

Annex B

Inspection record of Wetsep

WETSEP Location 污水處理機位置: 2号

Date 日期: 9-1-2017 to 至 15-1-2017

	Monday 星期二	Tuesday 星期二	Wednesday 星期三	Thursday 星期四	Friday 星期五	Saturday 星期六	Sunday 星期日
1. WETSEP In Normal Operation? 處理機是否正常運作?	✓	✓	✓	✓	✓	✓	
2. pH Value 酸鹼度 (6.0 - 9.0)	8	8.2	8.3	8.2	8.1	8.2	
3. Electrical Supply OK? 電力供應正常?	✓	✓	✓	✓	✓	✓	
4. Outlet Abnormal? (Any Sludge? Any Colour Change? Flowrate?) 出水口有否異常? (污泥有否積聚? 顏色有否改變? 流量有否異常?)	有異常	有異常	有異常	有異常	有異常	有異常	
5. Potion Enough? 藥水是否足夠?	✓	✓	✓	✓	✓	✓	
6. Clean the Sedimentation Tank? 有否清理隔沙缸?	有 9:30	有 9:30	有 9:30	有 9:30	有 9:30	有 9:30	
7. Clean the De-silt Basin? 有否清理蓄泥池?	有 10:00	有 10:00	有 10:00	有 10:00	有 10:00	有 10:00	
8. Are the Cleansing Records of Sedimentation Tank/ De-silt Basin Stored Properly? 清理蓄泥池記錄是否妥善儲存?	✓	✓	✓	✓	✓	✓	
9. Others 其他情況	一切正常	一切正常	一切正常	一切正常	一切正常	一切正常	
Verified by Site Foreman/Supervisor 地盤管工/監督簽署確認							

*Please - tick (✓) in the box if the condition is normal. *若情況正常, 請於方格內加上剔號(✓).
 cross (X) in the box if the condition is abnormal, and write down the non-conformance.
 *若情況不尋常, 請於方格內加上交叉(X), 並寫下不尋常狀況。

17/01/2017

WETSEP Location 污水處理機位置: 2號

Date 日期: 16-1-2017 to 22-1-2017

	Monday 星期二	Tuesday 星期三	Wednesday 星期四	Thursday 星期五	Friday 星期六	Saturday 星期日	Sunday 星期一
1. WETSEP In Normal Operation? 處理機是否正常運作?	✓	✓					
2. pH Value 酸鹼度 (6.0 - 9.0)	8.1	8.7					
3. Electrical Supply OK? 電力供應正常?	✓	✓					
4. Outlet Abnormal? (Any Sludge? Any Colour Change? Flowrate?) 出水口有否異常? (污泥有否積聚? 顏色有否改變? 流量有否異常?)	有異常	有異常					
5. Potion Enough? 藥水是否足夠?	✓	✓					
6. Clean the Sedimentation Tank? 有否清理隔沙缸?	有 09:30	有 10:30					
7. Clean the De-silt Basin? 有否清理蓄泥池?	有 10:00	有 11:00					
8. Are the Cleansing Records of Sedimentation Tank/ De-silt Basin Stored Properly? 清理蓄泥池記錄是否妥善儲存?	✓	✓					
9. Others 其他情況	一切正常	一切正常					
Verified by Site Foreman/Supervisor 地盤管工/監督簽署確認							

*Please - tick (✓) in the box if the condition is normal. *若情況正常, 請於方格內加上剔號(✓)。
cross (X) in the box if the condition is abnormal, and write down the non-conformance. *若情況不尋常, 請於方格內加上交叉(X), 並寫下不尋常狀況。

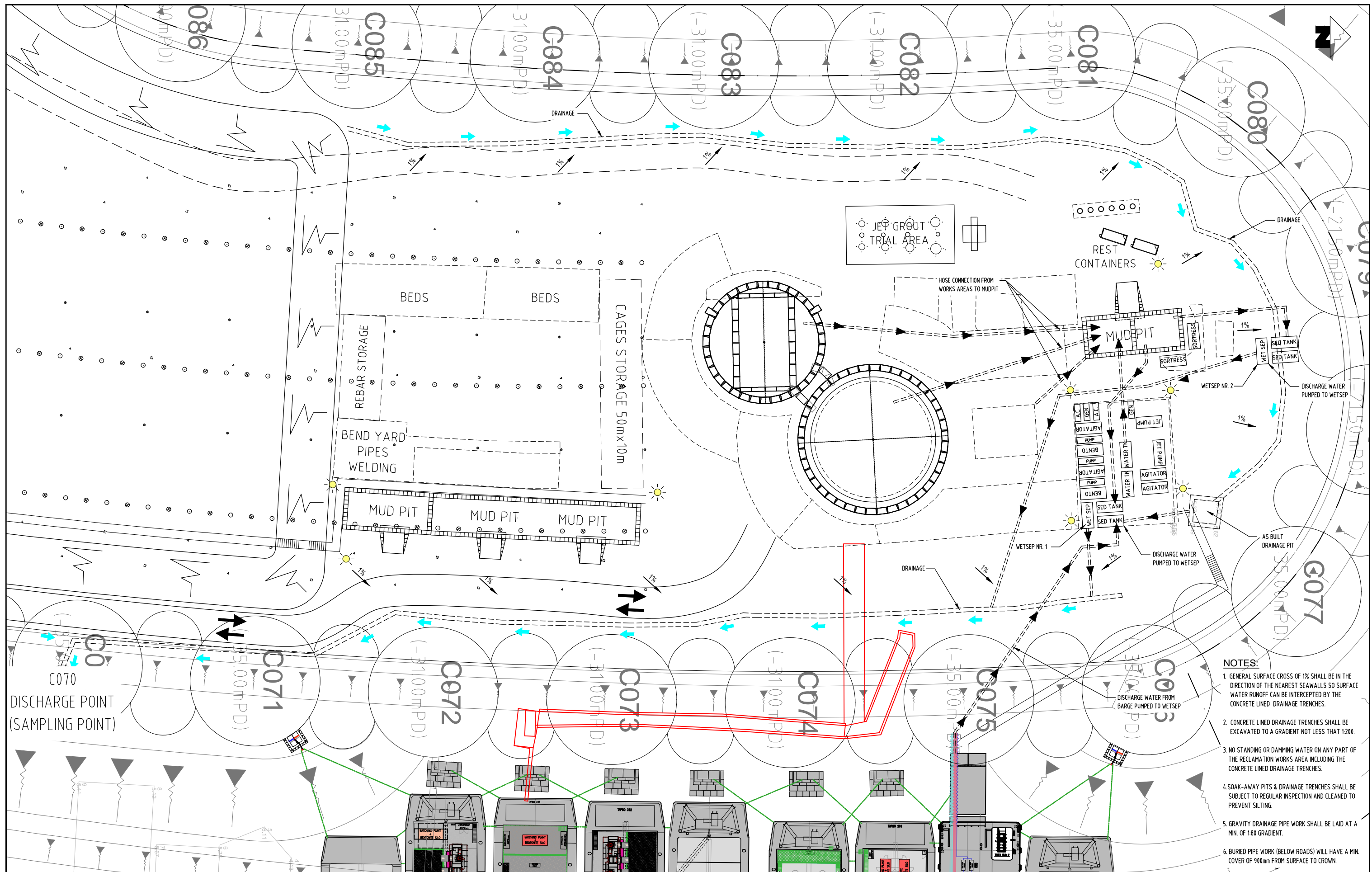
Remarks:

(1) Please keep the record and...

17/01/2017

Annex C

Site Drainage Management Plan



- NOTES:**
1. GENERAL SURFACE CROSS OF 1% SHALL BE IN THE DIRECTION OF THE NEAREST SEAWALLS SO SURFACE WATER RUNOFF CAN BE INTERCEPTED BY THE CONCRETE LINED DRAINAGE TRENCHES.
 2. CONCRETE LINED DRAINAGE TRENCHES SHALL BE EXCAVATED TO A GRADIENT NOT LESS THAN 1:200.
 3. NO STANDING OR DAMMING WATER ON ANY PART OF THE RECLAMATION WORKS AREA INCLUDING THE CONCRETE LINED DRAINAGE TRENCHES.
 4. SOAK-AWAY PITS & DRAINAGE TRENCHES SHALL BE SUBJECT TO REGULAR INSPECTION AND CLEANED TO PREVENT SILTING.
 5. GRAVITY DRAINAGE PIPE WORK SHALL BE LAID AT A MIN. OF 1:80 GRADIENT.
 6. BURIED PIPE WORK (BELOW ROADS) WILL HAVE A MIN. COVER OF 900mm FROM SURFACE TO CROWN.

Rev.	Date	Drawn	Designed	Verified	Description	Approved
D	27JUL16	AGM	pkv	Ble	UPDATE	SPo
C	15JUN16	pkv	pkv	ACh	WESTSEP NR. 3 REMOVED	SPo
B	14JUN16	pkv	pkv	ACh	DISCHARGE FROM BARGE ADDED	SPo
A	07JUN16	pkv	pkv	BLe	FIRST ISSUE	SPo

Main Contractor

Dragages - Bouygues Joint Venture 宜嘉 - 中鐵建聯營

Client

路政署
HIGHWAYS DEPARTMENT

Contractor's Designer

ARUP Ove Arup & Partners
Hong Kong Limited

Project

Contract No. HY/2012/08
Tuen Mun - Chek Lap Kok Link -
Northern Connection Sub-Sea Tunnel Section

Drawing Title

SOUTHERN LANDFALL
PORTION E1 SURFACE WATER DRAINAGE & DISCHARGE
ARRANGEMENT - GENERAL LAYOUT

Drawing no.

TMCLKL8-DBJ-SAA-MSI-10026

Scale

NTS

CADD Ref.

SAA-MSI-10026

Issue Status

DFT (DRAFT)

Revision

D

Annex D

Construction programme

Activity Name	Orig Dur	DWP Start	DWP Finish	% Comp	2016		2017					
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
					TMCLK - Northern Connection Sub-Sea Tunnel Section							
Contract Dates												
Commencement and Completion Dates												
KD01 - Achievement of Stage 1 - Nth TBM & C&C for E&MS/TCSS	0		09-Jan-17	0%						◆ KD01 - Achievement of Stage 1 - Nth TBM & C&C for E&MS/TCSS		
Site Possession Date												
Portions: X1,(N10,11,13 & 14) - Sth Landfall	0	06-Aug-15		0%								
Portions: N1 to N4 & N12	0		03-Dec-16	0%						◆ Portions: N1 to N4 & N12		
General Submissions												
Environmental												
Environmental Permit Submissions												
Supplementary WMP of C&C Tunnel at Sth.Landfall												
Supplementary WMP of C&C Tunnel at Sth.Landfall	0		28-Jun-14	0%								
Sediment Quality Report/Dumping Permit												
Southern Landfall												
Southern landfall - Commencement of Shaft & C&C Tunnel Dwall	0	03-Oct-15		0%								
Sediment Sampling & Testing Plan (SSTP) - if required												
Complete SSTP and Obtain EPD's approval	24	17-Feb-15	19-Mar-15	50%								
Sediment Quality Report (SQR) - if required												
Advance Ground Investigation works for Sediment sampling	24	20-Mar-15	21-Apr-15	90%								
Sediment Sample Testing & Report preparation	120	22-Apr-15	12-Sep-15	0%								
Dumping Permit for Load Dumping (Loading Permit) - if required												
Finalize the application document and submit to EPD - for Dwall	24	20-Jan-15	16-Feb-15	0%								
Notify the results and issue Loading Permit for Local & Cross Boundary Crossing - for Dwall	24	17-Feb-15	19-Mar-15	0%								
General Design Submissions												
(G6) IFA for Tunnel GBP												
SO's Review	35	29-Apr-14	02-Jun-14	100%								
SO Approval with Condition Received	0		03-Jun-14	100%								
PAYMENT MILESTONE												
Design and Design Checking of the Works												
MS 2.5 Submit AIP for seawall modification works at Southern Landfall	0		31-Jan-17	100%						◆ MS 2.5 Submit AIP for seawall modification works at Sth		
MS 2.32 Approve DDA for Approach Ramp Structures to Cut-and-cover Tunnels by the Supervising Officer	0		30-Apr-15	100%								
MS 2.44 Approve DDA for South Ventilation Building by the Supervising Officer	0		30-Jun-15	0%								
MS 2.48 Approve DDA for North Ventilation Building by the Supervising Officer	0		31-Jan-15	100%								
MS 2.52 Approve DDA for Facilities Provision for TCSS by the Supervising Officer	0		28-Feb-15	0%								
MS 2.56 Approve DDA for Drainage, Sewerage, Waterworks and Utilities at Southern Landfall by the Supervising Officer	0		30-Apr-15	100%								
MS 2.60 Approve DDA for Drainage, Sewerage, Waterworks and Utilities at Northern Landfall by the Supervising Officer	0		31-Dec-14	0%								
MS 2.69 Submit draft Operation and Maintenance Manual for all Tunnels and Cross Passgaes	0		29-Feb-16	0%								
MS 2.70 Accept Operation and Maintenance Manual for all Tunnels and Cross Passgaes by the Supervising Officer	0		30-Jun-16	0%						◆ MS 2.70 Accept Operation and Maintenance Manual for all Tunnels and Cross Passgaes by the Supervising Officer		
MS 2.71 Submit draft Operation and Maintenance Manual for all works except Tunnels and Cross Passgaes	0		29-Feb-16	0%								
MS 2.72 Accept Operation and Maintenance Manual for all works except Tunnels and Cross Passgaes by the Supervising Officer	0		30-Jun-16	0%						◆ MS 2.72 Accept Operation and Maintenance Manual for all works except Tunnels and Cross Passgaes by the Supervising Officer		
Tunnel Boring Machine (TBM) and Back-up Equipment for TBM Tunnel												
MS 3.1.6 Removal of TBM for Southbound Tunnel from Site after the completion of TBM Tunnel	0		31-Jan-17	0%						◆ MS 3.1.6 Removal of TBM for Southbound Tunnel from Site after the completion of TBM Tunnel		
MS 3.1.12 Removal of TBM for Northbound Tunnel from Site after the completion of TBM Tunnel	0		28-Feb-17	0%						◆ MS 3.1.12 Removal of TBM for Northbound Tunnel from Site after the completion of TBM Tunnel		
MS 3.1.25 Demolition of Slurry Treatment Plant on completion	0		28-Feb-17	0%						◆ MS 3.1.25 Demolition of Slurry Treatment Plant on completion		
MS 3.1.26 Complete the whole of the activities under this Cost Centre Part to the satisfaction of the Supervising Officer	0		31-Dec-15	0%								
TBM Tunnel												
MS 3.3.4 Complete walls of retrieval shaft	0		30-Jan-16	0%								
MS 3.3.5 Complete excavation to formation level for retrieval shaft and complete casting of base slab	0		30-Nov-16	0%						◆ MS 3.3.5 Complete excavation to formation level for retrieval shaft and complete casting of base slab		
MS 3.3.6 Complete all necessary works of retrieval shaft to facilitate retrieval of TBM	0		30-Nov-16	0%						◆ MS 3.3.6 Complete all necessary works of retrieval shaft to facilitate retrieval of TBM		
MS 3.3.33 Completion of excavation, support and permanent lining for 30% of the total length (measured on plan) of the N	0		31-May-16	100%						◆ MS 3.3.33 Completion of excavation, support and permanent lining for 30% of the total length (measured on plan) of the N		
MS 3.3.34 Completion of excavation, support and permanent lining for 32.5% of the total length (measured on plan) of the N	0		30-Jun-16	100%						◆ MS 3.3.34 Completion of excavation, support and permanent lining for 32.5% of the total length (measured on plan) of the N		
MS 3.3.35 Completion of excavation, support and permanent lining for 35% of the total length (measured on plan) of the N	0		30-Jun-16	100%						◆ MS 3.3.35 Completion of excavation, support and permanent lining for 35% of the total length (measured on plan) of the N		
MS 3.3.36 Completion of excavation, support and permanent lining for 37.5% of the total length (measured on plan) of the N	0		30-Jun-16	100%						◆ MS 3.3.36 Completion of excavation, support and permanent lining for 37.5% of the total length (measured on plan) of the N		
MS 3.3.37 Completion of excavation, support and permanent lining for 40% of the total length (measured on plan) of the N	0		30-Jul-16	100%						◆ MS 3.3.37 Completion of excavation, support and permanent lining for 40% of the total length (measured on plan) of the N		
MS 3.3.38 Completion of excavation, support and permanent lining for 42.5% of the total length (measured on plan) of the N	0		30-Jul-16	100%						◆ MS 3.3.38 Completion of excavation, support and permanent lining for 42.5% of the total length (measured on plan) of the N		
MS 3.3.39 Completion of excavation, support and permanent lining for 45% of the total length (measured on plan) of the N	0		30-Jul-16	100%						◆ MS 3.3.39 Completion of excavation, support and permanent lining for 45% of the total length (measured on plan) of the N		
MS 3.3.40 Completion of excavation, support and permanent lining for 47.5% of the total length (measured on plan) of the N	0		30-Jul-16	100%						◆ MS 3.3.40 Completion of excavation, support and permanent lining for 47.5% of the total length (measured on plan) of the N		
MS 3.3.41 Completion of excavation, support and permanent lining for 50% of the total length (measured on plan) of the N	0		31-Aug-16	100%						◆ MS 3.3.41 Completion of excavation, support and permanent lining for 50% of the total length (measured on plan) of the N		
MS 3.3.42 Completion of excavation, support and permanent lining for 52.5% of the total length (measured on plan) of the N	0		31-Aug-16	100%						◆ MS 3.3.42 Completion of excavation, support and permanent lining for 52.5% of the total length (measured on plan) of the N		
MS 3.3.43 Completion of excavation, support and permanent lining for 55% of the total length (measured on plan) of the N	0		31-Aug-16	0%						◆ MS 3.3.43 Completion of excavation, support and permanent lining for 55% of the total length (measured on plan) of the N		
MS 3.3.44 Completion of excavation, support and permanent lining for 57.5% of the total length (measured on plan) of the N	0		31-Aug-16	0%						◆ MS 3.3.44 Completion of excavation, support and permanent lining for 57.5% of the total length (measured on plan) of the N		
MS 3.3.45 Completion of excavation, support and permanent lining for 60% of the total length (measured on plan) of the N	0		31-Aug-16	0%						◆ MS 3.3.45 Completion of excavation, support and permanent lining for 60% of the total length (measured on plan) of the N		
MS 3.3.46 Completion of excavation, support and permanent lining for 62.5% of the total length (measured on plan) of the N	0		30-Sep-16	0%						◆ MS 3.3.46 Completion of excavation, support and permanent lining for 62.5% of the total length (measured on plan) of the N		
MS 3.3.47 Completion of excavation, support and permanent lining for 65% of the total length (measured on plan) of the N	0		30-Sep-16	0%						◆ MS 3.3.47 Completion of excavation, support and permanent lining for 65% of the total length (measured on plan) of the N		
MS 3.3.48 Completion of excavation, support and permanent lining for 67.5% of the total length (measured on plan) of the N	0		30-Sep-16	0%						◆ MS 3.3.48 Completion of excavation, support and permanent lining for 67.5% of the total length (measured on plan) of the N		
MS 3.3.49 Completion of excavation, support and permanent lining for 70% of the total length (measured on plan) of the N	0		30-Sep-16	0%						◆ MS 3.3.49 Completion of excavation, support and permanent lining for 70% of the total length (measured on plan) of the N		
MS 3.3.50 Completion of excavation, support and permanent lining for 72.5% of the total length (measured on plan) of the N	0		31-Oct-16	0%						◆ MS 3.3.50 Completion of excavation, support and permanent lining for 72.5% of the total length (measured on plan) of the N		
MS 3.3.51 Completion of excavation, support and permanent lining for 75% of the total length (measured on plan) of the N	0		31-Oct-16	0%						◆ MS 3.3.51 Completion of excavation, support and permanent lining for 75% of the total length (measured on plan) of the N		
MS 3.3.52 Completion of excavation, support and permanent lining for 77.5% of the total length (measured on plan) of the N	0		31-Oct-16	0%						◆ MS 3.3.52 Completion of excavation, support and permanent lining for 77.5% of the total length (measured on plan) of the N		
MS 3.3.53 Completion of excavation, support and permanent lining for 80% of the total length (measured on plan) of the N	0		31-Oct-16	0%						◆ MS 3.3.53 Completion of excavation, support and permanent lining for 80% of the total length (measured on plan) of the N		
MS 3.3.54 Completion of excavation, support and permanent lining for 82.5% of the total length (measured on plan) of the N	0		30-Nov-16	0%						◆ MS 3.3.54 Completion of excavation, support and permanent lining for 82.5% of the total length (measured on plan) of the N		
MS 3.3.55 Completion of excavation, support and permanent lining for 85% of the total length (measured on plan) of the N	0		30-Nov-16	0%						◆ MS 3.3.55 Completion of excavation, support and permanent lining for 85% of the total length (measured on plan) of the N		
MS 3.3.56 Completion of excavation, support and permanent lining for 87.5% of the total length (measured on plan) of the N	0		30-Nov-16	0%						◆ MS 3.3.56 Completion of excavation, support and permanent lining for 87.5% of the total length (measured on plan) of the N		
MS 3.3.57 Completion of excavation, support and permanent lining for 90% of the total length (measured on plan) of the N	0		30-Nov-16	0%						◆ MS 3.3.57 Completion of excavation, support and permanent lining for 90% of the total length (measured on plan) of the N		
MS 3.3.58 Completion of excavation, support and permanent lining for 92.5% of the total length (measured on plan) of the N	0		30-Nov-16	0%						◆ MS 3.3.58 Completion of excavation, support and permanent lining for 92.5% of the total length (measured on plan) of the N		
MS 3.3.59 Completion of excavation, support and permanent lining for 95% of the total length (measured on plan) of the N	0		31-Dec-16	0%						◆ MS 3.3.59 Completion of excavation, support and permanent lining for 95% of the total length (measured on plan) of the N		
MS 3.3.60 Completion of excavation, support and permanent lining for 97.5% of the total length (measured on plan) of the N	0		31-Dec-16	0%						◆ MS 3.3.60 Completion of excavation, support and permanent lining for 97.5% of the total length (measured on plan) of the N		
MS 3.3.61 Completion of excavation, support and permanent lining for 100% of the total length (measured on plan) of the N	0		31-Dec-16	0%						◆ MS 3.3.61 Completion of excavation, support and permanent lining for 100% of the total length (measured on plan) of the N		
MS 3.3.96 Completion of excavation, support and permanent lining for 50% of the total length (measured on plan) of the S	0		30-Jul-16	100%						◆ MS 3.3.96 Completion of excavation, support and permanent lining for 50% of the total length (measured on plan) of the S		
MS 3.3.97 Completion of excavation, support and permanent lining for 52.5% of the total length (measured on plan) of the S	0		30-Jul-16	100%						◆ MS 3.3.97 Completion of excavation, support and permanent lining for 52.5% of the total length (measured on plan) of the S		
MS 3.3.98 Completion of excavation, support and permanent lining for 55% of the total length (measured on plan) of the S	0		30-Jul-16	100%						◆ MS 3.3.98 Completion of excavation, support and permanent lining for 55% of the total length (measured on plan) of the S		
MS 3.3.99 Completion of excavation, support and permanent lining for 57.5% of the total length (measured on plan) of the S	0		31-Aug-16	100%						◆ MS 3.3.99 Completion of excavation, support and permanent lining for 57.5% of the total length (measured on plan) of the S		
MS 3.3.100 Completion of excavation, support and permanent lining for 60% of the total length (measured on plan) of the S	0		31-Aug-16	100%						◆ MS 3.3.100 Completion of excavation, support and permanent lining for 60% of the total length (measured on plan) of the S		
MS 3.3.101 Completion of excavation, support and permanent lining for 62.5% of the total length (measured on plan) of the S	0		31-Aug-16	100%						◆ MS 3.3.101 Completion of excavation, support and permanent lining for 62.5% of the total length (measured on plan) of the S		
MS 3.3.102 Completion of excavation, support and permanent lining for 65% of the total length (measured on plan) of the S	0		31-Aug-16	100%						◆ MS 3.3.102 Completion of excavation, support and permanent lining for 65% of the total length (measured on plan) of the S		
MS 3.3.103 Completion of excavation, support and permanent lining for 67.5% of the total length (measured on plan) of the S	0		31-Aug-16	100%						◆ MS 3.3.103 Completion of excavation, support and permanent lining for 67.5% of the total length (measured on plan) of the S		

Page 1 of 11		TMCLK - Northern Connection Sub-Sea Tunnel Section Detailed Works Programme (Rev. F) Three Months Rolling Programme Progress as of 01-Jan-17	<table border="1"> <thead> <tr> <th>Date</th> <th>Revision</th> <th>Checked</th> <th>Approved</th> </tr> </thead> <tbody> <tr> <td>12-Feb-14</td> <td>TMCLKDBJENPRG098507</td> <td>WYu</td> <td>SPs</td> </tr> <tr> <td>08-Apr-14</td> <td>TMCLKDBJENPRG098507 Rev.B</td> <td>SPs</td> <td>WYu</td> </tr> <tr> <td>28-Aug-14</td> <td>TMCLKDBJENPRG098507 Rev.C</td> <td>CLa</td> <td>WYu</td> </tr> <tr> <td>30-Oct-15</td> <td>TMCLKDBJENPRG098507 Rev.F</td> <td>WYu</td> <td></td> </tr> </tbody> </table>	Date	Revision	Checked	Approved	12-Feb-14	TMCLKDBJENPRG098507	WYu	SPs	08-Apr-14	TMCLKDBJENPRG098507 Rev.B	SPs	WYu	28-Aug-14	TMCLKDBJENPRG098507 Rev.C	CLa	WYu	30-Oct-15	TMCLKDBJENPRG098507 Rev.F	WYu	
Date	Revision	Checked	Approved																				
12-Feb-14	TMCLKDBJENPRG098507	WYu	SPs																				
08-Apr-14	TMCLKDBJENPRG098507 Rev.B	SPs	WYu																				
28-Aug-14	TMCLKDBJENPRG098507 Rev.C	CLa	WYu																				
30-Oct-15	TMCLKDBJENPRG098507 Rev.F	WYu																					



Activity Name	Orig Dur	DWP Start	DWP Finish	% Comp	2016			2017				
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
					MS 7.2.6 Complete concreting works of 75% area of the total construction floor area for the ventilation building	0		31-Dec-16	0%			
Facilities Provision for E&M Works for TBM Tunnel, Cut & Cover Tunnels and Cross Passages												
MS 9.1.1 Complete 25% of bonding terminal, opening and accessories, etc.	0		30-Sep-16	0%				◆ MS 9.1.1 Complete 25% of bonding terminal, opening and accessories, etc.				
MS 9.1.2 Complete 25% of plinth, hoisting facilities and accessories, etc.	0		30-Sep-16	0%				◆ MS 9.1.2 Complete 25% of plinth, hoisting facilities and accessories, etc.				
MS 9.1.3 Complete 50% of bonding terminal, opening and accessories, etc.	0		31-Jan-17	0%				◆ MS 9.1.3 Complete 50% of bonding terminal, opening and accessories, etc.				
MS 9.1.4 Complete 50% of plinth, hoisting facilities and accessories, etc.	0		31-Jan-17	0%				◆ MS 9.1.4 Complete 50% of plinth, hoisting facilities and accessories, etc.				
Construction												
Northern Landfall												
North Reclamation (Phase 1)												
Box Culvert Extension												
Construction												
Ch000-010 Culvert Outfall												
Removal of temporary bulk head	18	25-Nov-15	15-Dec-15	0%								
Ch150-250 Marine Section												
ELS & Structure												
Pile A41/A39 CJ to Pile A39/A37 CJ												
ELS												
Excavation to 0.5m below strut S2	4	05-Feb-16	16-Feb-16	100%								
Installation of strut S2	6	17-Feb-16	23-Feb-16	100%								
Excavation to 0.5m below strut S1	5	24-Feb-16	29-Feb-16	100%								
Installation of strut S1	5	01-Mar-16	05-Mar-16	100%								
Excavation to FEL	5	07-Mar-16	11-Mar-16	100%								
Box Culvert Structure												
Pile cap construction	10	18-Mar-16	01-Apr-16	100%								
Base slab construction including kicker	6	15-Apr-16	21-Apr-16	0%								
Removal of strut S1	4	22-Apr-16	26-Apr-16	0%								
Sliding formworks 1st assembly	18	27-Apr-16	19-May-16	0%								
Walls & top slab construction	6	20-May-16	26-May-16	0%								
Removal of strut S2 & Backfilling up to required level	6	03-Jun-16	10-Jun-16	0%								
Pile A39/A37 CJ to Pile A37/A35 CJ												
ELS												
Excavation to 0.5m below strut S2	4	17-Feb-16	20-Feb-16	100%								
Installation of strut S2	6	22-Feb-16	27-Feb-16	100%								
Excavation to 0.5m below strut S1	5	01-Mar-16	05-Mar-16	100%								
Installation of strut S1	5	07-Mar-16	11-Mar-16	100%								
Excavation to FEL	5	12-Mar-16	17-Mar-16	100%								
Box Culvert Structure												
Pile cap construction	10	02-Apr-16	14-Apr-16	100%								
Base slab construction including kicker	6	22-Apr-16	28-Apr-16	0%								
Removal of strut S1	4	29-Apr-16	04-May-16	0%								
Walls & top slab construction	6	27-May-16	02-Jun-16	0%								
Removal of strut S2 & Backfilling up to required level	6	11-Jun-16	17-Jun-16	0%								
Pile A37/A35 CJ to Pile A35/A33 CJ												
ELS												
Excavation to 0.5m below strut S2	4	22-Feb-16	25-Feb-16	100%								
Installation of strut S2	6	26-Feb-16	03-Mar-16	100%								
Excavation to 0.5m below strut S1	5	07-Mar-16	11-Mar-16	100%								
Installation of strut S1	5	12-Mar-16	17-Mar-16	100%								
Excavation to FEL	5	18-Mar-16	23-Mar-16	100%								
Box Culvert Structure												
Pile cap construction	10	15-Apr-16	26-Apr-16	100%								
Base slab construction including kicker	6	29-Apr-16	06-May-16	0%								
Removal of strut S1	4	07-May-16	11-May-16	0%								
Walls & top slab construction	6	03-Jun-16	10-Jun-16	0%								
Removal of strut S2 & Backfilling up to required level	6	18-Jun-16	24-Jun-16	0%								
Pile A35/A33 CJ to Pile A33/P117 CJ												
ELS												
Excavation to 0.5m below strut S2	4	26-Feb-16	01-Mar-16	100%								
Installation of strut S2	6	02-Mar-16	08-Mar-16	100%								
Excavation to 0.5m below strut S1	5	12-Mar-16	17-Mar-16	100%								
Installation of strut S1	5	18-Mar-16	23-Mar-16	100%								
Excavation to FEL	5	24-Mar-16	01-Apr-16	100%								
Box Culvert Structure												
Pile cap construction	10	27-Apr-16	09-May-16	100%								
Base slab construction including kicker	6	10-May-16	17-May-16	0%								
Removal of strut S1	4	18-May-16	21-May-16	0%								
Walls & top slab construction	6	11-Jun-16	17-Jun-16	0%								
Pile A33/P117 CJ to Pile P113/P109 CJ												
Box Culvert Structure												
Base slab construction including kicker	6	18-May-16	24-May-16	0%								
Removal of strut S1	4	25-May-16	28-May-16	0%								
Walls & top slab construction	6	18-Jun-16	24-Jun-16	0%								
Pile P113/P109 CJ to Pile P105/P101 CJ												
Box Culvert Structure												
Base slab construction including kicker	6	25-May-16	31-May-16	50%								
Removal of strut S1	4	01-Jun-16	04-Jun-16	0%								
Pile P105/P101 CJ to Pile P97/P93 CJ												
Box Culvert Structure												
Base slab construction including kicker	6	01-Jun-16	07-Jun-16	0%								
Removal of strut S1	4	08-Jun-16	13-Jun-16	0%								
Pile P97/P93 CJ to Pile P89/P85 CJ												
Box Culvert Structure												
Base slab construction including kicker	6	08-Jun-16	15-Jun-16	50%								
Removal of strut S1	4	16-Jun-16	20-Jun-16	0%								
Pile P89/P85 CJ to Pile P81/P77 CJ												
Box Culvert Structure												
Base slab construction including kicker	6	16-Jun-16	22-Jun-16	0%								

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30-Oct-15	TMCLKDBJENPRG98507 Rev.F	WYu	

Activity Name	Orig Dur	DWP Start	DWP Finish	% Comp	2016		2017					
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
					Removal of strut S1	4	23-Jun-16	27-Jun-16	0%			
Pile P81/P77 CJ to Pile P73/P69 CJ												
Box Culvert Structure												
Base slab construction including kicker	6	23-Jun-16	29-Jun-16	100%								
Ch250-380 Marine Section												
Installation of Dewatering & Observation Well Ch 250-380	23	04-Nov-15	30-Nov-15	100%								
1st Pumping Test & Analysis	17	01-Dec-15	19-Dec-15	100%								
Toe Grouting	106	21-Dec-15	07-May-16	100%								
2nd Pumping test & Analysis	25	08-Apr-16	07-May-16	100%								
Remaining toe grouting Ch250-380	51	09-May-16	09-Jul-16	100%								
NewActivity	0			0%								
ELS & Structure												
Geotextile - Phase 2 Reclamation - along combi wall system	4	03-Dec-16	08-Dec-16	0%								
Sand Blanket - Phase 2 Reclamation - along combi wall system	6	08-Dec-16	15-Dec-16	0%								
Band Drain - Phase 2 Reclamation - along combi wall system	30	15-Dec-16	23-Jan-17	0%								
Public Fill - Phase 2 Reclamation - along combi wall system	14	23-Jan-17	15-Feb-17	0%								
Pile P73/P69 CJ to Pile P65/P61 CJ												
ELS												
Excavation to 0.5m below strut S1	9	15-Feb-17	25-Feb-17	0%								
Installation of strut S1	5	25-Feb-17	03-Mar-17	0%								
Excavation to FEL	5	03-Mar-17	09-Mar-17	0%								
Box Culvert Structure												
Base slab construction including kicker	6	16-Mar-17	23-Mar-17	0%								
Pile P65/P61 CJ to Pile P57/P53 CJ												
ELS												
Excavation to 0.5m below strut S1	9	22-Feb-17	04-Mar-17	0%								
Installation of strut S1	5	04-Mar-17	10-Mar-17	0%								
Excavation to FEL	5	10-Mar-17	16-Mar-17	0%								
Pile P57/P53 CJ to Pile P49/P45 CJ												
ELS												
Excavation to 0.5m below strut S1	9	01-Mar-17	11-Mar-17	0%								
Installation of strut S1	5	11-Mar-17	17-Mar-17	0%								
Excavation to FEL	5	17-Mar-17	23-Mar-17	0%								
Pile P49/P45 CJ to Pile P41/P37 CJ												
ELS												
Excavation to 0.5m below strut S1	9	08-Mar-17	18-Mar-17	0%								
Pile P41/P37 CJ to Pile P33/P29 CJ												
ELS												
Excavation to 0.5m below strut S1	9	15-Mar-17	25-Mar-17	0%								
Miscellaneous works												
Inspection Manhole (IM)												
Inspection Manhole IM-01 to IM-04 & backfilling to +6.0mPD	12	24-Sep-15	09-Oct-15	0%								
Inspection Manhole IM-09 to IM-12 & backfilling to +6.0mPD	18	20-Oct-16	09-Nov-16	0%								
Stop Log Opening (SLO)												
SLO-01 to SLO-05 & backfilling to +6.0mPD	24	10-Oct-15	07-Nov-15	0%								
Balance Hole (BH)												
BH-01 to BH-03 & backfilling to +6.0mPD	18	03-Sep-15	23-Sep-15	0%								
BH-04 to BH-06 & backfilling to +6.0mPD	18	05-Sep-16	26-Sep-16	0%								
BH-07 to BH-09 & backfilling to +6.0mPD	18	10-Nov-16	30-Nov-16	0%								
Desilting Opening (DO)												
DO-01 to DO-04 & backfilling to +6.0mPD	18	27-Sep-16	19-Oct-16	0%								
North Launching Shaft												
Design Submission												
(C1) DDA for North C&C Tunnel Permanent Structure												
SO's Review	35	24-May-14	27-Jun-14	90%								
SO Approval with Condition Received	0		27-Jun-14	0%								
North Ventilation Shaft												
Construction												
North Ventilation Shaft Structure												
NVS - ML03 Tunnel Structure	47	19-May-16	15-Jul-16	30%								
NVS - ML02 Tunnel Structure	44	05-Apr-16	27-May-16	46%								
TMCLK VO-008 - Construction of Viaduct Foundations at Portion N6A												
Viaduct Pile Cap												
Construction												
Pier G1b												
Pile Cap G1b - ELS Foundation	24	03-Dec-16	04-Jan-17	0%								
Pile Cap G1b - Removal of Existing ground slab	6	04-Jan-17	11-Jan-17	0%								
Pile Cap G1b - Excavation & ELS Installation	15	11-Jan-17	04-Feb-17	0%								
Pile Cap G1b - Blinding Concrete	3	04-Feb-17	08-Feb-17	0%								
Pile Cap G1b - Rebar & Concreting	18	08-Feb-17	01-Mar-17	0%								
Pile Cap G1b - Backfilling & Temp Reinstatement	6	01-Mar-17	08-Mar-17	0%								
Pier H1b												
Pile Cap H1b - ELS Foundation	24	08-Mar-17	06-Apr-17	0%								
Pier G1c												
Pile Cap G1c - Preparation for ELS	6	24-Oct-14	30-Oct-14	0%								
Pile Cap G1c - Removal of Existing ground slab	6	31-Oct-14	06-Nov-14	0%								
Pile Cap G1c - Excavation & ELS Installation	12	07-Nov-14	20-Nov-14	0%								
Pile Cap G1c - Blinding Concrete	3	21-Nov-14	24-Nov-14	0%								
Pile Cap G1c - Rebar & Concreting	18	25-Nov-14	15-Dec-14	0%								
Pile Cap G1c - Backfilling & Temp Reinstatement	6	16-Dec-14	22-Dec-14	0%								
Pier H1c												
Pile Cap H1c - Preparation for ELS	6	02-Nov-15	07-Nov-15	0%								
Pile Cap H1c - Removal of Existing ground slab	6	09-Nov-15	14-Nov-15	0%								
North Approach TBM Tunnelling & Cross Passage												
Construction												
Northern Landfall Surface Setup for TBM operation												
Gantry Removal at North TBM Launching Shaft	24	17-Mar-17	19-Apr-17	0%								

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Activity Name	Orig Dur	DWP Start	DWP Finish	% Comp	2016			2017						
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May		
Slurry Treatment Plant De commissioning & Removal	48	17-Mar-17	19-May-17	0%										
North Approach Tunnel Internal Structure - NB														
CP51 - Excavation & Lining completion	0		09-Nov-16	0%										
NB - North TBM Tunnel - Corbel & Cable Trough installation	42	31-Aug-16	22-Oct-16	91%										
NB - North TBM Tunnel - OHVD Slab installation	42	07-Sep-16	29-Oct-16	0%										
NB - North TBM Tunnel - Fire proofing and Provision to E&MS and TCSS Contract for KD1	42	14-Sep-16	05-Nov-16	0%										
North Approach Tunnel Internal Structure - SB														
SB - North TBM Tunnel - Corbel & Cable Trough installation	42	22-Oct-16	10-Dec-16	91%										
SB - North TBM Tunnel - OHVD Slab installation	42	29-Oct-16	17-Dec-16	3%										
SB - North TBM Tunnel - Fire proofing & Provision to E&MS and TCSS Contract for KD1	42	05-Nov-16	24-Dec-16	0%										
North Approach Cross Passage														
CP55 - Traditional Method														
CP Finishing & Demobilization	18	23-May-16	14-Jun-16	100%										
CP52 - Pipe Jacking Method														
CP Finishing & Demobilization	21	24-Mar-16	22-Apr-16	100%										
CP51 - Traditional Method														
CP Excavation	14	14-Sep-16	28-Sep-16	100%										
CP Lining	14	28-Sep-16	12-Oct-16	100%										
2nd Segment Opening	7	12-Oct-16	19-Oct-16	100%										
CP Finishing & Demobilization	18	19-Oct-16	09-Nov-16	100%										
CP50 - Pipe Jacking Method														
CP Finishing & Demobilization	21	27-Jun-16	21-Jul-16	100%										
North Ventilation Building														
Design Submission														
(A11) Submissions to Design Advisory Panel of ArchSD														
ArchSD's comment	30	10-Jun-14	09-Jul-14	93%										
(I1) DDA for North Vent.Bldgs. GBP & Arch.Submission														
IPs Review	28	21-Aug-14	17-Sep-14	92%										
IP's No Objection Received	0		17-Sep-14	0%										
SO's Review	35	21-Aug-14	24-Sep-14	94%										
SO Approval with Condition Received	0		24-Sep-14	0%										
(I1) DDA for North & South Vent.Bldg. ABWF works														
IPs/ SO's Advance Comments/ ICE Comments	28	03-Dec-14	30-Dec-14	88%										
Comments Received	0		30-Dec-14	0%										
Designer to Reply PtC + Update Submission	21	31-Dec-14	24-Jan-15	0%										
Submit Updated DDA to SO/ ICE/ IPs	0	26-Jan-15		0%										
ICE Approval & Issue Check Cert	18	26-Jan-15	14-Feb-15	0%										
Submit ICE Check Cert to SO	6	16-Feb-15	25-Feb-15	0%										
IPs Review	28	26-Jan-15	22-Feb-15	0%										
IP's No Objection Received	0		22-Feb-15	0%										
SO's Review	35	26-Jan-15	01-Mar-15	0%										
SO Approval with Condition Received	0		02-Mar-15	0%										
(I2) DDA for North Vent.Bldgs.Structural Design incl.Vent.Connections														
IPs Review	28	24-Dec-14	20-Jan-15	92%										
IP's No Objection Received	0		20-Jan-15	0%										
SO's Review	35	24-Dec-14	27-Jan-15	92%										
SO Approval with Condition Received	0		27-Jan-15	0%										
(I3) DDA for North & South Vent.Bldgs. Service and E&M Provision														
ICE Approval & Issue Check Cert	12	15-Jan-15	28-Jan-15	100%										
Submit ICE Check Cert to SO	6	29-Jan-15	04-Feb-15	100%										
IPs Review	28	15-Jan-15	11-Feb-15	92%										
IP's No Objection Received	0		11-Feb-15	0%										
SO's Review	35	15-Jan-15	18-Feb-15	91%										
SO Approval with Condition Received	0		18-Feb-15	0%										
Construction														
Substructure	120	28-Jun-16	19-Nov-16	0%										
Superstructure	120	19-Nov-16	24-Apr-17	0%										
North Reclamation (Phase 2)														
Construction														
Dredging - Phase 2 (Zone G)	18	03-Dec-16	24-Dec-16	10%										
VS - Rock Grade 400 - Zone G	9	24-Dec-16	07-Jan-17	0%										
VS - Levelling Stone & Seawall Block - Zone G	27	07-Jan-17	15-Feb-17	0%										
VS - Rock Type A - Zone G	10	15-Feb-17	27-Feb-17	0%										
Vertical Seawall - Bermstone - (Zone G)	18	27-Feb-17	20-Mar-17	0%										
Vertical Seawall - Seawall Copping - (Zone G)	78	27-Feb-17	06-Jun-17	0%										
Geotextile (Zone G)	11	24-Dec-16	10-Jan-17	0%										
Sand Blanket (Zone G)	21	31-Dec-16	26-Jan-17	0%										
Band Drain (Zone G)	30	14-Jan-17	25-Feb-17	0%										
Reclamation - Phase 2	24	11-Feb-17	11-Mar-17	0%										
Backfilling to +10mPD - Phase 2	48	25-Feb-17	27-Apr-17	0%										
North Surface Roadworks, Utility & Drainage works														
Construction														
North Landfall - Underground Sewerage & Drainage - Summary	408	27-Jan-17	26-Jun-18	0%										
North Landfall - Underground Sewerage & Drainage - Portion N5	139	11-Mar-17	30-Aug-17	0%										
Sub-sea Tunnel														
Sub-sea TBM Tunnelling														
Major Procurement														
Precast Segment ID12.40 - Production for Sub-sea TBM Tunnel														
ID12.40 TBM Segment Ring Fabrication - 12 rings per day	300	22-Nov-14	19-Dec-15	89%										
Design Submission														
(G1) DDA for TBM Tunnel Lining Structural Design - Sub-sea tunnel														
Sub-sea TBM Tunnel Segment - Fabrication	265	06-Oct-14	26-Aug-15	89%										
(G3) DDA for TBM Tunnel Internal Structures (Sub-sea)														
Sub-sea Tunnel - Precast Gallery Fabrication	244	22-Jan-15	18-Nov-15	84%										
Construction														
Sub-sea TBM Tunnel - NB ID12.2m - S881														
NB - Sub-sea TBM Tunnel - CDG with Saturation (Ch5550 to 5330 - 220m)	18	14-Aug-16	02-Sep-16	100%										

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Activity Name	Orig Dur	DWP Start	DWP Finish	% Comp	2016					2017					
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May			
SB - Sub-sea TBM Tunnel - Precast Invert Gallery - Completion to CP15	7	08-Feb-17	15-Feb-17	0%											
SB - Sub-sea TBM Tunnel - Precast Invert Gallery - Completion to CP14	7	15-Feb-17	22-Feb-17	0%											
SB - Sub-sea TBM Tunnel - Precast Invert Gallery - Completion to CP13	13	22-Feb-17	07-Mar-17	0%											
SB - Sub-sea TBM Tunnel - Precast Invert Gallery - Completion to CP12	8	07-Mar-17	15-Mar-17	0%											
SB - Sub-sea TBM Tunnel - Precast Invert Gallery - Completion to CP11	11	15-Mar-17	26-Mar-17	0%											
Sub-sea Tunnel Cross Passage & Internal Structure															
Construction															
Sub-sea Tunnel Cross Passage															
CP48 - ML03 - Ch6489															
CP - Pipe Jacking Method - Break-out & Demobilization	11	22-Jul-16	02-Aug-16	100%											
CP - Remaining Internal Structure & Finishing	21	02-Aug-16	26-Aug-16	100%											
CP47 - ML03 - Ch6390															
CP - Remaining Internal Structure & Finishing	21	08-Aug-16	31-Aug-16	90%											
CP46 - ML03 - Ch6292															
CP - Pipe Jacking Method - Setup & Assembly	23	07-Jul-16	03-Aug-16	100%											
CP - Pipe Jacking Method - Break-in & Excavation	10	03-Aug-16	13-Aug-16	100%											
CP - Pipe Jacking Method - Break-out & Demobilization	12	13-Aug-16	25-Aug-16	100%											
CP - Remaining Internal Structure & Finishing	21	25-Aug-16	20-Sep-16	0%											
CP45 - ML03 - Ch6193															
CP - Pipe Jacking Method - Setup & Assembly	23	12-Jul-16	08-Aug-16	100%											
CP - Pipe Jacking Method - Break-in & Excavation	10	08-Aug-16	18-Aug-16	100%											
CP - Pipe Jacking Method - Break-out & Demobilization	12	18-Aug-16	30-Aug-16	100%											
CP - Remaining Internal Structure & Finishing	21	30-Aug-16	24-Sep-16	85%											
CP44 - ML03 - Ch6095															
CP - Pipe Jacking Method - Setup & Assembly	23	01-Aug-16	27-Aug-16	100%											
CP - Pipe Jacking Method - Break-in & Excavation	10	27-Aug-16	06-Sep-16	100%											
CP - Pipe Jacking Method - Break-out & Demobilization	12	06-Sep-16	18-Sep-16	100%											
CP - Remaining Internal Structure & Finishing	21	19-Sep-16	14-Oct-16	85%											
CP43 - ML03 - Ch5996															
CP - Pipe Jacking Method - Setup & Assembly	23	06-Aug-16	02-Sep-16	100%											
CP - Pipe Jacking Method - Break-in & Excavation	10	02-Sep-16	12-Sep-16	100%											
CP - Pipe Jacking Method - Break-out & Demobilization	12	12-Sep-16	24-Sep-16	100%											
CP - Remaining Internal Structure & Finishing	21	24-Sep-16	21-Oct-16	60%											
CP42 - ML03 - Ch5898															
CP - Pipe Jacking Method - Setup & Assembly	23	24-Aug-16	21-Sep-16	100%											
CP - Pipe Jacking Method - Break-in & Excavation	10	21-Sep-16	01-Oct-16	100%											
CP - Pipe Jacking Method - Break-out & Demobilization	12	01-Oct-16	13-Oct-16	100%											
CP - Remaining Internal Structure & Finishing	21	12-Oct-16	05-Nov-16	0%											
CP41 - ML03 - Ch5800															
CP - Pipe Jacking Method - Setup & Assembly	23	29-Aug-16	24-Sep-16	100%											
CP - Piping Jacking Method - Break-in & Excavation	10	25-Sep-16	04-Oct-16	100%											
CP - Pipe Jacking Method - Break-out & Demobilization	12	05-Oct-16	16-Oct-16	100%											
CP - Remaining Internal Structure & Finishing	21	17-Oct-16	09-Nov-16	0%											
CP40 - ML03 - Ch5703															
CP - Pipe Jacking Method - Setup & Assembly	23	05-Sep-16	04-Oct-16	100%											
CP - Piping Jacking Method - Break-in & Excavation	10	13-Oct-16	23-Oct-16	0%											
CP - Pipe Jacking Method - Break-out & Demobilization	12	23-Oct-16	04-Nov-16	0%											
CP - Remaining Internal Structure & Finishing	21	04-Nov-16	29-Nov-16	0%											
CP39 - ML03 - Ch5607															
CP - Pipe Jacking Method - Setup & Assembly	23	15-Sep-16	15-Oct-16	100%											
CP - Piping Jacking Method - Break-in & Excavation	10	17-Oct-16	26-Oct-16	0%											
CP - Pipe Jacking Method - Break-out & Demobilization	12	27-Oct-16	07-Nov-16	0%											
CP - Remaining Internal Structure & Finishing	21	08-Nov-16	01-Dec-16	0%											
CP38 - ML03 - Ch5510															
CP - Pipe Jacking Method - Setup & Assembly	23	23-Sep-16	22-Oct-16	80%											
CP - Piping Jacking Method - Break-in & Excavation	10	04-Nov-16	14-Nov-16	0%											
CP - Pipe Jacking Method - Break-out & Demobilization	12	14-Nov-16	26-Nov-16	0%											
CP - Remaining Internal Structure & Finishing	21	26-Nov-16	21-Dec-16	0%											
CP37 - ML03 - Ch5413															
CP - Pipe Jacking Method - Setup & Assembly	23	03-Oct-16	29-Oct-16	10%											
CP - Piping Jacking Method - Break-in & Excavation	10	08-Nov-16	17-Nov-16	0%											
CP - Pipe Jacking Method - Break-out & Demobilization	12	18-Nov-16	29-Nov-16	0%											
CP - Remaining Internal Structure & Finishing	21	30-Nov-16	23-Dec-16	0%											
CP36 - ML03 - Ch5315															
CP - Pipe Jacking Method - Setup & Assembly	23	08-Oct-16	05-Nov-16	10%											
CP - Piping Jacking Method - Break-in & Excavation	10	26-Nov-16	06-Dec-16	0%											
CP - Pipe Jacking Method - Break-out & Demobilization	12	06-Dec-16	18-Dec-16	0%											
CP - Remaining Internal Structure & Finishing	21	19-Dec-16	14-Jan-17	0%											
CP35 - ML03 - Ch5217															
CP - Pipe Jacking Method - Setup & Assembly	23	17-Oct-16	11-Nov-16	10%											
CP - Piping Jacking Method - Break-in & Excavation	10	30-Nov-16	09-Dec-16	0%											
CP - Pipe Jacking Method - Break-out & Demobilization	12	10-Dec-16	21-Dec-16	0%											
CP - Remaining Internal Structure & Finishing	21	22-Dec-16	18-Jan-17	0%											
CP34 - ML03 - Ch5118															
CP - Pipe Jacking Method - Setup & Assembly	23	20-Oct-16	16-Nov-16	0%											
CP - Piping Jacking Method - Break-in & Excavation	10	18-Dec-16	28-Dec-16	0%											
CP - Pipe Jacking Method - Break-out & Demobilization	12	28-Dec-16	09-Jan-17	0%											
CP - Remaining Internal Structure & Finishing	21	09-Jan-17	08-Feb-17	0%											
CP33 - ML03 - Ch5020															
CP - Pipe Jacking Method - Setup & Assembly	23	26-Oct-16	22-Nov-16	0%											
CP - Piping Jacking Method - Break-in & Excavation	10	22-Dec-16	31-Dec-16	0%											
CP - Pipe Jacking Method - Break-out & Demobilization	12	01-Jan-17	12-Jan-17	0%											
CP - Remaining Internal Structure & Finishing	21	13-Jan-17	13-Feb-17	0%											
CP32 - ML03 - Ch4921															
CP - Pipe Jacking Method - Setup & Assembly	23	03-Nov-16	30-Nov-16	0%											
CP - Piping Jacking Method - Break-in & Excavation	10	09-Jan-17	19-Jan-17	0%											
CP - Pipe Jacking Method - Break-out & Demobilization	12	19-Jan-17	31-Jan-17	0%											

Page 7 of 11
 Project ID: TMCLK DWP 16W25
 Data Date: 01-Jan-17

- Planned Bar
- Planned Bar - Critical
- Planned Milestone
- Progress bar
- Progress Milestone

TMCLK - Northern Connection Sub-Sea Tunnel Section

Detailed Works Programme (Rev. F)

Three Months Rolling Programme

Progress as of 01-Jan-17



Date	Revision	Checked	Approved
12-Feb-14	TMCLKDBJENPRG98507	WYu	SPs
08-Apr-14	TMCLKDBJENPRG98507 Rev.B	SPs	WYu
28-Aug-14	TMCLKDBJENPRG98507 Rev.C	CLa	WYu
30-Oct-15	TMCLKDBJENPRG98507 Rev.F	WYu	

Activity Name	Orig Dur	DWPFF Start	DWPFF Finish	% Comp	2016			2017						
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May		
Re-submission	18	29-May-15	18-Jun-15	0%										
Construction														
C&C Tunnel - 2nd 85m - Tunnel Structure	83	14-Jun-16	20-Sep-16	0%	C Tunnel - 2nd 85m - Tunnel Structure									
C&C Tunnel - 2nd 85m - Backfilling	9	21-Sep-16	30-Sep-16	0%	C&C Tunnel - 2nd 85m - Backfilling									
C&C Tunnel - 3rd 85m - Tunnel Structure	83	26-Jul-16	02-Nov-16	0%	C&C Tunnel - 3rd 85m - Tunnel Structure									
C&C Tunnel - 3rd 85m - Backfilling	15	03-Nov-16	19-Nov-16	0%	C&C Tunnel - 3rd 85m - Backfilling									
C&C Tunnel - 4th 85m - Tunnel Structure	83	05-Sep-16	13-Dec-16	0%	C&C Tunnel - 4th 85m - Tunnel Structure									
C&C Tunnel - 4th 85m - Backfilling	14	14-Dec-16	31-Dec-16	0%	C&C Tunnel - 4th 85m - Backfilling									
C&C Tunnel - 5th 85m - Excavation by vertical mean	44	22-Aug-16	14-Oct-16	0%	C&C Tunnel - 5th 85m - Excavation by vertical mean									
C&C Tunnel - 5th 85m - Tunnel Structure	83	19-Oct-16	26-Jan-17	0%	C&C Tunnel - 5th 85m - Tunnel Structure									
C&C Tunnel - 5th 85m - Backfilling	19	27-Jan-17	24-Feb-17	0%	C&C Tunnel - 5th 85m - Backfilling									
C&C Tunnel - 6th 85m - Excavation by ramp	27	22-Aug-16	22-Sep-16	0%	C&C Tunnel - 6th 85m - Excavation by ramp									
C&C Tunnel - 6th 85m - Excavation by vertical mean	52	23-Sep-16	24-Nov-16	0%	C&C Tunnel - 6th 85m - Excavation by vertical mean									
C&C Tunnel - 6th 85m - Tunnel Structure	83	29-Nov-16	15-Mar-17	0%	C&C Tunnel - 6th 85m - Tunnel Structure									
C&C Tunnel - 6th 85m - Backfilling	20	16-Mar-17	08-Apr-17	0%	C&C Tunnel - 6th 85m - Backfilling									
C&C Tunnel - 7th 152m - Excavation by ramp	15	03-Nov-16	19-Nov-16	0%	C&C Tunnel - 7th 152m - Excavation by ramp									
C&C Tunnel - 7th 67m - Excavation by vertical mean	42	21-Nov-16	11-Jan-17	0%	C&C Tunnel - 7th 67m - Excavation by vertical mean									
C&C Tunnel - 7th 67m - Tunnel Structure	78	12-Jan-17	24-Apr-17	0%	C&C Tunnel - 7th 67m - Tunnel Structure									
C&C Tunnel - 8th 85m - Excavation by vertical mean	42	04-Jan-17	28-Feb-17	0%	C&C Tunnel - 8th 85m - Excavation by vertical mean									
C&C Tunnel - 8th 85m - Tunnel Structure	88	01-Mar-17	19-Jun-17	0%	C&C Tunnel - 8th 85m - Tunnel Structure									
Intermediate Slab	164	20-Dec-16	18-Jul-17	0%	Intermediate Slab									
South Retrieval Shaft														
Design Submission														
(F4) Gantry Crane Support/Foundations in Southern Landfall														
Preparation of IFA Gantry Crane / Foundation	18	27-Jul-15	15-Aug-15	100%										
Review & Comment by JV	18	17-Aug-15	05-Sep-15	100%										
Designer prepare IFA	10	07-Sep-15	17-Sep-15	100%										
Formal Submission of IFA to ICE/ IPs	0		17-Sep-15	100%										
Advanced Submission to SO	0		17-Sep-15	100%										
IPs/ SO's Advance Comments/ ICE Comments	28	18-Sep-15	15-Oct-15	88%										
Comments Received	0		15-Oct-15	0%										
Designer to Reply RtC + Update Submission	21	16-Oct-15	10-Nov-15	0%										
Submit Updated IFA to SO/ ICE/ IPs	0	11-Nov-15		0%										
ICE Approval & Issue Check Cert	12	11-Nov-15	24-Nov-15	0%										
IPs Review	28	11-Nov-15	08-Dec-15	0%										
SO's Review	35	11-Nov-15	15-Dec-15	0%										
Method Statement Submission														
Method Statement of Construction Methodology of Retrieval Shaft														
Preparation Method Statement for Retrieval Shaft	25	24-Aug-15	21-Sep-15	0%										
Submit Method Statement to SO	0		21-Sep-15	0%										
SO Reviews & Comments	28	22-Sep-15	19-Oct-15	0%										
Construction														
South Landfall GI Works/DW Setting Up	48	06-Aug-15	02-Oct-15	0%										
South Retrieval Shaft - Diaphragm Wall	98	03-Oct-15	29-Jan-16	80%										
Retrieval Shaft - Excavation - Soft (other than Fill)	140	15-Apr-16	30-Sep-16	0%	Retrieval Shaft - Excavation - Soft (other than Fill)									
Retrieval Shaft - Temp. Slab/Prepare for TBM Breakthrough	48	03-Oct-16	28-Nov-16	0%	Retrieval Shaft - Temp. Slab/Prepare for TBM Breakthrough									
South Approach Ramp														
Construction														
Approach Ramp (CH1580-1850) - Pipe Pile/Sheet Piles Wall	126	03-Oct-15	09-Mar-16	0%										
Approach Ramp (CH1580-1850) - Tension Piles	103	03-Oct-15	04-Feb-16	0%										
Approach Ramp (CH1580-1800) - Excavation,	22	16-Mar-17	11-Apr-17	0%										
South Ventilation Building														
Design Submission														
(I1) DDA for South Vent.Bldg. GBP & Arch.Submission														
IPs Review	28	22-Dec-14	18-Jan-15	88%										
IP's No Objection Received	0		18-Jan-15	0%										
SO's Review	35	22-Dec-14	25-Jan-15	91%										
SO Approval with Condition Received	0		26-Jan-15	0%										
(I2) DDA for South Vent.Bldg. Foundation Design														
Review & Comment by JV	18	27-Apr-15	18-May-15	88%										
Designer prepare DDA	10	19-May-15	30-May-15	0%										
Formal Submission of DDA to ICE/ IPs	0		30-May-15	0%										
Advanced Submission to SO	0		30-May-15	0%										
IPs/ SO's Advance Comments/ ICE Comments	28	31-May-15	27-Jun-15	0%										
Comments Received	0		27-Jun-15	0%										
Designer to Reply RtC + Update Submission	21	29-Jun-15	23-Jul-15	0%										
Submit Updated DDA to SO/ ICE/ IPs	0	24-Jul-15		0%										
ICE Approval & Issue Check Cert	18	24-Jul-15	13-Aug-15	0%										
IPs Review	28	24-Jul-15	20-Aug-15	0%										
SO's Review	35	24-Jul-15	27-Aug-15	0%										
(J1) DDA Temp.works for Construction of Sth.Vent.Bldg.														
Designer to Reply RtC + Update Submission	21	24-Aug-15	16-Sep-15	90%										
Submit Updated DDA to SO/ ICE/ IPs	0	17-Sep-15		0%										
ICE Approval & Issue Check Cert	12	17-Sep-15	02-Oct-15	0%										
Submit ICE Check Cert to SO	6	03-Oct-15	09-Oct-15	0%										
IPs Review	28	17-Sep-15	14-Oct-15	0%										
IP's No Objection Received	0		14-Oct-15	0%										
SO's Review	35	17-Sep-15	21-Oct-15	0%										
SO Approval with Condition Received	0		22-Oct-15	0%										



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12-Feb-14	TMCLKDBGENPRG98507	WYu	SPs
08-Apr-14	TMCLKDBGENPRG98507 Rev.B	SPs	WYu
28-Aug-14	TMCLKDBGENPRG98507 Rev.C	CLa	WYu
30-Oct-15	TMCLKDBGENPRG98507 Rev.F	WYu	

Activity Name	Orig Dur	DWPF Start	DWPF Finish	% Comp	2016			2017						
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May		
Construction														
Mobilization & Setting Up Piling Rigs	64	06-Aug-15	22-Oct-15	0%										
Substructure	95	06-Sep-16	30-Dec-16	0%										
Superstructure	65	31-Dec-16	24-Mar-17	0%										
South Surface Roadworks, Utility & Drainage works														
Design Submission														
(E1) AIP - Southern Landfall Seawall Modification														
Designer Prepare AIP - Southern Landfall Seawall Modification	36	08-Nov-16	19-Dec-16	100%										
Review & Comment by JV	12	20-Dec-16	05-Jan-17	100%										
Designer prepare AIP	6	06-Jan-17	12-Jan-17	100%										
Formal Submission of AIP to ICE/IPs	0		12-Jan-17	100%										
Advanced Submission of AIP to SO	0		12-Jan-17	100%										
Review & Comment by SO/ ICE/ IPs	28	13-Jan-17	09-Feb-17	100%										
Advance Comments from SO/ Comments from ICE/ IPs Received	0		09-Feb-17	100%										
Designer to Prepare RTC & Updated AIP	18	10-Feb-17	02-Mar-17	100%										
Submission of AIP to SO/ ICE together with Reply To Comment (RTC)	0		02-Mar-17	100%										
Reply to IPs Comments in RTC	0		02-Mar-17	100%										
ICE Approval & Issue of Design Check Cert.	18	03-Mar-17	23-Mar-17	100%										
SO Review (35 Days)	35	03-Mar-17	06-Apr-17	100%										
(E1) DDA - Southern Landfall Seawall Modification														
Designer to Reply RTC + Update Submission	21	05-Jul-17	28-Jul-17	83.33%										
Submit Updated DDA to SO/ ICE/ IPs	0	29-Jul-17		0%										
ICE Approval & Issue Check Cert	12	29-Jul-17	11-Aug-17	0%										
Submit ICE Check Cert to SO	6	12-Aug-17	18-Aug-17	0%										
IPs Review	28	29-Jul-17	25-Aug-17	0%										
IP's No Objection Received	0		25-Aug-17	0%										
SO's Review	35	29-Jul-17	01-Sep-17	0%										
SO Approval with Condition Received	0		01-Sep-17	0%										
(E3) DDA for Sewerage, Drainage, Waterworks & Utility works for South Landfall														
IPs Review	28	02-Mar-15	29-Mar-15	100%										
IP's No Objection Received	0		29-Mar-15	100%										
SO's Review	35	02-Mar-15	05-Apr-15	100%										
SO Approval with Condition Received	0		08-Apr-15	100%										
Method Statement Submission														
Method Statement of Ground Treatment for TBMs Passing under Southern Landfall Seawall														
Preparation Method Statement for Ground Improvement in South Landfall	9	20-Jul-15	29-Jul-15	0%										
Submit Method Statement to SO	0		29-Jul-15	0%										
SO Reviews & Comments	28	30-Jul-15	26-Aug-15	0%										
Re-submission	6	27-Aug-15	02-Sep-15	0%										
SO's Review	28	03-Sep-15	30-Sep-15	0%										
SO's Approval	0		30-Sep-15	0%										
Construction														
Temporary Platform for Ground Treatment for TBM passing under Southern Seawall	48	06-Aug-15	02-Oct-15	0%										
Grouting Treatment for TBM passing under Southern Seawall	339	03-Oct-15	25-Nov-16	0%										
Testing & Commissioning/Inspection & Handover														
Final Inspection & Handover														
Design Submission														
(A12) Maintenance Matrix														
Preparation of Maintenance Matrix	35	24-Dec-15	05-Feb-16	100%										
Prepare Re-submission	18	12-Mar-16	06-Apr-16	88%										
2nd Submission	0		06-Apr-16	0%										
SO's Condition Approval	35	07-Apr-16	11-May-16	0%										
(A13) Operation & Maintenance Manual														
Preparation of Operation and Maintenance Manual	48	24-Dec-15	27-Feb-16	0%										
1st Submission	0		27-Feb-16	0%										
SO's Comments for 1st Submission	35	28-Feb-16	02-Apr-16	0%										
Prepare Re-submission	24	05-Apr-16	03-May-16	0%										
(A14) As-built & As-fabricated Drawings														
Preparation of As-built and As-fabricated Drawings	48	24-Dec-15	27-Feb-16	0%										
1st Submission	0		27-Feb-16	0%										
SO's Comments for 1st Submission	35	28-Feb-16	02-Apr-16	0%										
(A15) Health & Safety File incl. As-built Dwgs & Records, Maintenance Schedules, O&M Manual														
Preparation of Health and Safety File including as-built drawings and records, maintenance schedules, op	48	24-Dec-15	27-Feb-16	0%										
1st Submission	0		27-Feb-16	0%										
SO's Comments for 1st Submission	35	28-Feb-16	02-Apr-16	0%										

■ Planned Bar
■ Planned Bar - Critical
◆ Planned Milestone
■ Progress bar
◆ Progress Milestone

TMCLK - Northern Connection Sub-Sea Tunnel Section
Detailed Works Programme (Rev. F)
Three Months Rolling Programme
Progress as of 01-Jan-17



Date	Revision	Checked	Approved
12-Feb-14	TMCLKDBJGENPRG98507	WYu	SPs
08-Apr-14	TMCLKDBJGENPRG98507 Rev.B	SPs	WYu
28-Aug-14	TMCLKDBJGENPRG98507 Rev.C	CLa	WYu
30-Oct-15	TMCLKDBJGENPRG98507 Rev.F	WYu	



ENVIRONMENTAL COMPLAINT/ENQUIRY INVESTIGATION REPORT

Our Reference: 0212330_Complaint LOG_20170214_12

Basic Information of Complaint/Enquiry

Reference Number:	EP/RW/0000358212
Date of Complaint/Enquiry Received	6 February 2017
Location of Complaint/Enquiry	Site area near Ho Yeung Street
Nature of Complaint/Enquiry	Muddy water discharge
Complaint/Enquiry Received by	EPD
Via	Fax
Complainant/Enquirer	Not disclosed

Details of Complaint/Enquiry

On 6 February 2017, a complaint case was received by EPD regarding muddy water discharge from the site near Ho Yeung Street from 12:00am on 31 January 2017 to 4:00am on 1 February 2017. The IEC, the Environmental Team (ET) and the Project Proponent received the complaint notification from EPD on 14 February 2017. The ET was informed that the case is categorized as complaint in nature upon the investigation, discussion and agreement between relevant parties (i.e. the Contractor (DBJV), SOR and IEC).

Investigation Report

Upon receiving the case notification from EPD on 14 February 2017, the Contractor had promptly checked the construction programme of January and February 2017.

According to the construction programme provided by the Contractor, no construction works were carried out at the site near Ho Yeung Street during January and February 2017. No improper discharge was recorded. Two wetseps were set up at the site near Ho Yeung Street to treat the wastewater directed from the Slurry Treatment Plant during the incident period. Treated wastewater was discharged to the designated discharge point specified in the Water Discharge License. Site drainage plan of N6 is provided in Annex A.

Moreover, according to the inspection record of DBJV at midnight on 31 January and 1 February, the wastewater was properly treated by the wetsep before discharge. No improper discharge was observed during inspection. Photos taken by DBJV during the incident period were provided in Annex B.

ET has conducted an interview with the site foreman who was responsible for the wastewater treatment and management of wetsep of N6 during the incident period. It was confirmed that there was no improper discharge at N6 site area during the incident period. Maintenance record of the N6 wetsep during the incident period is provided in Annex C.

In addition, ET has conducted a joint site inspection with IEC, SOR and DBJV on 21 February 2017. No improper discharge was observed at the site near Ho Yeung Street. Two wetseps were operating to treat the wastewater from STP. No leakage of water pipes or malfunction of the wetseps was observed during the inspection. No water pipes were found on the seaside. Photos showing the site conditions are provided in Annex B.

Based on the above, there is no evidence to prove that the complaint case is related to this Contract.

Mitigation Measures and Follow-Up Actions Recommended to/Undertaken by Contractor

There is no evidence to prove that the complaint case is related to this Contract.

The Contractor was reminded to review and enhance the current mitigation measures to avoid similar situation.

The Contractor has been reminded to adhere strictly to implement all relevant mitigation measures of water quality impact recommended or specified in the EP (EP-354/2009/D), the approved EIA, Updated EM&A Manual and the Water Discharge License of this Project to avoid causing water pollution. The Contractor shall also fully comply with the conditions in the approved water discharge license to carry out construction works under the Contract.

Date of File Closed : 21 March 2017

Approved and Filed by:

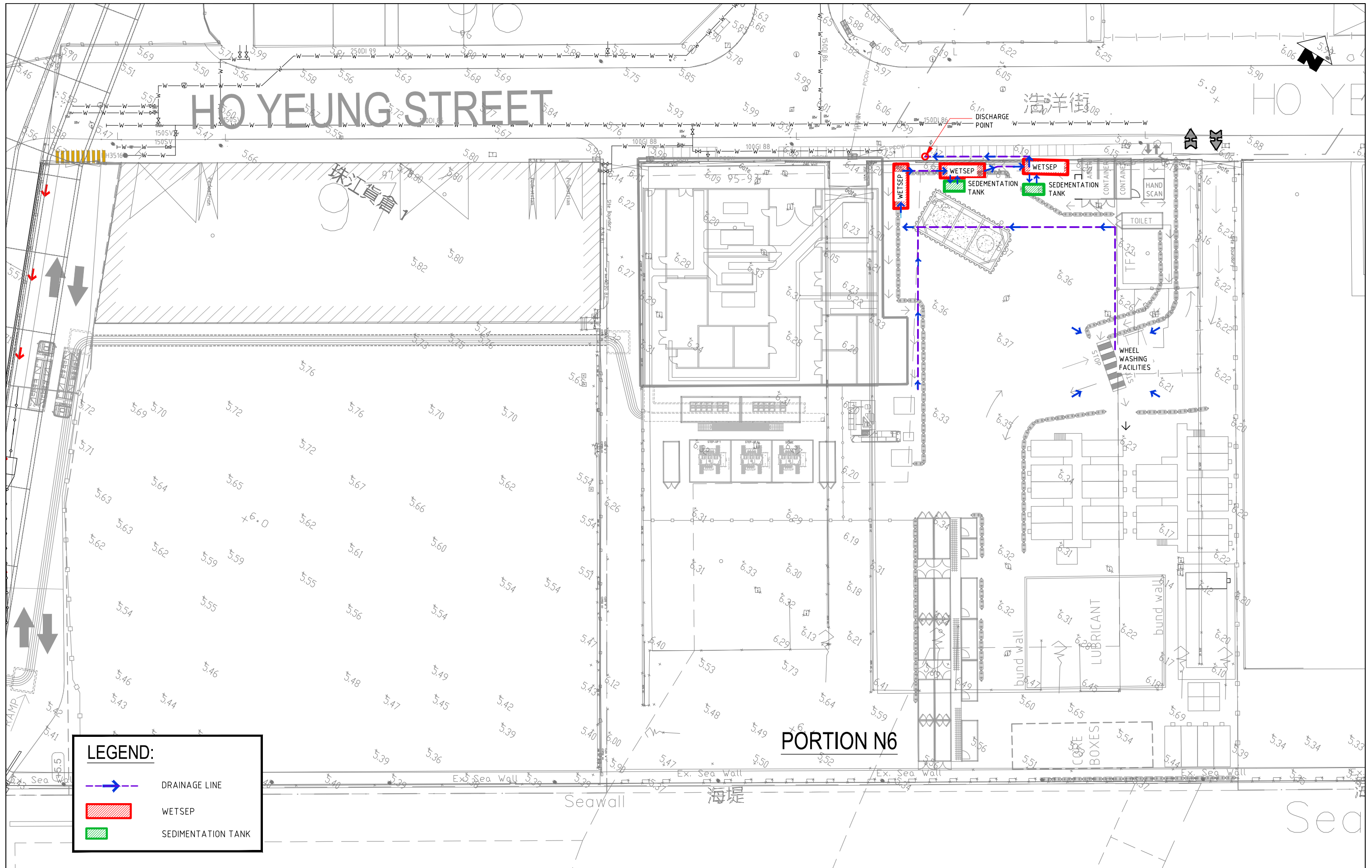


(Jovy Tam, ET Leader)

Date: 21 March 2017

Annex A

Site Drainage Management Plan



LEGEND:

- DRAINAGE LINE
- WETSEP
- SEDIMENTATION TANK

Rev.	Date	Drawn	Designed	Verified	Description	Approved
C	10FEB17	ASP	ACM	ECa	DRAINAGE LAYOUT REVISED	ASc
B	07DEC16	KBa	PKV	PKV	DISCHARGE POINT RELOCATED	ASc
A	01SEP16	KBa	ECa	ECa	FIRST ISSUE	SPo

Main Contractor



Dragages - Bouygues Joint Venture 宜嘉 - 布依格聯營

Client



路政署
HIGHWAYS DEPARTMENT

Contractor's Designer



Ove Arup & Partners
Hong Kong Limited

Project

Contract No. HY/2012/08
Tuen Mun - Chek Lap Kok Link -
Northern Connection Sub-Sea Tunnel Section

Drawing Title

GENERAL
PORTION N6
DRAINAGE LAYOUT

Drawing no.

TMCLKL8-DBJ-NAA-MSI-11513

Scale

1:500 @ A3

CADD Ref.

NAA-MSI011513-C-DFT

Issue Status

DFT (DRAFT)

Revision

C

Annex B

Photo Record



Annex B Photo Records taken during Site Investigation

*Note: Photos taken on 21/2/2017



Wastewater was treated in the Wetsep before discharge.

*Note: Photos taken on 21/2/2017

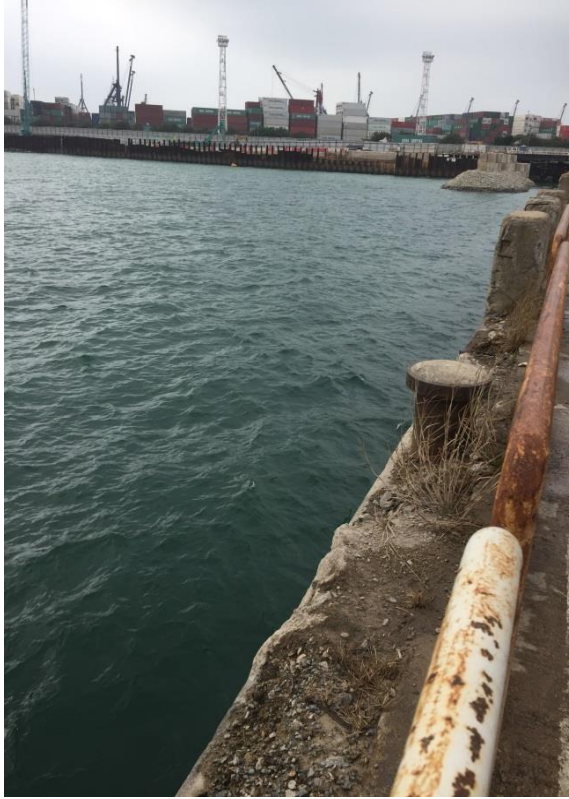


No improper discharge was observed on the seaside.



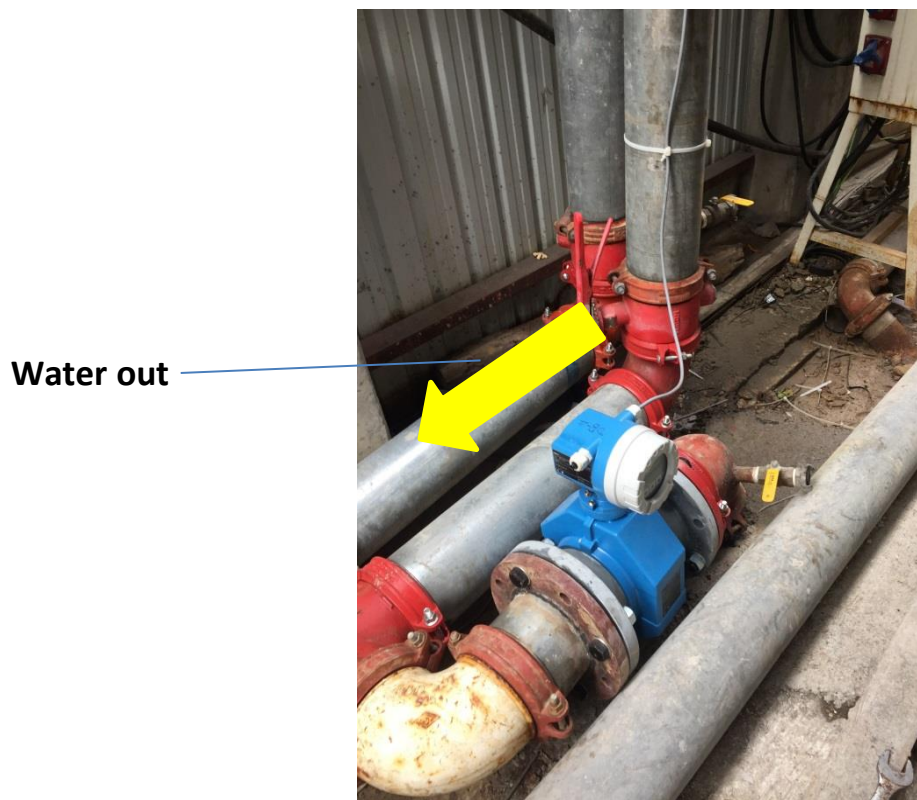
Annex B Photo Records taken during Site Investigation

*Note: Photos taken on 21/2/2017



No improper discharge was observed on the seaside.

*Note: Photos taken on 21/2/2017



Treated wastewater was directed to the designated discharge point.



Annex B Photo Records taken by DBJV

*Note: Photos taken on 1/2/2017



Wastewater was functioning properly.

*Note: Photos taken on 1/2/2017



Water sample was taken for checking.

Annex C

Maintenance Record of Wetsep

WETSEP Location 污水處理機位置: 116

Date

日期:

30-1-17 to 至 5-2-17

		<u>Monday</u> 星期一	<u>Tuesday</u> 星期二	<u>Wednesday</u> 星期三	<u>Thursday</u> 星期四	<u>Friday</u> 星期五	<u>Saturday</u> 星期六	<u>Sunday</u> 星期日
1.	WETSEP In Normal Operation? 處理機是否正常運作?	✓	✓	✓	✓	✓	✓	✓
2.	pH Value 酸鹼度 (6.0 - 9.0)	7.4	6.1	6.7	6.0	7.3	6.8	7.5
3.	Electrical Supply OK? 電力供應正常?	✓	✓	✓	✓	✓	✓	✓
4.	Outlet Abnormal? 出水口有否異常?	X	X	X	X	X	X	X
5.	Potion Enough? 藥水是否足夠?	✓	✓	✓	✓	✓	✓	✓
6.	Clean the Sedimentation Tank? 有否清理隔沙缸?	✓	✓	✓	✓	✓	✓	✓
7.	Clean the De-silt Basin? 有否清理蓄泥池?	✓	✓	✓	✓	✓	✓	✓
8.	Are the Cleansing Records of Sedimentation Tank/ De-silt Basin Stored Properly? 清理蓄泥池記錄是否妥善儲存?	✓	✓	✓	✓	✓	✓	✓
9.	Refill of Flocculants? pH Neutralization agent? 補充凝絮劑/酸鹼調節劑?	✓	✓	✓	✓	✓	✓	✓
10.	Flow rate of the discharge 排放流量	正常	正常	正常	正常	正常	正常	正常
11.	Nature and Composition of the discharge 廢水排放的性質及成份	无色	无色	无色	无色	无色	无色	无色
12.	Proper Desludging operation and disposal 正確清除及處理淤泥	✓	✓	✓	✓	✓	✓	✓
13.	Others 其他情況							
	Verified by Site Foreman/Supervisor 地盤管工/監督簽署確認	Lik	Lik	Lik	Lik	Lik	Lik	Lik

*Please -

tick (✓) in the box if the condition is normal.

*若情況正常, 請於方格內加上剔號(✓)。

cross (X) in the box if the condition is abnormal, and write down the non-conformance.

*若情況不尋常, 請於方格內加上交叉(X), 並寫下不尋常狀況。

Remarks:

(1) Please keep the record and send to environmental department in monthly basis.

備註:

(1) 請將記錄妥善保存, 並每月將記錄交回環保部。

Email
message

**Environmental
Resources
Management**

To Ramboll Environ - Hong Kong, Limited (ENPO)

16/F Berkshire House,
25 Westlands Road
Quarry Bay, Hong Kong
Telephone: (852) 2271 3113
Facsimile: (852) 2723 5660
E-mail: jovy.tam@erm.com

From ERM- Hong Kong, Limited

Ref/Project number Contract No. HY/2012/08 Tuen Mun–Chek Lap
Kok Link–Northern Connection Sub-sea Tunnel
Section

Subject Notification of Exceedance for Impact Dolphin
Monitoring



ERM

Date 13 June 2017

Dear Sir or Madam,

Please find attached the Notification of Exceedance (NOE) of the following
Log no.:

0212330_Dec2016/Feb2017_dolphin_STG&ANI_NEL&NWL

A total of one limit level exceedance was recorded in the quarterly impact
dolphin monitoring data between December 2016 and February 2017.

Regards,

A handwritten signature in black ink, appearing to read 'Jovy Tam', written in a cursive style.

Mr Jovy Tam
Environmental Team Leader

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ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/08

TUEN MUN – CHEK LAP KOK LINK –
NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

Impact Dolphin Monitoring
Notification of Exceedance

Log No.	0212330_ Dec2016/Feb2017_dolphin_STG&ANI_NEL&NWL [Total No. of Exceedances = 1 Limit Level Exceedance]	
Date	December 2016 to February 2017 (monitored) 05 June 2017 (results received by ERM)	
Monitoring Area	Northeast Lantau (NEL) and Northwest Lantau (NWL)	
Parameter(s) with Exceedance(s)	Quarterly encounter rate of dolphin sightings (STG) Quarterly encounter rate of total number of dolphins (ANI)	
Action Levels	North Lantau Social cluster	NEL: STG < 4.2 & ANI < 15.5 or NWL: STG < 6.9 & ANI < 31.3
Limit Levels		NEL: STG < 2.4 & ANI < 8.9 and NWL: STG < 3.9 & ANI < 17.9
Recorded Levels	NEL	STG = 0.0 & ANI = 0.0
	NWL	STG = 3.8 & ANI = 14.52
	One Limit Level Exceedance was recorded in the quarterly impact dolphin monitoring at NEL and NWL between December 2016 and February 2017. The exceedance was reported in the approved <i>Fortieth Monthly EM&A Report</i> dated 13 March 2017.	
Statistical Analyses	<p>Further to the review of the available and relevant dolphin monitoring data in the EM&A programme by this Contract, statistical analyses were conducted as follows:</p> <ul style="list-style-type: none"> A two-way ANOVA with repeated measures and unequal sample size was conducted using Period (2 levels: baseline vs impact – present quarter, December 2016 to February 2017) and Location (2 levels: NEL and NWL) as fixed factors to examine whether there were any significant differences in the average encounter rates between the baseline and present impact monitoring quarter. By setting $\alpha = 0.05$ as the significance level in the statistical tests, significant differences in STG ($p = 0.0110$) and ANI ($p = 0.0440$) were detected between Periods. A two-way ANOVA with repeated measures and unequal sample size was conducted using Cumulative Period (2 levels: baseline vs impact – cumulative quarters*, December 2012 to February 2017) and Location (2 levels: NEL and NWL) as fixed factors to examine whether there were any significant differences in the average encounter rates between the baseline and cumulative impact monitoring quarters. By setting $\alpha = 0.00005$ as the significance level in the statistical tests, significant difference in STG ($p = 0.000003$) and in ANI ($p = 0.000001$) between Cumulative Period and Location were detected. <p>*Note: The commencement date under <i>Contract No. HY/2012/08</i> is 1 November 2013.</p>	
Works Undertaken (in the monitoring quarter)	<p>In the quarter between December 2016 and February 2017, the major marine works under <i>Contract No. HY/2012/08</i> included:</p> <ul style="list-style-type: none"> Installation of silt curtain; Dredging; Construction of Vertical Seawall; Band drain installation; and Filling works. 	

<p>Possible Reason for Action or Limit Level Exceedance(s)</p>	<p>The potential factors that may have contributed to the observed exceedance are reviewed below:</p> <ul style="list-style-type: none"> • Blocking of CWD travelling corridor: The <i>Monitoring of Marine Mammals in Hong Kong Waters (2015 – 16)</i> ⁽¹⁾ reported that dolphin usage and traveling activities to the northern side of the airport (dolphin traveling corridor) are affected by frequent high-speed ferry traffic from Sky Pier (not related to this Contract), which is likely a major factor resulting in the decrease in dolphin abundances in North Lantau. • Marine works of the Contract: As per the findings from the EIA report (<i>Section 8.11.9</i>), the major influences on the Chinese White Dolphin (CWD) <i>Sousa chinensis</i> under this Contract are marine traffics, reclamation and dredging works. The Contractor implemented the marine traffic control in the reporting period as per the requirements in the <i>EP-354/2009/D</i> and the updated <i>EM&A Manual</i>. Most of the vessels of this Contract also worked within the site boundary, in which the area is seldom used by CWD. Disturbance from vessels of this Contract is considered minor. The reclamation and dredging works of this Contract (Phase 2) commenced on 27th December 2016. Dredging works were undertaken within the working rate described in the EP and the approved EIA Report by a closed grab dredger with silt curtains being deployed throughout the dredging period. Filling works were undertaken within 200m leading seawall throughout the filling period and the working rate described in the EP and the approved EIA Report were strictly followed. After reviewing of the daily dredging and filling records, all daily dredging and filling work rates in this quarter are under the maximum work rate described in the EP. During this quarter of dolphin monitoring, no adverse impact on CWD due to the activities under this Contract was observed. • Impact on water quality: According to the findings in the water quality monitoring results at the impact monitoring stations between December 2016 and February 2017, there was no exceedance on WQM. Impact mean levels of depth-averaged SS at all sampling stations during both mid-ebb and mid-flood tides were well below the corresponding ambient levels. The WQM results imply that no unacceptable impact on water quality was associated with the marine works under this Contract, and thus no indirect impacts on marine habitat quality due to change in water quality is observed in this Contract. <p>In view of the above, marine ecological mitigation measures were considered properly implemented, and thus no unacceptable impact on CWD or its habitat was associated with this Contract in this quarter from December 2016 and February 2017.</p>
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(1) Hung SKY (2016). Prepared for AFCD. Available at: https://www.afcd.gov.hk/english/conservation/con_mar/con_mar_chi/con_mar_chi_chi/files/Final_Report_2015_16.pdf

<p>Actions Taken/ To Be Taken</p>	<p>With reference to the site inspection records in this quarter, the respective marine ecological mitigation measures have been implemented properly by the Contractor throughout the marine works period, including:</p> <ol style="list-style-type: none"> 1. 250m dolphin exclusion zone; 2. Acoustic decoupling plan; 3. Training to workers; 4. Offsite vessel routing control in accordance with Regular Marine Travel Routes Plan, including routing control within existing and proposed marine park boundaries; 5. Vessels speed limited at 5 knots and 10 knots within existing and proposed marine park boundaries and site boundary respectively; 6. Idling and mooring of working vessels within site boundary; <p>The existing mitigation measures are recommended to be continuously implemented. Furthermore, it is also recommended to reduce the vessels for marine works as much as possible. The ET will monitor for future trends in exceedance(s).</p> <p>A joint team meeting was held on 29 May 2017 for discussion on CWD trend, with attendance of ENPO, HyD, Representatives of Resident Site Staff (RSS), Representatives of Environmental Team (ET) for Contract No. HY/2010/02, HY2011/03, HY/2012/07 and HY/2012/08. The discussion/recommendation as recorded in the minutes of the meeting, which might be relevant to this Contract are summarized below. It was concluded that the HZMB works is one of the contributing factors affecting the dolphins. It was also concluded the contribution of impacts due to the HZMB works as a whole (or individual marine contracts) cannot be quantified or separate from the other stress factors. ENPO presented the interim CWD survey results in mainland waters obtained from Hong Kong-Zhuhai-Macao Bridge Authority that some CWDs that were previously more often sighted in Hong Kong waters have expanded their ranges into mainland waters, and some with reduced usage in Hong Kong waters, while they are partially accounted for the local decline. It was reminded that the ETs shall keep reviewing the implementation status of the dolphin related mitigation measures and remind the contractor to ensure the relevant measures are fully implemented. The ETs were also reminded to update the BMP boundary in the Regular Marine Travel Route Plan. The participants were requested by ENPO to collect and report the marine traffic statistics. It was recommended that the marine works of HZMB projects should be completed as soon as possible so as to reduce the overall duration of impacts and allow the dolphins population to recover as early as possible. It was also suggested that the protection measures (e.g., speed limit control) for the proposed Brothers Marine Park (BMP) shall be brought forward as soon as possible before its establishment so as to provide a better habitat for dolphin recovery. It was also recommended that the marine works footprint and vessels for the marine works should be reduced as much as possible, and vessels idling / mooring in other part of the North Lantau shall be avoided whenever possible. It is noted that even though marine vessels may moor within the mooring site of BMP, commercial activities including loading / unloading / transshipment are not allowed except a permit is obtained. The HZMB works vessels were recommended to avoid the BMP.</p> <p>It was reminded that starting from January 2016, high-speed ferry (HSF) from the SkyPier would be re-routed north to the northern edge of the Sha Chau and Lung Kwu Chau Marine Park that had the highest density of CWD in the NWL. While the HSF would reduce speed to 15 knots, the associated disturbance might still affect CWD in the area. It implied that the CWDs in the area should be closely followed.</p>
<p>Remarks</p>	<p>The results of impact dolphin monitoring, the status of implemented marine ecological mitigation measures are documented in the approved <i>Thirty-Eighth to Fortieth Monthly EM&A Reports</i>.</p>