

Revised Proposal for the on-site time for the ET Leader and ET

Expansion of Sha Tau Kok Sewage Treatment Works - Environmental Team Services for Construction and Operation Phase

With response to EPD letter dated 11th November 2019 Ref.: () in EP 2/N7/F/77 Pt.2, and pursuant to the Environmental Permit no. EP-517/2017/A Condition 2.1, ET propose the initial on-site time of the ET Leader and ET should be a minimum of **8 hours per week** during normal office hours and could be adjusted subject to review in tandem with if any major change to the Contractor's works programme and the potential environmental impact. The justification of the minimum on-site time of the ET Leader and ET is shown Below:

Works to be carried on-site	Purpose	Man-hour per week
Environmental site inspection	<ul style="list-style-type: none"> ● To audit and assess the effectiveness of the Contractor's site practice and work methodologies regarding on environmental and landscape & visual mitigation measures as stipulated in the EM&A Manual. ● To take pro-active actions to pre-empt environmental problems. ● To audit compliance with the intended aims of the measures implemented by the Contractor. ● The findings will notify to the Contractor at the time of inspection to enable the rapid resolution of identified non-conformities. ● To carry out the follow-up actions if non-conformities identified during the site inspection. 	3 hours per week
Keeping and logging records in the log-book	<ul style="list-style-type: none"> ● To keep a contemporaneous log-book of any such instance or circumstance or change of circumstances. 	1 hour per week
Impact noise monitoring	<ul style="list-style-type: none"> ● To carry out impact noise monitoring at each station at 0700-1900 hours on normal weekdays; per week when construction activities are underway. ● To check the performance of monitoring and to track the varying environmental impact. ● To carry out remedial actions described in the Event/Action Plans of the EM&A Manual in accordance with the time frame set out in the Event/ Action Plans 	2 hours per week

	in case where specified criteria in the EM&A Manual are exceeded.	
Meeting with the ER, IEC, and contractor.	<ul style="list-style-type: none"> To discuss with ER, IEC and Contractor any observations that improvement works is required to enhance the overall environmental performance; liaise with Contractor on any environmental non-compliance identified and follow up actions taken. To liaise with the Project Proponent, IEC, RSS and other individuals or parties concerning other environmental issues deemed to be relevant to the construction/ operation process. 	2 hours per week

It is deemed that the minimum on-site time is the minimum time of the ET Leader and ET required to perform necessary on-site works to discharge the duties of the ET Leader and ET as stipulated in the EP and EM&A of the project.

The proposed **8 hours per week** on-site time of the ET Leader and ET will serve as a base case and additional on-site time would be provided in case there are critical activities, exceedance of monitoring parameters, project related environmental complaint, and other works covered by the duties of ET Leader and ET as stipulated in the EP and EM&A of the project.

Additional ET and ET Leader on-site time will be considered for critical work activities throughout the construction phase for more frequent inspections of the construction works as well as their mitigation measures. The highlighted critical work activities throughout the construction phase and the recommended additional on-site time are listed below:

Additional Monitoring for Critical work activities	Purpose	Recommended additional minimum on-site time
<u>Construction Phase</u>		
Monitoring of decommission of existing rising main and demolition of sewage pumping station inside the close area of Sha Tau Kok Chuen	<ul style="list-style-type: none"> To audit the Contractor's site practice and work methodologies regarding environmental mitigation measures contained in the EM&A Manual. To check any non-compliance with the construction methodology, mitigation measures and environmental monitoring and audit requirements recommended in the approved Method Statement submitted by the Contractor. To take pro-active actions to pre-empt environmental problems. 	2 hours per week
Monitoring for Marine construction works including	<ul style="list-style-type: none"> To audit the Contractor's site practice and work methodologies regarding 	2 hours per week

construction of cofferdam at the location of diffuser and construction of Submarine Outfall, etc.	<p>environmental mitigation measures contained in the EM&A Manual.</p> <ul style="list-style-type: none"> To check any non-compliance with the construction methodology, mitigation measures and environmental monitoring and audit requirements recommended in the approved Method Statement submitted by the Contractor. To take pro-active actions to pre-empt environmental problems. 	
Marine Water quality monitoring during marine construction activities	<ul style="list-style-type: none"> To obtain water samples from the Water Quality Monitoring Stations as stipulated in the Table 5.3 of EM&A Manual. To check the monitoring parameter against the Action and Limit Levels stipulated in the Table 4.2 of Baseline Environmental Monitoring Report (Water). 	3 days per week x 8 hours = 24 hours per week
<i>Operation Phase</i>		
Marine Water quality monitoring during the first year of the TSTP and expanded STKSTW operation.	<ul style="list-style-type: none"> To obtain water samples from the Water Quality Monitoring Stations as stipulated in the Table 5.3 of EM&A Manual. To check the monitoring parameter against the Action and Limit Levels stipulated in the Table 4.3 of Baseline Environmental Monitoring Report (Water). 	3 days per week x 8 hours = 24 hours per week
Continuous monitoring of treated sewage effluent from the TSTP and expanded STKSTW	<ul style="list-style-type: none"> To obtain 24-hour flow-weighted composite effluent sample for subsequent chemical analysis and testing To check the monitoring parameter against the Action and Limit Levels stipulated in the Table 5.4 of EM&A Manual. To notify the plant operator for the non-compliance and to identify the cause for the non-compliance if any non-compliance. 	<p>For auto-sampling, 4 hours x 7 days = 28 hours per week</p> <p>For Manual sampling, 8 hours x 3 shifts x 7 days = 168 hours per week</p>
Testing & Commissioning for the TSTP and the expanded STKSTW	<ul style="list-style-type: none"> To ascertain the effectiveness of the deodorization systems as required in the EM&A at the TSTP and STKSTW during the operation phase. 	4 hours per time

Monitoring of odour emission at the exhausts at TSTP and STKSTW	<ul style="list-style-type: none"> To check any non-compliance with the monitoring parameter as stipulated in the EM&A Manual. 	4 hours per time
Odour patrol during the period of maintenance of the deodorization system for TSTP or STKSTW.	<ul style="list-style-type: none"> To patrol and sniff along an odour patrol route at the existing STKSTW site boundary. To carry out the follow-up actions if any exceedance of the Action or Limit Level occurs actions in accordance with the Event/Action Plan presented in Table 3.5 of EM&A Manual should be carried out. 	2 hours per time

An updated construction programme is given in **Annex A**.

Apart from the aforementioned critical work activities, should there be any non-compliance, complaints, summons and prosecutions related to environmental issues or exceedances of environmental parameters related to the Project, more lengthy on-site time for more frequent inspections of the construction works should also be considered. Additional minimum on-site time, for example, 3 hours per week is recommended.

The deployment of specialist under the ET should also be considered based on different stages of the Project. During the baseline phase of the project, the "Pre-construction Survey of the Night Roosting Site for Great Egrets and other Ardeid Species for the Expansion of Sha Tau Kok Sewage Treatment Works" was conducted by the approved Ecologist and verified by IEC in October 2019. The survey result showed that the night roosting site is no longer utilized by ardeid birds. Therefore, there should be no additional on-site time for deployment of the ecology specialist during the construction and operation phase.

Pursuant to Section 9.1.2 of EM&A Manual and Condition 2.1 of EP, the ET should be supported by Registered Landscape Architect (RLA) who is responsible to supervise, monitor and ensure that all recommended landscape and visual mitigation measures during construction and operation phase of the project. The recommended additional on-site time due to the deployment of RLA is listed as below:

Additional Monitoring for Critical work activities	Purpose	Recommended additional minimum on-site time
Site Inspection conducted by ETL/ET and supported by Registered Landscape Architect (RLA)	<ul style="list-style-type: none"> To ensure the implementation of the proposed Construction and Operation Phase Landscape and Visual Mitigation Measures as stipulated in the Table 9.1 and 9.2 of EM&A Manual. To audit compliance with the intended aims of the measures implemented by the Contractor. 	<p><u>For Construction Phase (landscape construction works)</u> 4 hours every two weeks</p> <p><u>For Operation Phase (12 months of the establishment works)</u> 4 hours every two months</p>

	<ul style="list-style-type: none">• To carry out the follow-up actions if non-compliance identified during the site inspection in accordance with the responsibilities of the relevant parties are detailed in the Event/Action plan provided in the Table 9.3 of EM&A Manual.	
--	--	--

The proposed minimum on-site time should be subject to review in tandem with if any major change to the Contractor's works programme and the potential environmental impact. Propose changes to the on-site time will be reported in the monthly EM&A reports.

Contract No. DC/2018/03

Expansion of Sha Tau Kok Sewage Treatment Works Phase 1 and Village Sewerage in Tong To
Construction Programme (Rev.3)

Updated as of: 10 Feb 2020

Activity	Duration (Day)	Period		2019				2020				2021				2022				2023				2024
		Start	Finish	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Activity 1: Temporary Sewage Treatment Plant (TSTP)																								
Pre-drilling	68	15-Mar-19	21-May-19	█																				
Piling	85	3-Jun-19	26-Aug-19		█																			
Earthworks & R.C. Structures	123	24-Aug-19	24-Dec-19			█																		
E&M Installation	194	15-Nov-19	26-May-20				█																	
Submission for Odour Removal Efficiency and Emergency Response Plan (ERP) (EP Clauses 2.15 and 2.17)	30	18-Apr-20	17-May-20					█																
Commissioning	1	17-Jun-20	-						█															
Activity 2: Submarine Outfall (HDO Works)																								
Casing Installation (Land)	18	28-Mar-20	14-Apr-20						█															
Pilot Hole Drilling (Land)	88	15-Apr-20	11-Jul-20							█														
Reaming (Land)	188	13-Jul-20	16-Jan-21								█													
Casing Installation (Sea)	20	17-Dec-20	5-Jan-21									█												
Pilot Hole Drilling (Sea)	11	6-Jan-21	16-Jan-21										█											
Reaming (Sea)	15	18-Jan-21	1-Feb-21											█										
Pipe Connection & Pulling	58	17-Dec-20	12-Feb-21												█									
Cleaning & Testing	10	13-Feb-21	22-Feb-21													█								
Activity 3: Diffuser Installation																								
Construction of Cofferdam at the Location of Diffuser	92	1-May-21	31-Jul-21																					
Dredging of Marine Deposit for Diffuser	35	31-Aug-21	4-Oct-21																					
Backfilling Works (up to Invert of Diffuser)	25	13-Oct-21	6-Nov-21																					
Installation of Diffuser	9	8-Nov-21	16-Nov-21																					
Backfilling Works (up to Existing Seabed Level)	24	17-Nov-21	10-Dec-21																					
Activity 4: Sha Tau Kok Sewage Treatment Works (STKSTW)																								
Demolition of the Existing STKSTW	18	15-Jun-20	2-Jul-20																					
Piling	249	3-Jul-20	8-Mar-21																					
Earthworks & R.C. Structures	969	18-Jul-20	13-Mar-23																					
E&M Installation	553	19-Nov-21	25-May-23																					
Architectural Builders' Works and Finishes (ABWF)	611	7-Sep-21	10-May-23																					
Commissioning	1	25-May-23	-																					
Retaining Walls	166	10-Jul-23	22-Dec-23																					
Architectural Works	597	17-Jun-22	3-Feb-24																					
Activity 5: Sewerage in Sha Tau Kok Town																								
Sewerage in Sha Tau Kok Town	613	12-Sep-20	17-May-22																					
Activity 6: Demolition of Shun Lung Street Sewage Pumping Station																								
Demolition of Shun Lung Street Pumping Station	45	27-May-23	10-Jul-23																					
Activity 7: Landscape Works																								
Landscape Works	411	28-Dec-22	11-Feb-24																					

Notes:-
1. Red narrow represents critical path.
2. The programme is based on the subcontractor's latest programme and latest accepted Contractor's programme.