Dates of Inspection: 6/8/2020, 13/8/2020, 20/8/2020 and 27/8/2020.

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

- No environmental deficiency identified.

L12 Piling Foundation Work

Dates of Inspection: 4/8/2020, 11/8/2020, 18/8/2020 and 25/8/2020.

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

- No environmental deficiency identified.

Summary of EMIS

Power Station – (Part B of EIA Report)

Construction Phase Mitigation Measures and their Implementation

EM&A Log Ref.	Mitigation Measures	Implementation Status
	AIR QUALITY	
A1	For general construction works, the dust control measures stipulated under the Air Pollution Control (Construction Dust) Regulation shall be complied with, such as:	
	• 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
В6	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	

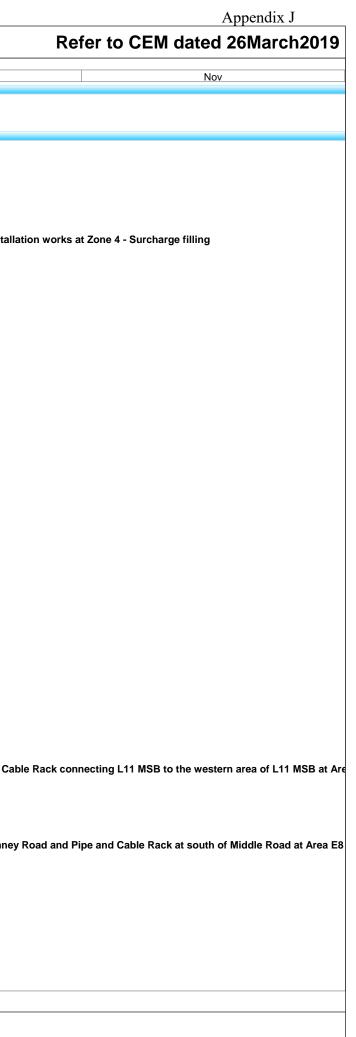
EM&A Log Ref.	Mitigation Measures	Implementation Status
G1	All percussive piling works shall be conducted on reclaimed land to avoid noise impact to marine mammals**	N/A
G2	All construction related vessels shall approach the extension site from the north and via the East Lamma Channel to avoid disturbance 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

ID	Task Name	Duration	Start	Finish	Half 2, 2020
1	Civil and Building Works for Unit 11 and Assoicated Works	1197 days	Fri 1/6/18	Thu 30/9/21	
2	Contract Key Dates	1197 days	Fri 1/6/18	Thu 30/9/21	
3	Contract Commencement Date	0 days	Fri 1/6/18	Fri 1/6/18	
4	Completion Dates	1044 days	Wed 31/10/18		
5	Section A1 - Ground treatment installation works at Zone 1A	0 days		Wed 31/10/18	
6 7	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	
8 9	Section A4 - Ground treatment installation works at Zone 3 Section A5 (i) - Ground treatment installation works at Zone 4 - Band drain installation	0 days 0 days		Thu 21/3/19 Thu 28/3/19	
0	Section A5 (ii) - Ground treatment installation works at Zone 4 - Surcharge filling	0 days	Wed 30/9/20	Wed 30/9/20)
1	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	-
2	Section A6 (ii) - External works at Area E15	0 days	Sat 15/2/20		
3	Section B1 (i) - Area south of L11 MSB and HRSG from GL11-F eastwards leading to Chimney Road at Area E1 & E2	0 days	Sun 1/3/20	Sun 1/3/20	
4	Section B1 (ii) - Supporting structures for overhead cranes of L11 MSB including the associated roof structure except the roof deferred works	0 days		Tue 17/3/20	
5	Section B1 (iii) - FSRU Civil works at Area E13	0 days	Mon 31/5/21		
6	Section B2 - Retractable Cover D at Area E22	0 days		Tue 31/3/20	
7	Section B3 - External works at Area B1, D2 and D4	0 days		Thu 30/4/20	
8	Section C1 - Area south of L11 MSB from GL11-F westwards leading to Station Road at Area E3(A) & E3(B)	0 days	Sun 1/3/20	Sun 1/3/20	_
9	Section C2 - (i) Southern part of L11 HRSG area and its surrounding at Area E7 except the deferred works for Lube Oil Storage Tank	0 days		Sun 1/12/19	
J	Section C2 - (ii) L11 Turbo Block foundation including the L11 MSB ground floor 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 reservoir	0 days	Thu 30/4/20	Thu 30/4/20	
1	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 11-1 to 11-6 for the installation of condenser	0 days	Sun 1/3/20	Sun 1/3/20	
2	Section D - (i) Roads and external grounds surrounding L11 MSB and L11 HRSG in addition to the southern & eastern areas mentioned above in Area E5 and E6	0 days		Tue 31/12/19	
3	surrounding in Area E6		Sun 1/3/20		
4	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	
5	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	
6	Section D - (v) Gas Duct Foundation, Pipe and Cable Rack and associated trench in Area E20	0 days	Sat 1/2/20	Sat 1/2/20	
7	Section E1 - (i) Link BrIdge and Pipe and Cable Rack connecting L11 MSB to the western area of L11 MSB at Area E3	0 days		Mon 28/9/20	
8	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	
29	Section E1 - (iii) External Works at Area E15 (C)	0 days		Sun 28/2/21	
0	Section E2 - Pipe and Cable Rack and trench at west of Chimney Road and Pipe and Cable Rack at south of Middle Road at Area E8 and E19	0 days		Thu 17/9/20	
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	
2	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	
3	Section F - 275kV Station Building Extension and associated works at Area E17	0 days		Sat 30/5/20	
4	Section G - A&A Works at No. 4 C.W. Intake at Area E12	0 days		Sun 31/5/20	
5	Section H - L11 Steel flue liner at No. 4 Chimney	0 days	Mon 15/7/19	Mon 15/7/19	

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ט	Task Name	Duration	Start	Finish	Sep	Half 2	2020
36	Section I - (i) 275kV cable trenching works connecting the 275kV Switching Station Extension and L11 MSB at Area E9 (B)	0 days	Fri 15/5/20	Fri 15/5/20	Сер		
37 38	Section I - (ii) Interconnector 2 Trench Modification Works at Area E10 Section J - (i) Demolition of Retractable Cover A&B & (ii) Foundation of LMX Light Oil Storage Tank Nos. 3 & 4 and A&A for Existing Bund Wall at	0 days 0 days	Fri 15/5/20 Fri 30/4/21	Fri 15/5/20 Fri 30/4/21			
39 40	Section K1 - External works at Area 15 (E) and 15(F) Section K2 - Removal of Southern Bund and External Works at Area D5, D6 and D7	0 days 0 days		Mon 31/5/21 Mon 31/5/21			
41	Section K3 - All remaining works shall be completed for reporting completion to BD and ready for OP inspection	0 days	Thu 30/9/21	Thu 30/9/21			
42	General & Preliminary	318 days	Fri 1/6/18	Wed 24/4/19			
43	Set up Temporary Site Office and Utilities	90 days	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		Thu 27/12/18			
16	Tower Crane erection 2@MSB, 1@ 275	50 days		Wed 24/4/19			
47 48	Submission and Approval Method Statement / Temp Work Submission & Approval from HEC for General Works	<u>554 days</u> 240 days	Fri 1/6/18 Fri 1/6/18	Mon 16/12/19 Sat 26/1/19			
19	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		Fri 26/4/19			
51	Structure Steelwork Connection Design Submission & BD Approval	60 days		Tue 27/11/18			
52	Structure Steelwork Shop Drawing & Approval	60 days		Tue 11/12/18			
53	Metal Cladding, louvre & windows submission & BD Approval	60 days	Wed 28/11/18				
54 55	Metal Cladding, louvre & windows shop drawing submission	60 days	Wed 12/12/18				
55 56	Order, Off Site Fabrication and Delivery (S. Steel & Cladding & louvres)	180 days	Sat 27/10/18				
50 57	Retractable Cover D BD Submission & Approval No. 4 C.W. Outfall A&A BD 1st Submission	90 days 90 days		Mon 20/5/19 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	3 Tue 22/1/19			
61	Folding Shutters Shop Drawing Submission & Approval	120 days		Wed 19/6/19			
62	Fabrication & Delivery of Folding Shutters	150 days		Sat 16/11/19			
63	Sewage Pump System Design submission & approval	90 days		Wed 19/6/19			
64 65	Fabrication & Delivery of Sewage Pump	180 days	Thu 20/6/19 Thu 30/8/18	Mon 16/12/19			
66	Other material submission & approval & delivery Coordination with the Employer's Specialist Contractors	300 days 478 days		Sat 19/9/20)K	🛡 19 Sep '20	
67	Installation of Puddle Pipes at C.W. outlet Culvert	7 days		Sun 26/5/19			
68	Installation of Puddle Pipes at C.W. Inlet Culvert	7 days 7 days		Sat 13/7/19			
69	Template setting at L11 Turbo Block Foundation	60 days		Mon 9/3/20			
70	Template setting of holding down bolts at HRSG column base	46 days	Tue 23/7/19				
71	I-beam / channel base installation on top of transformer foundations at Transformer Area	30 days	Fri 17/4/20				
72	Overhead crane erection at turbine hall using access through a temporary opening at L11 MSB roof between GL11-G to 11-H and 11-2 to 11-6	36 days	Sun 1/12/19				
73	Condenser assembly and erection using access through a temporary façade 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	127 days	Sun 1/3/20	Sun 5/7/20	w 1/F along GL 11-6 from GL11-I	B to 11-C including a c	lear space below 1/F betw
74	Installation of power train equipment including air inlet duct using access through a temporary façade opening at L11 MSB below 1/F along GL 11-6 from	142 days	Fri 1/5/20	Sat 19/9/20		Installation of pow	er train e quipment includi
75	GL11-F to 11-H including a clear space below 1/F of the above area Installation of embedded materials such as holding down bolts for equipment foundations - Commencement	30 days	Sun 23/6/19	Mon 22/7/19			
76	Section A1 & A2 - Ground treatment at Zone 1A & 1B	<u>92 days</u>	Wed 1/8/18	Wed 31/10/18			
77	Plant establishment for earthworks	7 days		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	Delivery of band drain	5 days		Sun 2/9/18			
80	Plant establishment for band drain (1st rig)	10 days		Wed 12/9/18			
81	Plant establishment for band drain (2nd rig)	7 days		Wed 26/9/18			
82	Plant establishment for band drain (3rd rig)	7 days	Thu 11/10/18	Wed 17/10/18			

Appendix J Refer to CEM dated 26March2019

Nov

6 to 11-C

duct using access through a temporary façade opening at L11 MSB belov

3 4 5 6 7 8 9 0 1 2 3	Vert. Band drain installation (1023 nos. x 44m) Deposition of surcharge up to +8.3mPD	45.1		1	Sep		Oct
5 6 7 7 8 9 0 1 2 1		45 days	Thu 13/9/18	Sat 27/10/18			
3 3 3 0 1 2		45 days		Wed 31/10/18	1 1		
7 3)) 1 2	Section A3 - Ground treatment installation works at Zone 2	158 days	Mon 1/10/18	Sun 17/3/19			
3)) ! 2	Backfilling and compaction from existing ground +4.5mPD to +5.5mPD	30 days		Tue 30/10/18			
)) 2	Delivery of band drain	6 days		Tue 23/10/18	4		
) 	Vert. Band drain installation (1787 nos. x 44m)	50 days		Wed 12/12/18			
	Deposition of surcharge up to +8.3mPD	60 days		Thu 31/1/19			
	Additional Concrete Blocks + Extra Surcharge	60 days	Mon 7/1/19	Sun 17/3/19			
	Section A4 - Ground treatment installation works at Zone 3 Backfilling and compaction from existing ground +4.5mPD to +5.5mPD	131 days 12 days		Thu 21/3/19 Mon 12/11/18			
	Vert. Band drain installation	60 days		Mon 7/1/19			
	Deposition of surcharge up to +8.3mPD	45 days		Thu 31/1/19			
5	Possession of Part 1 Defer portion at Zone 3	0 days	Wed 20/2/19	Wed 20/2/19			
3	Vert. Band drain installation	10 days	Wed 20/2/19	Fri 1/3/19			
7	Possession of Part 2 Defer portion at Zone 3	0 days	Fri 1/3/19	Fri 1/3/19	-		
3	Vert. Band drain installation Surcharge at deferred portion	7 days 14 days	Fri 1/3/19 Fri 8/3/19	Thu 7/3/19 Thu 21/3/19	-		
0	Section A5 (i) - Ground treatment installation works at Zone 4	83 days		Thu 28/3/19			
)1	Site Preparation for Vertical Band Drain	3 days	Tue 1/1/19				
2	Band drain installation	21 days	Wed 26/12/18				
)3	Possession of Defer portion at Zone 4	0 days	Fri 1/3/19	Fri 1/3/19			
)4	Vert. Band drain installation	28 days	Fri 1/3/19	Thu 28/3/19		Julasi Sep	120
)5)6	Section A5 (ii) - Surcharge works at Zone 4	<u>30 days</u>		Wed 30/9/20		 -	ion of surcharge up to +8.3n
)7	Deposition of surcharge up to +8.3mPD	30 days		Wed 30/9/20		Deposit	on of surcharge up to +0.5h
)8	Section A6 (i) - A&A Works for No. 4 C.W. Outfall at Area E18 BD Amendment, resubmission & approval for Jacking Pit	493 days 170 days		Sat 28/3/20 Mon 29/4/19			
9	Consent for Jacking Pit ELS	28 days	Sat 20/4/19	Fri 17/5/19			
0	Mobilization	0 days		Sat 15/12/18			
1	Jacking Pit Sheetpile Installation (incl. Stop work notice + CNY)	60 days	Sun 16/12/18				
2	Protective screen and preventive measure for U9 gas pipeline (VO)	28 days	Sun 24/2/19	Sat 23/3/19			
3	Provision of temp support for U10 gas pipeline (VO) upon RMA allow access	28 days	Sun 14/4/19	Sat 11/5/19			
4 5	ELS of jacking pit	30 days		Sun 16/6/19			
6	Pipe Jacking set up & ground strengthing Pipe Jacking	18 days 90 days	Mon 17/6/19	Sun 8/12/19			
7	Receiving Pit BD Approval	170 days	Sun 25/11/18				
8	Consent for Pipe & Sheet pile	28 days	Tue 14/5/19	Mon 10/6/19			
19	Receiving Pit Pipe & Sheet pile installation	30 days		Wed 10/7/19			
20	Consent for Receiving Pit ELS	28 days	Thu 4/7/19	Wed 31/7/19	-		
21	ELS of Receiving pit	40 days	Thu 1/8/19		-		
22	Allow modify existing outfall manhole for pipe jacking receiving	18 days		Fri 27/9/19			
23 24	Culvert Pipe Intallation & water test	55 days		Wed 12/2/20			
24 25	Inspection Manhole at Jacking Pit + backfill (Area E3(A))	18 days		Sun 1/3/20			
5 6	Manhole extension at Outfall no. 4 + backfill + Reinstate of Outfall Rd Sheetpile for L12 Outlet culvert (Connection to Jacking Pit)	45 days 45 days		Sat 28/3/20 Wed 28/8/19			
27	Consent + ELS for remaining jacking pit	75 days	Thu 29/8/19				
8	Outlet Culvert pipe installation + Thrust Box (remaining portion at A1 Area)	45 days		Sat 28/12/19			
29	Sheet pile for future extension along GRS	60 days	Thu 29/8/19	Sun 27/10/19			
80	Section A6 (ii) - External works at Area E15(D)	<u>37 days</u>		Sat 15/2/20			
31	Arae possession & Clearance	6 days		Mon 6/1/20			
32	Road & Surface Works	31 days	Tue 7/1/20				
3	Section B1 (i) - Area south of L11 MSB and HRSG from GL11-F eastwards	<u>375 days</u>	<u>Thu 31/1/19</u>	<u>Sun 1/3/20</u>			
	leading to Chimney Road at Area E1 & E2	0.1					
34 35	Area Possession & Clearance	0 days		Thu 31/1/19			
5 6	Excavation for CW Inlet Culvert (South of L11 HRSG)	21 days		Mon 6/5/19			l
6 7	Installation CW Inlet Culvert pipe Construction of Thrust Box & Manholes,etc	30 days		Wed 5/6/19 Wed 19/6/19			
8	Backfill	14 days 21 days		Wed 19/6/19 Wed 10/7/19	4		l
9	Install underground utilities	45 days		Wed 10/7/19 Wed 13/11/19	4		
0	Backfill and Temporary paving for Condensor Move in (E1)	14 days		Sun 1/3/20			l
1	Backfill and Temporary paving for Condensor Move in (ET) Backfill and Temporary paving for Condensor Move in (others)	30 days	Sat 1/2/20	Sun 1/3/20			l
2	Section B1 (ii) - Supporting structures for overhead cranes of L11 MSB	482 days		Tue 17/3/20			l
	including the associated roof structure except the roof deferred works	<u></u>					
3	Area possession & Clearance	0 days	Thu 1/11/18	Thu 1/11/18			1

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U	Task Name	Duration	Start	Finish
44	Erection of turbine hall roof except defer work	0 days	Wed 13/11/19	Wed 13/11/19
45	Installation of crane griders	21 days	Mon 11/11/19	
146	Turbine hall wall claddings	60 days		Tue 17/3/20
147	Section B1 (iii) - FSRU Civil works at Area E13 (GRS)	151 days		Mon 31/5/21
148	Submission and approval for consent to work	0 days	Fri 1/1/21	Fri 1/1/21
149	Civil & Building Works	130 days		Mon 10/5/21
150	Ground reinstatement	21 days	Tue 11/5/21	Mon 31/5/21
151	Section B2 - Retractable Cover D at Area E22	435 days	Tue 1/1/19	Tue 31/3/20
152	Area Possession, Demolition and clearance work	60 days		Mon 11/3/19
153	Revise Structural Form and BD resubmission & approval	150 days	Tue 12/3/19	Thu 8/8/19
154	Foundation construction	60 days		Mon 7/10/19
155	Backfill & Ground reinstatement	30 days		Wed 6/11/19
156	Superstructure fabrication & delivery	90 days		Wed 6/11/19
157	Superstructure erection	90 days	Thu 7/11/19	
158	E&M Installation and T&C	45 days	Sun 16/2/20	
159	Section B3 - External works at Area B1, D2 and D4	<u>416 days</u>		<u>Thu 30/4/20</u>
160	Receive Area from HKE, Area Possession & Clearance	0 days	Fri 1/3/19	Fri 1/3/19
161	Removal of existing paving for band drain under Section A5(i)	30 days	Fri 1/3/19	Sat 30/3/19
162	Complete Vert. Band drain under Section A5(i)	0 days	Thu 28/3/19	
163	Ground preparation for B1, D2 & D4 for handover to Plant contractor	90 days	Sat 1/2/20	Thu 30/4/20
164	Section C1 - Area south of L11 MSB from GL11-F westwards leading to	466 days	<u>Thu 1/11/18</u>	Sun 1/3/20
	Station Road at Area E3(A) & E3(B)			
165	Area Possession & Clearance	0 days	Thu 1/11/18	Thu 1/11/18
166	Excavation for Type C (Area E3A)	21 days		Mon 15/4/19
167	Installation CW Outlet Culvert Pipe connect to Type C1	21 days	Tue 16/4/19	
168	Installation CW Inlet Culvert pipe (South of L11 Condensor)	21 days	Mon 20/5/19	
169	Construction of Thrust Box	10 days		Wed 19/6/19
170	Construction of Access Manhole	21 days	Mon 10/6/19	
171	Backfill	14 days	Mon 1/7/19	
172	Construction of Underground drainage and utilities	60 days	Thu 7/11/19	Tue 7/1/20
173	Construct Temp Paving for Condenser move in	45 days	Wed 8/1/20	
174	Section C2 - (i) Southern part of L11 HRSG area and its surrounding at Area	295 days	Thu 31/1/19	
	E7 (No Defer Foundations)			
175	Area Possession & Clearance	0 days	Thu 31/1/19	Thu 31/1/19
176	Excavation & Pile Caps & Tie Beams (HRSG South Area E7)	45 days	Sun 19/5/19	
177	Construction RC foundations		Tue 9/7/19	
178	Construction RC plinths	30 days		Sat 21/9/19
179	Construction underground utilities	45 days		Sun 6/10/19
180	Backfill & Construction on-grade slabs	35 days	Mon 7/10/19	
181	Backfill and Temporary paving	21 days	Mon 11/11/19	
182	Section C2 - (ii) L11 Turbo Block foundation including the L11 MSB ground	<u>496 days</u>		Thu 30/4/20
102	floor together with the equipment foundations between GL 11-F to 11-H and	<u>490 uays</u>	<u>Sat 1/12/10</u>	<u>1 IIU 30/4/20</u>
	11-1 to 11-6 for the installation of power generator, air inlet duct and lube oil			
	reservoir			
183	Area Possession & Clearance	0 days	Sat 1/12/18	Sat 1/12/18
184	Excavation & Pile Caps & Tie Beams (MSBL11 - Turbo Block North)	70 days	Mon 14/1/19	
185			Wed 10/7/19	
186	Excavation & Pile Caps & Tie Beams (MSBL11 - Turbo Block South)	30 days		
187	Backfill and construction turbine block foundations	21 days		Thu 29/8/19
	Construction of internal drainage	60 days		Mon 7/10/19
188	Construction RC walls incl. G/F rooms	90 days	Tue 8/10/19	
189	Construction turbine block columns and upper portion for plant embed	21 days	Mon 9/9/19	Sun 29/9/19
100	installation	50 1	T 10/2/22	TI 20/1/20
190	Concrete Turbine upper part foundation & clear falsework	52 days		Thu 30/4/20
191	Section C2 - (iii) G/F of L11 MSB including the Condenser Pit, Circulating	<u>466 days</u>	<u>Thu 1/11/18</u>	<u>Sun 1/3/20</u>
	Water Pipe Pit and equipment foundations between GL 11-B to 11-C and 11-1			
100	to 11-6 for the installation of condenser	0.1		
192	Area Possession & Clearance	0 days		Thu 1/11/18
193	Excavation to foundation level at ELS Type A	18 days		Tue 30/4/19
194	Construction of CW Outlet Box + lowest tie beam & caps	40 days	Wed 1/5/19	
195	Construction of pile caps & tie beams & hot well sump pit up to +2.5mPD	30 days	Mon 10/6/19	Tue 9/7/19

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ID	Fask Name	Duration	Start	Finish
196	Backfill & Construction of CW Inlet Box + tie beams	18 days	Wed 10/7/19	Sat 27/7/19
197	Backfill and Construction ground beams & trenches	18 days		Wed 14/8/19
198	Construction of indoor underground drainage	12 days		Mon 26/8/19
199	Backfill & construction on-grade slabs	10 days		Thu 5/9/19
200	Construction Column casting and RC walls	30 days		Tue 29/10/19
201	Metal Cladding & Louvres for GLB-C/1-6	60 days	Thu 28/11/19	
202	Mis. Works for plant erection	24 days	Fri 7/2/20	Sun 1/3/20
203	Section D - (i) Roads and external grounds surrounding L11 MSB and L11	414 days		Tue 31/12/19
	HRSG in addition to the southern & eastern areas mentioned above in Area			
	E5 and E6			
204	Area Possession & Clearance	14 days	Thu 1/11/18	Wed 14/11/18
205	Excavation for Type C1 and open sheet pile	75 days	Mon 14/1/19	Mon 8/4/19
206	Install CW Outlet pipe & connect to prevous	21 days	Tue 16/4/19	Mon 6/5/19
207	Backfill	10 days		Thu 16/5/19
208	Undeground utilities and trenches	60 days		Sat 31/8/19
209	Construction of plant drainage, trenches & RC plinths	45 days		Tue 15/10/19
210	Remaining Undeground utilities & backfill (West of Tx Bay)	75 days		9 Tue 31/12/19
211	Section D - (ii) Remaining northern part of L11 HRSG area and its	<u>375 days</u>		Sun 1/3/20
	surrounding in Area E6	<u>oro uays</u>	<u>11u 31/1/1</u>	5un 1/5/20
212	Area Possession & Clearance	0 days	Thu 31/1/10	Thu 31/1/19
212	Excavation & Pits & Pile Caps & Tie Beams (HRSG north Area E6)	45 days		Sat 18/5/19
213	Construction RC foundations			
214		45 days		Tue 2/7/19
	Construction RC plinths & HRSG Lift Pit & internal drainage	60 days	Sun 9/6/19	
216	Backfill Construction on-grade slabs	28 days	Thu 8/8/19	
217	Construction underground utilities	45 days		Sat 19/10/19
218	Backfill, Remaining utilities and temporary paving	85 days		Mon 17/2/20
219 220	Touch up and site clearance	13 days	Tue 18/2/20	Sun 1/3/20
220	Section D - (iii) Whole of L11 MSB including the pipe and cable rack along	<u>526 days</u>	<u>Thu 1/11/18</u>	<u>Thu 30/4/20</u>
	south façade of L11 MSB with all underground utilities at Area E4 including			
221	C.W. Inlet and Outlet Culvert except the deferred works	0.4	The 1/11/10	The 1/11/10
221	Area Possession & Clearance	0 days		Thu 1/11/18
	Construction of pile caps & tie beams at Transformer Area	60 days		8 Sun 13/1/19
223	Excavation & Construction Blow Down Sum pit (Type B)	45 days		Sat 18/5/19
224	Construction of pile caps & tie beams at SunShadeCover Area	45 days		Fri 23/8/19
225	Preaparation for S.Steelwork Erection	14 days		Tue 16/7/19
226	Structural Delivery & Erection (Turhine Hall North fr G.L. 1-3/H->B)	30 days		Thu 15/8/19
227	Structural Delivery & Erection (Equipment Floors)	45 days	Fri 16/8/19	Sun 29/9/19
228	Structural Delivery & Erection (Turbine Hall South)	45 days	Mon 30/9/19	Wed 13/11/19
229	Fire Coating Application at Joint	120 days	Fri 16/8/19	Fri 13/12/19
230	External Scaffolding Erection	150 days		Sun 29/12/19
231	Construction 1/F RC Slab	14 days		Sun 13/10/19
232	Construction M/F RC Slab	7 days	Mon 14/10/19	
233	Construction 2/F RC Slab	14 days		
234	Construction 3/F RC Slab	14 days	Mon 28/10/19	
235	Construction 4/F RC Slab	14 days		9 Sun 10/11/19
236	Construction 4/F KC Stab Construction 5/F RC Stab (Roof of turbine hall, except defer portion)	30 days		Tue 24/12/19
230	Construction S/F RC Stab (Roof of turbine nan, except defer portion)			
237		14 days		Sun 22/12/19
	Construction Upper Roof RC Slab	12 days		Tue 7/1/20
239	Construction Defer Roof RC Slab (G.L. G-H)	30 days		Sat 15/2/20
240	Construction of Staircase ST-01 & lift shaft & machine room	120 days		Sun 29/12/19
241	Construction of Staircase ST-02 except defer work	76 days		9 Mon 13/1/20
242	Construction of RC plinth, kerbs & parapet Walls	30 days	Fri 7/2/20	Sat 7/3/20
243	Erection of Skylight & Roof Features	45 days		Sun 5/4/20
244	Waterproofing & Flooring at Roof	60 days		Mon 16/3/20
245	ABFW Works from 1/F to 5/F equipment rooms		Mon 21/10/19	
246	Metal Cladding, Windows and Louvres incl. roof feature	100 days		
247	Removal of external scaffolding	60 days		Thu 16/4/20
248	Building Services E&M Access & Installation	150 days		Sun 12/4/20
	Remaining and Mis. works for Plant erection Full Access	18 days		Thu 30/4/20
249	Remaining and Mis. Works for Plant election Full Access	10 uavs	101113/4/20	1110 30/4/20

17-8002 Master Prog Rev 3

Task

Split Milestone ♦

Summary 🛡

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1	ask Name	Duration	Start	Finish		Half 2, 2020			
50	Section D - (iv) Link Bridge between L10 and L11 MSB and at the south of	526 days	Thu 1/11/18	Thu 30/4/20	Sep		Oct		
	L11 MSB including their associated alternations & additions (A&A) Works at	<u>e_o uuyo</u>	110 1/11/10	1114 00/1/20					
	L10 MSB								
1	Area Possession & Clearance	0 days	Thu 1/11/18	Thu 1/11/18					
52	A&A works at South of L10 MSB	60 days	Thu 28/11/19	Fri 7/2/20					
53	Erection of link bridge structural steel	21 days	Fri 7/2/20	Thu 27/2/20					
54	Casting of bridge deck	7 days	Fri 28/2/20	Thu 5/3/20					
55	Metal roofing installation	14 days	Fri 6/3/20	Thu 19/3/20					
56	ABWF work	21 days	Fri 20/3/20	Thu 9/4/20					
57	Form new opening at MSB for final connection	14 days	Fri 27/3/20	Thu 9/4/20					
58	E&M Work for completion	21 days	Fri 10/4/20	Thu 30/4/20					
59	Section D - (v) Gas Duct Foundation, Pipe and Cable Rack and associated	<u>345 days</u>	Mon 11/2/19	<u>Sat 1/2/20</u>					
	<u>trench in Area E20</u>								
60	Area Possession & Clearance + CNY	0 days	Mon 11/2/19	Mon 11/2/19					
61	Sheet pile installation & submit as-built	75 days	Mon 11/2/19						
62	Consent for excavation	28 days		Fri 24/5/19					
63	Excavation & plate load test	45 days		Mon 15/7/19					
64	Construction of foundation	45 days		Thu 29/8/19					
65	Backfill & Underground utiltiies	30 days		Sat 28/9/19					
266	Remaining Pipe & cable rack and associated trenchs in Area E20	115 days	Sun 29/9/19						
67	Section E1 - (i) Link BrIdge and Pipe and Cable Rack connecting L11 MSB to	<u>263 days</u>	Wed 1/1/20	Mon 28/9/20	c.E1(i)	🛡 _28 Sep	• '20		
	the western area of L11 MSB at Area E3								
68	Area Possession	0 days		Wed 1/1/20					
69	Excavation & construction of new foundation	40 days		Tue 18/2/20					
270	Backfill	10 days	Wed 19/2/20						
271	Erection of Structural steel	30 days		Tue 4/8/20					
272	Backfill & Ground works	55 days		Mon 28/9/20		Backfill	& Ground works		
73	Section E1 - (ii) Gas Receiving Station and L11 Gas Receiving Station	<u>173 days</u>	Wed 1/1/20	<u>Tue 30/6/20</u>	c.E1(ii)				
	Equipment Room (GRS) Area Extension at Area E16								
74	Area Possession	0 days		Wed 1/1/20					
75	Removal of Surcharge and excavation	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	Tue 14/1/20		-				
78	ABWF for GRS Equipment room	45 days		Thu 21/5/20	-				
79	E&M Installation	45 days		Tue 30/6/20	-				
80	Construction of new Gas pipe plinths & racks	45 days		Mon 6/4/20	-				
81	Backfill and construction site drainage	21 days		Mon 27/4/20	-				
82	External Paving and install new fencing	60 days		Tue 30/6/20					
83	<u>Section E1 - (iii) External Works at Area E15 (C)</u>	<u>273 days</u>		<u>Sun 28/2/21</u>					
84	Removal of Surcharge and excavation	45 days		Wed 15/7/20	4				
85	Underground drianage, Utilities and RC plinths	123 days		Sun 15/11/20	4				
86	Backfill and install surface utilities	45 days	Mon 16/11/20						
87	Roadwork	60 days	Thu 31/12/20			100			
88	Section E2 - Pipe and Cable Rack and trench at west of Chimney Road and	<u>495 days</u>	Wed 1/5/19	<u>Thu 17/9/20</u>	c.E2 17 S	ep '20			
00	Pipe and Cable Rack at south of Middle Road at Area E8 and E19	0.1	***	***					
89	BD consent + Site Possession @ Area E8	0 days		Wed 1/5/19					
90 91	Excavation & Plate load test Foundation and Trench constructions	60 days 90 days	Wed 1/5/19 Sun 30/6/19	Sat 29/6/19 Fri 27/9/19					
91	Backfill & underground utitiles + temp paving	60 days		Tue 26/11/19					
93	Excavation & plate load test @ E19	60 days	Wed 27/11/19						
94	Construction of foundations & trenches	45 days		Sat 21/3/20					
95	Backfill & underground utitiles	60 days		Wed 20/5/20					
96	Pipe & cable rack Erection	60 days		Sun 19/7/20					
97	Ground reinstatement	60 days		Thu 17/9/20	Grou	nd reinstatement			
98	Section E3 - Gas Pipe Support Foundation and Pipe Trench and associated	173 days		Tue 30/6/20					
-	external works at Area E14, E15 (A) and E15 (B)	<u>175 uays</u>	<u>vieu 1/1/20</u>	100 30/0/20					
	Removal of surcharge / site clearance	21 days	Wed 1/1/20	Tue 21/1/20					
99	Excavation & construction of pipe trench	30 days	Wed 1/1/20 Wed 22/1/20						
	Encuration & construction of pipe trenen								
99 00 01		30 dave	Sun 1/3/20	Winn Sulver / / /					
	Construction of gas pipe support foundation	30 days	Sun 1/3/20 Tue 31/3/20						
0 1		30 days 60 days	Sun 1/3/20 Tue 31/3/20						

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Underground drianage, Ut

	Task Name	Duration	Start	Finish
303	Pagkfill & road work	32 days	Sat 20/5/20	Tue 30/6/20
303	Backfill & road work Section E4 - 275kV cable trenching works connecting the 275kV Switching	32 days 185 days	Fri 15/3/19	Sun 15/9/19
504	Section E4 - 275kV cable trenching works connecting the 275kV Switching Station Extension and L11 MSB at Area E9 (A)	<u>185 days</u>	<u>FFI 15/5/19</u>	<u>5011 15/9/19</u>
305	Site possession	0 days	Fri 15/3/19	Fri 15/3/19
306	Obtain Permit to work & Road close permit	10 days	Fri 15/3/19	Sun 24/3/19
307	Excavation & construction new cable trench to 275kV	45 days	Mon 25/3/19	
308	Excavation & construction new cable trench to L11MSB	130 days	Thu 9/5/19	Sun 15/9/19
309	Section F - 275kV Station Building Extension and associated works at Area	<u>709 days</u>	Fri 1/6/18	Sat 30/5/20
505	Section F - 275K V Station Bunding Extension and associated works at Area E17	<u>709 days</u>	<u>F [] 1/0/18</u>	<u>5at 50/5/20</u>
310	Installation of ELS for 275kV Switching Station near Staircase ST-3 and ST-6	14 days	Fri 1/6/18	Thu 14/6/18
311	Construction of Staircase ST-3	110 days	Fri 15/6/18	Tue 2/10/18
312	BD Amendment Approval on A&A	0 days		Mon 17/12/18
313	BD Amendment Approval on A&A ST3 & Drainage	0 days	Mon 4/2/19	Mon 4/2/19
314	OP inspection of Staircase ST-3	14 days	Mon 11/2/19	Sun 24/2/19
315	Consent of New Foundation Works (Stage 1)	0 days	Fri 19/10/18	Fri 19/10/18
316	Consent & BA10 for Demolition of Existing Staircase	0 days	Fri 8/3/19	Fri 8/3/19
317 318	Demolition of Exisiting Staircase and Submit BA14A BD inspection for BA14A & Issue OP	14 days 28 days	Sat 9/3/19 Sat 23/3/19	Fri 22/3/19 Fri 19/4/19
319	Consent & BA10 for New Foundation Work (Stage 2)	28 days	Sat 23/3/19 Sat 13/4/19	Fri 10/5/19
320	Hoarding Modification	7 days	Fri 19/10/18	Thu 25/10/18
321	Pile Cap & Tie Beam Construction (Stage 1)	98 days	Fri 26/10/18	Thu 31/1/19
322	Erection of Tower Crane	40 days	Mon 11/2/19	Fri 22/3/19
323	Pile Cap and Tie Beam (Stage 2)	21 days	Sat 11/5/19	Fri 31/5/19
324	RC Construction up to 1/F (Stage 1)	30 days	Sat 11/5/19	Sun 9/6/19
325 326	RC Construction up to 1/F (Stage 2) Construction of Staircase ST6	75 days	Sat 1/6/19 Sun 15/9/19	Wed 14/8/19 Fri 13/12/19
326	Shop Drawing Submission & Approval of Structural Steel	90 days 45 days	Wed 27/2/19	Fri 12/4/19
328	Structural Steel fabrication & Delivery	60 days	Sat 13/4/19	Tue 11/6/19
329	Erection of Structural Steel GL 17~18	30 days	Fri 16/8/19	Sat 14/9/19
330	Erection of Structural Steel GL 8~17	60 days	Sun 15/9/19	Wed 13/11/19
331	Metal Cladding Delivery	60 days	Wed 7/8/19	Sat 5/10/19
332	Metal Door, Window & Lourve Delivery	45 days	Sun 6/10/19	Tue 19/11/19
333	Erection of Working Platform and Scaffold	150 days	Mon 1/7/19	Wed 27/11/19
334	Install Decking	60 days	Wed 9/10/19	Sat 7/12/19
335 336	RC Walls from 1/F @ GIS Hall Construction of 2/F RC slab	40 days 14 days	Thu 31/10/19	Mon 9/12/19 Mon 23/12/19
337	Construction of R/F RC slab	21 days	Tue 24/12/19	Wed 15/1/20
338	Construction of UR/F RC slab	14 days	Thu 16/1/20	Fri 7/2/20
339	Construction of GIS Hall Floor	60 days	Tue 24/12/19	Tue 3/3/20
340	Installation of Overhead Crane (By JEC)	60 days	Wed 4/3/20	Sat 2/5/20
341	Construction of staircase ST4, ST5, Lift Shaft & Equip Floors	150 days	Sun 15/9/19	Sat 22/2/20
342	Lift Installation	90 days	Sun 23/2/20	Fri 22/5/20
343	Concrete of RC walls, plinths, kerb & parapet walls & New trench for LV Power	30 days	Tue 24/12/19	Sun 2/2/20
344 345	ABWF Works @ G/F ABWF Works @ 1/F	50 days 50 days	Mon 14/10/19 Wed 13/11/19	Fri 3/1/20
346	ABWF Works @ 2/F	75 days	Fri 13/12/19	Sat 7/3/20
347	ABWF Works @ R/F	30 days	Tue 14/1/20	Fri 21/2/20
348	ABWF Works @ UR/F	21 days	Mon 3/2/20	Sun 23/2/20
349	Waterproofing Works at R/F & UR/F	45 days	Thu 16/1/20	Mon 9/3/20
350	Building Services E&M Access & Installation & T&C	150 days	Wed 13/11/19	Tue 21/4/20
351	Metal Cladding, Windows and Louvres incl. Roof Feature	90 days	Tue 24/12/19	Thu 2/4/20
352	Shutter Erection	30 days	Fri 3/4/20	Sat 2/5/20
353	Removal of External Scaffolding + Tower Crane	35 days	Fri 3/4/20	Thu 7/5/20
354 355	External Underground Drainage and Utilities	30 days	Fri 17/4/20 Fri 1/5/20	Sat 16/5/20 Sat 30/5/20
356	Road & Paving Reinstatement Ready for FSD & OP Inspection	30 days 0 days	Sat 30/5/20	Sat 30/5/20
357	Section G - A&A Works at No. 4 C.W. Intake at Area E12	143 days		Sun 31/5/20
358				
	Permit to work	0 days		Wed 1/1/20
359	Erection of temp. platform	14 days		Tue 14/1/20
360	Demolition work	30 days	Wed 15/1/20	
361	Modify existing slab openings	75 days	Sun 23/2/20	Thu 7/5/20
362	Curing + Removal of platform	24 days	Fri 8/5/20	Sun 31/5/20
363	Section H - L11 Steel flue liner at No. 4 Chimney	186 days		Mon 15/7/19
364	Complete erection of L10 Steel flue	0 days	Tue 1/1/19	Tue 1/1/19
365	Modification of erection equipment	21 days		Mon 21/1/19
366	Erection temp. platform and demolition work	30 days	Tue 22/1/19	
367				
368	Structural steel delivery & Erection	85 days		Sun 26/5/19
	Removal of temp. work	5 days	Mon 27/5/19	
369	Reinstate G/F louvre wall and access door	45 days	Sat 1/6/19	Mon 15/7/19

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Appendix J Refer to CEM dated 26March2019

i) 275kV cable trenching works connecting the 275kV Switching ension and L11 MSB at Area E9 (B) ermit to work & Road close permit on & construction new cable trench ate cable trench for cable laying ii) Interconnector 2 Trench Modification Works at Area E10 ermit to work & Road close permit ate & new cable trench for cable laying i) Demolition of Retractable Cover A&B & (ii) Construction of & 4 ermit to work & Road close permit of Hoarding of existing cover & structural steel of existing bund wall and staircases of existing slab & foundation for new work ion of new bund wall and foundation ion of new bund wall and foundation ion of new oil separator e underground drainage and surface channel ion on-grade slab of hoarding and ground reinstatement - External works at Area 15 (E) and 15(F) of surcharge	232 days 0 days 160 days 72 days 275 days 275 days 426 days 0 days 21 days 30 days 45 days 60 days 30 days 100 days 80 days 40 days 40 days 365 days	Mon 16/9/19 Thu 5/3/20 Wed 1/4/20 Wed 1/4/20 Sun 1/3/20 Sun 1/3/20 Sun 1/3/20 Sun 22/3/20 Tue 21/4/20 Fri 5/6/20 Tue 4/8/20 Thu 3/9/20	Sun 15/9/19 Wed 4/3/20 Fri 15/5/20 Thu 31/12/20 Wed 1/4/20 Thu 31/12/20 Fri 30/4/21 Sun 1/3/20 Sat 21/3/20 Mon 20/4/20 Thu 4/6/20 Mon 3/8/20 Wed 2/9/20 Fri 11/12/20 Fri 11/12/20 Wed 20/1/21 Sun 21/3/21	c.J c.J Consent for new work
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ion of new oil separator underground drainage and surface channel ion on-grade slab of hoarding and ground reinstatement - External works at Area 15 (E) and 15(F)	80 days 40 days 60 days 40 days	Wed 23/9/20 Sat 12/12/20 Thu 21/1/21	Fri 11/12/20 Wed 20/1/21 Sun 21/3/21	
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ion on-grade slab of hoarding and ground reinstatement - External works at Area 15 (E) and 15(F)	60 days 40 days	Thu 21/1/21	Sun 21/3/21	
of hoarding and ground reinstatement - External works at Area 15 (E) and 15(F)	40 days			
- External works at Area 15 (E) and 15(F)	-		Eri $30/1/21$	
			Mon 31/5/21	c.K1
	30 days		Tue 30/6/20	
new drainage and utilities work	200 days	Wed 1/7/20		
- Kemoval of Southern Bund and External Works at Area D5, D0	<u>505 uays</u>	<u>NIOII 1/0/20</u>	<u>WIUII 51/5/21</u>	
n work	30 days	Mon 1/6/20	Tue 30/6/20	
	-			
	-			
	<u>025 uays</u>	<u>weu 0/1/20</u>	<u>111u 30/9/21</u>	
	30 days	Wed 8/1/20	Sat 15/2/20	
•				
	-			
	-			
	 Removal of Southern Bund and External Works at Area D5, D6 on work t new drainage and utilities work Paving All remaining works shall be completed for reporting completion ready for OP inspection (PS1.4.4) on of remaining roof after over headcrane move in tion of G/F Lube Oil Tank Room (BY TDK) tion of wall and staircase at G/F after Condensor Move in tion of Durasteel Steel wall panel after IBP installation tion of Transformer fence wall, cladding & associated FS services tatement of road & paving around MSB & HRSG on of trench covers and gratings after plant installation and reinstatement after 275kV cable laying 	Paving135 days- Removal of Southern Bund and External Works at Area D5, D6365 dayson work30 dayst new drainage and utilities work200 daysPaving135 days- All remaining works shall be completed for reporting completion623 daysready for OP inspection (PS1.4.4)61 daystion of G/F Lube Oil Tank Room (BY TDK)61 daystion of Wall and staircase at G/F after Condensor Move in90 daystion of Transformer fence wall, cladding & associated FS services122 daystatement of road & paving around MSB & HRSG122 dayson of trench covers and gratings after plant installation151 days	Paving135 daysSun 17/1/21- Removal of Southern Bund and External Works at Area D5, D6365 daysMon 1/6/20on work30 daysMon 1/6/20t new drainage and utilities work200 daysWed 1/7/20Paving135 daysSun 17/1/21- All remaining works shall be completed for reporting completion623 daysWed 8/1/20ready for OP inspection (PS1.4.4)30 daysWed 8/1/20ton of G/F Lube Oil Tank Room (BY TDK)61 daysTue 6/10/20tion of G/F Lube Oil Tank Room (BY TDK)61 daysSun 20/9/20tion of Transformer fence wall, cladding & associated FS services122 daysTue 1/9/20tatement of road & paving around MSB & HRSG122 daysTue 1/9/20on of trench covers and gratings after plant installation151 daysThu 1/10/20	Paving135 daysSun 17/1/21Mon 31/5/21- Removal of Southern Bund and External Works at Area D5, D6365 daysMon 1/6/20Mon 31/5/21on work30 daysMon 1/6/20Tue 30/6/20t new drainage and utilities work200 daysWed 1/7/20Sat 16/1/21Paving135 daysSun 17/1/21Mon 31/5/21- All remaining works shall be completed for reporting completion623 daysWed 8/1/20Thu 30/9/21ready for OP inspection (PS1.4.4)Sun 17/LMon 6/7/20Sat 15/2/20ton of G/F Lube Oil Tank Room (BY TDK)61 daysTue 6/10/20Sat 5/12/20tion of Durasteel Steel wall panel after IBP installation30 daysSun 20/9/20Mon 19/10/20tion of Transformer fence wall, cladding & associated FS services122 daysTue 1/9/20Thu 31/12/20tatement of road & paving around MSB & HRSG122 daysTue 1/9/20Thu 31/12/20on of trench covers and gratings after plant installation151 daysThu 1/10/20Sun 28/2/21

Task

Summary 🛡 🛡

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Appendix J Refer to CEM dated 26March2019
Nov
e at G/F after Condensor Move in struction of Durasteel Steel wall panel after IBP installation
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	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 Trainsformer 🔷 07/01
5	Power Receiving	1日	21/02/01 (月)		O/B GT & GEN- 100 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
0.23	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

 $\mathbf{2}_{\mathrm{T}}$ 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

举06月2021年 1旬下旬上旬中旬	07月 2021年08月 下旬上旬中旬下旬	2021年09月2 1上旬中旬下旬上	021年10月 2021年 旬中旬下旬上旬中旬	11月2021年12月 下旬上旬中旬下旬 12/01	2022年 2022年01月 2022年02 上旬中旬下旬上6中旬下1
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			18		
up to 31st-May 1	-2021				
	61.6	GT Fin	t Firing - 11/01-		
			Synchronizatio	n ♦ -12/01	
					-
	1111				
				1111	

 92.08	規問	開始日	終了日	Construction Schedule of Unit-11
103 B	11111	Internal Pr		2020年
lorth side stair frame & EV structure	90日	20/08/22(土)	20/12/04 (金)	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03月 2020年04月 2020年05月 2020年05月 2020年07月 2020年08月 2020年09月 2020年10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 2020年11月 2021年 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旬中旬下旬上旬中旬下旬上旬中旬下旬上旬中旬下
Setting FL+29m floor structure (Above tube bundie)				North side stair frame & EV structure
Setting FL+29m floor structure (Above tube bundle)	30日	20/10/01(木)		Setting FL+29m floor structure (Above tube bundle)
		21/02/25(木)		South pide stair frame)
Setting roof structure (Including deferable structure)	120日	20/12/04(金)		Setting roo' structure (Including deferable structure)
Prepare unloading Tube bundle	10日	20/09/04(金)		Preparit:unloading Tube bunde
Unloading Tube bundle #1 (9set)	3日	20/09/16(水)		Undpikding Tube bundle #1 (9set)#8.
Prepare installing Tube bundle #1 (9set)	5日	20/09/19(土)		Prepare installing Tube bundle = (9ast) 🚋
Period for the installation of Power Train	0日	20/09/24 (木)		₩ 09/24
Lifting and installing Tube bundle #1 (9set)	12日	20/09/25(金)		Lifting and installing Tube bundle #1 (\$sot)
Unloading Tube bundle #2 (6set)	2日	20/10/10(土)		Unicading Tube bundle #2 (6set)
Prepare installing Tube bundle #2 (6set)	4日	20/10/13(火)		Propare installing Tube bundle #2 (6set)-
Lifting and installing Tube bundle #2 (6set)	6日	20/10/17(土)		Lifting and installing Tube bundle #2 (6set)
Lifting Down commer piping (pre-assembling)	8日	20/09/01 (火)		Lifting Down commer piping (pro-assembling)
Lifting and setting HP-Drum	1日	20/10/14(水)		Lifting and petting HP-Drum≱●
Lifting and setting IP-Drum	1日	20/10/31(土)		Litting and setting IP-Drum
Lifting and setting LP-Drum	1日	20/11/04 (水)		Lifting and setting LP-Drum
Lifting and installing HRSG Outlet duct	2日	20/11/18(水)		Lifting and installing HRSG Outlet duct
Adjusting HDR level (HP)	10日	20/11/05(木)		Adjusting HDR level (HP)
Adjusting HDR level (IP & LP)	15日	20/11/17(火)		Adjusting HDR level (IP & LP)
Lifting and setting the silencer of HRSG	5日	21/04/23(金)		Lifting and setting the allencer of HF
Assembly accessory inside HRSG	180日	21/03/19(金)		Assembly accessory inside HRSG
Excavation the foundation of UTAC (By Civil)		21/02/01 (月)		Excavation the foundation of UTAC (By Civit)
Urea to Ammonia conversion system	90日	21/02/25(木)		Urea to Ammonia conversion system
CO2 Fire fighting	50日	21/04/13 (火)		-002-Fire fighti
Installation the SCR catalyst	20日	22/01/06 (木)	22/01/28(金)	
		aa (az (1a (土)	0 / 0 / 0 / 0 / 0)	
Lifting and hang Pipes (Left side of HRSG)	80日	20/07/16(木)		Lifting and hang Pipes (Left side of HRS3)
Fitting Pipes (Inside of HRSG / HP)	90日	20/11/17 (火)		Fitting Pipos (Inside of HRSG / HP)
Fitting Pipes (Inside of HRSG / IP,LP)	90日	20/12/04(金)		Fitting Pipes (Inside of HRSG / IPLP)
Lifting FL+29m and roof structure	40日	20/12/04(金)		Litting FL+29m and roof structure
Lifting and hang Pipes (Upper HRSG)	60日	20/12/04(金)		Lifting and hang Pipes (Upper HRSG)
Fitting and welding Pipes in range of Hydrostatic		20/11/17(火)		Fitting and wriding Piges in range of Hydrostatic
Fitting and welding Pipes out range of Hydrostatic	100 日	21/03/02 (火)	1/03/03(金)	Fitting and welding Pipes out range of Hydrostatic
Drange for programula city of the	10.8	20/01/04/04	0/00/07/21	
	10日	20/01/24 (金)		Prepare for preassemble Side and Top Casing
Preassembly Side casing (2set)	30日	20/02/11(火)		Preasembly Side casing (2set)
Preassembly Top casing (HP and IP)	30日	20/02/11(火)		Pressembly Top casing (HP and IP)
	3日	20/03/20(金)		Prepare for preassemble SGR 🛁
Preassembly SCR	12日	20/03/24 (火)		Preasembly SCR 🚽
	3日	20/07/27(月)		Prepare for preassemble AlG
Preassembly AIG	18日	20/07/30(木)		Pressenbly AlG
	4日	20/06/20(土)		Prepare for preassemble HRSG Intel duot
	52日	20/06/25 (木)		Preassembly HRSG Injet duct
	4日	20/09/28(月)		Prepare for preassentibly HRSG Dutlet duct
Preassembly HRSG Outlet duct	40日	20/10/02(金)	0/11/18(水)	Preasembly HTSS Outlet duct

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

スク	58	100100	開始日	转了日
		124100	and the Pro-	
Pre	Preassembly FL+29m floor structure #1	18日	20/08/01 (土)	20/08/22(土)
IRSG	G Exhaust duct	445日	20/02/01 (土)	21/07/02 (金)
Ma	lake the condition for construction	5日	20/02/01 (土)	20/02/06 (木)
Ce	Center line marking	5日	20/02/01 (土)	20/02/06 (木)
Chi	Chipping	20日	20/02/07 (金)	20/02/29 (土)
Pac	acker setting	20日	20/02/19 (水)	20/03/12 (木)
Bui	luilding structure in the part of ED4	25日	20/05/15 (金)	20/06/12(金)
Bui tier	uilding structure in the part of ED5,6 (By 2nd er)	15日	20/06/25(木)	20/07/11(土)
Gro	routing structure for exhaust duct (Nearly stack)10日	20/06/13(土)	20/06/24 (水)
Red	Receiving Exhaust duct ED4	2日	20/05/01 (金)	20/05/02(土)
Lift	ifting and assembly the Elbow duct in ED4	30日	20/07/13(月)	20/08/15(土)
Pre	reassembling other duct in ED4	40日	20/05/04(月)	20/06/18 (木)
Lift	ifting and connecting the duct of ED4	5日	20/08/17(月)	20/08/21 (金)
Rec	eceiving Éxhaust duct ED5,6	2日	20/06/15(月)	20/06/16 (火)
Pre	reasembling ED5, 6	70日	20/06/15(月)	20/09/03 (木)
Buil tier	uilding structure in the part of ED5,6 (Above 2nd er)	50日	20/08/22 (土)	20/10/19(月)
Per	eriod for the installation of tube bundles	7日	20/10/20(火)	20/10/27 (火)
Lifti	iting and connecting the duct of ED5,6	15日	20/10/31 (土)	20/11/17(火)
Buil	uilding structure in the part of ED1-3	55日	20/11/24 (火)	21/02/15(月)
Gro	routing structure for exhaust duct (Horizontal)	10日	21/02/16 (火)	21/02/26 (金)
Rec	eceiving Exhaust duct ED1-3	2日	20/06/30(火)	20/07/01 (水)
Pre	reassembling ED1-3	120日	20/09/04(金)	21/01/21 (木)
Lifti	fting and connecting the duct of ED1-3	25日	21/02/13(土)	21/04/22 (木)
Sca	caffolding, welding, insulation	140日	21/01/21 (木)	21/07/02(金)
Peri	eriod of crane for vertical duct	18日	20/10/30 (金)	20/11/19(木)
ver H	Head Grane	75日	19/12/14 (土)	20/03/13 (金)
Che	heck the location of installation	1日	19/12/17(火)	19/12/17(火)
Lifti	fting and setting the rail for OHC	16日	19/12/18 (水)	20/01/04(土)
		5日	19/12/14(土)	19/12/20(金)
Unic	nloading OHC material	2日	19/12/20(金)	19/12/23(月)
	reassembly OHC	15日	19/12/23(月)	
	fting and setting Aux. OHC Garter	4日	20/01/09 (木)	20/01/13(月)
		4日	20/01/14 (火)	
Inst	stalling electrical equipment	20日	20/01/18(土)	20/02/13(木)
Corr	ommissioning	25日	20/02/14(金)	20/03/13(金)
nder	enser	185日	20/03/03 (火)	20/10/02(金)
Cen	enter line marking	2日	20/03/09(月)	20/03/10(火)
Chip	nipping	6日	20/03/11 (水)	20/03/17 (火)
Set	atting packer and base plate	4日	20/03/18 (水)	20/03/21 (土)
Setti cond	tting temporary rail and SARLIFT for installation ndenser	28日	20/03/11 (水)	20/04/10(金)
(Loa	pad test for SARLIFT)	1日	20/04/03 (金)	20/04/03 (金)
Asse	sembling the scafolding around skirt	15日	20/03/20 (金)	20/04/05(日)

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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

ID I	92.0名	10100	開始目	转了日	Construction Schedule of Unit-11				
	and a second sec	1751192	Lander 1-1	48.3 13	2020年				
136	Preparation the lifting tool for the skirt	2日	20/04/05(日)	20/04/06(月)	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02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09月 2020年09月 2020年10月 2020年11月 2020年12月 2021年01月 2021年01月 2021年03月 2021年03月 2021年03月 2021年04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旬中旬下旬上旬中旬下旬上旬中旬下旬上旬中旬下	2021年 1月11日	2021年05月 202 印中何下何上句	2021年05月 2021年06月 202 上旬中旬下旬上旬中旬下旬上旬	2021年05月 2021年06月 2021年07月 20 上旬中旬下旬上旬中旬下旬上旬中旬下旬上1
137	[Civil]Excavate the access road	30日	20/03/03 (火)		Preparation the lifting tool for the skirt.				
138	Assembly the Unit carrier	4日	20/04/03(金)	20/04/06(月)	[Civil]Excavate the access road				
139	Assembly the 750tonA/C	4日	20/04/03 (金)	20/04/06(月)	Assembly the Unit carrier				
140	Delivery date of condenser	2日	20/04/01 (水)	20/04/02 (木)	Assembly the 750tonA/C				
141	Remove packing material	3日	20/04/04(土)	20/04/06(月)	Delivery date of condenser				
142	Installation Upper skirt	2日	20/04/11 (土)	20/04/13(月)	Remove packing material				- 1 A I I I I I
143	Installation Lower skirt	2日	20/04/14 (火)	20/04/15(水)	Installation Upper skirt				
144	Fit up condenser skirt	3日	20/04/16 (木)	20/04/18(土)	Installation Lower skirt				
145	Assembling and welding skirt	8日	20/04/20(月)	20/04/28 (火)	Fit up condensir akrt				
146	Remove rail for condenser skirt	1日	20/04/16 (木)	20/04/16 (木)	Assembling and weiging skint				11110
147	Installation Condenser shell of lower	1日	20/04/17 (金)	20/04/17(金)	Remove rail for condensor skirt				
148	Installation Condenser shell of upper	1日	20/04/18(土)	20/04/18(土)	Installation Condenser shell of Jower				
149	Disassembly the 750tonA/C	1日	20/04/18(土)	20/04/18(±)	Installation Condenser shell of upper	161			
150	Dismantling SARLIFT and temporary rail	15日	20/04/20(月)	20/05/06 (水)	Disassembly the 750tonA/C+				
151	Assembling the scafolding around condenser she	5日	20/04/27 (月)	20/05/01 (金)	Dismantling SARLIFT and temporary rail				
152	Welding Condenser shell (outside / 1 layer)	5日	20/05/02 (土)	20/05/07 (木)	Assembling the scafelding around condenser shell in Welding Condenser shell (outside / I layer)				
153	Fit up condenser skirt to condenser shell	3日	20/05/08 (金)	20/05/11 (月)	Fit up condenser skirt to condenser shell				
154	Installation the monorail of South side	20日	20/05/12 (火)	20/06/03 (水)	Installation the monorail of South side				
155 📴	Hand over around condenser to civil working	30日	20/06/08(月)	20/07/11 (土)	Hand over around condenser to civil working				
156	Installation the condenser water box of South sid	le 7日	20/07/13 (月)	20/07/20(月)	Iristallation the condenser water box of South side				
157	Installation the CW pipe	45日	20/07/21 (火)	20/09/10 (木)	Installation the CW pipe				
158	Assembling Exp.J	1日	20/09/21(月)	20/09/21(月)	Assembling Exp.J h				
159	Welding Exp_J	10日	20/09/22(火)	20/10/02 (金)	Welding Exe.J 🐂				
160									1.7.1
161	GT/ST/Generator	535日	20/06/02 (火)	22/02/15 (火)	GT/ST/Generator			ł	
162	Remove templates	14日	20/06/02 (火)	20/06/17 (水)	Remove templates				
63	Center line marking	5日	20/06/18 (木)	20/06/23 (火)	Center fine matking				
64	Chipping	10日	20/06/24 (水)		Cytoping				
65	Packer setting	15日	20/07/06(月)		Packer setting				
166	Setting the base plate	7日	20/07/23 (木)		Setting the base plate 🎽				
167	Setting the bearing case	7日	20/07/31(金)		Setting the bearing case 🛌				
168	Lay down pipes under GT	1日	20/08/08(土)		Lay down pipes under GT				
170	Lay down pipes under ST	313	20/08/10(月)		Lay down pipes under ST 🖬				
170	Lifting and hanging EB01	5日	20/08/05 (水) 20/07/30 (木)		IP/LP+MSV Lifting and retting ■				
172	Setting the Gantry system for GT	21日	20/08/03(月)		Lifting and hanging EB01 M				
172	Load test for Gantry system	21日 2日	20/08/03 (月)		Setting the Gantry system for GT-				
173	GT O/B (with Gantry)	2日	20/08/27(木) 20/09/01(火)		Load top: for Ganby system #				
175	Setting the Gantry crane for GEN	1日	20/09/01(火)		GT O/B (with Gantry) 🔶 89/02			1	
176	GEN O/B (with Gantry)	2日	20/09/03(木)		Setting the Gentry crane for GEN 1				
177		2日	20/09/05(土)		CEN D/B/(with Gantry) 🐱 69/04				
178	Dismantling the Gantry system	15日	20/09/08(火)		ST Lower casing O/B (with 0HC) 🏅				111
179		31日	20/10/01(木)		Disminifing the Gantry system				11.13
180	ST Rotor	1日	20/10/30 (金)		Lifting art setting St. Annual and a setting St.				
					ST Roter				

Installation HRSG was re-started from 23rd-Jun

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Appendix J

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	夕 スク名	利用	開始日	終了日	Construction Schedule of Unit-11
					2020年 2021年 2022年 2022年
0	HP-MSV lifting and setting	5EI	20/10/31(土)	20/11/05 (木)	2022年 9年08月 2019年10月 2019年10月 2019年11月 2019年11月 2019年11月 2020年05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 2020年05月 2020年11月 2020年11月 2020年12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07月 2021年07月 2021年07月 2021年05月 2021年05月 2021年07月 2021年10月 2021年11月
	Assembly ST	51日	20/11/06(金)	21/01/04(月)	HDP-MSM lifting and setting
3	ST Upper Casing	1日	20/12/29 (火)	20/12/29 (火)	Assembly Sir
45	First alignment of GT and GEN	25日	20/09/14(月)	20/10/12(月)	ST Upper Dasing M
5	GT enclosure (Lower)	20日	20/10/31 (土)	20/11/23 (月)	Firits: alignment of GT and GEN
6	Assembly piping around GT	120日	20/11/11 (水)	21/03/30 (火)	(GT enclosurin (Lower), distant
7	Assembly slipring of GEN	28日	20/11/11 (水)	20/12/12 (土)	Assembly piping around ST
3	Final alignment	20日	21/01/05 (火)	21/01/27 (水)	Assembly aligning of CEN
2	Assembly 3S clutch	15日	21/01/28(木)	21/02/13 (土)	Final digrament
1	Joint coupling	10日	21/02/15(月)	21/02/25 (木)	Assémbly 35 ckitch
-	Installation GT enclosure	80日	20/12/19(土)	21/03/22 (月)	Joint coupling
£	Installation ST enclosure	80日	21/02/26(金)	21/05/29(土)	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)	22/02/15 (火)	Elowing out a
					Remove temporary strainer
	GT Air inlet	394日	20/07/06(月)	21/10/08 (金)	ST Air Inlet
	Center line marking	2日	20/08/13 (木)	20/08/15(土)	Center line marking Me
T.	Setting the base plate	10日	20/08/15(土)	20/08/27 (木)	Setting the base glate
	Preassembly the Air inlet duct	60日	20/07/06(月)	20/09/12(土)	Pressembly the Air inlet duct
	Lifting and installation the Air inlet duct (Vertical)	25日	20/08/27 (木)	20/09/24 (木)	Lifting and installation the Air inlet duct (Vertice)
(iii)	Welding Air inlet duct (Vertical)	50日	20/09/08 (火)	20/11/04 (水)	Welding Air inlet duct (Verland)
	Lifting and installation the Air inlet filter	37日	20/10/07 (水)	20/11/18 (水)	Litting and installation the Air rolet filter
	Welding Air inlet filter	70日	20/10/19(月)	21/01/07 (木)	Weifing Air just litter Winner
1	Lifting and assembly the Air inlet manifold	2日	20/11/06 (金)	20/11/07 (土)	Lifting and Assembly the Air rate manifold
	Lifting and installation the Air inlet duct (Horizontal)	8日	20/11/09(月)	20/11/17 (火)	Lifting and installation the Air inlet duct (Horizonta)
	Automatic roller shutter	2日	20/11/18 (水)	20/11/19 (木)	Automatic roller stutter
	Welding Air inlet duct (Horizontal)	25日	20/11/18 (水)	20/12/16 (水)	Welting Air inlet dupt (Horizontal)
813	Filter element installation	5日	21/10/02(土)	21/10/08 (金)	Filter element installation
	Auxiliary Equipment (O/B)	353日?	20/04/28 (火)	21/06/12(土)	Auxiliary Equipment (O/B)
		143日?	20/06/09(火)	20/11/21 (土)	
	Chipping and pakker setting	10日	20/06/09 (火)		Chipping and pakker setting
	H2 cooler	2日	20/07/31 (金)		T H2 cooler
	Platform under the GEN	5日	20/08/03(月)		Platform under the GEN 🎽
	Temp hanging Main Steam Piping	25日	20/07/30(木)		Temp hanging Main Steam Piping
	Sampling lack	2日	20/11/03 (火)		Shapping lack 🙀
	Light oil drain unit		20/11/05(木)		Light (di drain unit) 🕪
	GT purge air compressor		20/11/07(土)		GT purge air compressor
	GT purge are reservoir		20/11/10(火)		GT purge are reserver M
	Light oil flow divider unit & platform	22	20/11/12(木)		Light of flow divisor unit & platformage
	GT Purge air unit		20/11/12(木)		IQT Purce air unit#
	Fuel gas unit	2日	20/11/20(金)	20/11/21(土)	Firel and point 1
	2 MCD haster Marster War	105 5 6	00/05/05/11		
	2 MSB Inside North-West		20/05/05 (火)		
	Chipping and pakker setting	10日	20/05/05 (火)	20/05/16(土)	Chipping and pakkor setting

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- 18 H	タスク名	利用作用	開始日	終了日		
		1411-14	INDU H	74.7.14	2020年 2021年	to:
0	Preparation hauling equipment	4日	20/05/28(本)	20/06/02(火)	2022年 第408月 2019年10月 2019年11月 2019年11月 2019年11月 2019年11月 2021年05月 2021年11月 2021年11月 2021年11月 2021年11月 2021年10月 2021年05月 2021年11月 2021年11日 2011年11日	年01月 2022年 何下旬上旬中5
7	Condenser water box	3日		20/06/04 (木)	Preparation hauling equipment	
	Closed cooling water pump	2日	20/06/05(金)	20/06/06(土)	Condenser water box 🎽	
6	Condenser vacuum pump	2日	20/06/08(月)		Closed cooling water pump	1.1
2	Dismantling hauling equipment	2日		20/06/11(木)	Condenser vacuum pump	
-	ST blow down tank	1日	20/06/10(水)	20/06/10 (水)	Dismantling hauling equipment	
-	ST Blow down tank structure	1日	20/06/11(木)	20/06/11(木)	ST blow down tank	
-	GT casing cooling fan	1日	20/06/12(金)	20/06/12 (金)	ST Blow down tank structure	
-	GT compressor blade washing device	1日	20/06/12(金)	20/06/12(金)	GT casing cooling fan	1.1
	Building MSB North streuture	40日	20/06/13(土)	20/07/29 (水)	GT compressor blade washing device	10.8
	Pre-assembly structure for Air inlet duct access	30日	20/08/01 (土)	20/09/04 (金)	Building MSB North structure:	311
	Building structure for Air inlet duct access	2日	20/09/25 (金)	20/09/26 (土)	Pre-assembly structure for Air inlet duct access:	
	Closed cooling water stand pipe	2日	20/09/25(金)	20/09/26 (土)	Building structure for Air inlet duct access	
1	ST Blowdown pit sump pump	2日	20/06/10 (水)	20/06/11(木)	Closed boding water stand pipe	1.11
1					ST Blowdown pit sump pump a	
	6 MSB Inside South-West	163日?	20/05/16 (土)	20/11/21(土)		111
-	Chipping and pakker setting	10日	20/05/16(土)	20/05/27 (水)		1.1.1
-	Condensate extraction pump	2日	20/06/15(月)	20/06/16 (火)	Chipping and pakker setting	
	CEP access stair	1日	20/06/15(月)	20/06/15(月)	Condensate extraction pump	
	Building MSB South strouture	25日	20/07/01 (水)	20/07/29 (水)	CEP access stair 1	
***	Gland condenser	1日	20/07/07 (火)	20/07/07(火)	Building MSB South streature)	
*	Plant and Instrument air receiver	2日	20/07/27 (月)	20/07/28 (火)	Plant and Instrument air receiver 14/	
	Trip valve unit	1日	20/09/28(月)	20/09/28(月)		1.116
	Control oil unit	1日	20/09/28(月)	20/09/28(月)	Control all unit	
	Seal oil unit	2日	20/07/31 (金)	20/08/01(土)	Self of unit	110
	Plant air compressor	2日	20/11/18 (水)	20/11/19 (木)	Plant air compressor b	111
1	Instrument air dryer	2日	20/11/20 (金)	20/11/21(土)	Instrument av dover	111
	CEP pit sump pump	2日	20/06/17 (水)	20/06/18 (木)	CEP pit sump pump	
	Condenser hotwell pit sump pump	2日	20/06/19 (金)	20/06/20(土)	Condenser, hotwell pit sump pump	
						1.1.1
	7 Lube oil room	144日?	20/05/28 (木)	20/11/11 (水)		
	Chipping and pakker setting		20/05/28 (木)	20/06/08(月)	Chipping and pakker setting	
	Disassemble structure		20/07/31 (金)		Disassemble structure H	- 3
	Lube oil reservoir		20/08/01 (土)		Lube of reservoir-1	
	Assemble sturcture		20/08/01 (土)		Assemble sturcture#	1.1.13
	Open floor		20/09/28 (月)			6.610
	Lube oil filter with sturcture		20/09/29 (火)		Lube of filter/w/0) sturature	
	Lube oil cooler		20/09/29 (火)		Lube oil poter H	
	JOP for GEN		20/10/01 (木)		u0P for GEN T	
			20/10/01 (木)		JOP for S1	
n.]			20/10/01 (木)		Lube eit partifer unit	
			20/10/01 (木)		Lube di transfer pung	
-	Lube oil accumulator		20/10/01 (木)		Lube cil accumulator	
	Close floor	1日	20/10/02 (金)	20/10/02(金)	Close floor T	4 G - 10

Installation HRSG was re-started from 23rd-Jun

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4	7スク名	10100	開始日	腾了日	Construction Schedule of Unit-11		
	(And Belline)	- Minu		100	2026年 2021年	20223E	
0	TCA filter	18	20/11/11 (水)	20/11/11 (水)	2020年 9年08月 2019年10月 2019年10月 2019年11月 2019年12月 2020年03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08月 2020年08月 2020年08月 2020年09月 2020年10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07月 2021年09月 2021年10月 2021年11月 2021年11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07月 2021年09月 2021年11月 2021年11月 2021年11月 2021年11月 2021年03月 2021年03月 2021年04月 2021年05月 2021年05月 2021年07月 2021年09月 2021年10月 2021年11月 2021年11月 2021年11月 2021年03月 2021年03月 2021年04月 2021年05月 2021年05月 2021年07月 2021年09月 2021年10月 2021年11月 2021年11月 2021年11月 2021年03月 2021年03月 2021年04月 2021年05月 2021年07月 2021年09月 2021年11月 2021年11月 2021年11月 2021年11月 2021年03月 2021年04月 2021年05月 2021年05月 2021年05月 2021年04月 2021年04月 2021年04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11月 2021年11月 2021年11月 2021年04月 2021年05月 2021年04月 2021年05月 2021年04月 2021年04月 2021年04月 2021年04月 2021年04月 2021年04月 2021年11月 2021年11日	021年12月 2022年01月 向中旬下旬上旬中旬下旬	月2 旬上
2					TÇA filter		
3	9 East of MSB	142日?	20/04/28 (火)	20/10/09 (金)			
F	Chipping and pakker setting	15日	20/04/28 (火)	20/05/15 (金)		1.1.1.1.1	
5 📆	Light Oil main pump unit	2日	20/05/15(金)	20/05/16 (土)	Chipping and pokker setting		
6	GT light oil last chance filter	2日	20/05/15(金)	20/05/16 (土)	-Light Gill main pump unit 1	16111	
7 🗰	GT light oil drain tank unit	2日	20/06/01 (月)	20/06/02 (火)	GT light di last chance filtor B		
8	Pipe rack from L10 to L11 (except around EB02)	45日	20/06/08(月)	20/07/29 (水)	DT light oil drain tank unit		
9	Temp hanging Main Steam Piping	15日	20/07/30 (木)	20/08/15 (土)	Pipe rack freeh L10 to L11 (except around EB02)		
0 [11]	Building structure for EB02	12日	20/07/10 (金)	20/07/24 (金)	Temp hanging Main Stealin Piping		
	Preassembly E802	52日	20/05/01 (金)	20/06/30 (火)	Prestcembly EB02		
2	Lifting and installation EB02	2日	20/07/25 (土)	20/07/27 (月)	Lifting and installation EBQ2MB		
U.	Sound proof around EB02	30日	20/07/26(火)	20/08/31(月)	Sound proof around EB02		
	Pipe rack from L10 to L11 (Above EB02)	30日	20/09/01 (火)	20/10/05 (月)	Pipe rack from LID to L11 (Above EB02)		
	GT enclosure ventilation fan	2日	20/10/06 (火)	20/10/07 (水)	GT enclosure ventilation fan		
	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)	Oily shain pit aunip pump 🚡		
	Chemical drain pit sump pump	4日	20/05/22(金)	20/05/26(火)	Chemical drain pit, sump pump	l i na fra	
	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)	HRSG-Blow down tank		
	Chemical dosing system	2日	20/05/12 (火)	20/05/13 (水)	Chemical dosing system	1.1.1.6	
	GT water injection system	2日	20/05/18(月)		GT water injection system		
	Lower Fuel gas heater	2日	20/06/03 (水)		Lower Fuel gas heater 🖌		
	Support structure for FGH	3日	20/06/05(金)		Support structure for FGH 🞽		
	Upper Fuel gas Heater	2日	20/06/20(土)		Upper Fuel gas Heater		
_	G⊤ fuel gas flow meter FGH Maintenance platform	2日	20/07/30(木)		GT fuel gas flow meter#		
	FWP sun shade	15日	20/07/30(木) 20/07/30(木)		FGH Maintenance platform		
	Reserved feed water tank	14日	20/06/30(火)		FWP dun shude	11118	
	Feed water pump	2日	20/08/01(±)		Reserved feed water tank		
	LP-ECO Recirculation pump	2日	20/10/30 (金)		Feed water pump 🖬		
	Dry air system for HRSG	2日	20/10/30(金)		LP=ECO Recircúlation pump-		
	HRSG Topping up pump	1日	21/01/09(土)		Ory air system for HRSGM		
-	HRSG blowdown pit sump pump	2日	20/05/15(金)		HRSG Topping up pump 14		
	HRSG Washing water sump pump	2日	21/01/11(月)		HRSG blowdown pit sump pump'		
-				-	HRSG Webling water sump pump 🍸		
	12 CCW cooler area	87日	20/05/15 (金)	0/08/24(月)			
	Chipping and pakker setting	10日	20/05/15 (金)	0/05/26 (火)			
	Civil finish casting trench at west side of	1日	20/06/30 (火)	0/06/30 (火)	Chipping and pakker setting		
	CCW-C area Sea water booster pump	4日	20/07/01 (水)	0/07/04 (土)	Civil finish casting tranch at west side of CCW-C area		
	CW vent pump and seal water booster	4日	20/07/01 (水)	0/07/04 (土)	Sem water booster pump		
	Condenser tube cleaning unit	4日	20/07/01 (水)	0/07/04 (土)	¢W vent pump and seal water booster		
	CCW cooler	4日	20/07/01 (水) 2	0/07/04 (土)	Condenser tube cleaning unit		
	CCW cooler sun shade	20日	20/08/01(土) 2	0/08/24 (月)	CCW cooler		

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No. No. <th></th> <th>タスク名</th> <th>101111</th> <th>關始目</th> <th>終了日</th> <th>Construction Schedule of Unit-11</th> <th></th>		タスク名	101111	關始目	終了日	Construction Schedule of Unit-11	
Numerical State Numerical State Numerical State State			DOM:57	140622	100000	2020年 9年08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13月	24
 Image: Second Second	U	Sea water sump pump	4日	20/06/02 (火)	20/06/05 (金)		2年01月 上旬下旬。
Processor Ave: Process						Sea water sump pump	
Note::::::::::::::::::::::::::::::::::::	18 10	TCA cooler	2日	20/10/28 (水)	20/10/30 (金)		
Model Model Model Model Model Model Model Mod	19	Dismantle the temporary slope at south side of HRSG	20日	21/02/01(月)	21/02/24 (水)		
Image Image <td< td=""><td>20</td><td></td><td>50日</td><td>21/04/16 (金)</td><td>21/06/12(土)</td><td></td><td></td></td<>	20		50日	21/04/16 (金)	21/06/12(土)		
Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martine Martin Martin Martin <td>21 11</td> <td>UTAC system</td> <td>90日</td> <td>21/03/01(月)</td> <td>21/06/12(土)</td> <td></td> <td></td>	21 11	UTAC system	90日	21/03/01(月)	21/06/12(土)		
	22	Silencer at MSB roof	3日	20/10/28 (水)	20/10/30 (金)		
Norma Norma <th< td=""><td>23 💼</td><td>LPS to LMX LO transfer pump for U-11</td><td>2日</td><td>20/06/08(月)</td><td>20/06/09 (火)</td><td></td><td></td></th<>	23 💼	LPS to LMX LO transfer pump for U-11	2日	20/06/08(月)	20/06/09 (火)		
Image: Section of the sectin of the section of the	24					LPS to LMX LO transfer pump for U=11	
8 Monume a Monume B Monume 8 Monume B Monume Monume 8 Monume Monume Monume Monume 8 Monum Monum	15	Sea water intake area	52日	20/08/06 (木)	20/10/05(月)		
Note Note Note Note Note Note Note	16	Marking center line	3日	20/08/06 (木)	20/08/10(月)	Sea waterinitako area 🗸 🖓	
Image Image Image Image Image Image Image Ima	.7	Chipping and pakker setting	7日	20/08/10(月)	20/08/18 (火)	Marking conter line	
vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite vite <td>8</td> <td>Setting the baseplate</td> <td>3日</td> <td>20/08/18(火)</td> <td>20/08/21(金)</td> <td>Chipping and pukker setting</td> <td>a e</td>	8	Setting the baseplate	3日	20/08/18(火)	20/08/21(金)	Chipping and pukker setting	a e
Note: Note: Note: Note: Note: N	9	Grouting	15日	20/08/21 (金)	20/09/08 (火)	Setting the baseplate by	
Image: Section Sectin Section Section Sectin Section Section Section Section Section Se	0	Circulating water pump	10日	20/09/08(火)	20/09/18 (金)	Grouting	
R Avandada marger 9 Monte <	1	Circulating water pump outlet piping	2日			Circulating water surger	
Image: Second	2					Circulating water pump extint piping 🖌	
 Industry International Sector S	3					Auxiliary circulation water pump A	
 sevende <	4					Electro chiomation plant	
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Aligner in Aligneri	6	Screen wash water pump	2日			Sorben system 🅍	
 Instants of koning own Normality own <li< td=""><td>7</td><td></td><td></td><td></td><td></td><td>Screen wash water pump</td><td></td></li<>	7					Screen wash water pump	
Image: Section	8	Replacement of Gantry crane for CW pump	70日	20/11/11 (7K)	21/01/30(土)		
Image: Section Sect							
I Name Name <t< td=""><td>) (113</td><td></td><td></td><td></td><td></td><td>Dismantling Old gamtry crane</td><td></td></t<>) (113					Dismantling Old gamtry crane	
Instrume Note of the send of sequed	1					Assembling New gentry crane	
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Permete for ference transformer No						Preparation work in the area (if applicable)	
Image: A series of the seri	8					Preparation the installation	
Not Reademine Note Reademine Note Reademine Descent reademine Image: Source Sourc	1					Preparation for Generator transformer	
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Image: Section of the section of th						Trans area oily drain sump pump 3	
4 Bethel work 4658? 20/05/07 (k) 21/10/30 (k) 5 Generator Ancillaries 1108 20/09/25 (k) 21/01/30 (k) 6 Lifting IPB Bass & Supports 2018 20/10/31 (k) 20/10/31 (k) 7 IPB Bass & Supports 505000 (k) 20/10/31 (k) 20/10/20 (k) 8 O/B GMCB (k) MSB 2F) 1318 20/09/10 (k) 21/01/30 (k)		1. Martin and Martin and Martin and Martin	00 H	20/00/20 (小)	20/11/30())	Transformer ancitaries	
S Generator Ancillaries 1101 20/09/25 (20) 1101 20/09/25 (20) 1101 20/10/30 (20) 1101 20/10/30 (20) 1101 20/10/31 (20) 1101 20/10/31 (20) 1101 20/10/31 (20) 1101 20/10/31 (20) 1101 20/10/31 (20) 1101 20/10/31 (20) 1101 20/10/31 (20) 1101 20/08/26 (20) 1101 20/08/26 (20) 1101 20/08/26 (20) 1101 20/08/26 (20) 1101 20/08/26 (20)		lectrical work	165 🖓 2	20/06/07/-	01/10/00/-L3		
Lifting IPB Bass & Supports DPB Bass & Supports O/B GMCB IPB & QMCB (IN MSB 2F) 101 101 <						ter a la construction de la c	
IPB Bass & Supports S0FL 20/10/31 (±) 20/12/28 (用) 0/B GMCB 2FL 20/08/29 (±) 20/08/31 (用) IPB & GMOB (IN MSB 2F) 131 H 20/09/01 (±) 21/01/30 (±)						Generator, Arcillaries	
D/B GMCB 2日 20/08/29 (土) 20/08/31 (月) IPB & GMCB (IN MSB 2F) 131日 20/09/01 (火) 21/01/30 (土)						Lifting IPE Bass & Supports S2233334	
0 /B GMCB 2日 20/08/29 (土) 20/08/31 (月) /B & GMCB (IN MSB 2F) 131日 20/09/01 (火) 21/01/30 (土)						H ⁱ B Hans & Supports	
1 mm SWGR & MCC (In MSB 1 - 3F) 79日 20/06/01 (月) 20/08/31 (月)	1		31日	20/09/01 (火) 2	21/01/30(土)	IPB & GMCB (W MSB; PS)	

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Appendix J

8

92.08		XHON	開始日	終了日	Construction Schedule of Unit-11
		100-5	vendifficant.	2.00744	2020年 2021年 2021年
I 🛄 UPS,	Battery & Battery Charger (in MSB 4F)	79日	20/08/01 (土)	20/10/31(±)	
DCS	& Others (in MSB 5F)	78日	20/09/01 (火)	20/11/30(月)	
AC/E	DC Busduct	105日	20/10/01 (木)	21/01/30(土)	DCS 3 Others (in MSB 57)
HRSC	G Equipment	78日	20/08/01(土)	20/10/30(金)	
5 🔜 Local	I panel (GT/ST TB, Local control box etc)	155日	20/10/01 (木)	21/03/30 (火)	
6 Local	Instrument Enclosure	182日	20/10/01 (木)	21/04/30(金)	Local panel (GT/ST TB, Local control box etc)
Cable	e Tray & Supports (Erectrical room of MSB)	165日	20/05/07 (木)	20/11/14 (土)	
B 🗰 Cable	e Tray & Supports (MSB – HRSG)	98日	20/08/11(火)	20/12/02 (水)	Cable Tray & Supports (Erectrical room of MSB)
Cable	e Tray & Supports (HRSG)	105日	20/10/01 (木)	21/01/30(土)	Cable Tray & Supports (MSB - HFSG)
Cable	e Tray & Supports (Chimney)	78日	20/11/02(月)	21/01/30(土)	Cable Tray & Supports (HRSG)
Ехроз	sed Cinduit (MSB)	130日	20/10/01 (木)	21/03/01(月)	Cabler Tray & Supports (Chimney) minimum and a support
2 📰 Expos	sed Cinduit (HRSG)	103日	21/02/01 (月)	21/05/31(月)	Exposed Cinduit (MSB)
Expos	sed Cinduit (Island equipment)	130日	21/02/01 (月)	21/07/01 (木)	Expised Cinduit (HRSQ)
	ng (for Power Receiving)	119日		20/12/31 (木)	Exposed Cinduit (Island equipment)
Cablin	ng (for MSB Local, to HRSG)	155日	20/11/02(月)	21/04/30(金)	Cabling (for Power Receiving) and a second
	ng (for HRSG)	132日		21/07/31(土)	Cabling: (for MSB Local; to HRSQ).
	ng (for Island equipment)	184日	21/03/01(月)		Cabling (for HRSQ)
1	ination & Cable check	365日	20/09/01 (火)		Cabling (for Island equipment)
1	ing System	339日		21/08/31(火)	Termination & Cable check
	Instrument	339日	20/09/01 (火)		Earthing System
	ment Piping & Tubing	262日	20/10/01 (木)		Local Instrument
	ment Calibration & Testing	365日	20/09/01 (火)		Instrument Piping & Tubing
			20,00,010,0	21710/00(11)	Instrument Calibration & Testing
Piping		392日	20/08/10(月)	91/11/10/74	
Piping Main F	Pining	244日	20/08/20(木)		Piole 🖝
	ound HRSG	150日	20/11/17(火)		Mair Piping
	rth side of MSB	222日	20/08/20 (木)		Around HRSOM
	uth side of MSB (around gland condenser)		20/09/15(火)		North side of MSB 1000
	ad piping	60日	20/11/06(金)		South side of MSB (around gland condenser)
	eparation Hydrostatic test				Lead piping Terrangenetic and the second
	drostatic test (Can't promise)	30日 1日	21/04/17(土)		Preparation Hydrostatio test
			21/05/31(月)		※TDK-challenge to m Hydrostatic test (Can't pron
		247日	20/08/10(月)		BOP for lube oil and cooling
		230日	20/08/10(月)		North side of MSB (ground CDW)
-	uth side of MSB (around Lube oil reservoir)		20/11/20(金)		South side of MSE (around Lube oil reservoir)
		1日	21/05/24(月)		Receiving Lube O
Others		230日	20/12/11 (金)		Others BOP
		230日	20/12/11 (金)		Others BOP
Assemb	bly the blowing out piping	日 08	21/08/09(月)	21/11/10 (水)	
Grane		480日	19/12/16(月)		Crane
	12/212/04-2746-004-21465-0440	3日	20/01/03 (金)		Recombination of 500tonC/C 11
		10日	20/01/07 (火)		Operate 500tonC/C (with JIB)
		4日	20/01/18 (土)	20/01/22 (水)	Dismantling 500tonC/C
Assemb	bly 1250C/C	10日	20/02/14 (金)	20/02/25(火)	Assembly 1250C/C
Operate	e 1250tonC/C for HRSG	222日	20/02/26 (水)	20/12/09 (水)	Operate 1250tonC/C for HRSG

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

	6-Jul-2020 Rev_7
21年06月2021年07月2021年08月2021年09月2021年10月 时期下旬上旬中旬下旬上旬中旬下旬上	2022年 2021年11月2021年12月2022年01月2022年02月202 新港旬下旬上5时旬下旬上5年旬下旬上5年
o" uo to 31st-May-2021	
o" up to 31at-May-2021 //31	
4	
r the blowing out piping.	

1	タスク名	MARKAN	開始日	終了日		6-Ju
0					2020年 9年08月 2019年10月 2019年11月 2019年11月 2019年11月 2019年11月 2020年05月 2020年05月 2020年03月 2020年05月 2020年05月 2020年05月 2020年05月 2020年07月 2020年06月 2020年07月 2020年06月 2020年07月 2021年07月 2021年11月 2021年11日	
	Operate 1250tonC/C for GT Air inlet	25日	20/08/27 (木)	20/09/24 (木)	中如下和上领中如下如上领中如下如上领中如下和上领中如下和上领中如下和上领中如下和上领中如下和上领中如下和上领中如下和上领中如下和上领中如下和上领中如下和上领中如下和上领中如下和上领中如下和上领中如下和上领中如下和上领中如下和上领中如下和上领中如下和上领中和下和上	1月 2022年 〒旬上旬中旬
1	Operate 1250tonC/C with additional C/W for inlet	2日	20/08/25 (火)	20/08/26 (水)	Operate 1250tonC/C with additional C/W for inlet	
	Operate 1250G/C with additional C/W for tube bundle	27日	20/09/25(金)	20/10/26(月)	Operate 1250C/C with additional C/W for tuber tundle 111111111	1.1
	Dismantling 1250tonC/C	10日	20/12/10 (木)	20/12/21(月)	Dismantline 1250tonC/C	
	Assembly 600tonC/C	4日	20/08/20(木)	20/08/25 (火)	Assembly 600tonC/C	11
	Operate 600tonC/C (without JIB)	54日	20/08/25 (火)	20/10/26(月)	Operate 600tonC/C (without JB)	
	Dismantling 600tonC/C	4日	20/10/27 (火)	20/10/30(金)	Diamenting 600tooC/C	
	Assemby 750tonA/C for Condenser	4日	20/04/03 (金)	20/04/06(月)	Assemby 750tarA/C for Condenser	
	Operate 750tonA/C for Condenser	22日	20/04/07 (火)	20/05/01(金)	Operate 750tonA/C for Condenser	2.1
	Dismantling 750tonA/C for Condenser	2日	20/04/18(土)	20/04/20(月)	Dismanting: 750tonA/C for Condenser	
	Assemby 500tonA/C for Exhaust duct	1日	20/10/29 (木)	20/10/30 (金)	Assemby 509;onA/C for Exhaust duct No	
	Operate 500tonA/C for Exhaust duct	17日	20/10/30(金)	20/11/18 (水)	Operate 500tonA/C for Exhuut duct	
	(Support)	1日	20/11/19(木)	20/11/19(木)	Operate 500tonA/C for HRSG outfet duct (Support)	
	Dismantling 500tonA/C for Exhaust duct	1日	20/11/20(金)		Dismantling 500tonA/C for Exhaust duct 1	
	Assembly jib to 220tonA/C	2日	20/10/05(月)	20/10/07 (水)	Assembly jib to 22DonA/C M	
	Operate 220tonA/C with jib	52日	20/10/07 (水)	20/12/05 (土)	Operate 220topA/C with jtb	
	Disassembly jib from 220tonA/C	2日	20/12/07(月)	20/12/08 (火)	Disassembly jib from 220tonA/C	11
	250ton A/C	400日	19/12/16(月)	21/03/27 (土)	250ton A/C	
	200tonA/C	480日	19/12/16(月)	21/06/29 (火)	200tonA/C	11
E	quipment for heavy lifting	190日	20/03/11 (水)	20/10/16(金)	Equipment for heavy lifting	1.01
	SARLIFT	50日	20/03/11 (水)	20/05/06 (水)	SARLIFT	
	Assembly the rail for SARLIFT	22日	20/03/11 (7K)	20/04/04 (土)	Assembly the relifier SARLIFT	
	Assembly the SARLIFT proper	9 日	20/04/05(日)	20/04/13 (月)	Assembly the SARLIFT proger	11
	Dismantling the SARLIFT	15日	20/04/20(月)	20/05/06 (水)	Dismostling the SARUFT	
	Gentry system	46日	20/08/03(月)	20/09/24 (木)	Gantry system	
	Assembly the Gantry for powertrain	21日	20/08/03(月)	20/08/26 (水)	Assembly the Gantry for govertrain	1.13
	Disassembly the Gantry	15日	20/09/08 (火)	20/09/24 (木)	Disassembly the Gastry	
	Unit carrier	76日	20/03/27 (金)	20/10/16(金)	Unit carrier	
	Preparation for transportation the Condenser	日	20/03/27 (金)	20/04/01 (水)	Preparation for transportation the Condenser	1.11
	Transportation the Condenser	·日	20/04/01 (水)	20/04/02 (木)	Transportation the Condenser	2.11
	Disassembling Unit carrier	日	20/04/03 (金)	20/04/03 (金)	Disassembling Unit carrier	
	Assembling Unit carrier for Tube Bundle	日	20/09/15 (火)	20/09/16 (水)	Assembling Unit carrier for Tube Bundle 🙀	
	Transportation the Tube Bundle part1	B	20/09/16 (水)	20/09/21(月)	Transportation the Tube Bunds part	
	Disassembling Unit carrier	Ħ	20/09/22 (火)	20/09/22 (火)		
	Assembling Unit carrier for Tube Bundle	B	20/10/09 (金)	20/10/10 (土)	Assembling Unit carrier for Tube Bundle M	
	Transportation the Tube Bundle part2 5	H	20/10/10 (土)	20/10/15 (木)	Transportation the Tube Bundle part2	
	Disassembling Unit carrier 1	B	20/10/16 (金)	20/10/16 (金)		
	Assembling Unit carrier for Power Train 3	B	20/08/21 (金)	20/08/25 (火)	Disassembling Unit carrier 🖡	
	Test operation for transportation of Power 1 Train	Ħ	20/08/25(火)	20/08/25 (火)	Assembling Unit carrier for Power Train Ten	
	Transportation the Transformer 2	H	20/08/31 (月)	20/09/01 (火)		
	Transporatation the Gas Turbine Proper 2	Ħ	20/09/01 (火)	20/09/02 (水)	Transportation the Transformet a	
	Transportation the Generator 2	日	20/09/03 (木)	20/09/04 (金)	Transportation the Gas Turbine Property	
	Disassembling the Unit carrier 1	B	20/09/05(土)	20/09/05(土)	Transportation the Generato	

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

Sunley Engineering & Construction Co., Ltd.

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

Short Term Programme

Month		Aug-20		Sep-20	Oct-20				
tem Day	1 2 3 4 5 6 7 8 9 10 11 12 13 14	15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	31 1 2 3 4 5 6 7 8 9 10 11 12 13	14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29				
Month Bay Activity Coring works at Cable bridge (Bored File) 1 Full Core for CP6-4 2 Full Core for CP6-4 2 Full Core for CP6-5 Loading Test at Cable bridge (Socketted H File) 2 Dismantle part of Temporary Working Platform 3 Compression Load Test Setup 3 Compression Load Test 4 Full Core for 6 nos. Bord File (BP1, BP3, BP4, BPC1, BPC5 & BPC8)		Aug-20 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30		Sep-20 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	Oct-20				

Legend:

- Sunday or Holiday

Monthly Waste Flow Table for August 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 O	C&D Materia	Is Generated	Monthly		Actual Q	uantities of N	Ion-inert C&	D Materials	Generated	Monthly
	Exca	avated Mate	erials		Non-	excavated Ma	aterials							
	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	strip) (*)	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
Total	3160.23	0.00	0.00	0.00	0.00	132113.55	0.00	0.00	43.72	0.00	0.266	0.00	1.80	511.51
TOLCI	5100.23	0.00	0.00	0.00	0.00	102110.00	0.00	0.00	40.72	0.00	0.200	0.00	1.00	511.51

Total Inert C&D Waste Materials		Non-inert C&D Materials	8
Generated	C&D Materials Recycled	C&D Waste Disposed of at Landfill	Chemical Waste
135273.78 tonnes	43.99 tonnes	511.51 tonnes	1800 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
 132113.55
 tonnes were reused in this and other contracts, and the remaining 3160.23
 tonnes were disposed as public fill to Fill Banks / Sorting Facilities.

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

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

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

Notes: (1) metal, paper & plastic were collected by recycler

(2) The performance target of waste recycling are specified in the Contract.

(3) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.

(4) Plastics refer to plastic bottles/ containers, plastic/ foam from packaging material.

(5) Broken concrete for recycling into aggregates.

(6) Disposal of inert waste to public fill or sorting facilities will NOT be considered as recycled waste.

Updated

Appendix K

Monthly Waste Flow Table for August 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	I Quantities	of Inert C&D	Materials G	Generated N	lonthly		Actual Q	uantities of	Non-inert Ca	&D Materials	s Generated	Monthly					
	Exc	avated Mate	erials		Non-e	xcavated M	aterials												
	Disposed in Public Fill	Disposed in Sorting Facilities	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 cil/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					
-																			
												-	-						
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	2600	67.08					

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	67.08 tonnes	2600 Liters			

Updated

- 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 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 August 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 Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of Non-inert C&D Materials Generated Monthly							
	Excavated Materials			Non-excavated Materials										
MM/YYYY	Disposed in Public Fill	Disposed in Sorting Facilities	Others (e.g Reused in the Contract / Other Projects)	Concrete of	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
Total	87583.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73.32	0.00	0.00	0.00	2600.00	41.95

Total Inert C&D Waste Materials Generated		Non-inert C&D Materials							
		C&D Materia	Is Recycled		te Disposed Landfill	Chemical Waste			
87583.76	tonnes	73.32	tonnes	41.95	tonnes	2600.00	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
 0.00
 tonnes were reused in this and other contracts, and the remaining

 87583.76
 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.