

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

Twenty-sixth Monthly Environmental Monitoring & Audit (EM&A) Report

13 January 2016

Environmental Resources Management

16/F, Berkshire House 25 Westlands Road Quarry Bay, Hong Kong Telephone 2271 3000 Facsimile 2723 5660



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14 January 2016

By Fax (2293 6300) and By Post

AECOM Supervising Officer Representative's Office No.8 Mong Fat Street, Tuen Mun, New Territories, Hong Kong

Attention: Messrs. Edwin Ching / Andy Westmoreland

Dear Sirs,

Re: Agreement No. CE 48/2011 (EP) Environmental Project Office for the HZMB Hong Kong Link Road, HZMB Hong Kong Boundary Crossing Facilities, and Tuen Mun-Chek Lap Kok Link – Investigation

Contract No. HY/2012/08 TM-CLKL Northern Connection Sub-sea Tunnel Section <u>Monthly EM&A Report for December 2015 (EP-354/2009/D)</u>

Reference is made to the Monthly Environmental Monitoring and Audit (EM&A) Report (Dec. 2015) (ET's ref.: "0212330_26th Monthly EM&A_20160113.doc" dated 13 Jan. 2016) certified by the ET Leader and provided to us via e-mail on 13 Jan. 2016.

We are pleased to inform you that we have no adverse comments on the captioned monthly EM&A report. We write to verify the captioned submission in accordance with Condition 4.4 of EP-354/2009/D.

Thank you for your kind attention. Please do not hesitate to contact the undersigned or the ENPO Leader Mr. Y. H. Hui should you have any queries.

Yours sincerely,

Har Handbeen

F. C. Tsang Independent Environmental Checker Tuen Mun – Chek Lap Kok Link

c.c. HyD – Mr. Stephen Chan (By Fax: 3188 6614) HyD – Mr. Matthew Fung (By Fax: 3188 6614) AECOM – Mr. Conrad Ng (By Fax: 3922 9797) ERM – Mr. Jovy Tam (By Fax: 2723 5660) Dragages – Bouygues JV - Mr. C. F. Kwong (By Fax: 2293 7499)

Internal: DY, YH, LP, CL, ENPO Site

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Environmental Resources Management

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EXECUTIVE SUMMARY

Under *Contract No. HY/2012/08*, Dragages – Bouygues Joint Venture (DBJV) is commissioned by the Highways Department (HyD) to undertake the design and construction of the Northern Connection Sub-sea Tunnel Section of the Tuen Mun – Chek Lap Kok Link Project (TM-CLK Link Project) while AECOM Asia Company Limited was appointed by HyD as the Supervising Officer. For implementation of the environmental monitoring and audit (EM&A) programme under the Contract, ERM-Hong Kong, Limited (ERM) has been appointed as the Environmental Team (ET) in accordance with *Environmental Permit No. EP-354/2009/A*. Ramboll Environ Hong Kong Ltd. was employed by HyD as the Independent Environmental Checker (IEC) and Environmental Project Office (ENPO). Subsequent applications for variation of environmental permits (VEP), *EP-354/2009/B*, *EP-354/2009/C* and *EP-354/2009/D*, were granted on 28 January 2014, 10 December 2014 and 13 March 2015, respectively.

The construction phase of the Project commenced on 1 November 2013 and will tentatively be completed by the end of 2018. The impact monitoring of the EM&A programme, including air quality, water quality, marine ecological monitoring and environmental site inspections, were commenced on 1 November 2013.

This is the Twenty-sixth Monthly EM&A report presenting the EM&A works carried out during the period from 1 to 31 December 2015 for the *Contract No. HY/2012/08 Northern Connection Sub-sea Tunnel Section* (the "Project") in accordance with the Updated EM&A Manual of the TM-CLK Link Project. As informed by the Contractor, major activities in the reporting period included:

Land-based Works

- Box Culvert Extension at Works Area Portion N-A;
- Construction of capping beam and base slab for Ventilation Shaft at Works Area Portion N-C; and
- TBM Tunnel Works at Works Area Portion N-C.

A summary of monitoring and audit activities conducted in the reporting period is listed below:

| 24-hour TSP Monitoring | 11 sessions |
|-------------------------------------|-------------|
| 1-hour TSP Monitoring | 11 sessions |
| Impact Dolphin Monitoring | 2 sessions |
| Joint Environmental Site Inspection | 5 sessions |

Implementation of Marine Mammal Exclusion Zone

There was no dredging, reclamation or marine sheet piling works in open waters during this reporting period. Thus, Passive Acoustic Monitoring (PAM) and the day-time monitoring of Dolphin Exclusion Zone (DEZ) by dolphin observers were not in effect during the reporting period.

Summary of Breaches of Action/Limit Levels

Breaches of Action and Limit Levels for Air Quality

No Action Level or Limit Level of air quality exceedances were recorded in the air quality monitoring of this reporting month.

Environmental Complaints, Non-compliance & Summons

No non-compliance with EIA recommendations, EP conditions and other requirements associated with the construction of this Contract was recorded in this reporting period.

No environmental complaint was received in this reporting period.

No environmental summons was received in this reporting period.

Reporting Change

There was no reporting change required in the reporting period.

Upcoming Works for the Next Reporting Month

Works to be undertaken in the next monitoring period of January 2016 include the following:

Land-based Works

- Box Culvert Extension at Works Area Portion N-A;
- Construction of capping beam and base slab for Ventilation Shaft at Works Area Portion N-C;
- Site preparation for Ventilation Shaft at Works Area Portion S-C;
- TBM Tunnel Works at Works Area Portion N-C; and
- Excavation of Sub-sea Tunnel.

Future Key Issues

Potential environmental impacts arising from the above upcoming construction activities in the next reporting month of January 2016 are expected to be mainly associated with dust, marine ecology and waste management.

1.1 BACKGROUND

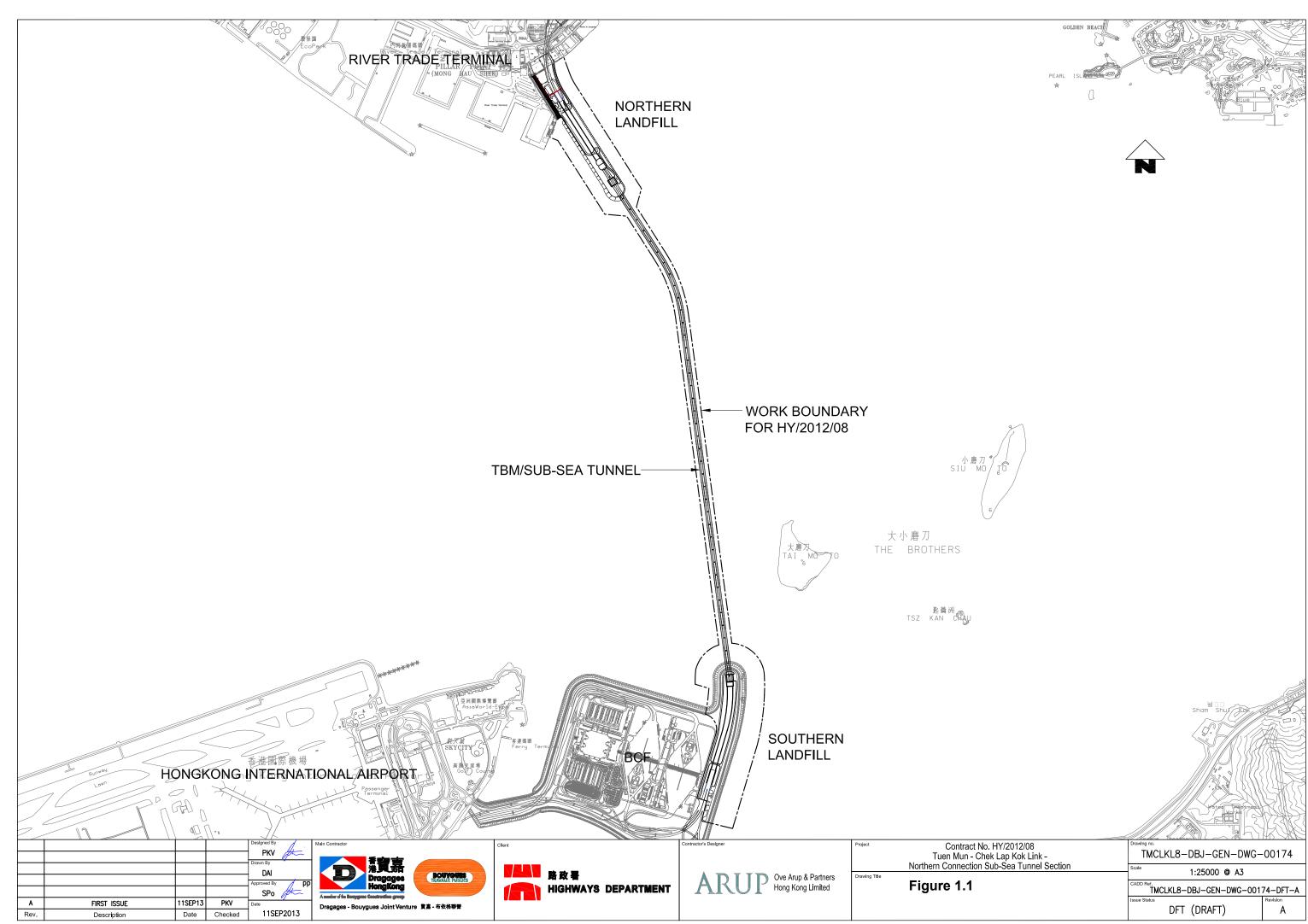
According to the findings of the Northwest New Territories (NWNT) Traffic and Infrastructure Review conducted by the Transport Department, Tuen Mun Road, Ting Kau Bridge, Lantau Link and North Lantau Highway would be operating beyond capacity after 2016. This forecast has been based on the estimated increase in cross boundary traffic, developments in the Northwest New Territories (NWNT), and possible developments in North Lantau, including the Airport developments, the Lantau Logistics Park (LLP) and the Hong Kong – Zhuhai – Macao Bridge (HZMB). In order to cope with the anticipated traffic demand, two new road sections between NWNT and North Lantau – Tuen Mun – Chek Lap Kok Link (TM-CLKL) and Tuen Mun Western Bypass (TMWB) are proposed.

An Environmental Impact Assessment (EIA) of TM-CLKL (the Project) was prepared in accordance with the EIA Study Brief (No. ESB-175/2007) and the *Technical Memorandum of the Environmental Impact Assessment Process (EIAO-TM*). The EIA Report was submitted under the Environmental Impact Assessment Ordinance (EIAO) in August 2009. Subsequent to the approval of the EIA Report (EIAO Register Number AEIAR-146/2009), an Environmental Permit (EP-354/2009) for TM-CLKL was granted by the Director of Environmental Protection (DEP) on 4 November 2009, and EP variation (VEP) (EP-354/2009A) was issued on 8 December 2010. Subsequent applications for variation of environmental permits (VEPs), *EP-354/2009/B*, *EP-354/2009/C* and *EP-354/2009/D*, were granted on 28 January 2014, 10 December 2014 and 13 March 2015, respectively.

Under *Contract No. HY/2012/08*, Dragages – Bouygues Joint Venture (DBJV) is commissioned by the Highways Department (HyD) to undertake the design and construction of the Northern Connection Sub-sea Tunnel Section of TM-CLKL while AECOM Asia Company Limited was appointed by HyD as the Supervising Officer. For implementation of the environmental monitoring and audit (EM&A) programme under the Contract, ERM-Hong Kong, Limited (ERM) has been appointed as the Environmental Team (ET). Ramboll Environ Hong Kong Ltd. was employed by HyD as the Independent Environmental Checker (IEC) and Environmental Project Office (ENPO).

Layout of the Contract components is presented in Figure 1.1.

The construction phase of the Contract commenced on 1 November 2013 and will tentatively be completed by 2018. The impact monitoring phase of the EM&A programme, including air quality, water quality, marine ecological monitoring and environmental site inspections, were commenced on 1 November 2013.



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1.2 SCOPE OF REPORT

This is the Twenty-sixth Monthly EM&A Report under the *Contract No. HY*/2012/08 *Tuen Mun – Chek Lap Kok Link – Northern Connection Sub-sea Tunnel Section.* This report presents a summary of the environmental monitoring and audit works in December 2015.

1.3 ORGANIZATION STRUCTURE

The organization structure of the Contract is shown in *Appendix A*. The key personnel contact names and contact details are summarized in *Table 1.1* below.

Table 1.1Contact Information of Key Personnel

| Party | Position | Name | Telephone | Fax |
|--|--|---------------------|-----------|-----------|
| Highways Department | Engr 16/HZMB | Kenneth Lee | 2762 4996 | 3188 6614 |
| SOR (AECOM Asia Company | Chief Resident Edwin Ching Engineer | | 2293 6388 | 2293 6300 |
| Limited) | 0 | Andrew Westmoreland | 2293 6360 | 2293 6300 |
| ENPO / IEC (Ramboll Environ Hong | ENPO Leader | Y.H. Hui | 3547 2133 | 3465 2899 |
| Kong Ltd.) | IEC | Dr. F.C. Tsang | 3547 2134 | 3465 2899 |
| Contractor (Dragages - Bouygues Joint Venture) | Environmental Manager | C.F. Kwong | 2293 7322 | 2293 7499 |
| joint venture) | Environmental Officer | Bryan Lee | 2293 7323 | 2293 7499 |
| | 24-hour complaint hotline | Rachel Lam | 2293 7330 | |
| ET (ERM-HK) | ET Leader | Jovy Tam | 2271 3113 | 2723 5660 |

1.4 SUMMARY OF CONSTRUCTION WORKS

The construction phase of this Contract was commenced on 1 November 2013. The construction programme is shown in *Appendix B*.

As per DBJV's information, details of major construction works carried out in this reporting period are summarized in *Table 1.2*.

The general layout plan of the site showing the detailed works areas is shown in *Figure 1.2*. The Environmental Sensitive Receivers in the vicinity of the Project are shown in *Figure 1.3*.

The implementation schedule of environmental mitigation measures is presented in *Appendix C*.

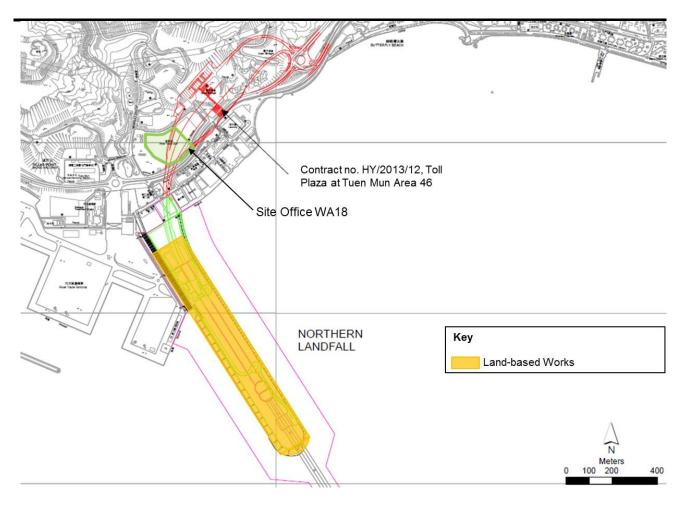
Table 1.2Summary of Construction Activities Undertaken during the Reporting Period

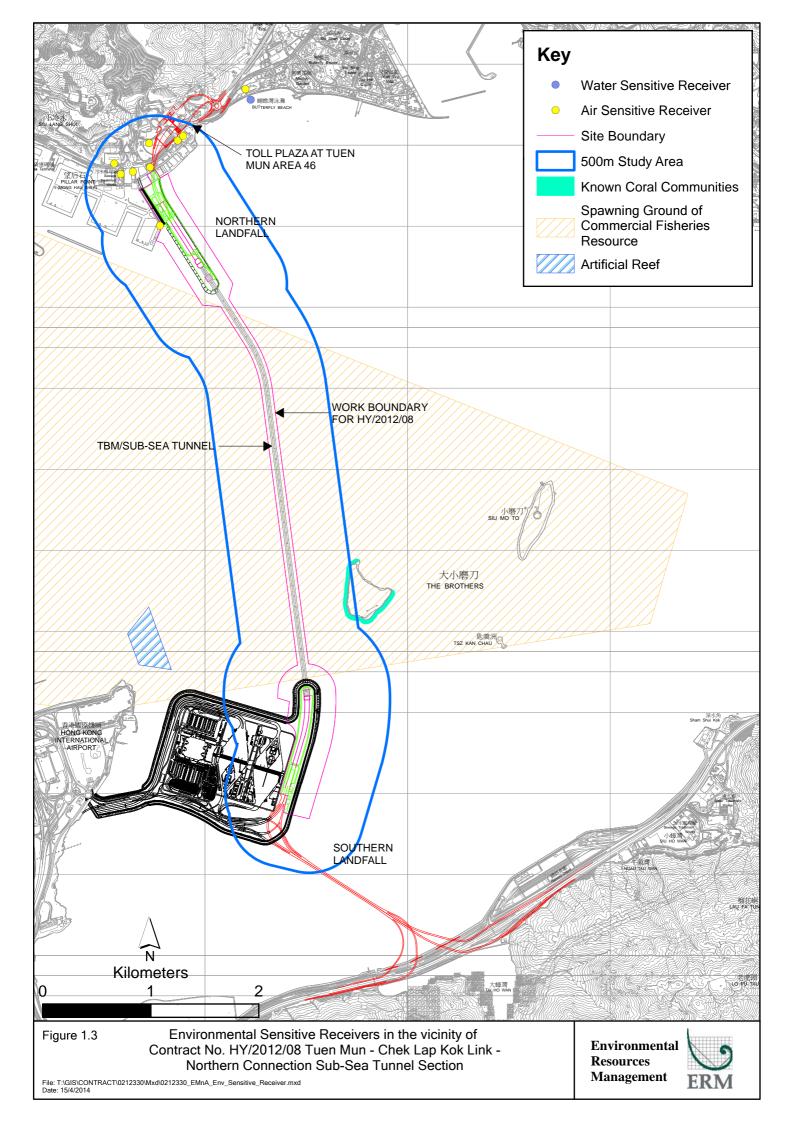
Construction Activities Undertaken

Land-based Works

- Box Culvert Extension at Works Area Portion N-A;
- Construction of capping beam and base slab for Ventilation Shaft at Works Area Portion N-C; and
- TBM Tunnel Works at Works Area Portion N-C.

Figure 1.2 Locations of Construction Activities – December 2015





2

The EM&A programme required environmental monitoring for air quality, water quality and marine ecology as well as environmental site inspections for air quality, noise, water quality, waste management, marine ecology and landscape and visual impacts. The EM&A requirements and related findings for each component are summarized in the following sections

2.1 AIR QUALITY

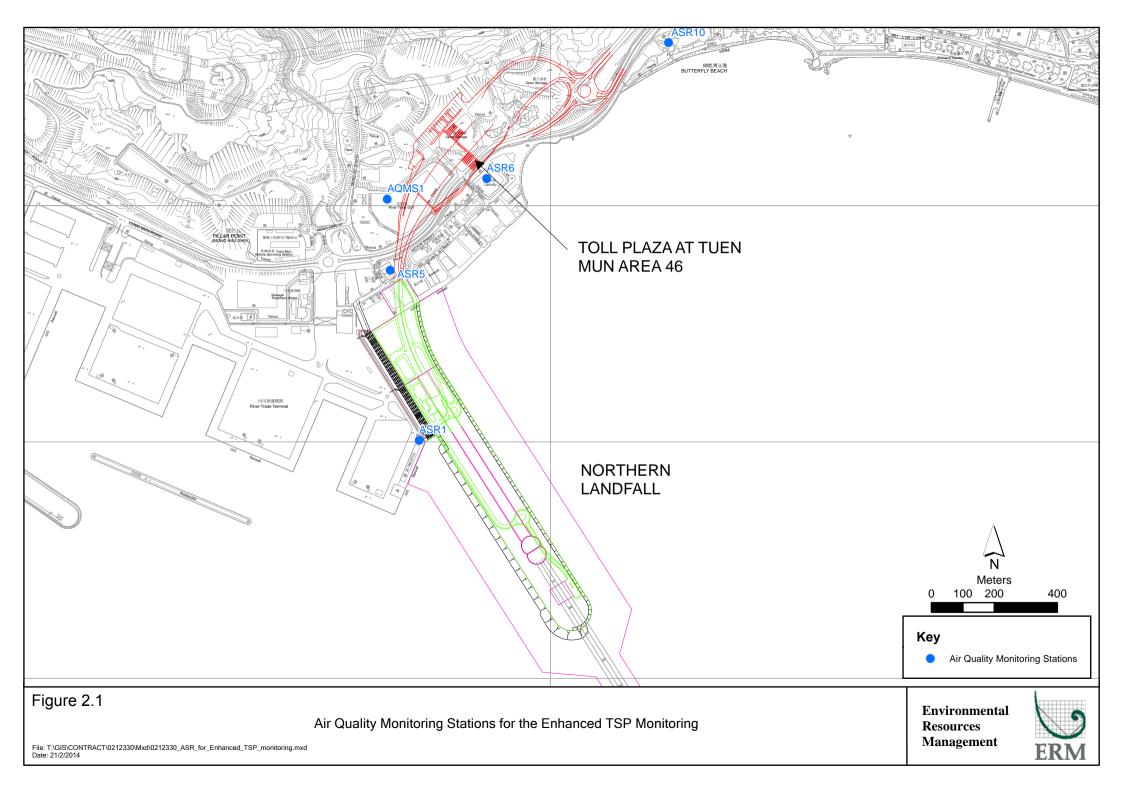
2.1.1 Monitoring Requirements and Equipment

In accordance with the Updated EM&A Manual and the Enhanced TSP Monitoring Plan, impact 1-hour TSP monitoring was conducted three (3) times every six (6) days and impact 24-hour TSP monitoring was carried out once every six (6) days when the highest dust impact was expected. 1-hr and 24hr TSP monitoring frequency was increased to three times per day every three days and daily every three days, respectively, as excavation works for launching shaft commenced on 24 October 2014.

High volume samplers (HVSs) were used to carry out the 1-hour and 24-hour TSP monitoring on 1, 4, 7, 10, 13, 16, 19, 22, 25, 28 and 31 December 2015 at the five (5) air quality monitoring stations in accordance with the requirements stipulated in the Updated EM&A Manual (*Figure 2.1; Table 2.1*). Wind meter was installed at the rooftop of ASR5 for logging wind speed and wind direction. Details of the equipment deployed are provided in *Table 2.2*. Copies of the calibration certificates for the equipment are presented in *Appendix E*.

| Table 2.1 | Locations of Impact Air Quality Monitoring Stations and Monitoring Dates |
|-----------|--|
| | in this Reporting Period |

| Monitoring Station | Monitoring Dates | Location | Description | Parameters & Frequency |
|---------------------------|--------------------------|-------------------|--------------|---|
| ASR1 | 1, 4, 7, 10, 13, 16, 19, | Tuen Mun | Office | TSP monitoring |
| | 22, 25, 28 and 31 | Fireboat Station | | 1-hour Total Suspended |
| | December 2015 | | | Particulates (1-hour TSP, |
| ASR5 | | Pillar Point Fire | Office | μ g/m ³), 3 times in every 6 days |
| | | Station | | 24-hour Total Suspended |
| | | | | Particulates (24-hour TSP, |
| AQMS1 | | Previous River | Bare ground | μ g/m ³), daily for 24-hour in |
| | | Trade Golf | | every 6 days |
| | | | | Enhanced TSP monitoring |
| ASR6 | | Butterfly Beach | Office | (commenced on 24 October 2014) |
| | | Laundry | | 1-hour Total Suspended |
| | | | | Particulates (1-hour TSP, |
| ASR10 | | Butterfly Beach | Recreational | μ g/m ³), 3 times in every 3 days |
| | | Park | uses | 24-hour Total Suspended |
| | | | | Particulates (24-hour TSP, |
| | | | | μ g/m ³), daily for 24-hour in |
| | | | | every 3 days |



| Equipment | Brand and Model |
|---|--|
| High Volume Sampler (1-hour TSP and 24-hour TSP) | Tisch Environmental Mass Flow Controlled Total Suspended Particulate (TSP) High Volume Sampler (Model No. TE-5170) |
| Wind Meter | Davis (Model: Weather Wizard III (S/N: WE90911A30) |
| Wind Anemometer for calibration | Lutron (Model No. AM-4201) |

2.1.2 Action & Limit Levels

The Action and Limit Levels of the air quality monitoring is provided in *Appendix D*. The Event and Action plan is presented in *Appendix J*.

2.1.3 Monitoring Schedule for the Reporting Month

The schedule for air quality monitoring in December 2015 is provided in *Appendix F*.

2.1.4 *Results and Observations*

The monitoring results for 1-hour TSP and 24-hour TSP are summarized in *Tables 2.3* and *2.4*, respectively. Detailed impact air quality monitoring results and graphical presentations are presented in *Appendix G*.

Table 2.3Summary of 1-hour TSP Monitoring Results in this Reporting Period

| Station | Average (µg/m³) | Range (µg/m³) | Action Level (µg/m³) | Limit Level (µg/m³) |
|---------|-----------------|---------------|-------------------------|------------------------|
| ASR1 | 141 | 63 - 231 | 331 | 500 |
| ASR5 | 170 | 108 - 242 | 340 | 500 |
| AQMS1 | 114 | 65 - 175 | 335 | 500 |
| ASR6 | 126 | 69 - 193 | 338 | 500 |
| ASR10 | 95 | 54 - 189 | 337 | 500 |

Table 2.4Summary of 24-hour TSP Monitoring Results in this Reporting Period

| Station | Average (µg/m³) | Range (µg/m³) | Action Level (µg/m³) | Limit Level (µg/m³) |
|---------|-----------------|---------------|-------------------------|------------------------|
| ASR1 | 93 | 64 - 114 | 213 | 260 |
| ASR5 | 107 | 89 - 133 | 238 | 260 |
| AQMS1 | 79 | 58 - 112 | 213 | 260 |
| ASR6 | 82 | 63 - 141 | 238 | 260 |
| ASR10 | 62 | 49 - 80 | 214 | 260 |

The weather condition during the monitoring period varied from sunny to cloudy. The major dust sources in the reporting period include construction activities under the Contract as well as nearby traffic emissions.

A total of 11 monitoring events were undertaken in which no Action or Limit Level exceedances of 1-hr TSP were recorded in this reporting month. No Action or Limit Level exceedances for 24-hr TSP were record. Meteorological information collected at the ASR5, including wind speed and wind direction, is provided in *Appendix H*.

2.2 WATER QUALITY MONITORING

As informed by the Contractor, Phase I Reclamation works for the Northern Landfall was substantially completed in December 2014, a proposal letter was sent to EPD on 21 May 2015 to seek approval for the temporary suspension of Water Quality Monitoring. Subsequently, a letter from EPD on 5 June 2015 stated that they have no strong objection to the temporary suspension of the water quality monitoring. Water Quality Monitoring was suspended from 6 June 2015 effectively and will resume when Phase II Reclamation commences in the fourth quarter of 2016 tentatively.

2.3 DOLPHIN MONITORING

2.3.1 Monitoring Requirements

Impact dolphin monitoring is required to be conducted by a qualified dolphin specialist team to evaluate whether there have been any effects on the dolphins. In order to fulfil the EM&A requirements and make good use of available resources, the on-going impact line transect dolphin monitoring data collected by HyD's *Contract No. HY/2011/03 Hong Kong-Zhuhai-Macao Bridge. Hong Kong Link Road - Section between Scenic Hill and Hong Kong Boundary Crossing Facilities* on the monthly basis is adopted to avoid duplicates of survey effort.

2.3.2 Monitoring Equipment

Table 2.5 summarises the equipment used for the impact dolphin monitoring.

Table 2.5Dolphin Monitoring Equipment

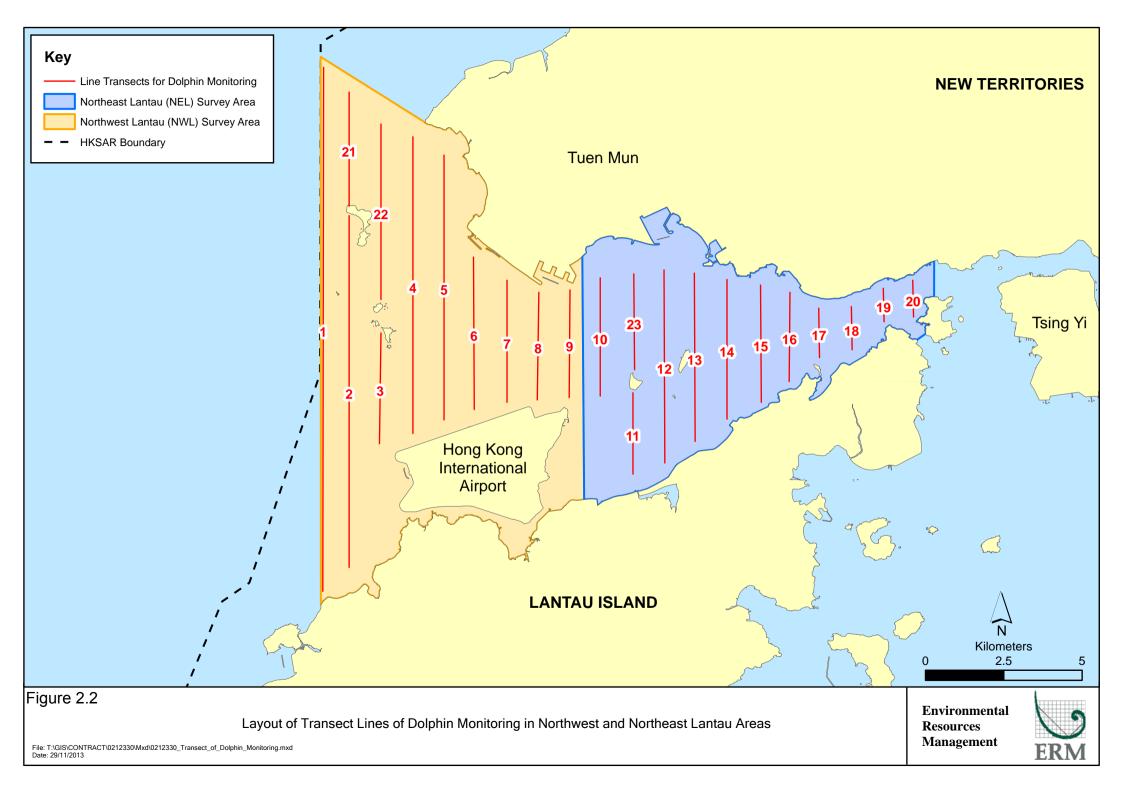
| Equipment | Model |
|---------------------------------|---|
| Global Positioning System (GPS) | Garmin 18X-PC |
| | Geo One Phottix |
| Camera | Nikon D90 300m 2.8D fixed focus |
| | Nikon D90 20-300m zoom lens |
| Laser Binocular | Infinitor LRF 1000 |
| Marine Binocular | Bushell 7 x 50 marine binocular with compass and reticules |
| Vessel for Monitoring | 65 foot single engine motor vessel with viewing platform 4.5m above water level |

2.3.3 Monitoring Parameter, Frequencies & Duration

Dolphin monitoring should cover all transect lines in Northeast Lantau (NEL) and the Northwest Lantau (NWL) survey areas twice per month throughout the entire construction period. The monitoring data should be compatible with, and should be made available for, long-term studies of small cetacean ecology in Hong Kong. In order to provide a suitable long-term dataset for comparison, identical methodology and line transects employed in baseline dolphin monitoring was followed in the impact dolphin monitoring.

2.3.4 Monitoring Location

The impact dolphin monitoring was carried out in the NEL and NWL along the line transect as depicted in *Figure 2.2*. The co-ordinates of all transect lines are shown in *Table 2.6* below.



| | Line No. | Easting | Northing | | Line No. | Easting | Northing |
|----|-------------|---------|----------|----|-------------|---------|----------|
| 1 | Start Point | 804671 | 815456 | 13 | Start Point | 816506 | 819480 |
| 1 | End Point | 804671 | 831404 | 13 | End Point | 816506 | 824859 |
| 2 | Start Point | 805475 | 815913 | 14 | Start Point | 817537 | 820220 |
| 2 | End Point | 805477 | 826654 | 14 | End Point | 817537 | 824613 |
| 3 | Start Point | 806464 | 819435 | 15 | Start Point | 818568 | 820735 |
| 3 | End Point | 806464 | 822911 | 15 | End Point | 818568 | 824433 |
| 4 | Start Point | 807518 | 819771 | 16 | Start Point | 819532 | 821420 |
| 4 | End Point | 807518 | 829230 | 16 | End Point | 819532 | 824209 |
| 5 | Start Point | 808504 | 820220 | 17 | Start Point | 820451 | 822125 |
| 5 | End Point | 808504 | 828602 | 17 | End Point | 820451 | 823671 |
| 6 | Start Point | 809490 | 820466 | 18 | Start Point | 821504 | 822371 |
| 6 | End Point | 809490 | 825352 | 18 | End Point | 821504 | 823761 |
| 7 | Start Point | 810499 | 820880 | 19 | Start Point | 822513 | 823268 |
| 7 | End Point | 810499 | 824613 | 19 | End Point | 822513 | 824321 |
| 8 | Start Point | 811508 | 821123 | 20 | Start Point | 823477 | 823402 |
| 8 | End Point | 811508 | 824254 | 20 | End Point | 823477 | 824613 |
| 9 | Start Point | 812516 | 821303 | 21 | Start Point | 805476 | 827081 |
| 9 | End Point | 812516 | 824254 | 21 | End Point | 805476 | 830562 |
| 10 | Start Point | 813525 | 820872 | 22 | Start Point | 806464 | 824033 |
| 10 | End Point | 813525 | 824657 | 22 | End Point | 806464 | 829598 |
| 11 | Start Point | 814556 | 818853 | 23 | Start Point | 814559 | 821739 |
| 11 | End Point | 814556 | 820992 | 23 | End Point | 814559 | 824768 |
| 12 | Start Point | 815542 | 818807 | | | | |
| 12 | End Point | 815542 | 824882 | | | | |

Table 2.6Impact Dolphin Monitoring Line Transect Co-ordinates

2.3.5 Action & Limit Levels

The Action and Limit levels of impact dolphin monitoring are shown in *Appendix D*. The Event and Action plan is presented in *Appendix J*.

2.3.6 Monitoring Schedule for the Reporting Month

Dolphin monitoring was carried out on 2, 7, 9 and 15 of December 2015. The dolphin monitoring schedule for the reporting month is shown in *Appendix F*.

2.3.7 Results & Observations

A total of 301.52 km of survey effort was collected, with 88.2% of the total survey effort being conducted under favourable weather conditions (ie Beaufort Sea State 3 or below with good visibility) in December 2015. Amongst the two areas, 114.10 km and 187.42 km of survey effort were collected from NEL and NWL survey areas, respectively. The total survey effort conducted on primary and secondary lines were 218.08 km and 83.44 km, respectively. The survey efforts are summarized in *Appendix I*.

A total of 7 groups of twenty-eight Chinese White Dolphin sightings were recorded during the two sets of surveys in December 2015. All seven sightings were made in NWL during the survey in December 2015. Five of the seven sightings were made on primary lines during on-effort search. None of the dolphin groups was associated with operating fishing vessels.

None of the sightings was made in the proximity of the TM-CLKL alignment (including both northern landfall section and southern connection viaduct section) and HKLR09 alignment, as well as the HKBCF/HKLR03 reclamation sites. The distribution of dolphin sightings during the reporting month is shown in *Figure 2.3*.

Encounter rates of Chinese White Dolphins are deduced from the survey effort and on-effort sighting data made under favourable conditions (Beaufort 3 or below with good visibility) in December 2015 with the results present in *Tables 2.7* and *2.8*.

| | | Encounter rate (STG) (no. of on-effort dolphin sightings per 100 km of survey effort) Primary Lines Only | Encounter rate (ANI) (no. of dolphins from all on- effort sightings per 100 km of survey effort) Primary Lines Only |
|-----|----------------------------|--|---|
| NEL | Set 1: December 2nd / 7th | 0.0 | 0.0 |
| | Set 2: December 9th / 15th | 0.0 | 0.0 |
| NWL | Set 1: December 2nd / 7th | 4.1 | 17.8 |
| | Set 2: December 9th / 15th | 4.8 | 11.9 |

Table 2.7Individual Survey Event Encounter Rates

Note: Dolphin Encounter Rates are deduced from the Two Sets of Surveys (Two Surveys in Each Set) in December 2015 in Northeast (NEL) and Northwest Lantau (NWL)

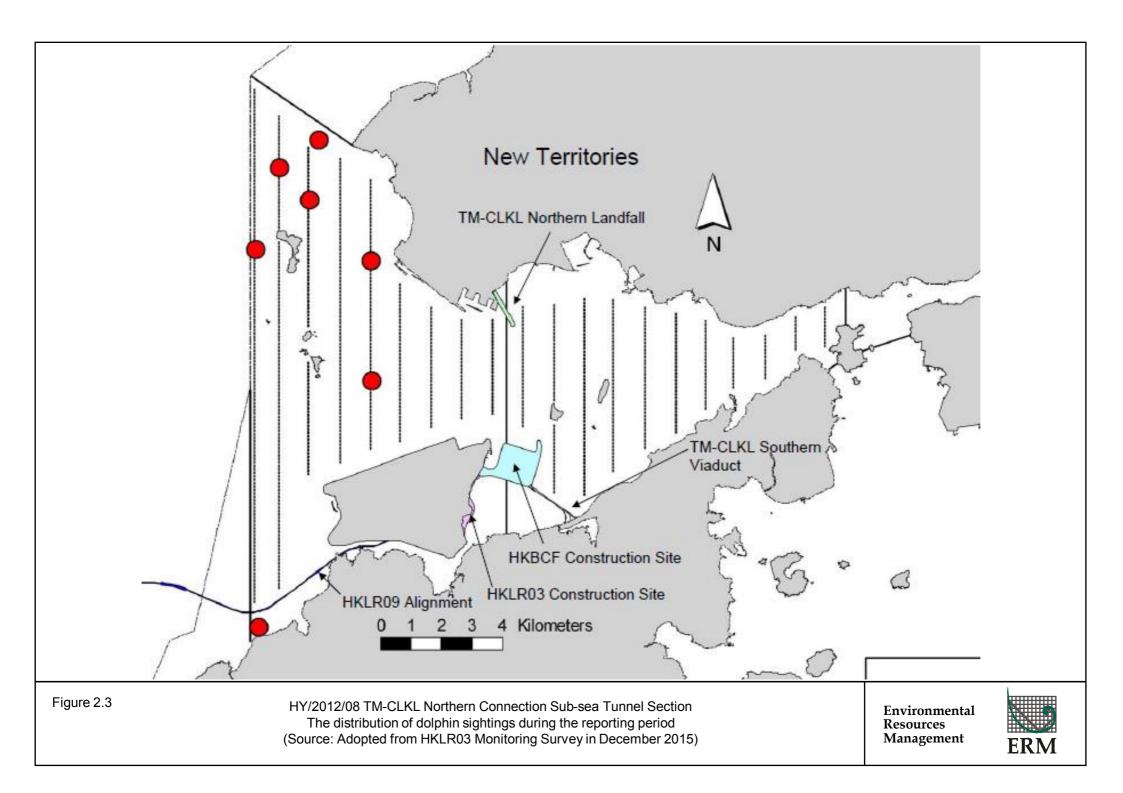


Table 2.8Monthly Average Encounter Rates

| | (no. of on-ef | rate (STG) fort dolphin 00 km of survey ort) | Encounter rate (ANI) (no. of dolphins from all on- effort sightings per 100 km of survey effort) | | | | | |
|------------------|-----------------------|---|---|--|--|--|--|--|
| | Primary Lines Only | Both Primary and Secondary Lines | Primary Lines Only | Both Primary and Secondary Lines | | | | |
| Northeast Lantau | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Northwest Lantau | 4.4 | 3.3 | 15.7 | 11.9 | | | | |

Note: Overall dolphin encounter rates (sightings per 100 km of survey effort) from all four surveys are conducted in December 2015 on primary lines only as well as both primary lines and secondary lines in Northeast and Northwest Lantau.

Due to monthly variation in dolphin occurrence within the survey area, it would be more appropriate to draw conclusion on whether any unacceptable impacts on dolphins have been detected in relation to the construction activities of this Project in the quarterly EM&A reports, where comparison on distribution, group size and encounter rates of dolphins between the quarterly impact monitoring period and baseline monitoring period will be made.

2.3.8 Implementation of Marine Mammal Exclusion Zone

There was no dredging, reclamation or marine sheet piling works in open waters during this reporting period. Thus, Passive Acoustic Monitoring (PAM) and the day-time monitoring of Dolphin Exclusion Zone (DEZ) by dolphin observers were not in effect during the reporting period.

2.4 EM&A SITE INSPECTION

Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures under the Contract. In the reporting month, five (5) site inspections were carried out on 2, 9, 16, 23 and 30 December 2015.

Key observations and recommendations during the site inspections in this reporting period are summarized in *Table 2.9*.

| Table 2.9 | Specific Observations and Recommendations during the Weekly Site |
|-----------|--|
| | Inspection in this Reporting Month |

| Inspection Date | Observations | Recommendations/ Remarks |
|------------------|--|---|
| 2 December 2015 | Works Area - Portion N-C Accumulated general refuse should be cleared. Chemical labels and drip trays should be provided to the chemical containers. | Works Area - Portion N-C The Contractor was reminded to clear the accumulated general refuse. The Contractor was reminded to provide chemical labels and drip trays to the chemical containers. |
| 9 December 2015 | Works Area - Portion N-BDrip tray should be provided to the chemical containers. | Works Area - Portion N-B The Contractor was reminded to provide drip tray to the chemical containers. |
| 16 December 2015 | Works Area - Portion N-A Water spraying should be applied more frequently during dry condition. The chemical container should be fully bunded. | Works Area - Portion N-A The Contractor was reminded to apply water spraying more frequently during dry condition. The Contractor was reminded to repair the bunding of the chemical container. |
| 23 December 2015 | Works Area - Portion N-A Water spraying should be applied more frequently during dry condition. Oil near the gantry crane should be cleaned. | Works Area - Portion N-C The Contractor was reminded to apply water spraying more frequently during dry condition. The Contractor was reminded to clean the oil near the gantry crane and maintain better housekeeping. |
| 30 December 2015 | Works Area - Portion N-ADrip tray should be maintained in good condition. | Works Area - Portion N-AThe Contractor was reminded to clear the water inside the drip tray. |

The Contractor has rectified all of the observations as identified during environmental site inspections in the reporting month.

2.5 WASTE MANAGEMENT STATUS

The Contractor had submitted application form for registration as chemical waste producer under the Contract. Sufficient numbers of receptacles were available for general refuse collection and sorting.

Wastes generated during this reporting period include mainly construction wastes (inert and non-inert) and recyclable materials. Reference has been

made to the waste flow table prepared by the Contractor (*Appendix L*). The quantities of different types of wastes are summarized in *Table 2.10*.

| Month/Year | Inert Construction | Imported Fill (tonnes) | Inert Construction | Non-inert Construction | Recyclable Materials (c) | Chemical Wastes | Marine Se | ediment (m³) | |
|------------------|----------------------------------|---------------------------|-------------------------------|----------------------------------|-----------------------------|--------------------|---------------|--|--|
| | Waste ^(a) (tonnes) | | Waste Re- used (tonnes) | Waste ^(b) (tonnes) | (kg) | (kg) | Category L | Category M (M _p & M _f) | |
| December 2015 | 38,600 | 0 | 0 | 141 | 700 | 0 | 0 | 0 | |
| Notes: | | | | | | | | | |

Table 2.10Quantities of Different Waste Generated in the Reporting Month

(a) Inert construction wastes include hard rock and large broken concrete, and materials disposed as public fill.

(b) Non-inert construction wastes include general refuse disposed at landfill.

(c) Recyclable materials include metals, paper, cardboard, plastics, timber and others.

The Contractor was advised to properly maintain on site C&D materials and waste collection, sorting and recording system, dispose of C&D materials and wastes at designated ground and maximize reuse/ recycle of C&D materials and wastes. The Contractor was also reminded to properly maintain the site tidiness and dispose of the wastes accumulated on site regularly and properly.

For chemical waste containers, the Contractor was reminded to treat properly and store temporarily in designated chemical waste storage area on site in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.

2.6 Environmental Licenses and Permits

The status of environmental licensing and permit is summarized in *Table 2.11* below.

| License/ Permit | License or Permit No. | Date of Issue | Date of Expiry | License/ Permit Holder | Remarks |
|--|-----------------------|-------------------|-------------------------|------------------------|--|
| Environmental Permit | EP-354/2009/D | 13 March 2015 | Throughout the Contract | HyD | Application for VEP on 3 March 2015 to supersede EP-354/2009/C |
| Construction Dust Notification | 363510 | 19 August 2013 | Throughout the Contract | DBJV | - |
| Chemical Waste Registration | 5213-422-D2516-01 | 10 September 2013 | Throughout the Contract | DBJV | - |
| Construction Waste Disposal Account | 7018108 | 28 August 2013 | Throughout the Contract | DBJV | Waste disposal in Contract No. HY/2012/08 |
| Waste Water Discharge License | WT00017707-2013 | 18 November 2013 | 30 November 2018 | DBJV | For site WA18 |
| Waste Water Discharge License | WT00019248-2014 | 5 June 2014 | 30 June 2019 | DBJV | For site Portion N6 and Reclamation Area E |
| Construction Noise Permit | GW-RW0350-15 | 14 July 2015 | 13 December 2015 | DBJV | For site WA23 |
| Construction Noise Permit | GW-RW0638-15 | 14 December 2015 | 13 June 2016 | DBJV | For site WA23 |
| Construction Noise Permit | GW-RW0474-15 | 29 September 2015 | 28 March 2016 | DBJV | For Portion N6 |
| Construction Noise Permit | GW-RW0512-15 | 20 October 2015 | 19 January 2016 | DBJV | For Slurry Treatment Plant and TBM Tunnel Works at Northern Landfall |

Summary of Environmental Licensing and Permit Status Table 2.11

DBJV = Dragages – Bouygues Joint Venture

VEP = Variation of Environmental Permit

2.7 IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

In response to the site audit findings, the Contractors carried out all corrective actions.

A summary of the Implementation Schedule of Environmental Mitigation Measures (EMIS) is presented in *Appendix C*. The necessary mitigation measures relevant to this Contract were implemented properly.

2.8 SUMMARY OF EXCEEDANCES OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMIT

No Action Level or Limit Level exceedances were recorded in the air quality monitoring of this reporting month.

Cumulative statistics are provided in *Appendix K*.

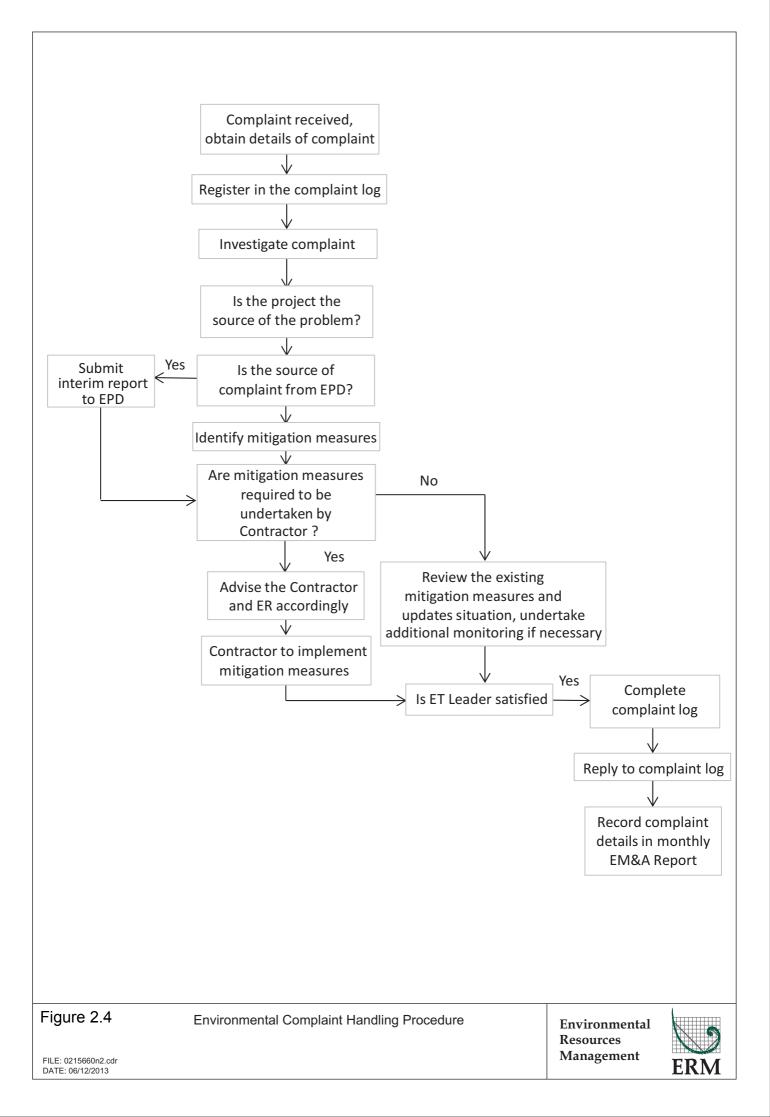
2.9 SUMMARY OF COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

The Environmental Complaint Handling Procedure is provided in Figure 2.4.

No environmental complaint was received in the reporting period.

No notification of summons and prosecution were received in the reporting period.

Statistics on complaints, notifications of summons and successful prosecutions are summarized in *Appendix K*.



3.1 CONSTRUCTION ACTIVITIES FOR THE COMING MONTH

As informed by the Contractor, the major works for the Project in January 2016 are summarized in *Table 3.1*.

Table 3.1Construction Works to Be Undertaken in the Coming Month

Works to be undertaken

Land-based Works

- Box Culvert Extension at Works Area Portion N-A;
- Construction of capping beam and base slab for Ventilation Shaft at Works Area Portion N-C;
- Site preparation for Ventilation Shaft at Works Area Portion S-C;
- TBM Tunnel Works at Works Area Portion N-C; and
- Excavation of Sub-sea Tunnel.

3.2 KEY ISSUES FOR THE COMING MONTH

Potential environmental impacts arising from the above upcoming construction activities in the next reporting month of January 2016 are mainly associated with dust, marine ecology and waste management issues.

3.3 MONITORING SCHEDULE FOR THE COMING MONTH

The tentative schedule for environmental monitoring in January 2016 is provided in *Appendix F*.

4.1 CONCLUSIONS

4

This Twenty-sixth Monthly EM&A Report presents the findings of the EM&A activities undertaken during the period from 1 to 31 December 2015, in accordance with the Updated EM&A Manual and the requirements of EP-354/2009/D.

Air quality (including 1-hour TSP and 24-hour TSP) and dolphin monitoring were carried out in this reporting month. No Action Level or Limit Level exceedances were recorded in the air quality monitoring of this reporting month.

A total of seven (7) groups of twenty-eight (28) Chinese White Dolphin sightings were recorded during the two sets of surveys in December 2015. All seven sightings were made in NWL during the survey in December 2015. Five of the seven sightings were made on primary lines during on-effort search. None of the dolphin groups was associated with operating fishing vessels. No unacceptable impact from the construction activities of the TM-CLKL Northern Connection Sub-sea Tunnel Section on Chinese White Dolphins was noticeable from general observations during the dolphin monitoring in this reporting month.

Environmental site inspection was carried out five (5) times in December 2015. Recommendations on remedial actions recommended for the deficiencies identified during the site audits were properly implemented by the Contractor.

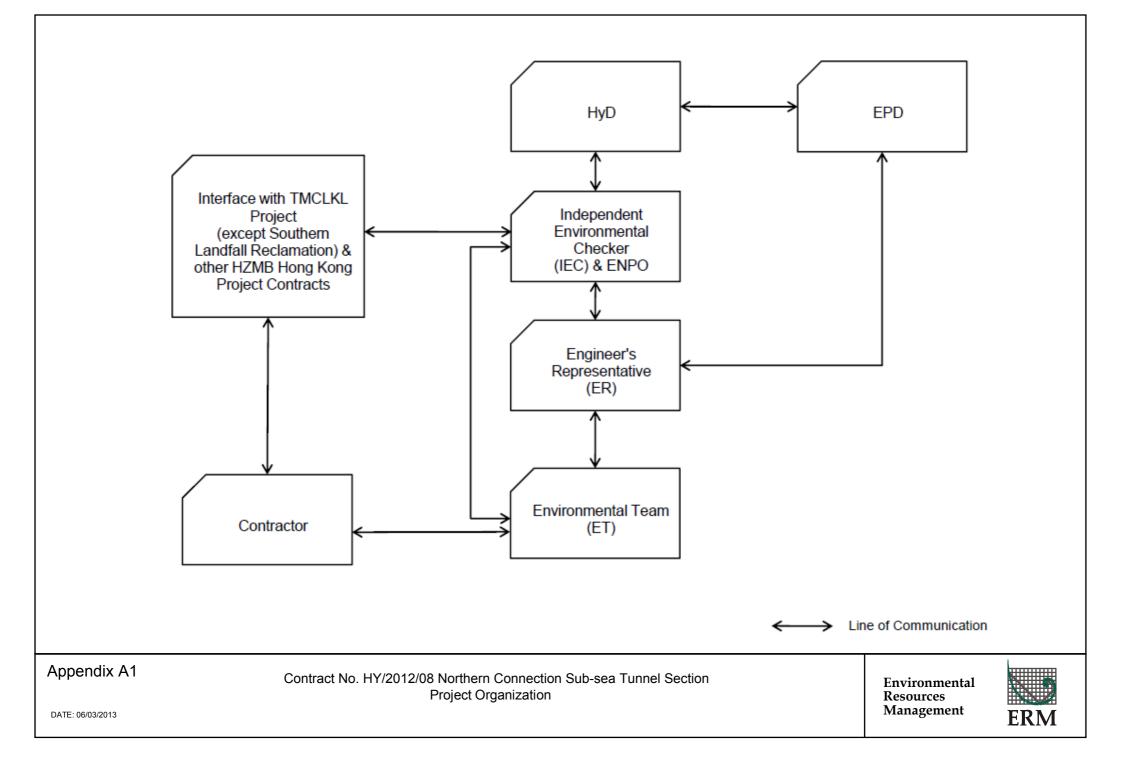
No non-compliance event was recorded during the reporting period.

No environmental complaint was received during the reporting period.

No summons/ prosecution was received during the reporting period.

The ET will keep track on the construction works to confirm compliance of environmental requirements and the proper implementation of all necessary mitigation measures. Appendix A

Project Organization for Environmental Works



Appendix B

Construction Programme

| Activity Name | Orig | DWPF Start | DWPF | | | | | | | |
|--|------------|-----------------|------------------------|---|--|--------------|-----------------------|--|---|---------------------------------------|
| | Dur | | Finish | Oct | 2015 Nov | Dec | c Jan | Feb | 2016 Mar A | pr May |
| TMCLK - Northern Connection Sub-Sea Tunnel Section | | | | | | | | | | |
| Contract Dates | | | | | | | | | | |
| Commencement and Completion Dates KD06 - Completion of Section 1B - Portion N8 | 0 | | 03-Dec-15 | | | 🔶 КD06 | · Completion of Sect | ioh 1B - Portion N8 | | |
| Site Possession Date | | | | | | | | | | |
| Portions: X1,(N10,11,13 & 14) - Sth Landfall | 0 | 06-Aug-15 | | 3 & 14) - Sth Landfal | | | | | | |
| Handover Date | | , J | | | | | | | | |
| Portions: N8A, N8B(above +3), N8C | 0 | | 03-Dec-15 | | | Portio | ns: N8A, N8B(above | +3), N8C | | |
| General Submissions Environmental | | | | | | | | | | |
| Environmental Permit Submissions | | | | | | | | | | |
| Supplementary WMP of C&C Tunnel at Sth.Landfall Supplementary WMP of C&C Tunnel at Sth.Landfall | | | 00 lun 14 | | | | | | | |
| | 0 | | 28-Jun-14 | | | | | | | |
| Sediment Quality Report/Dumping Permit Southern Landfall | | | | | | 1 | | | | |
| Southern landfall - Commencement of Shaft & C&C Tunnel Dwall | 0 | 03-Oct-15 | | Southern la | ndfall - Commend | cement of S | haft & C&C Tunnel E | Dwall | | · · · · · · · · · · · · · · · · · · · |
| Southern Landfall - Commencement of Retrieval Shaft Excavation | 0 | 30-Jan-16 | | | | 1 1 1 | | Southern Landfa | all - Commencement of | f Retrieval Shaft Exe |
| Southern Landfall - Commencement of C&C Tunnel Excavation | 0 | 03-Mar-16 | | | | | | 4 | Southern Landfall - C | Commencement of |
| Sediment Sampling & Testing Plan (SSTP) - if required Complete SSTP and Obtain EPD's approval | 24 | 17-Feb-15 | 23-Mar-15 | | | | | | | |
| Sediment Quality Report (SQR) - if required | 24 | 17 1 00-10 | | | | | | | | |
| Advance Ground Investigation works for Sediment sampling | 24 | 24-Mar-15 | 24-Apr-15 | | | 1 | | | | |
| Sediment Sample Testing & Report preparation | 120 | 25-Apr-15 | 16-Sep-15 | Sediment Sample T | esting & Report pr | eparation | | | | |
| Update SQR - Submission & EPD Approval | 48 | 17-Sep-15 | 14-Nov-15 | | Upda | te SQR - S | ubmission & EPD Ap | proval | | |
| Dumping Permit for Load Dumping (Loading Permit) - if required | | · | | | | | | | | |
| Finalize the applivation doucment and submit to EPD - for Dwall | 24 | 20-Jan-15 | 16-Feb-15 | | | | | | | |
| Notify the results and issue Loading Permit for Local & Cross Boundary Crossing - for Dwall | 24 | 17-Feb-15 | 23-Mar-15 | | | | | | | |
| Submit draft application document for Loading Permit to EPD for comment - for Excavation | 96 | 23-Jul-15 | 14-Nov-15 | | Subm | | | | PD for comment - for I | |
| Finalize the applivation doucment and submit to EPD - for Excavation | 24 | 16-Nov-15 | 12-Dec-15 | | | F | | | mit to EPD - for Excava | |
| Notify the results and issue Loading Permit for Local & Cross Boundary Crossing - for Excavation | 24 | 14-Dec-15 | 13-Jan-16 | | | 7 | Noti | ly the results and iss | ue Loading Permit for L | _ocal & Çross Boun ¦ |
| Dumping at Sea Ordinance (DASO) Submit application for local dumping | 24 | 16-Nov-15 | 12-Dec-15 | | | <u> </u> | ubmit application for | local dumping | | |
| Approval for Dumping at Sea Ordinance | 24 | 14-Dec-15 | 13-Jan-16 | | | | Appr | oval for Dumping at | Sea Ordinance | |
| Cross Boundary Dumping Permit | | | | | | | | | | |
| Apply for Cross Boundary Dumping Permit | 24 | 14-Jan-16 | 17-Feb-16 | | | | | Apply | for Cross Boundary D | umping Permit |
| Cross Boundary DumpingApproval | 24 | 18-Feb-16 | 16-Mar-16 | | | | | | Cross Bound | ary DumpingAppro |
| Issuance of PRC Permit for Cat L, Mp | 0 | | 16-Mar-16 | | | | | | Issuance of P | RC Permit for Cat |
| General Design Submissions | | | | | | | | | | |
| (G6) IFA for Tunnel GBP SO's Review | 35 | 29-Apr-14 | 02-Jun-14 | | | 1 | | | | |
| SO Approval with Condition R eceived | 0 | | 03-Jun-14 | | | + | | | | |
| PAYMENT MILESTONE | | | | | | | | | | |
| Design and Design Checking of the Works | | | | | | | | | | |
| MS 2.12 Approve DDA for ground treatment at Southern Landfall by the Supervising Officer | 0 | | 31-Aug-15 | Approve DDA for gr | ound treatment at | Southern L | ndfall by the Superv | isihg Officer | | |
| MS 2.20.3 Approve DDA for Cross Passages by the Supervising Officer by the Supervising Officer | 0 | | 31-Mar-15 | Dfficer | | | | | | |
| MS 2.23Submit DDA for Cut- and-cover Tunnel and Cross Passages at Southern Landfall | 0 | | 31-Jan-15 | uthore Least No. 1 | Duran da a | | | | | |
| MS 2.24 Approve DDA for Cut-and-cover Tunnel and Cross Passages at Southern Landfall by the Supervising Officer | | | 30-Apr-15 | uthern Landfall by th | | ¢er | | | | |
| MS 2.32 Approve DDA for Approach Ramp Structures to Cut-and-cover Tunnels by the Supervising Officer MS 2.44 Approve DDA for South Ventilation Building by the Supervising Officer | 0 | | 30-Apr-15 30-Jun-15 | nels by the Supervisi Building by the Supe | T I | | | | | |
| MS 2.44 Approve DDA for South Ventilation Building by the Supervising Officer MS 2.48 Approve DDA for North Ventilation Building by the Supervising Officer | 0 | | 30-Jun-15 31-Jan-15 | . building by the Supe | a yraing Officer | | | | | |
| MS 2.48 Approve DDA for North Ventilation Building by the Supervising Officer MS 2.51 Submit DDA for Facilities Provision for TCSS | 0 | | 31-Jan-15 29-Nov-14 | | | | | | | |
| MS 2.51 Submit DDA for Facilities Provision for TCSS by the Supervising Officer | 0 | | 29-NoV-14 28-Feb-15 | | | 1 | | | | |
| MS 2.52 Approve DDA for Facilities Provision for TCSS by the Supervising Onicer MS 2.56 Approve DDA for Drainage, Sewerage, Waterworks and Utilities at Southern Landfall by the Supervising Officer | | | 28-Feb-15 30-Apr-15 | Southern Landfall by | the Supervision | ficer | | | | |
| MS 2.60 Approve DDA for Drainage, Sewerage, Waterworks and Utilities at Southern Landial by the Supervising Officer MS 2.60 Approve DDA for Drainage, Sewerage, Waterworks and Utilities at Northern Landial by the Supervising Officer | | | 30-Apr-13 | | | | | | | |
| MS 2.69 Submit draft Operation and Maintenance Manual for all Tunnels and Cross Pass gaes | 0 | | 29-Feb-16 | | | | | | MS 2.69 Submit draft (| Operation and Maint |
| MS 2.71 Submit draft Operation and Maintenance Manual for all works except Tunnels and Cross Passgaes | 0 | | 29-Feb-16 | | | ; ; ; | | | MS 2.71 Submit draft (| |
| Tunnel Boring Machine (TBM) and Back-up Equipment for TBM Tunnel | | | | | | | | | | |
| MS 3.1.8 Delivery to Site of cutter head of TBM for Northbound Tunnel | 0 | | 30-Sep-15 | MS 3.1.8 Del | ivery to Site of cut | tter head of | TBM for Northbound | Tunnel | | |
| MS 3.1.9 Delivery to Site of remaining parts of TBM and back-up equipment for Northbound Tunnel | 0 | | 31-Dec-15 | 1 | | | 🔶 MS 3.1.9 De | livery to Site of rem | aining parts of TBM and | d back-up equipmen |
| MS 3.1.10 Complete site assembly, testing and commissioning of TBM for Northbound Tunnel | 0 | | 30-Nov-15 | | • | MS 3.1. | 10 Complete site ass | embly, testing and c | ommissioning of TBM | for Northbound Tuni |
| MS 3.1.25 Complete the whole of the activities under this Cost Centre Part to the satisfaction of the Supervising Office | 0 | | 31-Dec-15 | | | | MS 3.1.25 C | omplete the whole o | f the activities under thi | s Cost Centre Part |
| TBM Tunnel | | | 00 les 10 | | | | | | | |
| MS 3.3.4 Complete walls of retrieval shaft | 0 | | 30-Jan-16 | | | | | | lete walls of retrieval sh | |
| MS 3.3.7 Completion of excavation, support and permanent lining for 1% of the total length (measured on plan) of the No | | | 31-Dec-15 | | | 1 | | | on, support and perma | |
| MS 3.3.8 Completion of excavation, support and permanent lining for 2% of the total length (measured on plan) of the No MS 3.3.9 Completion of excavation, support and permanent lining for 3% of the total length (measured on plan) of the No | | | 31-Dec-15 31-Dec-15 | | | | | | on, support and permai | |
| MS 3.3.9 Completion of excavation, support and permanent lining for 3% of the total length (measured on plan) of the No MS 3.3.10 Completion of excavation, support and permanent lining for 4% of the total length (measured on plan) of the N | | | 31-Dec-15 30-Jan-16 | | | | | | on, support and permain pletion of excavation, su | |
| | | | | | | 1 | | | | |
| MS 3.3.11 Completion of excavation, support and permanent lining for 5% of the total length (measured on plan) of the No | . 0 | | 30-Jan-16 | | | 1 | | ▼ IVIS 3.3.11 Com | oletion of excavation, su | upport and permane |
| Page 1 of 12 Planned Bar TMCLK - N | lorthorn C | connection Su | Ih-See Turr | el Section | | | I | Date | Revision Chec | ked Approved |
| Planned Bar - Critical | | | | | 香豆 | a ≠ ∣ | 0 | 8-Apr-14 TMCLK/DBJ0 8-Aug-14 TMCLK/DBJ0 | GEN/PRG/98507 WYu GEN/PRG/98507 Rev.B SPa GEN/PRG/98507 Rev.C CLa | SPo WYu WYu |
| Project ID: TMCLK DWPF 15W48 | etailed W | orks Program | me (Rev. F |) | Drag | 夏嘉 Jages | | | GEN/PRG/98507 Rev. F WYu | |
| Data Date: 20-Dec-15 Progress bar | Three Mo | onths Rolling I | Programme | Ār | Hong nember of the Bouygues Construct | tion group | | | | |
| Progress Milestone | | - | - | D | ragages - Bouygues Join | u venture 寶嘉 | - 10 113 倍聯盟 | | | |
| | rogr | ess as of 20- | Dec-12 | | | | | | | |

| Activity Name | Orig | DWPF Start | DWPF | | | | | | | | | | |
|--|---------|---------------|------------------------|---------|---------------------|----------------------------|--|----------|------------------------|-----------------------|---|----------------------------|----------------------|
| | Dur | | Finish | | Oct | 2015 Nov | De | С | Jan | Feb | 2016 Mar | Apr | May |
| MS 3.3.12 Completion of excavation, support and permanent lining for 6% of the total length (measured on plan) of the No | 0 | | 30-Jan-16 | | | | | | | | ompletion of excavati | | |
| MS 3.3.13 Completion of excavation, support and permanent lining for 7% of the total length (measured on plan) of the No | 0 | | 30-Jan-16 | | , , , , | | | | 4 | MS 3.3.13 C | ompletion of excavati | ion, support a | nd permane |
| MS 3.3.14 Completion of excavation, support and permanent lining for 8% of the total length (measured on plan) of the No | 0 | | 29-Feb-16 | | | | | | | 1 1 | MS 3.3.14 Comp | letion of exca | vation, supp |
| MS 3.3.15 Completion of excavation, support and permanent lining for 9% of the total length (measured on plan) of the No | 0 | | 29-Feb-16 | | | | | | | | MS 3.3.15 Comp | | |
| MS 3.3.16 Completion of excavation, support and permanent lining for 10% of the total length (measured on plan) of the N | 0 | | 29-Feb-16 | - | 1 1 1 | | | | | , , , , | MS 3.3.16 Comp | | |
| MS 33.17 Completion of excavation, support and permanent lining for 11% of the total length (measured on plan) of the N | 0 | | 29-Feb-16 | | | | | | | | MS 3.3.17 Comp | | |
| MS 3.3.62 Completion of excavation, support and permanent lining for 1% of the total length (measured on plan) of the So | 0 | | 30-Nov-15 | | | | • | | | | and permanent lining | | |
| MS 3.3.63 Completion of excavation, support and permanent lining for 2% of the total length (measured on plan) of the So | 0 | | 30-Nov-15 | - | 1 1 1 | | | | | | and permanent lining | | |
| MS 3.3.64 Completion of excavation, support and permanent lining for 3% of the total length (measured on plan) of the So MS 3.3.65 Completion of excavation, support and permanent lining for 4% of the total length (measured on plan) of the So | 0 | | 30-Nov-15 31-Dec-15 | | , , , , | | MS 3.3. | | | | and permanent lining | | |
| MS 3.3.66 Completion of excavation, support and permanent lining for 5% of the total length (measured on plan) of the So | 0 | | 31-Dec-15 | - | | | | | | | avation, support and p | | |
| MS 3.3.67 Completion of excavation, support and permanent lining for 6% of the total length (measured on plan) of the So | 0 | | 31-Dec-15 | - | 1 1 1 1 | | | | | | avation, support and | | |
| MS 3.3.68 Completion of excavation, support and permanent lining for 7% of the total length (measured on plan) of the So | 0 | | 30-Jan-16 | | | | | | | , ' | avation, support and | | |
| MS 3.3.69 Completion of excavation, support and permanent lining for 8% of the total length (measured on plan) of the So | 0 | | 30-Jan-16 | - | , , , , | | | | | 1 | ompletion of excavati | | |
| MS 3.3.70 Completion of excavation, support and permanent lining for 9% of the total length (measured on plan) of the So | 0 | | 30-Jan-16 | - | | | | | | | ompletion of excavati | | |
| MS 3.3.71 Completion of excavation, support and permanent lining for 10% of the total length (measured on plan) of the S | 0 | | 29-Feb-16 | - | • | | | | | | MS 3.3.71 Comp | | |
| MS 3.3.72 Completion of excavation, support and permanent lining for 11% of the total length (measured on plan) of the S | 0 | | 29-Feb-16 | - | 1 1 1 | | | | | 1 | MS 3.3.72 Comp | | |
| MS 3.3.73 Completion of excavation, support and permanent lining for 12% of the total length (measured on plan) of the S | 0 | | 29-Feb-16 | | | | + | | | | MS 3.3.73 Comp | | |
| MS 3.3.74 Completion of excavation, support and permanent lining for 13% of the total length (measured on plan) of the S | 0 | | 29-Feb-16 | - | | | | | | 1 1 1 | MS 3.3.74 Comp | | |
| MS 3.3.75 Completion of excavation, support and permanent lining for 14% of the total length (measured on plan) of the S | 0 | | 29-Feb-16 | - | | | | | | 1 1 1 | MS 3.3.75 Comp | | |
| Cut-and-cover Tunnels at Southern Landfalls | | | | | | | | | | | | | , copp |
| MS 4.1.1 Complete 10% of total length (measured on plan) of temporary retaining walls for excavation of Cut-and-cover tu | 0 | | 31-Oct-15 | | , , , , | MS 4.1.1 Co | nplete 10% | of tota | length (measur | ; ¢d on plan) of t | emporary retaining w | alls for excav | ation of Cut |
| MS 4.1.2 Complete 20% of total length (measured on plan)of temporary retaining walls for excavation of Cut-and-cover tun | 0 | | 31-Oct-15 | † | I I I I | ♦ MS 4.1.2 Co | mplete 20% | of tota | l length (measur | ed on plan) of te | emporary retaining w | alls for excav | ation of Cut |
| MS 4.1.3 Complete 30% of total length (measured on plan) of temporary retaining walls for excavation of Cut-and-cover tu | 0 | | 30-Nov-15 | - | | | MS 4.1. | Com | plete 30% of tota | length (measu | ured on plan) of temp | orary retainin | g walls for e |
| MS 4.1.4 Complete 40% of total length (measured on plan) of temporary retaining walls for excavation of Cut-and-cover tu | 0 | | 30-Nov-15 | - | | | MS 4.1. | Com | plete 40% of tota | ¦ l length (measu | ured on plan) of temp | orary retainin | g walls for e |
| MS 4.1.5 Complete 50% of total length (measured on plan) of temporary retaining walls for excavation of Cut-and-cover tu | 0 | | 31-Dec-15 | | | | | • | MS 4.1.5 Com | plete 50% of to | otal length (measured | l on plan) of te | mporary re |
| MS 4.1.6 Complete 60% of total length (measured on plan) of temporary retaining walls for excavation of Cut-and-cover tu | 0 | | 31-Dec-15 | - | | | | • | MS 4.1.6 Com | ¦ plete 60% of to | otal length (measured | l on plan) of te | mporary re |
| MS 4.1.7 Complete 70% of total length (measured on plan) of temporary retaining walls for excavation of Cut-and-cover tu | 0 | | 30-Jan-16 | | | | | | • | MS 4.1.7 Co | mplete 70% of total le | ength (measu | red on plan) |
| MS 4.1.8 Complete 80% of total length (measured on plan) of temporary retaining walls for excavation of Cut-and-cover tu | 0 | | 30-Jan-16 | - | | | | | • | MS 4.1.8 Co | mplete 80% of total le | ength (measu | red on plan) |
| MS 4.1.9 Complete 90% of total length (measured on plan) of temporary retaining walls for excavation of Cut-and-cover tu | 0 | | 29-Feb-16 | | | | | | | , , , , | MS 4.1.9 Comple | ete 90% of tota | al length (m |
| MS 4.1.26 Complete excavation for 50% of total length (measured on plan) of all Cross Passages | 0 | | 31-Dec-15 | - | 1 1 1 | | | • | MS 4.1.26 Co | nplete excavat | ion for 50% of total le | ength (measur | ed on plan) |
| Cut-and-cover Tunnel at Northern Landfall | | | | | | | | | | | | | |
| MS 4.2.6 Removal of TBM for NB Northern Landfall Tunnel from Site after completion of Northern Landfall TBM Tunnel | 0 | | 30-Sep-15 | | MS 4.2.6 Rer | moval of TBM for | NB Northe | n Lano | Ifall Tunnel from | Site after comp | oletion of Northern La | Indfall TBM Tu | innel |
| MS 4.2.17 Completion of Permanent Lining for 100% of NB Northern Landfall TBM Tunnel | 0 | | 31-Aug-15 | 7 Coi | mpletion of Perr | n anent Lining for | 100% of N | North | iern Landfall TBI | VI Tunnel | | | |
| MS 4.2.20 Completion of Permanent Lining for 75% of SB Northern Landfall TBM Tunnel | 0 | | 31-Jul-15 | Perm | anent Lining for | 7,5% of SB North | i¢rn Landfal | TBM | Tunnel | 1 1 1 | | | |
| MS 4.2.21 Completion of Permanent Lining for 100% of SB Northern Landfall TBM Tunnel | 0 | | 30-Sep-15 | | MS 4.2.21 C | ompletion of Per | n anent Lini | g for 1 | 00% of SB Nort | hern Landfall T | BM Tunnel | | |
| Approach Ramp Structures to Cut-and-cover Tunnel at Southern Landfall MS 5.1.6 Complete retaining wall foundation for 10% of the total length (measured on plan) of approach ramp structure | 0 | | 31-Oct-15 | | ! | | diplete retai | ina w | Il foundation for | 10% of the tota | l length (measured o | n plan) of app | loach ramp |
| MS 5.1.7 Complete retaining wall foundation for 20% of the total length (measured on plan) of approach ramp structure | 0 | | 30-Nov-15 | - | | | 1 | | | | or 20% of the total len | | |
| MS 5.1.8 Complete retaining wall foundation for 30% of the total length (measured on plan) of approach ramp structure | 0 | | 30-Nov-15 | - | 1 1 1 | | | | _ | 1 | or 30% of the total len | | |
| MS 5.1.9 Complete retaining wall foundation for 40% of the total length (measured on plan) of approach ramp structure | 0 | | 31-Dec-15 | - | | | | | _ | | wall foundation for 40 | | |
| MS 5.1.10 Complete retaining wall foundation for 50% of the total length (measured on plan) of approach ramp structure | 0 | | 31-Dec-15 | | 1 1 1 | | | | | | g wall foundation for 5 | | |
| MS 5.1.11 Complete retaining wall foundation for 60% of the total length (measured on plan) of approach ramp structure | 0 | | 30-Jan-16 | | , , | | | | | MS 5.1.11 C | omplete retaining wal | I foundation fo | or 60% of the |
| MS 5.1.12 Complete retaining wall foundation for 70% of the total length (measured on plan) of approach ramp structure | 0 | | 30-Jan-16 | - | - - - - | | | | | MS 5.1.12 C | omplete retaining wal | II foundation fo | or 70% of th |
| MS 5.1.13 Complete retaining wall foundation for 80% of the total length (measured on plan) of approach ramp structure | 0 | | 29-Feb-16 | - | | | | | | 1 1 1 1 | MS 5.1.13 Comp | lete retaining | wall foundat |
| MS 5.1.14 Complete retaining wall foundation for 90% of the total length (measured on plan) of approach ramp structure | 0 | | 29-Feb-16 | - | - - | | | | | | MS 5.1.14 Comp | lete retaining | wall foundat |
| North Ventilation Buildings | | | | | 1 1 1 | | | | | 1 1 1 | | | |
| MS 7.2.3 Complete 100% of foundation for the ventilation building | 0 | | 30-Nov-15 | | | | MS 7.2. | Com | plete 100% of fou | ndation for the | ventilation building | | |
| Construction | | | | | 1 1 1 | | | | | 1 1 1 | | | |
| Northern Landfall | | | | | | | | | | | | | |
| North Reclamation (Phase 1) Construction | | | | | | | | | | 1 1 1 | | | |
| Zone D1 | | | | | | - + | + | | | , , , , | | | |
| Reclamation Surcharge Removal - Zone D1 - (CH205 to 255) to +6mPD | 6 | 13-Nov-15 | 20-Nov-15 | | 1 1 1 | | urcher- | me | I - Zone D1 - (C | | L 6m PD | | |
| Surcharge Removal - Zone D1 - (CH255 to 305) to +6mPD | 6 | 24-Nov-15 | 01-Dec-15 | | | | 1 | | | | | | |
| Preparation for Portion N8 Handover | 2 | 01-Dec-15 | 03-Dec-15 | - | | | - | Ĩ. | moval - Zone D | 1 | 305) 10 +6mPD | | |
| Preparation for Portion No Handover Portion N8 Handover | 0 | 01-000-10 | 03-Dec-15 | | | | Prepa | | for Portion N8 H | μιωΟVCI | · | | |
| | U | | 00 000-10 | | 1 | | | , ind F | nanduvel | | | | |
| Zone A2 Sloping Seawall | | | | | | | | | | i 1 1 | | | |
| SS - Armour Rock - Zone A2 - (CH843 to 893) | 4 | 14-Jun-14 | 19-Jun-14 | | | | | | | | | | |
| SS - Armour Rock - Zone A2 - (CH893 to 956) | 4 | 19-Jun-14 | 24-Jun-14 | - | | | | | | 1 1 1 | | | |
| Box Culvert Extension | | | - | | | | | 1 | | | · | | |
| Construction Ch000-010 Culvert Outfall | | | | | | | | | | 1 1 1 | | | |
| Cut sheet pile wall below water level by diver | 18 | 14-Sep-15 | 06-Oct-15 | | Cut shee | t pile wall below v | vater level k | y dive | | | | | |
| Removal of temporary seawall block | 3 | 07-Oct-15 | 09-Oct-15 | | Remov | al of temporary s | eawall bloc | ĸ | | - - - - | | | |
| | | | <u> </u> | | | <u>.</u> | <u>. </u> | <u> </u> | <u> </u> | | <u> </u> | | <u> </u> |
| Page 2 of 12 Planned Bar TMCLK - Nor | thern C | Connection Su | ub-Sea Tunn | nel S | Section | | | | | | Revision DBJGEN/PRG/98507 N DBJGEN/PRG/98507 Rev. B | Checked WYu SF SPa W | Approved Po Yu |
| Project ID: TMCLK DWPF 15W48 Planned Bar - Critical Project ID: TMCLK DWPF 15W48 Deta | ailed W | orks Program | nme (Rev F) |) | | | ョ嘉 | | 28-A 10-J | ug-14 TMCLK | DBJGEN/PRG/98507 Rev.C (DBJGEN/PRG/98507 Rev.F) | CLa W | |
| Progress bar | | - | | | | Dra Hon | gages gKong | BC | DUYGUES MUX PUBLICS | | | | |
| ♦ ♦ Progress Milestone Th | ree Mo | onths Rolling | Programme | | D | ragages - Bouygues Constru | | - 布依格 | 帶營 | | | | |
| | Progr | ess as of 20- | Dec-15 | | | | | | | | | | |
| | | | | | | | | | | | | | |

| Activ | vity N | Name | | | Drig [| DWPF Start | DWPF | | | | | | | | | |
|-------|--------|--|--|-----------------|--------|--------------|------------|------------------|--------------|--|-------------------|-----------------------------|------------------------------|--|--------------------|------------|
| | | | | | our | Curt | Finish | | •t 1 | 2015 | | | Ech | 2016 | Apr | May |
| | | Preparation & pour blinding concrete base of b | box culvert outfall | | 8 | 10-Oct-15 | 19-Oct-15 | | | Nov paration & pour | De blinding co | c Jan | Feb /ert outfall | Mar | Apr | May |
| | - | Install precast culvert element by barge (5 nos | | | 21 | 20-Oct-15 | 13-Nov-15 | \ | -r | | | vert element by barge | | | | |
| | | | ~, | | | | | _ | | | | | 1 | | - - - - | |
| | | Concreting in-situ Top Slab and sticth joint | | | 12 | 14-Nov-15 | 27-Nov-15 | | 1 | | Concreti | ng in-situ Top Slab and | | | | |
| | | Removal of temporary bulk head | | 1 | 18 | 28-Nov-15 | 18-Dec-15 | | | Y | | Removal of tempor | aty bulk head | | | |
| | | CH000-150 Land Section | | | | | | | · | | ¦ | | | | | |
| | | ELS & Structure Pile A43/A41 CJ to Pile A41/A | 139 C.I | | | | | | 1 | | | | | | | |
| | | ELS | | | | | | | | | | | 1 | | | |
| | | Installation of strut S1 | | | 5 | 08-May-15 | 13-May-15 | | 1 | | | | | | - - - - | |
| | | Excavation to FEL | | | 5 | 14-May-15 | 19-May-15 | | 1 | | - | | | | | |
| | | Box Culvert Structure | | | | | | | · + | | + | | | | -¦ | |
| | | Pile cap construction | | 1 | 10 | 27-May-15 | 06-Jun-15 | | 1 | | - | | | | 1 1 1 | |
| | | Base slab construction including kicker | | | 6 | 19-Jun-15 | 26-Jun-15 | | 1 | | | | | | | |
| | | Removal of strut S1 | | | 4 | 27-Jun-15 | 02-Jul-15 | - | | | - | | | | | |
| | | System formworks delivery & setup | | 1 | 14 | 03-Jul-15 | 18-Jul-15 | etup | | | | | | | | |
| | | Walls & top slab construction | | | 6 | 20-Jul-15 | 25-Jul-15 | | · | | | | | | | |
| | | | | | 6 | | | | | | - | | | | | |
| | | Removal of strut S2 & Backfilling up to re | | | 0 | 03-Aug-15 | 08-Aug-15 | & Backfilling up | o to requ | lired level | - | | | | | |
| | | Pile A45/A43 CJ to Pile A43/A ELS | 41 CJ | | | | | | | | - | | | | | |
| | | Installation of strut S1 | | | 5 | 14-May-15 | 19-May-15 | | 1 | | | | | | | |
| | | Excavation to FEL | | | 5 | 20-May-15 | 26-May-15 | | | | | | | | | |
| | | Box Culvert Structure | | | | | | | | | 1 | | | | | |
| | | Pile cap construction | | 1 | 10 | 08-Jun-15 | 18-Jun-15 | | | | 1 1 1 | | | 1 1 1 | 1 1 1 | |
| | | Base slab construction including kicker | | | 6 | 27-Jun-15 | 04-Jul-15 | - | | | - | | | | | |
| | | Removal of strut S1 | | | 4 | 06-Jul-15 | 09-Jul-15 | - | | | - | | | | | |
| | | | | | | | | l | | | ; ; ; ; | | | | - | |
| | | Walls & top slab construction | | | 6 | 27-Jul-15 | 01-Aug-15 | ction | 1 | | 1 | | | | | |
| | | Pile A47/A45 CJ to Pile A45/A ELS | 43 CJ | | | | | | | | 1 | | | | | |
| | | Excavation to 0.5m below strut S1 | | | 5 | 14-May-15 | 19-May-15 | | | | | | | | | |
| | | Installation of strut S1 | | | 5 | 20-May-15 | 26-May-15 | - | | | | | | | | |
| | | Excavation to FEL | | | 5 | 27-May-15 | 01-Jun-15 | | | | | | | | | |
| | | | | | 5 | 27-1vidy-13 | 01-301-13 | | | | | | | | | |
| | | Box Culvert Structure Pile cap construction | | | 10 | 19-Jun-15 | 02-Jul-15 | | | | | | | | | |
| | | Base slab construction including kicker | | | 6 | 06-Jul-15 | 11-Jul-15 | - | | | | | | | | |
| | | | | | | | | ker - | | | | | | | | |
| | | Removal of strut S1 | | | 4 | 13-Jul-15 | 16-Jul-15 | | | | | | | | | |
| | | Walls & top slab construction | | | 6 | 03-Aug-15 | 08-Aug-15 | struction | | | | | | | | |
| | | Pile A49/A47 CJ to Pile A47/A | 445 CJ | | | | | | 1 | | | | | | | |
| | | ELS Excavation to 0.5m below strut S1 | | l l | 5 | 20-May-15 | 26-May-15 | | | | | | | | | |
| | | Installation of strut S1 | | | 5 | 27-May-15 | 01-Jun-15 | - | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | Excavation to FEL | | | 5 | 02-Jun-15 | 06-Jun-15 | | | | | | | | | |
| | | Box Culvert Structure Pile cap construction | | | 10 | 03-Jul-15 | 14-Jul-15 | - | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | Base slab construction including kicker | | | 6 | 15-Jul-15 | 21-Jul-15 | ng kicker | | | | | | | | |
| | | Removal of strut S1 | | | 4 | 22-Jul-15 | 25-Jul-15 | | | | | | | | | |
| | | Pile A52/A49 CJ to Pile A49/A | 47 CJ | | | | | | | | | | | | | |
| | | ELS Excavation to 0.5m below strut S1 | | l l | 5 | 27-May-15 | 01-Jun-15 | - | | | | | | | | |
| | | Installation of strut S1 | | | 5 | 02-Jun-15 | 06-Jun-15 | - | | | | | | | | |
| | | | | | | | | _ | | | | | | | | |
| | | Excavation to FEL | | | 5 | 08-Jun-15 | 12-Jun-15 | | | | | | | | | |
| | | Box Culvert Structure Pile cap construction | | | 10 | 22-Jul-15 | 01-Aug-15 | | | | - | | | | | |
| | | | | | | | - | | | | 1 | | | | | |
| | | Base slab construction including kicker | 10 have descent | | 6 | 03-Aug-15 | 08-Aug-15 | on including kic | | . – | - - - | | | 1 1 1 | | |
| | | Preparation for TempAccess Road for N | No nandvoer | 2 | 24 | 07-Sep-15 | 06-Oct-15 | Pre | paratio | n for Temp Acce | ess Road fo | r N8 handvoer | | 1 1 1 | | |
| | | Ch150-250 Marine Section | | | | | | | | | ¦ + | | | | | |
| | | Foundation H-beam installation & Concreting - 16 nos (F | (P105 - P120) | | 40 | 21-May-15 | 09-Jul-15 | 6 nos (P105 - F | 120) | | - | | | 1 1 1 | | |
| | | Preboring - 20 nos (P65 - P84) - Rig 3 | ~ | | 50 | 07-Jul-15 | 02-Sep-15 | ng - 20 nos (P6 | |) - Rig 3 | - | | | | | |
| | | | (D65 D94) | | | | - | _ | | | ber - | | | 1 1 1 | | |
| | | H-beam installation & Concreting - 20 nos (F | (r W - F04) | | 50 | 10-Jul-15 | 05-Sep-15 | | | reting - 20 nos (| (1765 - P84) | | | | | |
| | | Preboring - 20 nos (P85 - P104) - Rig 1 | | | 50 | 07-Jul-15 | 02-Sep-15 | | | | | | | , , ,, | | <u> </u> |
| | | H-beam installation & Concreting - 20 nos (F | (P85 - P104) | | 50 | 10-Jul-15 | 05-Sep-15 | | | reting - 20 nos (| | | | 1 1 1 | | |
| | | ELS & Structure | | | 00 | 01 1 1 | 04.11.1 | | | | 1 | | | 1 1 1 | | |
| | | Cofferdam closing of Ch100-250 | | | 28 | 01-Jun-15 | 04-Jul-15 | | | | 1 | | | 1 1 1 | 1 1 1 | |
| | | Dewatering well installation Ch180-250 | | | 12 | 19-Jun-15 | 04-Jul-15 | | | | 1 | | | | | |
| | | Dewatering well installation Ch100-180 | | 1 | 12 | 06-Jul-15 | 18-Jul-15 | 00-180 | | | 1 | | | 1 1 1 | | |
| | | 1st Pumping test | | 1 | 18 | 20-Jul-15 | 08-Aug-15 | Ι | | | T | | | | | |
| | | Toe grouting Ch100-250 | | 9 | 95 | 07-Sep-15 | 31-Dec-15 | | | | 1 | Toe grouting | ¢h100-250 | 1 1 1 | | |
| | | 2nd Pumping test Ch100-250 | | 2 | 29 | 02-Jan-16 | 04-Feb-16 | | | | 1 | | 2nd Pum | iping test Ch100-2 | 50 | |
| | | Pile A41/A39 CJ to Pile A39/A | N37 CJ | | | | | | | | 1 | | 1 | | 1 1 1 | |
| | | | | THOMAS | - | | a – | <u> </u> | ; | | | • · · | Date | Revision | Checked | Approved |
| Pag | e 3 c | of 12 | Planned Bar | TMCLK - Norther | n Cor | nnection Sub | o-Sea Tunr | nel Sectio | n | | | 08- | Feb-14 TMCLK Apr-14 TMCLK | VD BJGEN/PRG/98507 VD BJGEN/PRG/98507 Rev | WYu Si AB SPa W | iPo VYu |
| Proj | ect II | D: TMCLK DWPF 15W48 | Planned Bar - Critical Planned Milestone | Detailed | l Work | ks Programn | ne (Rev. F |) | | | ョ嘉 | 10- | | (DBJGEN/PRG/98507 Rev (DBJGEN/PRG/98507 Rev | | VYu |
| Data | | te: 20-Dec-15 | Progress bar | | | - | | | | Drag | gages gKong | BOUYGUES TRAVAUX PUBLICS | | | | |
| Jaio | Ja | | Progress Milestone | Three | Mont | hs Rolling P | rogramme | | A memb | cer of the Bouygues Construct pages - Bouygues Join | 0 1 . | - 布依格聯營 | | | | |
| | | | | Pro | ogres | s as of 20-D | Dec-15 | | | | | | | | | |
| | | | | | | | | | | | _ | | | | | |

| / Name | | Orig Dur | DWPF Start | DWPF Finish | | 201 | 5 | | | | | 2016 | | |
|--|---------------|---------------|---------------------------|---------------------------|-----------------|---------------------------------------|------------------------------|---------------|-----------------------|------------------------------|---|---|------------------------------------|-------------------|
| ELS | | Bu | | | | | Nov | Dec | | Jan | Feb | Mar | Apr | - |
| Excavation to 0.5m below strut S2 | | 4 | 05-Feb-16 | 16-Feb-16 | | | | | | | E | xcavation to 0.5m belo | ow strut S2 | |
| Installation of strut S2 | | 6 | 17-Feb-16 | 23-Feb-16 | | | | | | | | Installation of strut S | 62 | |
| Excavation to 0.5m below strut S1 | | 5 | 24-Feb-16 | 29-Feb-16 | | | | | | | | Excavation to 0.5 | ōm below stri | uts |
| Installation of strut S1 | | 5 | 01-Mar-16 | 05-Mar-16 | | | | | | | 1 1 1 | Installation of | strut S1 | |
| Excavation to FEL | | 5 | 07-Mar-16 | 11-Mar-16 | | | | | | | 1 1 1 1 | Excavation | n to FEL | |
| Box Culvert Structure | | | | | | | | | | | j 1 1 | | | |
| Pile cap construction | | 10 | 18-Mar-16 | 01-Apr-16 | | | | | | | 1 1 1 1 | | Pile cap co | nstr |
| Pile A39/A37 CJ to Pile A37/A35 CJ ELS | | | | | | | | | | | | | | |
| Excavation to 0.5m below strut S2 | | 4 | 17-Feb-16 | 20-Feb-16 | | | | | | | | Excavation to 0.5m b | elow strut S2 | 2 |
| Installation of strut S2 | | 6 | 22-Feb-16 | 27-Feb-16 | | | | | | | | Installation of stru | t S2 | |
| Excavation to 0.5m below strut S1 | | 5 | 01-Mar-16 | 05-Mar-16 | - | | | | | | | Excavation to | 0.5m belows | sţru |
| Installation of strut S1 | | 5 | 07-Mar-16 | 11-Mar-16 | _ | | | | | | 1 1 1 | Installation | n of strut S1 | |
| Excavation to FEL | | 5 | 12-Mar-16 | 17-Mar-16 | _ | 1 | | | | | 1 1 1 | Excava | ation to FEL | |
| Pile A37/A35 CJ to Pile A35/A33 CJ | | | | | | | | | | | 1 1 1 1 | — | | |
| ELS | | | | 4 | | | | | | | | | | - |
| Excavation to 0.5m below strut S2 | | 4 | 22-Feb-16 | 25-Feb-16 | | | | | | | | Excavation to 0.5m | n below strut | S2 |
| Installation of strut S2 | | 6 | 26-Feb-16 | 03-Mar-16 | | | | | | | | Installation of s | strut S2 | |
| Excavation to 0.5m below strut S1 | | 5 | 07-Mar-16 | 11-Mar-16 | | | | | | | 1 1 1 | Excavation | n to 0.5m belo | ow |
| Installation of strut S1 | | 5 | 12-Mar-16 | 17-Mar-16 | | | | | | | | 🔲 Installa | tion of strut S | 31 |
| Excavation to FEL | | 5 | 18-Mar-16 | 23-Mar-16 | | | | | | | , | Exc | avation to FE | ΞЦ |
| Pile A35/A33 CJ to Pile A33/P117 CJ | | | · | | | | | | | | | | | |
| ELS Excavation to 0.5m below strut S2 | | 4 | 26-Feb-16 | 01-Mar-16 | | | | | | | 1 1 1 | Excavation to 0. | 5m belowstr | ru# 9 |
| Installation of strut S2 | | 6 | 02-Mar-16 | 08-Mar-16 | | 1 | | | | | | Installation o | | |
| Excavation to 0.5m below strut S1 | | 5 | 12-Mar-16 | 17-Mar-16 | | | | | | | | | | |
| Installation of strut S1 | | 5 | 18-Mar-16 | 23-Mar-16 | _ | | | | | | | | | ÷ |
| | | | 10-10/201-10 | 23-Wai - 10 | | | | | | | 1 1 1 1 | insu | allation of str | ut a |
| Pile A33/P117 CJ to Pile P113/P109 CJ ELS | | | | | | | | | | | 1 1 1 | | | |
| Excavation to 0.5m below strut S1 | | 9 | 09-Mar-16 | 18-Mar-16 | - | | | | | | 1 | Excava | ation to 0.5m | i bel |
| Installation of strut S1 | | 5 | 19-Mar-16 | 24-Mar-16 | | | | | | | | Insi | tallation of st | rut s |
| Pile P113/P109 CJ to Pile P105/P101 CJ | | | | | | | | | | | 1 1 1 | | | |
| ELS | | | 17 May 10 | 00 Mar 10 | | | | | | | 1 1 1 | | | |
| Excavation to 0.5m below strut S1 | | 9 | 17-Mar-16 | 30-Mar-16 | | | | | | | , , , , | | Excavation to | o 0. |
| Ch250-380 Marine Section Installation of Dewatering & Observation Well Ch 250-380 | | 23 | 04-Nov-15 | 30-Nov-15 | | | | Installatio | on of De | watering & Ob | servation We | ll Ch 250-380 | | ÷ |
| 1st Pumping Test & Analysis | | 17 | 01-Dec-15 | 19-Dec-15 | _ | | | | | mping Test & / | 1 | | | |
| Toe Grouting | | 106 | 21-Dec-15 | 07-May-16 | _ | | | $\overline{}$ | | | | | | - |
| Ch250-320 Prebored H-piles | | | | | | | | _ [| | | 1 1 1 | | | ł |
| Preboring - 16 nos (P49 - P64) - Rig 1 | | 40 | 03-Sep-15 | 22-Oct-15 | | Preborin | g - 16 nos¦ (F | P49 - P6.) |) - Rig 1 | | 1 1 1 | | | |
| H-beam installation & Concreting - 16 nos (P49 - P64) | | 40 | 07-Sep-15 | 26-Oct-15 | | H-bea | m installatio | in & Concr | reting - ⁻ | 16 nos (P49 - | ; P64) | | | |
| Rig 1 Demobilization | | 0 | 23-Oct-15 | | - | 🔶 Rig 1 De | emobilizațio | n | | | 1 1 1 | | | |
| Preboring - 20 nos (P29 - P48) - Rig 3 | | 50 | 03-Sep-15 | 03-Nov-15 | | ¦ Pr | eboring - 20 |) nos (P29 | 9 - P48) | - Rig 3 | 1 1 1 | | | |
| H-beam installation & Concreting - 20 nos (P29 - P48) | | 50 | 07-Sep-15 | 06-Nov-15 | | | H-beam inst | allation & | Concre | ting - 20 nos (| P29 - P48) | | | |
| Rig 2 Demobilization | | 0 | 04-Nov-15 | | _ | ♦ R | ig 2 Demobi | ilization | | | , , , , | | | |
| Ch320-360 Prebored H-piles | | | | | | | | | | | | | | |
| Current Steel Bridge location available | | 0 | | 02-Sep-15 | t Steel Bridg | ge location availat | ble | | | | | | | |
| Predrilling - 3 nos | | 9 | 03-Sep-15 | 12-Sep-15 | redrilling - 3 | 3 nos | | | | | 1 | | | |
| Preboring - 14 nos (C13-C28) - Rig 2 | | 35 | 14-Sep-15 | 27-Oct-15 | | Prebo | ring - 14 nos | s (C13-C2 | 28) - Rig | 12 | 1 1 1 | | | |
| H-beam installation & Concreting - 14 nos (C13-C28) | | 35 | 17-Sep-15 | 30-Oct-15 | | H-b | eam installa | tion & Cor | ncreting | - 14 nos (C13 | -C28) | | | |
| Preboring - 6 piles (P9-12, P15-16) - Rig 2 | | 18 | 28-Oct-15 | 17-Nov-15 | | | Prebo | ring - 6 pil | les (P9- | 12, P15-16) - | kig 2 | | | |
| H-beam Installation & Concreting - 6 piles (P9-12, P15-16) | | 18 | 31-Oct-15 | 20-Nov-15 | | | H-be | am Instal | lation & | Concreting - 6 | piles (P9-12 | , P15-16) | | |
| Ch360-380 Prebored H-piles | | | | | | | | | | | | | | |
| Steel Bridge Landing Platform Construction | | 18 | 03-Jul-15 | 23-Jul-15 | Constructio | on | | | | | | | | |
| Ch380-399 Connection Section | ! | | | | | | | | | | | · · · · · · · · · · · · · · · · · · · | | |
| Foundation & ELS | | | | | | | | | | | | | | |
| Stage 1 Preboring - 9 nos (C1-7,C9-10) - Rig 2 | | 27 | 30-May-15 | 02-Jul-15 | | | | | | | 1 1 1 | | | |
| H-beam installation & Concreting - 9 nos (C1-7,C9-10) | | 29 | 03-Jun-15 | 08-Jul-15 | nos (©1-7,C | 9-10) | | | | | | | | |
| Preboring & sheet piling (west row south 50%) - Rig 2 | | 24 | 10-Aug-15 | 05-Sep-15 | _ | et piling (west row | south 50%) | - Rig 2 | | | 1 1 | | | |
| Stage 2 | | | - | | | · · · · · · · · · · · · · · · · · · · | | | | | , 1 | | | |
| 2015/16 Dry Season | | 0 | 01-Nov-15 | | | \ 201 | 5/16 Dry Se | eason | | | | | | |
| Install concrete blocks to support working platform | | 6 | 02-Nov-15 | 07-Nov-15 | | | Install concr | rete blocks | s to supp | oort working pl | atform | | | |
| 2nd Relocation of working platform | | 6 | 09-Nov-15 | 14-Nov-15 | | | 2nd Rel | ocation of | working | platform | 1 1 1 | | | |
| Preboring - 4 nos (C13-C16) - Rig 2 | | 12 | 16-Nov-15 | 28-Nov-15 | | | | Preboring | ı-4 nos | (C13-C16) - F | , Rig 2 | | | |
| | | 12 | 19-Nov-15 | 02-Dec-15 | | | | H-beam | n installa | tion & Concre | ting - 4 nos (0 | C13-C16) | | -1 |
| H-beam installation & Concreting - 4 nos (C13-C16) | | | 00 Dec 15 | 23-Dec-15 | - | | | | | | | lle row north 50%) - Ri | ig 2 | 1 |
| | | 18 | 03-Dec-15 | | 1 1 | | | | - 1 ⁻ | - | | | | ¦ Bio |
| H-beam installation & Concreting - 4 nos (C13-C16) | | 18 24 | 24-Dec-15 | 23-Jan-16 | | | | | | P | reboring for s | heet piling (west row r | 10rth 50%) - I | . ųU |
| H-beam installation & Concreting - 4 nos (C13-C16) Preboring for sheet piling (middle row north 50%) - Rig 2 Preboring for sheet piling (west row north 50%) - Rig 2 | | 24 | 24-Dec-15 | | | | | | | | Preboring for s | heet piling (west row n | , | 1 |
| H-beam installation & Concreting - 4 nos (C13-C16) Preboring for sheet piling (middle row north 50%) - Rig 2 Preboring for sheet piling (west row north 50%) - Rig 2 4 of 12 | TMCLK - North | 24 | 24-Dec-15 | | inel Sect | ion | | <u> </u> | | 12-F 08-A | Date Date Ppr-14 TMCL pr-14 TMCL | Revision KDBJGEN/PRG/98507 N KDBJGEN/PRG/98507 Rev. B | Checked SPa V | Ap SPo WYu |
| H-beam installation & Concreting - 4 nos (C13-C16) Preboring for sheet piling (middle row north 50%) - Rig 2 Preboring for sheet piling (west row north 50%) - Rig 2 | cal Detail | 24 hern C | 24-Dec-15 | ıb-Sea Tun | | ion | 香寶 | | BOIL | 12-F 08-A 28-A 10-J | Date TMCL pr-14 TMCL ug-14 TMCL | Revision KDBJGEN/PRG/98507 1 KDBJGEN/PRG/98507 Rev. B | Checked WYu S SPa V CLa V | Ap |
| H-beam installation & Concreting - 4 nos (C13-C16) Preboring for sheet piling (middle row north 50%) - Rig 2 Preboring for sheet piling (west row north 50%) - Rig 2 4 of 12 FILL Planned Bar Planned Bar - Critical Planned Bar | Detai | 24 hern Co | 24-Dec-15 onnection Su | ub-Sea Tun nme (Rev. F | =) | ion | 香寶 港 Dragag Hong Ke | ges 🛛 | BOUY | 12-F 08-A 28-A 10-J | Date TMCL pr-14 TMCL ug-14 TMCL | Revision KDBJGEN/PRG.98507 1 KDBJGEN/PRG.98507 Rev.B KDBJGEN/PRG.98507 Rev.C (| Checked WYu S SPa V CLa V | Ap SPo WYu |

| tivity Name | · · · · · · · · · · · · · · · · · · · | | Orig Dur | DWPF Start | DWPF Finish | | 2015 | | | 2016 | |
|---|--|--------------------------|-------------|----------------|----------------|---------------------------------------|---|--------------------------|-----------------------------------|--|---------------------------|
| Big 2 Domobilization | | | | 25-Jan-16 | FINISH | Oct | Nov | Dec | Jan Feb | Mar A | vpr M |
| Rig 3 Demobilization | | | 0 | 25-Jan-16 | | | | | Rig 3 Demobi | lization | |
| Land Access route for CKS Steel Bridge - Preparation for dismantling | | | 24 | 23-Jul-15 | 19-Aug-15 | Preparation for disman | htling | | | | |
| Available for steel bridge relocation | | | 0 | 20-Aug-15 | | teel bridge relocation | | | | | |
| Steel bridge relocation | | | 12 | 20-Aug-15 | 02-Sep-15 | ridge relocation | | | | | |
| Make good for Landside Roadworks | | | 24 | 03-Sep-15 | 02-Oct-15 | Make good fc | or Landside Roadwo | orks | | | |
| Miscellaneous works | | | | | | | | | | | |
| Inspection Manhole (IM) | | | | | | | | | | | ! ! |
| Inspection Manhole IM-01 to IM-04 & back | filling to +6.0mPD | | 12 | 29-Sep-15 | 13-Oct-15 | | tion Manhole IM-01 | to IM-04 & bacl | kfilling to +6.0m₽D | | |
| SLO-01 to SLO-05 & backfilling to +6.0m | PD | | 24 | 14-Oct-15 | 11-Nov-15 | | SI Q-01 t | SI 0-05 & bac | kfilling to +6.0mPD | | |
| Balance Hole (BH) | | | 24 | | | | 3LO-0 (IC | 0 SLO-05 & Dau | | | |
| BH-01 to BH-03 & backfilling to +6.0mPl |) | | 18 | 07-Sep-15 | 26-Sep-15 | BH-01 to BH-03 | & backfilling to +6. | .0mPD | | | |
| North Launching Shaft | | | | | | | | | | | |
| Design Submission | | | | | | | | | | | |
| (C1) DDA for North Approac | n Ramp Permanent Structure | | 28 | 23-Oct-14 | 19-Nov-14 | | | | | | |
| IP's No Objection Received | | | 0 | | 19-Nov-14 | | | | | | |
| SO's Review | | | 35 | 23-Oct-14 | 26-Nov-14 | - | | | | | |
| SO Approval with Condition R eceived | | | 0 | 20 000 11 | 26-Nov-14 | _ | | | | | |
| North Ventilation Shaft | | | | | 201100 14 | | | | | | |
| Construction | | | | | | | | | | | |
| North Ventilation Shaft Exca | | | | | | | | | | | |
| A- Vent Shaft Excavation (-40.0mPD to -4 | · · · · · · · · · · · · · · · · · · · | | 29 | 02-Sep-15 | 08-Oct-15 | A- Vent S | Shaft Excavation (-4 | | | | |
| A - Vent Shaft Bottom Base Slab for TBM F | - | | 48 | 08-Oct-15 | 04-Dec-15 | | | | ft Bottom Base Slab for TBM F | | |
| A- Tympanum construction for TBM break | -in/out | | 36 | 15-Oct-15 | 27-Nov-15 | | | A- Tympanum (| construction for TBM break-in | 'out | |
| North Ventilation Shaft - Steel Bell Installat | on | | 40 | 15-Oct-15 | 02-Dec-15 | | | North ventila | ion Shaft - Steel Bell Installati | on | |
| North Ventilation Shaft - Steel Bell Backfill | ng for S882 Crossing | | 12 | 02-Dec-15 | 16-Dec-15 | | | North | Ventilation Shaft - Steel Bell E | Backfilling for S882 Crossin | g |
| North Ventilation Shaft - Shaft Flooding for | S880 Arrival | | 10 | 16-Dec-15 | 30-Dec-15 | | | | North Ventilation Shaft - Sha | ft Flooding for S880 Arrival | |
| | of Viaduct Foundations at Portion | N6A | | | | | | | | | |
| Viaduct Bored Pile Construct Bored Pile Construction | ion | | | | | | | | | | |
| G1c-6 | | | | | | | 1 1 1 1 | | | | |
| Pile 6 - RCD Socket Drilling | | | 14 | 14-Jul-14 | 29-Jul-14 | | | | | | |
| Viaduct Pile Cap | | | | | | | | | | | |
| Construction Pier G1c | | | | | | | | | | | |
| Pile Cap G1c - Preparation for ELS | | Í | 6 | 24-Oct-14 | 30-Oct-14 | • | | | | | |
| Pile Cap G1c - Removal of Existing grou | nd slab | | 6 | 31-Oct-14 | 06-Nov-14 | - | | | | | |
| Pile Cap G1c - Excavation & ELS Installa | tion | | 12 | 07-Nov-14 | 20-Nov-14 | - | | | | | |
| Pile Cap G1c - Blinding Concrete | | | 3 | 21-Nov-14 | 24-Nov-14 | - | | | | | |
| Pile Cap G1c - Rebar & Concreting | | | 18 | 25-Nov-14 | 15-Dec-14 | - | | | | | |
| Pile Cap G1c - Backfilling & Temp Reins | atement | | 6 | 16-Dec-14 | 22-Dec-14 | | | | | | |
| Pier H1c | | | | | | | | | | | |
| Pile Cap H1c - Preparation for ELS | | | 6 | 02-Nov-15 | 07-Nov-15 | | Pile Cap H1 | c - Preparation | for ELS | | |
| Pile Cap H1c - Removal of Existing grou | nd slab | | 6 | 09-Nov-15 | 14-Nov-15 | - | Pile Car | o H1c - Remov | al of Existing ground slab | | |
| Pile Cap H1c - Excavation & ELS Installa | tion | | 12 | 16-Nov-15 | 28-Nov-15 | | | Pile Cap H1c - | Excavation & ELS Installation | | |
| Pile Cap H1c - Blinding Concrete | | | 3 | 30-Nov-15 | 02-Dec-15 | + | | Pile Cap H1c | - Blinding Concrete | | |
| Pile Cap H1c - Rebar & Concreting | | | 18 | 03-Dec-15 | 23-Dec-15 | - | \ \ | P | ile Cap H1c - Rebar & Concre | eting | |
| Pile Cap H1c - Backfilling & Temp Reins | atement | | 6 | 24-Dec-15 | 02-Jan-16 | - | | | Pile Cap H1c - Backfilling | & Temp Reinstatement | |
| North Surface works for TBM | Tunnelling | | | | | | | | | | |
| Design Submission | | | | | | I | | | | | |
| (D1) IFA for Temp. Access to ICEApproval & Issue of Desi gn Check Ce | Portion N8A, N8B & N8C incl. Temp | o. Lighting | 18 | 02-May-14 | 23-May-14 | | | | | | |
| Check Cert to SO | | | 0 | | 23-May-14 | - | | | | | |
| No Objection or Further Minor Comments | from IPs Received | | 0 | | 23-May-14 | - | | | | | |
| SO Review (35 Days) | | | 35 | 02-May-14 | 05-Jun-14 | - | | | | | |
| SO Approval with Condition R eceived | | | 0 | | 05-Jun-14 | | | | | | |
| | | | J | | | | | | | | |
| North Approach TBM Tunnelli Design Submission | ig a closs Passage | | | | | | | | | | |
| ETWB TCW No 15/2005 - Cro | ss Passage Ground Treatment for T | FBM Tunnels in N | | 1 | | | | | | | |
| Review Meeting with GEO - after AIP Appro | | | 0 | 01-Apr-14 | | ļ | ļ | | | | |
| | 15/2005 - Cross Passage Ground Treatment for TBM T | unnels in North Landfall | 0 | | 04-Aug-14 | | | | | | |
| 1st Submission GEO Review | | | 28 | 04-Aug-14 | 31-Aug-14 | | | | | | |
| Received GEO Comment | | | 0 | | 01-Sep-14 | | | | | | |
| Prepare Response to Comment | | | 12 | 01-Sep-14 | 15-Sep-14 | | | | | | |
| 2nd Submission to GEO | | | 0 | | 15-Sep-14 | | | | | | |
| 2nd GEO Review | | | 28 | 16-Sep-14 | 13-Oct-14 | | | | | | |
| Received 2nd GEO Comment | | | 0 | | 13-Oct-14 | | | | | | |
| Prepare Respond to 2nd Comment | | | 12 | 14-Oct-14 | 27-Oct-14 | 1 | | | | | |
| N | | | | | | | <u> </u> | | | | 1 |
| e 5 of 12 | | TMCLK - North | ern C | onnection Su | ıb-Sea Tun | nel Section | | | 08-Apr-14 TMCL | K/DBJ/GEN/PRG/98507 WYu K/DBJ/GEN/PRG/98507 Rev.B SPa | ecked Appro SPo WYu |
| | Planned Bar - Critical Planned Milestone | Detail | ed Wo | orks Program | ıme (Rev. F | ·) 🗾 | た 着寶 | 嘉 | 28-Aug-14 TMCL 10-Jun-15 TMCL | KDBJGEN/PRG/98507 Rev.C CLa KDBJGEN/PRG/98507 Rev.F WYu | WYu |
| ect ID: TMGLK DWPF 15W48 | | - | - | 0 | • | · · · · · · · · · · · · · · · · · · · | Dragag HongKa | | AUX PUBLICS | | |
| | Progress bar | | | nthe Dell' | | | ber of the Bourymune Construction | quore | | | |
| ject ID: TMCLK DWPF 15W48 a Date: 20-Dec-15 | | Thre | ee Mo | nths Rolling I | Programme | A mer Drag | riber of the Bouygues Construction of agages - Bouygues Joint Ve | group enture 寶嘉 - 布依格 | 辩 登 | | |

| Activit | y Name | Orig Dur | DWPF Start | DWPF Finish | | 2015 | | | 2 | 016 | |
|---------|--|--------------------|------------------------|------------------------|----------------|---|---------------------------------|---|--|--|-------------------|
| | 3rd Submission to GEO | 0 | | 27-Oct-14 | | t Nov | Deo | c Jan | Feb | Mar Apr | May |
| | 3rd GEO Review | 28 | 28-Oct-14 | 24-Nov-14 | | | - | | | | |
| | Construction | | | | | | | | | | |
| | Northern Landfall Surface Setup for TBM operation Gantry Setup at North Ventilation Shaft | 48 | 08-Oct-15 | 04-Dec-15 | | | Gantr | y Setup at North Ventila | tion Shaft | | |
| | Gantry Removal at North Ventilation Shaft | 24 | 02-Jan-16 | 29-Jan-16 | | | | | Gantry Removal a | t North Ventilation Shaft | |
| | North Approach TBM Tunnel - NB ID15.60m - S880 | | | <u> </u> | | | ¦ ¦ | | | | |
| | NB - North TBM Tunnel - Transition with Saturation (Ch6840 to 6708 - 132m) | 75 | 08-Sep-15 | 22-Nov-15 | 1 | | | BM Tunnel - Transitio | | , | |
| | NB - North TBM Tunnel - Transition with Saturation (Ch6708 to 6688 - 20m) NB - North TBM Tunnel - Transition with Saturation (Ch6688 to 6640 - 48m) | 6 | 22-Nov-15 28-Nov-15 | 28-Nov-15 12-Dec-15 | | | | | | Ch6708 to 6688 - 20m) uration (Ch6688 to 6640 - | /18m) |
| | NB - North TBM Tunnel - CDG+Boulder with Saturation (Ch6640 to 6600 - 40m) | 8 | 12-Dec-15 | 20-Dec-15 | | | | | | with Saturation (Ch6640 | |
| | NB - North TBM Tunnel - CDG with Saturation (Ch6600 to 6560 - 40m) | 5 | 20-Dec-15 | 25-Dec-15 | | | | NB - North TBM | Tunnel - CDG with S | aturation (Ch6600 to 6560 |)- 40m) |
| | NB - North TBM Tunnel - Thrust Frame Removal | 12 | 19-Aug-15 | 02-Sep-15 | orth TBM Tunne | el - Thrµst Frame Rem | ¦ | | | · | |
| | North Approach TBM Tunnel - SB ID12.40m - S882 | | | | | | | | | | |
| | SB - North TBM Tunnel - Back-up Gnatry G3 & G4 Assembly SB - North TBM Tunnel - CDG with Trimix (Ch7021 to 6891 - 130m) | 17 | 29-Jul-15 12-Sep-15 | 16-Aug-15 24-Sep-15 | | up Gnatry G3 & G4 As | | | | | |
| | SB - North TBM Tunnel - CDG+ Boulder with Saturation (Ch6891 to 6861 - 30m) | 9 | 24-Sep-15 | 03-Oct-15 | Г | i i | i ì | Ch7021 to 6891 - 130m with \$aturation (Ch68 | | | |
| | SB - North TBM Tunnel - Transition with Saturation (Ch6861 to 6729 - 132m) | 63 | 03-Oct-15 | 05-Dec-15 | | | + | | | on (Ch6861 to 6729 - 132 | m) |
| | SB - North TBM Tunnel - Transition with Saturation (Ch6729 to 6709 - 20m) | 5 | 05-Dec-15 | 10-Dec-15 | | | E SE | - North TBM Tunnel - | Transition with \$atu | ation (Ch6729 to 6709 - 2 | 0m) |
| | SB - North TBM Tunnel - Thrust Frame Removal | 12 | 24-Sep-15 | 10-Oct-15 | s | B - North TBM Tunnel | - Thrust Fra | me Removal | | | |
| | SB - North TBM Tunnel - Transition with Saturation (Ch6709 to 6661 - 48m) | 11 | 10-Dec-15 | 21-Dec-15 | | | | SB - North TBM Tu | nnel - Transition with | Saturation (Ch6709 to 66 | 61 + 48m) |
| | SB - North TBM Tunnel - Transition with Saturation (Ch6661 to 6621 - 40m) | 8 | 21-Dec-15 | 29-Dec-15 | | | | SB - North TB | M Tunnel - Transitior | with Saturation (Ch6661 | to 6621 - 40m) |
| | SB - North TBM Tunnel - Transition with Saturation (Ch6621 to 6581 - 40m) | 5 | 29-Dec-15 | 03-Jan-16 | | | | SB - North | BM Tunnel - Transit | ion with Saturation (Ch66 | 21 to 6581 - 40 |
| | North Approach Tunnel Internal Structure - NB NB - North TBM Tunnel - Invert Backfilling (Ch7175 to 6870 - 305m) Stage 1 | 87 | 10-Sep-15 | 06-Dec-15 | | | NB- | North TBM Tunnel - In | vert Backfilling (Ch7 | 175 to 6870 - 305m) Stag | e1 |
| | NB - North TBM Tunnel - Invert Backfilling (Ch6870 to 6688 - 182m) Stage 1 | 77 | 06-Dec-15 | 24-Feb-16 | | | | | | - North TBM Tunnel - Inve | |
| | NB - North TBM Tunnel - Invert Backfilling (Ch6688 to 6560 - 128m) Stage 1 | 54 | 01-Apr-16 | 26-May-16 | | | | | | | |
| | NB - North TBM Tunnel - Preparation for Invert Gallery Installation | 14 | 10-Sep-15 | 24-Sep-15 | NB - North | TBM Tunnel - Prepar | ation for Inv | art Gallery Installation | | | |
| | NB - North TBM Tunnel - Invert Precast Gallery Installation (Ch7205 to 6870 - 335m) | 96 | 24-Sep-15 | 29-Dec-15 | | | : | NB - North TB | M Tunnel - Invert Pre | cast Gallery Installation (| Ch7205 to 687 |
| | NB - North TBM Tunnel - Invert Precast Gallery Installation (Ch6870 to 6688 - 182m) | 77 | 29-Dec-15 | 18-Mar-16 | | | | | | NB - North TBM | Tunnel - Invert |
| | NB - North TBM Tunnel - Invert Backfilling (Ch7205 to 7175 - 30m) Stage 2 | 9 | 15-Oct-15 | 24-Oct-15 | | ; | i | ert Backfilling (Ch720 | | | |
| | NB - North TBM Tunnel - Invert Backfilling (Ch7175 to 7125 - 50m) Stage 2 | 15 | 24-Oct-15 | 08-Nov-15 | | | | nel - Invert Backfilling | (| | |
| | NB - North TBM Tunnel - Invert Backfilling (Ch7125 to 7075 - 50m) Stage 2 NB - North TBM Tunnel - Invert Backfilling (Ch7075 to 7025 - 50m) Stage 2 | 15 | 08-Nov-15 23-Nov-15 | 23-Nov-15 08-Dec-15 | | | | FBM Tunnel - Invert Ba | | 7075 - 50m) Stage 2 7075 to 7025 - 50m) Stag | o 2 ' |
| | NB - North TBM Tunnel - Invert Backfilling (Ch7025 to 6975 - 50m) Stage 2 | 14 | 08-Dec-15 | 22-Dec-15 | | | | | | ing (Ch7025 to 6975 - 50r | |
| | NB - North TBM Tunnel - Invert Backfilling (Ch6975 to 6925- 50m) Stage 2 | 14 | 22-Dec-15 | 05-Jan-16 | | | | | | Backfilling (Ch6975 to 69 | |
| | NB - North TBM Tunnel - Invert Backfilling (Ch6925 to 6870 - 55m) Stage 2 | 14 | 05-Jan-16 | 19-Jan-16 | | | | NB | - North TBM Tunnel | - Invert Backfilling (Ch69 | 25 to 6870 - 55 |
| | NB - North TBM Tunnel - Invert Backfilling (Ch6870 to 6688 - 182m) Stage 2 | 77 | 19-Jan-16 | 11-Apr-16 | | | 1 1 1 | | | NB | - North TBM T |
| | CP53 - Excavation & Lining completion | 0 | | 16-Mar-16 | | | | | | CP53 - Excavation | n & Lining com |
| | North Approach Tunnel Internal Structure - SB SB - North TBM Tunnel - Invert Backfilling (Ch7205 to 7175 - 30m) | 8 | 10-Oct-15 | 18-Oct-15 | | SB - North TBM Tu | nel - Invert | Backfilling (Ch7205 to | 7175 - 30m) | | |
| | SB - North TBM Tunnel - Invert Backfilling (Ch7175 to 7125 - 50m) | 13 | 18-Oct-15 | 31-Oct-15 | | | | Invert Backfilling (Ch | | | |
| | SB - North TBM Tunnel - Invert Backfilling (Ch7125 to 7075 - 50m) | 13 | 31-Oct-15 | 13-Nov-15 | | <u>+</u> | | unnel - Invert Backfilli | | 50m) | |
| | SB - North TBM Tunnel - Invert Backfilling (Ch7075 to 7025 - 50m) | 13 | 13-Nov-15 | 26-Nov-15 | | | SB - Nort | TBM Tunnel - Invert E | ackfilling (Ch7075 to | o 7025 - 50m) | |
| | SB - North TBM Tunnel - Invert Backfilling (Ch7025 to 6975 - 50m) | 12 | 26-Nov-15 | 08-Dec-15 | | • | ; SB | · North TBM Tunnel - I | vert Backfilling (Ch | 7025 to 6975 - 50m) | |
| | SB - North TBM Tunnel - Invert Backfilling (Ch6975 to 6925- 50m) | 12 | 08-Dec-15 | 20-Dec-15 | | | | SB - North TBM Tu | nel - Invert Backfilli | ng (Ch6975 to 6925- 50m) |) |
| | SB - North TBM Tunnel - Invert Backfilling (Ch6925 to 6870 - 55m) | 12 | 20-Dec-15 | 01-Jan-16 | | | | | BM Tunnel - Invert B | ackfilling (Ch6925 to 6870 |) - 55m) |
| | SB - North TBM Tunnel - Invert Backfilling (Ch6870 to 6688 - 182m) | 77 | 01-Jan-16 | 21-Mar-16 | | | | | | SB - North TBN | /I Tunnel - Invei |
| | SB - North TBM Tunnel - Invert Backfilling (Ch6688 to 6560 - 182m) | 54 | 21-Mar-16 | 18-May-16 | | | | | | | |
| | North Approach Cross Passage CP55 - Traditional Method | | | | | | | | | | |
| | CP55 Platform Available from ML03 North Approach Tunnel Backfilling | 0 | 24-Oct-15 | | | ¢ ¢P55 Platform A | vailable fro | n ML03 North Approac | h Tunnel Backfilling | | |
| | CP55 Platform Available from ML02 North Approach Tunnel Backfilling | 0 | 31-Oct-15 | | | CP55 Platfor | nh Available | from ML02 North App | oach Tunnel Backfill | ing | |
| | CP54 - Traditional Method CP54 Platform Available from ML03 North Approach Tunnel Backfilling | 0 | 08-Dec-15 | | | | 🔶 СР | 54 Platform Available fi | om ML03 North App | roach Tunnel Backfilling | |
| | CP54 Platform Available from ML02 North Approach Tunnel Backfilling | 0 | 26-Nov-15 | | | • | CP54 Plat | form Available from MI | 02 North Approach | Tunnel Backf lling | |
| | CP53 - Pipe Jacking Method | | I | | | | , , , , , , , | | | | |
| | CP53 Platform Available from ML03 North Approach Tunnel Backfilling | 0 | 05-Jan-16 | | | | - - - - - | | | /L03 North Approach Tun | _ |
| | CP53 Platform Available from ML02 North Approach Tunnel Backfilling CP - Pipe Jacking TBM - Delivery, Assembly & Setup | 23 | 21-Dec-15 | 01-Feb-16 | | | | CP53 Platform Ava | | th Approach Tunnel Back | |
| | CP - Pipe Jacking Telvi - Delivery, Assembly & Setup CP - Pipe Jacking Method - Break-in, Excavation & Lining Installation | 9 | 05-Jan-16 01-Feb-16 | 10-Feb-16 | | | | | | g TBM - Delivery, Assem acking Method - Break-in, | |
| | CP - Pipe Jacking Method - Break out & Pipe Jacking TBM Removal | 10 | 10-Feb-16 | 20-Feb-16 | | | | | | Pipe Jacking Method - Bre | |
| | CP - Waterproofing, Finishing | 21 | 20-Feb-16 | 16-Mar-16 | | | 1 1 1 1 | | | CP - Waterproofin | |
| | CP52 - Pipe Jacking Method | | | | | | 1 1 1 1 | | | | |
| | CP52 Platform Available from ML03 North Approach Tunnel Backfilling | 0 | 30-Jan-16 | | | | 1 | | | ailable from ML03 North | |
| | CP52 Platform Available from ML02 North Approach Tunnel Backfilling | 0 | 12-Jan-16 | | | | 1 | CP52 F | latform Available fro | m ML02 North Approach | Tunnel Backfill |
| Page | 6 of 12 Planned Bar | TMCLK - Northern C | onnection Si | Jb-Sea Tunn | el Section | n | | 10 | Date Ri eb-14 TMCLK/DBJGEP | wision Checked | Approved SPo |
| | Planned Bar - Critical | | | | | | 富嘉 | 08-A 28-A | pr-14 TMCLK/DBJGEP ug-14 TMCLK/DBJGEP | //FRG/98507 WYU //FRG/98507 Rev.B SPa //FRG/98507 Rev.C CLa //FRG/98507 Rev.F WYu | WYu WYu WYu |
| | Planned Milestone | | orks Program | . , |) | Dra | 弐方台 gages gKong | BOUYGUES TRAMAUX PUBLICS | | | · |
| uata | Date: 20-Dec-15 | Three Mo | nths Rolling | Programme | | A member of the Bouygues Constru Dragages - Bouygues Joi | ction group nt Venture 寶嘉 | - 布依格聯營 | | | |
| | | Progre | ess as of 20- | Dec-15 | | | | | | | |

| Activity Name | Orig | DWPF Start | DWPF | | |
|--|-----------|------------------------|------------------------|---|-----------|
| | Dur | | Finish | 2015 Oct Nov Dec Jan Feb Mar Apr | May |
| CP - Pipe Jacking TBM - Delivery, Assembly & Setup | 23 | 01-Feb-16 | 05-Mar-16 | CP - Pipe Jacking TBM - Del | |
| CP - Pipe Jacking Method - Break-in, Excavation & Lining Installation | 9 | 05-Mar-16 | 14-Mar-16 | CP - Pipe Jacking Metho | d - Break |
| CP - Pipe Jacking Method - Break out & Pipe Jacking TBM Removal | 10 | 14-Mar-16 | 24-Mar-16 | CP - Pipe Jacking | Method - |
| CP51 - Traditional Method | | 1 1 | | | |
| CP51 Platform Available from ML02 North Approach Tunnel Backfilling | 0 | 10-Mar-16 | | ◆ CP51 Platform Available ĭr | om ML02 |
| CP50 - Pipe Jacking Method CP50 Platform Available from ML02 North Approach Tunnel Backfilling | 0 | 09-Apr-16 | | ◆ CP50 Plat | form Avai |
| North Ventilation Building | | | | | |
| Design Submission | | | | | |
| (A10) ACABAS Submissions ACABAS Approval | 28 | 16-Mar-14 | 12-Apr-14 | | |
| | 20 | 10-10/al - 14 | 12-Api-14 | | |
| (A11) Submissons to Design Advisory Panel of ArchSD ArchSD's comment | 30 | 10-Jun-14 | 09-Jul-14 | | |
| (I1) DDA for North Vent.Bldgs. GBP & Arch.Submission | | | | | |
| Designer to Reply RtC + Update Submission | 21 | 28-Jul-14 | 20-Aug-14 | | |
| Submit Updated DDA to SO/ ICE/ IPs | 0 | 21-Aug-14 | | | |
| ICEApproval & Issue Check Cert | 12 | 21-Aug-14 | 03-Sep-14 | | |
| Submit ICE Check Cert to SO | 6 | 04-Sep-14 | 11-Sep-14 | | |
| IPs Review | 28 | 21-Aug-14 | 17-Sep-14 | | |
| IP's No Objection Received | 0 | | 17-Sep-14 | | |
| SO's Review | 35 | 21-Aug-14 | 24-Sep-14 | | |
| SO Approval with Condition R eceived | 0 | | 24-Sep-14 | | |
| (I1) DDA for North & South Vent.Bldg. ABWF works | 1 | | | | |
| Preparation of DDANorth & SouthABWF | 18 | 25-Sep-14 | 17-Oct-14 | | |
| Review & Comment by JV | 24 | 18-Oct-14 | 14-Nov-14 | | |
| Designer prepare DDA | 15 | 15-Nov-14 | 02-Dec-14 | | |
| (I2) DDA for North Vent.Bldgs.Structural Design incl.Vent.Connections IPs/ SO's Advance Comments/ ICE Comments | 28 | 01-Nov-14 | 28-Nov-14 | | |
| Comments Received | 0 | 01-1404-14 | 28-Nov-14 | | |
| Designer to Reply RtC + Update Submission | 21 | 29-Nov-14 | 23-Dec-14 | | |
| Submit Updated DDA to SO/ ICE/ IPs | 0 | 23-Nov-14 24-Dec-14 | 23-Dec-14 | | |
| ICEApproval & Issue Check Cert | 12 | 24-Dec-14 24-Dec-14 | 09-Jan-15 | | |
| Submit ICE Check Cert to SO | 6 | 10-Jan-15 | 16-Jan-15 | | |
| | | | | | |
| IPs Review | 28 | 24-Dec-14 | 20-Jan-15 | | |
| IP's No Objection Received | 0 | 01.0 | 20-Jan-15 | | |
| SO's Review | 35 | 24-Dec-14 | 27-Jan-15 | | |
| SO Approval with Condition R eceived | 0 | | 27-Jan-15 | | |
| (I3) DDA for North & South Vent.Bldgs. Service and E&M Provision Preparation of DDANth VB Service and E&MS Provision | 18 | 12-Sep-14 | 04-Oct-14 | | |
| Review & Comment by JV | 24 | 06-Oct-14 | 01-Nov-14 | | |
| Designer prepare DDA | 15 | 03-Nov-14 | 19-Nov-14 | | |
| Formal Submission of DDAto ICE/ IPs | 0 | | 19-Nov-14 | | |
| Advanced Submission to SO | 0 | | 19-Nov-14 | | |
| IPs/ SO's Advance Comments/ ICE Comments | 28 | 20-Nov-14 | 17-Dec-14 | | |
| Comments Received | 0 | 20110111 | 17-Dec-14 | | |
| Designer to Reply RtC + Update Submission | 21 | 18-Dec-14 | 14-Jan-15 | | |
| Submit Updated DDAto SO/ ICE/ IPs | 0 | 15-Jan-15 | | | |
| ICEApproval & Issue Check Cert | 12 | 15-Jan-15 | 28-Jan-15 | | |
| Submit ICE Check Cert to SO | 6 | 29-Jan-15 | 04-Feb-15 | | |
| | 28 | | | | |
| IPs Review IPs No Objection Received | 0 | 15-Jan-15 | 11-Feb-15 11-Feb-15 | | |
| SO's Review | 35 | 15-Jan-15 | 11-Feb-15 18-Feb-15 | | |
| SU's Review SO Approval with Condition Received | 0 | 10-Jail-10 | 18-Feb-15 18-Feb-15 | | |
| | U | | 10-1-60-10 | | |
| (J2) Tower Crane Foundation for Ventilation Building ICE Approval & Issue Check Cert | 12 | 17-Sep-15 | 02-Oct-15 | ICE Approval & Issue Check Cert | |
| Submit ICE Check Cert to SO | 6 | 03-Oct-15 | 09-Oct-15 | Submit lÇE Check Cert to SO | |
| IPs Review | 28 | 17-Sep-15 | 14-Oct-15 | IPs Réview | |
| IP's No Objection Received | 0 | | 14-Oct-15 | ♦ IP's No Objection Received | |
| SO's Review | 35 | 17-Sep-15 | 21-Oct-15 | SQ's Review | |
| SO Approval with Condition R eceived | 0 | · · · · · | 22-Oct-15 | ♦ SQ Approval with Condition Received | |
| (C3) DDA for North Vent Shaft & Duct Permanent Structure | | | - | | |
| Review & Comment by JV | 18 | 28-Aug-14 | 18-Sep-14 | | |
| Designer prepare DDA | 10 | 19-Sep-14 | 30-Sep-14 | | |
| Formal Submission of DDA to ICE/ IPs | 0 | | 30-Sep-14 | | |
| Advanced Submission to SO | 0 | | 30-Sep-14 | | |
| IPs/ SO's Advance Comments/ ICE Comments | 28 | 01-Oct-14 | 28-Oct-14 | | |
| Comments Received | 0 | | 28-Oct-14 | | |
| Page 7 of 12 TMCLK - No | orthern C | Connection Su | b-Sea Tunne | el Section | oproved |
| Planned Bar - Critical | | | | 08-Apr-14 TMCLKDBJGEN/PRG98507 Rev.B SPa WYu 28-Aug-14 TMCLKDBJGEN/PRG98507 Rev.C CLa WYu | |
| | tailed W | orks Program | me (Rev. F) | 音寶嘉 Pragages Pragages Progkong | |
| Data Date: 20-Dec-15 Progress bar ♦ Progress Milestone T | hree Mo | onths Rolling I | Programme | HongKong A metter of the Bouygeus Construction group Drogoges - Bouygeus - Bouygeus - 市价格等管 | |
| | | - | - | eregenges eestykkeestenni teinere atas if DVID W 20 | |
| | riogi | ess as of 20- | Dec-10 | | |

| Activity Name | | | Orig | DWPF Start | DWPF | | | | | | | | | |
|---|---|-------------------|-----------------------|----------------------------|-------------------|-------|------------------|---|-----------------------|-----------------------------|---|---|-------------------|----------------|
| | | | Dur | | Finish | | Oct | 2015 Nov | De | c Jan | Feb | 2016 Mar | Apr | May |
| Designer to Reply RtC + Update Submiss | sion | | 21 | 29-Oct-14 | 21-Nov-14 | | | | - | | | | | |
| Submit Updated DDAto SO/ ICE/ IPs | | | 0 | 22-Nov-14 | | F | | | | | | | | |
| ICEApproval & Issue Check Cert | | | 12 | 22-Nov-14 | 05-Dec-14 | | | | 1 1 1 | | 1 1 1 | | | |
| Submit ICE Check Cert to SO | | | 6 | 06-Dec-14 | 12-Dec-14 | ļ | | | i | | , , , ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | | | |
| IPs Review | | | 28 | 22-Nov-14 | 19-Dec-14 | | | | 1 1 1 | | - - - - | | | |
| IP's No Objection Received | | | 0 | | 19-Dec-14 | F | 1 | | 1 | | | | | |
| SO's Review | | | 35 | 22-Nov-14 | 26-Dec-14 | _ | | | | | | | | |
| SO Approval with Condition R eceived | | | 0 | | 27-Dec-14 | | | | 1 | | | | | |
| (D9) DDA Temporary suppo SO's Review | rt and dewatering measures for Ve | nt Duct ELS desi | gn for l 35 | Northern Land 19-Aug-15 | fall 22-Sep-15 | | SO's Review | ; ; ; ; | ; ; ; | | | | - | |
| SO Approval with Condition R eceived | | | 0 | | 22-Sep-15 | _ | SO Approval with | | ved | | 1 | | | |
| | S design of ventilation duct and its | o connectione wi | | ding and tupp | | | | | | | | | | |
| 1st Submission GEO Review | S design of ventilation duct and its | s connections wi | 28 | 02-Sep-15 | 29-Sep-15 | | 1st Submissio | h GEO Review | 1 | | | | | |
| Received GEO Comment | | | 0 | | 29-Sep-15 | | Received GE | o Comment | - | | | | | |
| Prepare Response to Comment | | | 12 | 30-Sep-15 | 14-Oct-15 | | Prepa | te Response to | Çomment | | | | | |
| 2nd Submission to GEO | | | 0 | | 14-Oct-15 | _ | 🔷 2nd S | ubmission to GE | : o | | | | | |
| 2nd GEO Review | | | 28 | 15-Oct-15 | 11-Nov-15 | - | | 2nd G | O Review | | | | | |
| North Surface Roadworks, Ut | ility & Drainage works | | | | | - | | | | | | | | |
| Design Submission | | | | | | | | | | | | | | |
| (A20) DDA for Traffic Sign, F SO's Review | Road Marking, Street Furnitures, Sig | gn Gantry & etc | 35 | 11-Dec-14 | 14-Jan-15 | | 1 1 1 | 1 | 1 1 1 | | 1 1 1 | | 1 1 1 | |
| SO Approval with Condition R eceived | | | 0 | | 14-Jan-15 | _ | | | | | 1 | | | |
| | inage, Waterworks & Utility works f | for North Landfal | 1 | | | | | | 1 | | | | | |
| IPs Review | mago, materworks a ounity works | | 28 | 08-Nov-14 | 05-Dec-14 | | | | - | | | | | |
| IP's No Objection Received | | | 0 | | 05-Dec-14 | E | | | + | | | | | |
| SO's Review | | | 35 | 08-Nov-14 | 12-Dec-14 | _ | | | - - - - | | | | | |
| SO Approval with Condition R eceived | | | 0 | | 12-Dec-14 | - | | | 1 | | 1 1 1 | | 1 1 1 | |
| Sub-sea Tunnel | | | | | | | | | 1 1 1 | | 1 | | | |
| Sub-sea TBM Tunnelling | | | | | | | | | ; ; ; ; | | ; ; ; | , , , , | | |
| Major Procurement | | | | | | | | 1 | | | | | | |
| S881 - S881 - 13.6m dia - TBM - Manufacturing - | Cutterhead | | 257 | 18-Jul-14 | 03-Jun-15 | | | | | | | | | |
| S881 - 13.6m dia - TBM - Workshop Asse | mbly | | 70 | 02-Feb-15 | 06-May-15 | - | | | - | | | | | |
| S881 - 13.6m dia - TBM - Workshop Acce | ptance Test | | 0 | | 06-May-15 | - | 1 1 1 | 1 | 1 1 1 | | 1 1 1 | | 1 1 1 | |
| S881 - 13.6m dia - TBM - Disassembly a | nd Packing for Transport | | 16 | 07-May-15 | 26-May-15 | sport | t! | | ¦ | | | | | |
| S881 - 13.6m dia - TBM - Delivery | | | 20 | 27-May-15 | 15-Jun-15 | - | | | - | | | | | |
| S881 - 13.6m dia - TBM - Arrival to site | | | 0 | | 15-Jun-15 | _ | | | | | | | | |
| Precast Semanet ID12 40 - F | Prodcution for Sub-sea TBM Tunne | <u></u> | | | | | | | 1 | | | | 1 | |
| ID 12.40 TBM Segment Ring Fabrication - | | ~ | 300 | 22-Nov-14 | 19-Dec-15 | ⊨ | 1 | : | : | ID12.40 TBM Segm | ¦ Ient Ring Fabric | ation - 12 rings pe | er day | |
| Design Submission | | | | | | | | + | 1 | | | | | |
| (B6) Risk Assessment of Su CLP Review (4 weeks) | bmarine Cable - Tunnelling Works | | 28 | 17-Mar-15 | 13-Apr-15 | | | | - - - - | | | | | |
| CLP Comment Received | | | 0 | | 13-Apr-15 | _ | | | | | | | | |
| SO's Condition Approval | | | 35 | 12-Mar-15 | 15-Apr-15 | ┢ | | | 1 | | | | | |
| | ning Structural Design Sub assit | unnol | | | 1074110 | | - | | ; ; ; | | | | | |
| Sub-sea TBM Tunnel Segment - Fabricati | ning Structural Design - Sub-sea to on | unnei | 265 | 06-Oct-14 | 29-Aug-15 | ТВМ | Tunnel Segment | Fabrication | 1 | | | | 1 | |
| (G3) DDA for TBM Tunnel In | ternal Structures (Sub-sea) | | | | | | | | - | | | | | |
| Sub-sea Tunnel - Precast Gallery Fabrica | | | 244 | 22-Jan-15 | 21-Nov-15 | | i 1 | ; \$ | j bub-sea Tur | nel - Precast Gallery | Fabrication | | 1 | |
| Construction | | | | | | | | | | | ¦ | | · | ļ |
| Sub-sea TBM Tunnel - NB II NB TBM Change diameter at North Ventila | | | 87 | 30-Dec-15 | 01-Apr-16 | | | | | | | | NB TBM Ch | |
| | | | | 00 000 10 | | | | 1 | 1 | | 1 | 1 | | iqi iye ulali |
| Sub-sea TBM Tunnel - SB ID SB - S882 TBM Crossing within NVS Stee | | | 7 | 03-Jan-16 | 10-Jan-16 | | | | - | SB - SE | k 18 2 TBM Crossi | ng within NVS Ste | el bell | |
| SB - Sub-sea TBM Tunnel - Transition wit | h Saturation (Ch6543 to 6521 - 22m) | | 5 | 10-Jan-16 | 15-Jan-16 | - | | | | 📕 SB - | şub-sea TBM T | Funnel - Transition | with Saturation | , (Ch6543 t |
| SB - Sub-sea TBM Tunnel - Transition wit | h Saturation (Ch6521 to 6451 - 70m) | | 15 | 15-Jan-16 | 30-Jan-16 | | | ; + | | | SB - Sub-se | a TBM Tunnel - Ti | ransition with Sa | aturation (0 |
| SB - Sub-sea TBM Tunnel - Transition wit | h Saturation (Ch6451 to 6371 - 80m) | | 17 | 30-Jan-16 | 19-Feb-16 | - | 1 1 1 | 1 | 1 1 1 | | | B - Sub-sea TBM | 1 | 1 |
| SB - Sub-sea TBM Tunnel - Transition wit | h Saturation (Ch6371 to 6321 - 50m) | | 10 | 19-Feb-16 | 29-Feb-16 | - | | 1 | 1 1 1 | | | | TBM Tunnel - T | - |
| SB - Sub-sea TBM Tunnel - CDG+Boulde | r with Saturation (Ch6321 to 6281 - 40m) | | 5 | 29-Feb-16 | 05-Mar-16 | - | | 1 | | | | SB - Sub-s | sea TBM Tunnel | -¦CDG+B |
| SB - Sub-sea TBM Tunnel - Steel Bell disi | | | 27 | 05-Mar-16 | 04-Apr-16 | _ | 1 1 1 | 1 | 1 1 1 | | 1 1 1 | | SB - Sub-s | 1 |
| Sub-sea TBM Tunnel - SB - | | | | | | | | | ; ; ; | | | | | |
| SB - ISIG Assembly for Sub-sea TBM Tur | | | 7 | 15-Jan-16 | 22-Jan-16 | | | | | | BB - ISIG Assem | bly for Sub-seaT | BM Tunnel | |
| Sub-sea Tunnel Cross Passag | je & Internal Structure | | | | | - | | | - | | | | | |
| Design Submission | Dormonont works that O | aniacl Assess | + 0.1 | | | | | | 1 | | 1 1 1 | | | |
| (G4) DDA for Cross Passage Review & Comment by JV | e - Permanent works - incl. Geotech | mical Assessmen | it - Sub 6 | -sea tunnel 01-Dec-14 | 06-Dec-14 | | | | | | | | | |
| Designer prepare DDA | | | 12 | 08-Dec-14 | 20-Dec-14 | | | | - | | | | 1 1 1 | |
| Formal Submission of DDAto ICE/ IPs | | | 0 | | 20-Dec-14 | | 1 1 | | | | | | | |
| Advanced Submission to SO | | | 0 | | 20-Dec-14 | - | | | | | | | | |
| IPs/ SO's Advance Comments/ ICE Com | ments | | 28 | 21-Dec-14 | 17-Jan-15 | - | | | | | | | | |
| | | | | | _ | | 1 | | | | 1 | | 1 | |
| Page 8 of 12 | Planned Bar | TMCLK - Nort | hern C | onnection Su | ıb-Sea Tunr | nel | Section | | | | | Revision DBJGEN/PRG/98507 | WYu S | Approved Po |
| Project ID: TMCLK DWPF 15W48 | Planned Bar - Critical | | | | | | | | 雪嘉 | 28- | Aug-14 TMCLK/ | DBJGEN/PRG/98507 Rev. DBJGEN/PRG/98507 Rev. DBJGEN/PRG/98507 Rev. | C CLa W | /Yu /Yu |
| - | Planned Milestone | Detai | nea Wo | orks Program | ime (Rev. F |) | | ア | 弐方古 gages gKong | BOUYGUES TRAVAUX PUBLICS | - MOLN | | | |
| Data Date: 20-Dec-15 | Progress bar Progress Milestone | Thi | ree Mo | onths Rolling | Programme |) | A me | mber of the Bouygues Constru Igages - Bouygues Joi | tion group | - 布依格聯營 | | | | |
| | | | Progr | ess as of 20 | Dec-15 | | | ,, | | | | | | |
| | | | Progr | ess as of 20- | Dec-15 | | | 7 <u>8-</u> 00.00 | - <i>25.4</i> 8 | | | | | |

| Inversion | ctivity Name | | Orig | DWPF Start | DWPF | | 0045 | | | | 0010 | | |
|--|---|--|-----------|----------------|---------------|--------------------|----------------------|--------------|-----------------------|------------------------------|---|------------------|-------------|
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| Image: second | | | | | | _ | | | | | | | |
| Image: section of the section of th | | | | | 11-Feb-15 | | | | | 1 1 1 1 | | | |
| NewNe | | | | | 04 Mar 15 | | | | | 1 1 1 1 | | | |
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| The CVM is S2000-Composing Sevent Heart V and CVM is 1III< | | | | | | | | | | | | | |
| InductorInducto | | Research Crowned Transforment for Curb and TDM | | 12-Feb-15 | 10-IVIdI - 13 | | | | | | | | |
| Non-right constrained00 | | - | | | 13-Jul-15 | CW No 15/2005 - | Cross Passage Gro | | ent for Sub-sea TBM T | unnel | | | |
| Non-RegressionNon-Re | 1st Submission GEO Review | | 28 | 14-Jul-15 | 10-Aug-15 | O Review | | | | | | | |
| 000 | Received GEO Comment | | 0 | | 10-Aug-15 | nment | | | | | | 1 1 1 | |
| Mark Software Mark Sof | Prepare Response to Comment | | 12 | 11-Aug-15 | 24-Aug-15 | sponse to Comme | ent | | | | | | |
| Name of the second of the se | 2nd Submission to GEO | | 0 | | 24-Aug-15 | sion to GEO | | | | | | | |
| ProductionalDDD <th< td=""><td>2nd GEO Review</td><td></td><td>28</td><td>25-Aug-15</td><td>21-Sep-15</td><td>2nd GEO Revi</td><td>iew</td><td></td><td></td><td></td><td></td><td></td><td></td></th<> | 2nd GEO Review | | 28 | 25-Aug-15 | 21-Sep-15 | 2nd GEO Revi | iew | | | | | | |
| Bit Control Control <thcontrol< th=""> <thcontrol< th=""> <thcontr< td=""><td>Received 2nd GEO Comment</td><td></td><td>0</td><td></td><td>21-Sep-15</td><td>Received 2nd</td><td>GEO Comment</td><td></td><td></td><td></td><td></td><td></td><td></td></thcontr<></thcontrol<></thcontrol<> | Received 2nd GEO Comment | | 0 | | 21-Sep-15 | Received 2nd | GEO Comment | | | | | | |
| Backbarner Barl | Prepare Respond to 2nd Comment | | 12 | 22-Sep-15 | 07-Oct-15 | Prepa | are Respond to 2nd (| Comment | | | | 1 | |
| Boathern Landill Southern Landill Boathern Landill Southern Landill TES (DAC NOT CAS Dava A popular) Range III Southern Landill TES (DAC Not CAS A popular) Range III Southern Landill Test Dava Test (DAC Landiel See A popular) Range IIII Southern Landill Test Southern Landiel See A popular Range IIII Southern Landiel See A popular Range Test Southern Landiel See A popular Range IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII | 3rd Submission to GEO | | 0 | | 07-Oct-15 | 🔶 3rd S | ubmission to GEO | | | | | | |
| Neuronal Notice Service Ser | 3rd GEO Review | | 28 | 08-Oct-15 | 04-Nov-15 | | 3rd GEO I | ¦ R¦eview | | | 1 1 1 | | |
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| Proceedings and Childs CS PR00 </td <td></td> <td></td> <td>18</td> <td>09-Dec-14</td> <td>31-Dec-14</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> | | | 18 | 09-Dec-14 | 31-Dec-14 | | | | | | | | |
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| Pri Schlanza Colman 22 Edametra 9 1 9 1 9 1 9 1 9 1 9 1 < | Formal Submission of DDAto ICE/ IPs | | 0 | | 13-Jan-15 | _ | | | | | | | |
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| Bergers Hay HS - Label Joins on 1 <t< td=""><td>IPs/ SO's Advance Comments/ ICE Comments</td><td></td><td>28</td><td>14-Jan-15</td><td>10-Feb-15</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<> | IPs/ SO's Advance Comments/ ICE Comments | | 28 | 14-Jan-15 | 10-Feb-15 | | | | | | | | |
| Basin Highend DOA's DC E (P) 4 44 Mo 15 4 44 Mo 15 Exclusion dissocination 10 44 Mo 15 10 Mo 16 Disfloring 10 44 Mo 15 10 Mo 16 Disfloring 10 44 Mo 15 10 Mo 16 Disfloring 10 10 Mo 15 10 Mo 15 Disfloring 10 Mo 15 10 Mo 15 10 Mo 15 Proceed of Dos Disch COC, Portal & ELS | Comments Received | | 0 | | 10-Feb-15 | | | | | | | | |
| 1074 approx 4 base check Code 14 1444-15 18-49-15 19 Bar ore 14 1444-15 18-59-16 19 Store 14-144-15 17-69-16 19 Store 19-16 19-16-16 19 Store 19-16-16 19-16-16 < | Designer to Reply RtC + Update Submission | | 21 | 11-Feb-15 | 13-Mar-15 | _ | | | | | | | |
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| 835. havies 54 54.44-5 0.49-75 93. JAP Temp. Support for South, C&C, Portal & LLS 09-2075 69-56-15 95. house 09 09-2075 09-56-15 95. house 09 09-4075 09-46-15 95. house 09 09-4075 09-4075 95. house <td>ICEApproval & Issue Check Cert</td> <td></td> <td>18</td> <td>14-Mar-15</td> <td>08-Apr-15</td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> | ICEApproval & Issue Check Cert | | 18 | 14-Mar-15 | 08-Apr-15 | - | | | | | | | |
| (F3) APT emp.Support for South.C&C, Portal & ELS 24 10.4 mm 48.4 mm PR. Notability 24 10.4 mm 48.4 mm 10.4 mm PR. Notability 24 10.4 mm 10.4 mm 10.4 mm PR. Notability 26 10.7 mm 10.7 mm 10.7 mm Sold Proteine 26 10.7 mm 10.7 mm 10.7 mm (F3) DDA Stand CS LL3 91 10.7 mm 20.4 mm 10.4 mm Providered Comment by 7V 91 27.4 mm 20.4 mm 10.4 mm Decore provide Comment by 7V 91 27.4 mm 20.4 mm 10.4 mm Providered Comment by 7V 91 27.4 mm 20.4 mm 10.4 mm 10.4 mm Decore provide Comment DDA Stand CB Ellos 0 20.4 mm 20.4 mm 10.4 mm <td< td=""><td>IPs Review</td><td></td><td>28</td><td>14-Mar-15</td><td>10-Apr-15</td><td></td><td></td><td></td><td></td><td></td><td></td><td> </td><td></td></td<> | IPs Review | | 28 | 14-Mar-15 | 10-Apr-15 | | | | | | | | |
| IP: Ruision Pin Ruision | SO's Review | | 35 | 14-Mar-15 | 17-Apr-15 | - | | | | | 1 1 1 | | |
| IP: Ruision Pin Ruision | (F3) AIP Temp. Support for Sout | h.C&C. Portal & ELS | | | | | | | | | | | |
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| Page 9 of 12 Planned Bar IMCLK - Northern Connection Sub-Sea Tunnel Section | Ige 9 of 12 | | orthern C | Connection Su | ıb-Sea Tun | nel Section | | | 08-8 | eb-14 TMCLKE pr-14 TMCLKE | DBJGEN/PRG/98507 DBJGEN/PRG/98507 Rev. | WYu S B SPa W | 8Po VYu |
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| *2nd Submission SO's Condition Approval (B5) AIP Construction Risk Assessment - Impact on South Landfall SO's Condition Approval (B5) DDA Construction Risk Assessment - Impact on South Landfall Proparation of Construction Risk Assessment - Impact on South Landfall Proparation of Construction Risk Assessment - Impact on South Landfall SO's Comments for 1st Submission Proparation of Construction Risk Assessment - Impact on South Landfall 2nd Submission ICE Cert. Issue SO's Condition Approval (E1) AIP Temp.works - Retrieval Shaft on Southern Landfall inc. break-out SO Approval with Condison Received (F1) DDA Temp.works - Retrieval Shaft on Southern Landfall inc. break-out Proparation of DDA Temp Support for Sth Retrieval Shaft Proparation of DDA Temp Support for Sth Retrieval Shaft Review & Comments / V Designer propare DDA Formal Submission of DDA to ICE/ IPS Advarced Submission SO IPs/ SO's Advance Comments / ICE Comments Comments Received Designer to Reply RIC + Update Submission Submit ICE Check Cert to SO IPs No Objection Received SO's Review SO Approval with Condison Received </th <th>Dur 0 35 35 36 0 35 0 35 0 35 0 35 0 10 0 10 0 10 0 10 0 10 0 10 0 12 0 12 0 12 0 12 0 12 0 12 0 12 0 12 0 12 0 12 0 12 0 12 0 12 0 12 0 12 12 0 12 12 12 12 12 12 12 12 12 12</th> <th>05-Jul-15 27-Jan-15 27-Jan-15 03-Mar-15 18-Apr-15 23-May-15 05-Jun-15 05-Jun-15 05-Jun-15 05-Jun-15 05-Jun-15 27-Apr-15 19-May-15 27-Apr-15 19-May-15 227-May-15 227-May-15 220-Jul-15</th> <th>Finish 04-Jul-15 08-Aug-15 02-Mar-15 02-Mar-15 17-Apr-15 22-May-15 04-Jun-15 04-Jun-15 04-Jun-15 04-Jun-15 09-Jul-15 20-Jan-15 20-Jan-15 20-Jan-15 20-Jan-15 20-Jan-15 20-Jan-15 22-May-15 26-May-15 26-May-15 23-Jun-15 23-Jun-15</th> <th>oval</th> <th>2015 Nov</th> <th></th> <th></th> <th>Jan F</th> <th>2016 Feb Mar</th> <th>Apr</th> | Dur 0 35 35 36 0 35 0 35 0 35 0 35 0 10 0 10 0 10 0 10 0 10 0 10 0 12 0 12 0 12 0 12 0 12 0 12 0 12 0 12 0 12 0 12 0 12 0 12 0 12 0 12 0 12 12 0 12 12 12 12 12 12 12 12 12 12 | 05-Jul-15 27-Jan-15 27-Jan-15 03-Mar-15 18-Apr-15 23-May-15 05-Jun-15 05-Jun-15 05-Jun-15 05-Jun-15 05-Jun-15 27-Apr-15 19-May-15 27-Apr-15 19-May-15 227-May-15 227-May-15 220-Jul-15 | Finish 04-Jul-15 08-Aug-15 02-Mar-15 02-Mar-15 17-Apr-15 22-May-15 04-Jun-15 04-Jun-15 04-Jun-15 04-Jun-15 09-Jul-15 20-Jan-15 20-Jan-15 20-Jan-15 20-Jan-15 20-Jan-15 20-Jan-15 22-May-15 26-May-15 26-May-15 23-Jun-15 23-Jun-15 | oval | 2015 Nov | | | Jan F | 2016 Feb Mar | Apr |
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| Reply to IPs Comments in RTC | 0 | | 17-Dec-14 | | | | | | | |
| ICEApproval & Issue of Desi gn Check Cert. | 18 | 18-Dec-14 | 10-Jan-15 | | | | | | | |
| Check Cert to SO | 0 | | 10-Jan-15 | | | | | | | |
| No Objection or Further Minor Comments from IPs Received | 0 | | 10-Jan-15 | | | + | | | | · - <mark>-</mark> |
| SO Review (35 Days) | 35 | 19-Dec-14 | 22-Jan-15 | | | | | | | |
| SO Approval with Condition R eceived | 0 | | 22-Jan-15 | | | | | | | |
| (F2) DDA Temp works of Ground Treatment for TBMs passing under Southern La | andfal | 1 | | | | | | | | |
| Review & Comment by JV | 18 | 27-Apr-15 | 18-May-15 | | | | | | | |
| Designer prepare DDA | 6 | 19-May-15 | 26-May-15 | | | T | | | | |
| Formal Submission of DDA to ICE/ IPs | 0 | | 26-May-15 | 1 | | | | | | |
| Advanced Submission to SO | 0 | | 26-May-15 | 1 | | | | | | |
| IPs/ SO's Advance Comments/ ICE Comments | 28 | 27-May-15 | 23-Jun-15 | IS | | | | | | |
| Comments Received | 0 | | 23-Jun-15 | 1 | | | | | | |
| Designer to Reply RtC + Update Submission | 21 | 24-Jun-15 | 18-Jul-15 | eSubmission | | ÷ | 1 | | | · - |
| Submit Updated DDA to SO/ ICE/ IPs | 0 | 20-Jul-15 | | E/ IPs | | 1 | | | | |
| ICEApproval & Issue Check Cert | 12 | 20-Jul-15 | 01-Aug-15 | eck Cert | | | | | | |
| Submit ICE Check Cert to SO | 6 | 03-Aug-15 | 08-Aug-15 | ert to SO | | | | | | |
| IPs Review | 28 | 20-Jul-15 | 16-Aug-15 | | | 1 | | | | |
| IP's No Objection Received | 0 | | 16-Aug-15 | n Received | | · + | | | | |
| SO's Review | 35 | 20-Jul-15 | 23-Aug-15 | | | | | | | |
| SO Approval with Condition Received | 0 | | 24-Aug-15 | with Condition Re | ceived | | | | | |
| (F4) Gantry Crane Support/Foundations in Southern Landfall | | | | | | | | | | |
| Preparation of IFA Gantry Crane / Foundation | 18 | 27-Jul-15 | 15-Aug-15 | A Gantry Crane / F | oundation | | | | | |
| Review & Comment by JV | 18 | 17-Aug-15 | 05-Sep-15 | ew & Comment by | JV | | 1 | | | · - · - · - · - · · · · · · · · · · · · |
| Designer prepare IFA | 10 | 07-Sep-15 | 17-Sep-15 | Designer prepare | IFĄ | 1 | | | | |
| | | | | L | | | · · · · · | | , | |
| 10 of 12 Planned Bar TMCLK - Northe | ern Co | onnection Su | ıb-Sea Tunı | nel Section | | | | Date 12-Feb-14 08-Apr-14 | Revision TMCLK/DBJGEN/PRG/98507 TMCLK/DBJGEN/PRG/98507 R | |
| t ID: TMCLK DWPF 15W48 Planned Bar - Critical | ed Wo | orks Program | ime (Rev. F | ·) | | 寶嘉 | | 28-Aug-14 10-Jun-15 | TMCLK/D BJGEN/PR G/98507 R TMCLK/D BJGEN/PR G/98507 R | ev.C CLa W |
| Progress bar | | _ | | - | Drag | gages gKong | BOUYGUE TRAVAUX PUBLI | ě | | |
| Progress Milestone Three | e Mo | onths Rolling I | Programme | | A member of the Bouygues Constru Dragages - Bouygues Joi | stion group | | 1 | | |

| ity Name | Or | rig | DWPF Start | DWPF | |
|---|---|--|--|---|---|
| | Di | | | Finish | 2015 2016 Oct Nov Dec Jan Feb Mar Apr M |
| Formal Submission of IFA to ICE/ IPs | 0 | 0 | | 17-Sep-15 | Formal Submission of IFA to ICE/ IPs |
| Advanced Submission to SO | 0 | D | | 17-Sep-15 | Advanced Submission to SO |
| IPs/ SO's Advance Comments/ ICE Comments | 28 | 8 | 18-Sep-15 | 15-Oct-15 | IPs/ SO's Advance Comments / ICE Comments |
| Comments Received | 0 | 0 | | 15-Oct-15 | Comments Received |
| Designer to Reply RtC + Update Submission | 2. | :1 | 16-Oct-15 | 10-Nov-15 | Designer to Reply RtC + Update Submission |
| Submit Updated IFA to SO/ ICE/ IPs | 0 | h | 11-Nov-15 | | ◆ Submit Updated A to SO/ ICE/ IPs |
| ICEApproval & Issue Check Cert | 12 | | | 04 Nov 15 | |
| | | | 11-Nov-15 | 24-Nov-15 | CEApproval & Issue Check Cert |
| IPs Review | 28 | 8 | 11-Nov-15 | 08-Dec-15 | IPsReview |
| IP's No Objection Received | 0 | D | | 08-Dec-15 | No Objection Received |
| SO's Review | 35 | 5 | 11-Nov-15 | 15-Dec-15 | SO's Review |
| SO Approval with Condition R eceived | 0 | D | | 15-Dec-15 | SO Approval with Condition R eceived |
| Method Statement Submission | | | | | |
| Method Statement of Construction Methodology of Retrieval Shaft | | | - | | |
| Preparation Method Statement for Retrieval Shaft | 25 | !5 | 24-Aug-15 | 21-Sep-15 | Preparation Method Statement for Retrieval Shaft |
| Submit Method Statement to SO | 0 | D | | 21-Sep-15 | Submit Method Statement to SO |
| SO Reviews & Comments | 28 | 8 | 22-Sep-15 | 19-Oct-15 | SO Reviews & Comments |
| Re-submission | 18 | 8 | 20-Oct-15 | 10-Nov-15 | Re-submission |
| SO's Review | 28 | 8 | 11-Nov-15 | 08-Dec-15 | SO's Review |
| | | | | | |
| SO's Approval | 0 | | | 08-Dec-15 | Sels Approval |
| Construction South Landfall GI Works/DW Setting Up | 48 | 8 | 06-400-15 | 02-Oct-15 | South Loodfall CI Wark/OW/Sotting Lin |
| | | | 06-Aug-15 | | South Landfall GI Works/DW, Setting Up |
| South Retrieval Shaft - Diaphragm Wall | 98 | | 03-Oct-15 | 29-Jan-16 | South Retrieval Shaft - Diaphragm Wall |
| Retrieval Shaft - Excavation - Soft by ramp | 3 | 3 | 30-Jan-16 | 02-Feb-16 | Retrieval Shaft - Excavation Soft by ramp |
| Retrieval Shaft - Excavation - Soft by vertical mean (Fill material | 52 | 2 | 03-Feb-16 | 14-Apr-16 | Retrieval |
| _South Approach Ramp | | | | | |
| Construction | | | | | |
| Appoach Ramp (CH1580-1850) - Pipe Pile/Sheet Piles Wall | 12 | 26 | 03-Oct-15 | 09-Mar-16 | Appoach/Ramp (CH1580-18 |
| Appoach Ramp (CH1580-1850) - Tension Piles | 10 | 03 | 03-Oct-15 | 04-Feb-16 | Appoach Ramp (CH1580-1850) - Tension Piles |
| Appoach Ramp (CH1580-1850) - Pile Test | 24 | 4 | 05-Feb-16 | 10-Mar-16 | Appoach Ramp (CH1580-18 |
| South Ventilation Building | | | | | |
| Design Submission | | | | | |
| (I1) DDA for South Vent.Bldg. GBP & Arch.Submission | | | | | |
| Designer to Reply RtC + Update Submission | 2' | 1 | 27-Nov-14 | 20-Dec-14 | |
| Submit Updated DDAto SO/ ICE/ IPs | 0 | D | 22-Dec-14 | | |
| ICEApproval & Issue Check Cert | 18 | 8 | 22-Dec-14 | 14-Jan-15 | |
| Submit ICE Check Cert to SO | 6 | 6 | 15-Jan-15 | 21-Jan-15 | |
| IPs Review | 28 | 8 | 22-Dec-14 | 18-Jan-15 | |
| IP's No Objection Received | 0 | n | | 18-Jan-15 | |
| | | | | | |
| SO's Review | 35 | 5 | 22-Dec-14 | 25-Jan-15 | |
| SO Approval with Condition R eceived | 0 | 0 | | 26-Jan-15 | |
| (I2) DDA for South Vent.Bldg. Foundation Design | | | | | |
| Review & Comment by JV | 18 | 8 | 27-Apr-15 | 18-May-15 | |
| Designer prepare DDA | 10 | 0 | 19-May-15 | 30-May-15 | |
| Formal Submission of DDA to ICE/ IPs | 0 | D | | 30-May-15 | |
| Advanced Submission to SO | 0 | 0 | | 30-May-15 | |
| IPs/ SO's Advance Comments/ ICE Comments | 28 | 8 | 31-May-15 | 27-Jun-15 | ents |
| Comments Received | 0 | | | 27-Jun-15 | |
| | | | | | |
| Designer to Reply RtC + Update Submission | 2. | | 29-Jun-15 | 23-Jul-15 | late Submission |
| Submit Updated DDA to SO/ ICE/ IPs | 0 | D | 24-Jul-15 | | CE/ IPs |
| ICEApproval & Issue Check Cert | 18 | 8 | 24-Jul-15 | 13-Aug-15 | sue Oheck Cert |
| IPs Review | 28 | 8 | 24-Jul-15 | 20-Aug-15 | |
| SO's Review | 35 | 5 | 24-Jul-15 | 27-Aug-15 | |
| | | | | | |
| (12) DDA for South Vent Rida Structural Design incl. Vent Connections | | | 18-Feb-15 | 17-Mar-15 | |
| (12) DDA for South Vent.Bldg.Structural Design incl.Vent.Connections Review & Comment by JV | 18 | 8 | | | |
| | | | 18-Mar-15 | 28-Mar-15 | |
| Review & Comment by JV Designer prepare DDA | 18 | 0 | | | |
| Review & Comment by JV Designer prepare DDA Formal Submission of DDA to ICE/ IPs | 18 10 0 | 0 D | | 28-Mar-15 | |
| Review & Comment by JV Designer prepare DDA | 18 | 0 D | | | |
| Review & Comment by JV Designer prepare DDA Formal Submission of DDAto ICE/ IPs | 18 10 0 | 0 D D | | 28-Mar-15 | |
| Review & Comment by JV Designer prepare DDA Formal Submission of DDAto ICE/ IPs Advanced Submission to SO | | 0 D D 8 | 18-Mar-15 | 28-Mar-15 28-Mar-15 | |
| Review & Comment by JV Designer prepare DDA Formal Submission of DDA to ICE/ IPs Advanced Submission to SO IPs/ SO's Advance Comments/ ICE Comments | 18 10 0 0 28 | 0 0 0 0 88 0 | 18-Mar-15 | 28-Mar-15 28-Mar-15 25-Apr-15 | |
| Review & Comment by JV Designer prepare DDA Formal Submission of DDA to ICE/ IPs Advanced Submission to SO IPs/ SO's Advance Comments/ ICE Comments Comments Received Designer to Reply RtC + Update Submission | 18 10 0 28 0 | 0 0 0 0 88 0 | 18-Mar-15 29-Mar-15 | 28-Mar-15 28-Mar-15 25-Apr-15 25-Apr-15 | |
| Review & Comment by JV Designer prepare DDA Formal Submission of DDA to ICE/ IPs Advanced Submission to SO IPs/ SO's Advance Comments/ ICE Comments Comments Received | 18 10 0 28 0 | 0 0 0 0 18 0 11 1 | 18-Mar-15 29-Mar-15 | 28-Mar-15 28-Mar-15 25-Apr-15 25-Apr-15 | Designer to Reply RtC + Update Subthission |
| Review & Comment by JV Designer prepare DDA Formal Submission of DDA to ICE/ IPs Advanced Submission to SO IPs/ SO's Advance Comments/ ICE Comments Comments Received Designer to Reply RtC + Update Submission (J1) DDA Temp.works for Construction of Sth.Vent.Bldg. | 18 10 0 28 0 22 | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 18-Mar-15 29-Mar-15 27-Apr-15 | 28-Mar-15 28-Mar-15 25-Apr-15 25-Apr-15 21-May-15 | Designer to Reply RtC + Update Submission Submit Updated DDAto SO/ ICE/ IPst |
| Review & Comment by JV Designer prepare DDA Formal Submission of DDA to ICE/ IPs Advanced Submission to SO IPs/ SO's Advance Comments/ ICE Comments Comments Received Designer to Reply RtC + Update Submission (J1) DDA Temp.works for Construction of Sth.Vent.Bldg. Designer to Reply RtC + Update Submission | 18 10 00 28 00 22 7 | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 18-Mar-15 29-Mar-15 27-Apr-15 24-Aug-15 | 28-Mar-15 28-Mar-15 25-Apr-15 25-Apr-15 21-May-15 | Submit Updated DDA to SO/ ICE/ IPs |
| Review & Comment by JV Designer prepare DDA Formal Submission of DDA to ICE/ IPs Advanced Submission to SO IPs/ SO's Advance Comments/ ICE Comments Comments Received Designer to Reply RtC + Update Submission (J1) DDA Temp.works for Construction of Sth.Vent.Bldg. Designer to Reply RtC + Update Submission Submit Updated DDA to SO/ ICE/ IPs ICEApproval & Issue Check Cert | 18 10 0 28 0 22 2 2 2 0 22 0 12 | 0 0 0 88 0 11 11 11 0 0 2 | 18-Mar-15 29-Mar-15 27-Apr-15 27-Apr-15 24-Aug-15 17-Sep-15 17-Sep-15 | 28-Mar-15 28-Mar-15 25-Apr-15 25-Apr-15 21-May-15 16-Sep-15 02-Oct-15 | Submit Updated DDA to SO/ ICE/ IPs |
| Review & Comment by JV Designer prepare DDA Formal Submission of DDA to ICE/ IPs Advanced Submission to SO IPs/ SO's Advance Comments/ ICE Comments Comments Received Designer to Reply RtC + Update Submission (J1) DDA Temp.works for Construction of Sth.Vent.Bldg. Designer to Reply RtC + Update Submission Submit Updated DDA to SO/ ICE/ IPs ICEApproval & Issue Check Cert Submit ICE Check Cert to SO | 18 10 0 0 28 0 22 22 0 12 12 12 12 12 12 12 12 | 0 0 0 88 0 0 11 11 0 0 2 2 | 18-Mar-15 29-Mar-15 27-Apr-15 24-Aug-15 17-Sep-15 17-Sep-15 03-Oct-15 | 28-Mar-15 28-Mar-15 25-Apr-15 25-Apr-15 21-May-15 16-Sep-15 02-Oct-15 09-Oct-15 | Submit Updated DDA to SO/ ICE/ IPs ICE Approval & Issue Check Cert Submit ICE Check Cert to SO |
| Review & Comment by JV Designer prepare DDA Formal Submission of DDAto ICE/ IPs Advanced Submission to SO IPs/ SO's Advance Comments/ ICE Comments Comments Received Designer to Reply RtC + Update Submission (J1) DDA Temp.works for Construction of Sth.Vent.Bldg. Designer to Reply RtC + Update Submission Submit Updated DDAto SO/ ICE/ IPs ICE Approval & Issue Check Cert | 18 10 0 28 0 22 2 2 2 0 22 0 12 | 0 0 0 88 0 0 11 11 0 0 2 2 | 18-Mar-15 29-Mar-15 27-Apr-15 27-Apr-15 24-Aug-15 17-Sep-15 17-Sep-15 | 28-Mar-15 28-Mar-15 25-Apr-15 25-Apr-15 21-May-15 16-Sep-15 02-Oct-15 | Submit Updated DDA to SO/ ICE/ IPs |
| Review & Comment by JV Designer prepare DDA Formal Submission of DDA to ICE/ IPs Advanced Submission to SO IPs/ SO's Advance Comments/ ICE Comments Comments Received Designer to Reply RtC + Update Submission (J1) DDA Temp.works for Construction of Sth.Vent.Bldg. Designer to Reply RtC + Update Submission Submit Updated DDA to SO/ ICE/ IPs ICE Approval & Issue Check Cert Submit ICE Check Cert to SO IPs Review | 18 10 0 0 28 0 22 22 0 12 12 12 12 12 12 12 12 | 0 0 0 88 0 0 11 11 0 0 2 2 | 18-Mar-15 29-Mar-15 27-Apr-15 24-Aug-15 17-Sep-15 17-Sep-15 03-Oct-15 | 28-Mar-15 28-Mar-15 25-Apr-15 25-Apr-15 21-May-15 16-Sep-15 02-Oct-15 09-Oct-15 | Submit Updated DDA to SO/ ICE/ IPs ICE Approval & Issue Check Cert Submit ICE Check Cert to SO IPs Review |
| Review & Comment by JV Designer prepare DDA Formal Submission of DDA to ICE/ IPs Advanced Submission to SO IPs/ SO's Advance Comments/ ICE Comments Comments Received Designer to Reply RtC + Update Submission (J1) DDA Temp.works for Construction of Sth.Vent.Bldg. Designer to Reply RtC + Update Submission Submit Updated DDA to SO/ ICE/ IPs ICE Approval & Issue Check Cert Submit ICE Check Cert to SO IPs Review | 18 10 0 28 0 28 0 28 0 29 0 12 0 12 0 0 12 0 0 12 0 0 12 0 0 12 10 0 10 10 10 10 10 10 10 10 | 0 0 0 18 0 11 11 0 2 6 8 8 | 18-Mar-15 29-Mar-15 27-Apr-15 24-Aug-15 17-Sep-15 17-Sep-15 03-Oct-15 | 28-Mar-15 28-Mar-15 25-Apr-15 25-Apr-15 21-May-15 16-Sep-15 02-Oct-15 09-Oct-15 14-Oct-15 | Submit Updated DDA to SO/ ICE/ IPs: ICE Approval & Issue Check Cert Submit ICE Check Cert to SO IPs Review nel Section |
| Review & Comment by JV Designer prepare DDA Formal Submission of DDAto ICE/ IPs Advanced Submission to SO IPs/ SO's Advance Comments/ ICE Comments Comments Received Designer to Reply RtC + Update Submission (J1) DDA Temp.works for Construction of Sth.Vent.Bldg. Designer to Reply RtC + Update Submission Submit Updated DDAto SO/ ICE/ IPs ICE Approval & Issue Check Cert Submit ICE Check Cert to SO IPs Review 11 of 12 Planned Bar TMCL TMCL | 18 10 0 22 0 22 0 22 0 12 22 0 12 22 0 12 22 0 12 22 0 12 12 12 12 12 12 12 12 12 12 | 0 0 88 0 0 11 11 2 2 6 88 88 | 18-Mar-15 29-Mar-15 27-Apr-15 27-Apr-15 17-Sep-15 17-Sep-15 03-Oct-15 17-Sep-15 | 28-Mar-15 28-Mar-15 25-Apr-15 25-Apr-15 21-May-15 16-Sep-15 02-Oct-15 09-Oct-15 14-Oct-15 | Submit Updated DDA to SO/ ICE/ IPs: ICEApproval & Issue Check Cert Submit ICE Check Cert to SO IPs Review Inel Section Table The Interview The In |
| Review & Comment by JV Designer prepare DDA Formal Submission of DDA to ICE/ IPs Advanced Submission to SO IPs/ SO's Advance Comments/ ICE Comments Comments Received Designer to Reply RtC + Update Submission (J1) DDA Temp.works for Construction of Sth.Vent.Bldg. Designer to Reply RtC + Update Submission Submit Updated DDA to SO/ ICE/ IPs ICE Approval & Issue Check Cert Submit ICE Check Cert to SO IPs Review 11 of 12 Ct ID: TMCLK DWPF 15W48 | 18 10 0 22 0 22 0 22 0 12 22 0 12 22 0 12 22 0 12 22 0 12 12 12 12 12 12 12 12 12 12 | 0 0 88 0 0 11 11 2 2 6 88 88 | 18-Mar-15 29-Mar-15 27-Apr-15 24-Aug-15 17-Sep-15 17-Sep-15 03-Oct-15 17-Sep-15 | 28-Mar-15 28-Mar-15 25-Apr-15 25-Apr-15 21-May-15 16-Sep-15 02-Oct-15 09-Oct-15 14-Oct-15 | Submit Updated DDA to SO/ ICE/ IPs; ICE Approvat & Issue Check Cert Submit ICE Check Cert to SO IPs Review Inel Section 遵告中:14 TMCLKOBUGENPRG88507 Rev: D SPa WYu 28-4pr:14 10:4:up:14 TMCLKOBUGENPRG88507 Rev: D SPa 10:4:up:14 TMCLKOBUGENPRG88507 Rev: C CLa WYu 28-4pr:14 10:4:up:14 TMCLKOBUGENPRG88507 Rev: C CLa |
| Review & Comment by JV Designer prepare DDA Formal Submission of DDAto ICE/ IPs Advanced Submission to SO IPs/ SO's Advance Comments/ ICE Comments Comments Received Designer to Repty RtC + Update Submission (J1) DDA Temp.works for Construction of Sth.Vent.Bldg. Designer to Repty RtC + Update Submission Submit Updated DDAto SO/ ICE/ IPs ICE Approval & Issue Check Cert Submit ICE Check Cert to SO IPs Review 11 of 12 Planned Bar TMCL TMCL | 18 10 0 22 0 22 0 22 0 22 0 22 0 12 0 12 0 12 0 12 0 12 0 12 0 12 0 12 0 12 0 12 0 12 0 12 0 12 0 12 12 13 14 15 16 17 18 19 10 10 10 11 12 12 13 <td< td=""><td>0 0 0 88 0 0 11 2 3 3 88 7 88 7 88 7 88 7 88 7 88 7 88</td><td>18-Mar-15 29-Mar-15 27-Apr-15 27-Apr-15 17-Sep-15 17-Sep-15 03-Oct-15 17-Sep-15</td><td>28-Mar-15 28-Mar-15 25-Apr-15 25-Apr-15 21-May-15 16-Sep-15 02-Oct-15 09-Oct-15 14-Oct-15 D-Sea Tunn me (Rev. F</td><td>Submit Updated DDA to SO/ ICE/ IPS: ICE Approval & Issue Check Cert Submit ICE Check Cert to SO IPs Review Inel Section =)</td></td<> | 0 0 0 88 0 0 11 2 3 3 88 7 88 7 88 7 88 7 88 7 88 7 88 | 18-Mar-15 29-Mar-15 27-Apr-15 27-Apr-15 17-Sep-15 17-Sep-15 03-Oct-15 17-Sep-15 | 28-Mar-15 28-Mar-15 25-Apr-15 25-Apr-15 21-May-15 16-Sep-15 02-Oct-15 09-Oct-15 14-Oct-15 D-Sea Tunn me (Rev. F | Submit Updated DDA to SO/ ICE/ IPS: ICE Approval & Issue Check Cert Submit ICE Check Cert to SO IPs Review Inel Section =) |

| ity Name | Orig | DWPF Start | DWPF | | | | | | | | | | |
|--|---|---|--|------------------------------|---------------------------------------|-------------------|--|-----------|----------------|---|---|---|--|
| | Dur | | Finish | | Oct | 2015 Nov | De | c | Jan | Feb | 2016 Mar | Apr | May |
| IP's No Objection Received | 0 | | 14-Oct-15 | | | lo Objection Rec | | | | | | | |
| SO's Review | 35 | 17-Sep-15 | 21-Oct-15 | | S | o's Review | | | | | | | |
| SO Approval with Condition R eceived | 0 | | 22-Oct-15 | 1 | ♦ S | O Approval with | Condition | eceive | d | | | | |
| Construction | | · · · | | | | | | | | | | | |
| Mobilization & Setting Up Piling Rigs | 64 | 06-Aug-15 | 22-Oct-15 | | Μ | Nobilization & Se | tting Up Pil | ing Rigs | 3 | | | | |
| S - Piling (Socket H-piles) | 132 | 23-Oct-15 | 08-Apr-16 | | | | | | | | | S - Pili | ng (Socke |
| S -Sheet Piling | 48 | 23-Oct-15 | 17-Dec-15 | | | | | S-Sh | eet Piling | | | | |
| South Surface Roadworks, Utility & Drainage works | | | | | | | | | | | | | |
| Design Submission (E1) AIP - Southern Landfall Seawall Modification | | | | | | | | | | | | | |
| Review & Comment by SO/ ICE/ IPs | 28 | 13-Jan-17 | 09-Feb-17 | | | | | | | | | | |
| Advance Commants from SO/ Comments from ICE/ IPs Received | 0 | | 09-Feb-17 | | | | | | | | | | |
| Designer to Prepare RtC & Updated AIP | 18 | 10-Feb-17 | 02-Mar-17 | | | + | | | | | | | |
| Submisson of AIP to SO/ ICE together with Reply To Comment (RTC) | 0 | | 02-Mar-17 | | | | | | | | | | |
| Reply to IPs Comments in RTC | 0 | | 02-Mar-17 | | | | | | | | | | |
| ICE Approval & Issue of Desi gn Check Cert. | 18 | 03-Mar-17 | 23-Mar-17 | | | | | | | | | | |
| Check Cert to SO | 0 | | 23-Mar-17 | | | | | | | | | | |
| No Objection or Further Minor Comments from IPs Received | 0 | | 23-Mar-17 | | | + | - 1 | | | | | | |
| SO Review (35 Days) | 35 | 03-Mar-17 | 06-Apr-17 | - | | 1 | | | | | | | |
| SO Approval with Condition R eceived | 0 | | 06-Apr-17 | - | | | | | | | | | |
| | | | 207 pr 17 | | | 1 | | | | 1 | | | |
| (E1) DDA - Southern Landfall Seawall Modification Preparation of DDAModification of Seawall at Sth Landfall | 18 | 07-Apr-17 | 02-May-17 | | | 1 | | | | 1 | | | |
| Review & Comment by JV | 18 | 04-May-17 | 24-May-17 | + | | 1 1 1 1 | - <u>-</u> | | | | | | |
| Designer prepare DDA | 10 | 25-May-17 | 06-Jun-17 | - | | | | | | | | | |
| Formal Submission of DDAto ICE/ IPs | 0 | | 06-Jun-17 | - | | | | | | | | | |
| Advanced Submission to SO | 0 | | 06-Jun-17 | - | | 1 1 1 | | | | | | | |
| | | 07.1.17 | | | | | | | | | | | |
| IPs/ SO's Advance Comments/ ICE Comments | 28 | 07-Jun-17 | 04-Jul-17 | | | | | | | | | | |
| (E3) DDA for Sewerage, Drainage, Waterworks & Utility works for South Designer to Reply RtC + Update Submission | h Landfall | 02-Feb-15 | 04-Mar-15 | | | | | | | | | | |
| Submit Updated DDAto SO/ ICE/ IPs | 0 | 05-Mar-15 | | | | 1 | | | | | | | |
| | | | 10 Mar 15 | _ | | | | | | | | | - |
| ICEApproval & Issue Check Cert | 12 | 05-Mar-15 | 18-Mar-15 | | | | | | | | | | |
| Submit ICE Check Cert to SO | 6 | 19-Mar-15 | 25-Mar-15 | | | ¦ | | | | | | | |
| | | | | | | | | | | | | i i | 1 |
| IPs Review | 28 | 05-Mar-15 | 01-Apr-15 | | | | | | | | | | i i |
| | 0 | | 01-Apr-15 01-Apr-15 | | | | | - | | | | | |
| IPs Review | | 05-Mar-15 05-Mar-15 | | | | | | - | | | | | |
| IPs Review IP's No Objection Received | 0 | | 01-Apr-15 | | | | | - | | | | | |
| IPs Review IP's No Objection Received SO's Review SO Approval with Condition Received Method Statement Submission | 0 35 0 | 05-Mar-15 | 01-Apr-15 08-Apr-15 | | | | - | | | | | | |
| IPs Review IPs No Objection Received SO's Review SO Approval with Condition Received Method Statement Submission Method Statement of Ground Treatment for TBMs Passing under Sout | 0 35 0 | 05-Mar-15 | 01-Apr-15 08-Apr-15 08-Apr-15 | hent for | Ground Impro | vement in South | Landfall | | | | | | |
| IPs Review IP's No Objection Received SO's Review SO Approval with Condition Received Method Statement Submission Method Statement of Ground Treatment for TBMs Passing under Sout Preparation Method Statement for Ground Improvement in South Landfall | 0 35 0 thern Landfall S 9 | 05-Mar-15 | 01-Apr-15 08-Apr-15 08-Apr-15 29-Jul-15 | | Ground Impro | vement in South | Landfall | | | | | | |
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Appendix C

Environmental Mitigation and Enhancement Measure Implementation Schedules

| EIA Reference | EM&A Manual | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Imp | olementa Stages | tion | Status * |
|----------------------|----------------|--|--|-------------------------|---|-----|--------------------|------|----------|
| | Reference | | | | | D | С | 0 | |
| Air Quality 4.8.1 | 3.8 | An effective watering programme of twice daily watering with complete coverage, is estimated to reduce by 50%. This is recommended for all areas in order to reduce dust levels to a minimum; | construction period | Contractor | TMEIA Avoid smoke impacts and disturbance | | Y | | ~ |
| 4.8.1 | 3.8 | Watering of the construction sites in Lantau for 8 times/day and in Tuen Mun for 12 times/day to reduce dust emissions by 87.5% and 91.7% respectively and shall be undertaken. | | Contractor | TMEIA Avoid dust generation | | Y | | ~ |
| 4.8.1 | 3.8 | The Contractor shall, to the satisfaction of the Engineer, install effective dust suppression measures and take such other measures as may be necessary to ensure that at the Site boundary and any nearby sensitive receiver, dust levels are kept to acceptable levels. | construction period | Contractor | TMEIA Avoid dust generation | | Y | | ~ |
| 4.8.1 | 3.8 | The Contractor shall not burn debris or other materials on the works areas. | All areas / throughout construction period | Contractor | TMEIA Avoid dust generation | | Y | | ~ |
| 4.8.1 | 3.8 | In hot, dry or windy weather, the watering programme shall maintain all exposed road surfaces and dust sources wet. | All unpaved haul roads / throughout construction period in hot, dry or windy weather | Contractor | TMEIA Avoid smoke impacts and disturbance | | Y | | \$ |
| 4.8.1 | 3.8 | Where breaking of oversize rock/concrete is required, watering shall be implemented to control dust. Water spray shall be used during the handling of fill material at the site and at active cuts, excavation and fill sites where dust is likely to be created. | construction period | Contractor | TMEIA Avoid dust generation | | Y | | √ |
| 4.8.1 | 3.8 | Open dropping heights for excavated materials shall be controlled to a maximum height of 2m to minimise the fugitive dust arising from unloading. | | Contractor | TMEIA Avoid dust generation | | Y | | ~ |
| 4.8.1 | 3.8 | During transportation by truck, materials shall not be loaded to a level higher than the side and tail boards, and shall be dampened or covered before transport. | | Contractor | TMEIA Avoid dust generation | | Y | | ~ |

Legend: D=Design, C=Construction, O=Operation

| EIA Reference | EM&A Manual Reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Imj | plementa Stages | tion | Status * |
|--------------------------------|-----------------------------|--|---|-------------------------|-------------------------------------|-----|--------------------|------|----------|
| | Kelefence | | | | | D | C | 0 | |
| 4.8.1 | 3.8 | Materials having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin. The tarpaulin shall be properly secured and shall extend at least 300mm over the edges of the side and tail boards. | construction period | Contractor | TMEIA Avoid dust generation | | Y | | ~ |
| 4.8.1 | 3.8 | No earth, mud, debris, dust and the like shall be deposited on public roads. Wheel washing facility shall be usable prior to any earthworks excavation activity on the site. | | Contractor | TMEIA Avoid dust | | Y | | 1 |
| 4.8.1 | 3.8 | Areas of exposed soil shall be minimised to areas in which works have been completed shall be restored as soon as is practicable. | All exposed surfaces / throughout construction period | Contractor | TMEIA Avoid dust generation | | Y | | ✓ |
| 4.8.1 | 3.8 | All stockpiles of aggregate or spoil shall be enclosed or covered and water applied in dry or windy condition. | All areas / throughout construction period | Contractor | TMEIA Avoid dust generation | | Y | | 1 |
| 4.11 | Section 3 | EM&A in the form of 1 hour and 24 hour dust monitoring and site audit. | All representative existing ASRs / throughout construction period | Contractor | EM&A Manual | | Y | | √ |
| WATER QUAL | ITY | | | | | | | | |
| Marine Works (Seq | uence A) | | | | | | | | |
| 6.1 | Annex A | Construction of seawalls to be advanced by at least 200m before the main reclamation dredging and filling can commence. The protection by advanced seawall is a dynamic process depending on the progress of the construction activities and the stage when such protection could be realised is illustrated in Figure 6.2a and detailed in Appendix D6a. The part of the works where such measures can be undertaken for the majority of the time includes the following locations: | backfilling works | Contractor | TM-EIAO | | Y | | ~ |
| Figure 6.2a Appendix D6a | | - TM-CLKL northern reclamation; | | | | | | | |
| 6.1 | - | a maximum of 50% public fill to be used for all seawall filling below +2.5mPD for TM-CLKL southern and northern landfalls. | TM-CLKL seawall filling | Contractor | TM-EIAO | | Y | | 1 |

Legend: D=Design, C=Construction, O=Operation

| EIA Reference | EM&A Manual | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Imj | plementa Stages | tion | Status * |
|---------------|--------------------------|---|---|-------------------------|---|-----|--------------------|------|----------|
| | Reference | | | | | D | C | 0 | |
| 6.1 | - | a maximum of 30% public fill to be used for reclamation filling below +2.5mPD for TM-CLKL southern landfall | TM-CLKL southern landfall reclamation filling | Contractor | TM-EIAO | | Y | | N/A |
| 6.1 | - | a maximum of 100% public fill to be used for reclamation filling below +2.5mPD for TM-CLKL northern landfall | TM-CLKL northern landfall reclamation filling | Contractor | TM-EIAO | | Y | | ~ |
| 6.1 | - | Use of cage type silt curtains round allgrab dredgers during the HKBCF, HKLR and TM-CLKL southern reclamation works. | All areas dredging works | Contractor | TM-EIAO | | Y | | ~ |
| | Figure 1.1 of Annex C | A layer of floating type silt curtain will be applied when dredging and reclamation works are being undertaken at Portion N-a as shown in Figure 1.1 of Annex C of the EM&A Manual. | | Contractor | TM-EIAO | | Y | | ~ |
| 6.1 | - | Trailer suction hopper dredgers shall not allow mud to overflow. | All areas/ throughout construction period | Contractor | Marine Fill Committee Guidelines. DASO permit conditions. | | Y | | Ý |
| 6.1 | - | The use of Lean Material Overboard (LMOB) systems shall be prohibited. | All areas/ throughout construction period | Contractor | Marine Fill Committee Guidelines. DASO permit conditions. | | Y | | 1 |

Legend: D=Design, C=Construction, O=Operation

| EIA Reference | EM&A Manual | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Imp | plementa Stages | tion | Status * |
|--------------------------------|----------------|---|--|-------------------------|-------------------------------------|-----|--------------------|------|----------|
| | Reference | | | | | D | С | 0 | |
| 6.1 | Annex A | For other parts of the reclamation works construction of seawalls to be advanced by at least 200m before the main reclamation dredging and filling can commence. It should be noted that the protection by advanced seawall is a dynamic process depending on the progress of the construction activities and the stage when such protection could be realised is illustrated in Figure 6.2b and detailed in Appendices D6b. The part of the works where such measures can be undertaken for the majority of the time includes the following locations: | Portion D of HKBCF and HKLR | Contractor | TM-EIAO | | Y | | ~ |
| Figure 6.2b Appendix D6b | | TM-CLKL northern reclamation; Reclamation filling for Portion D of HKBCF; Reclamation filling for FSD berth of HKBCF; and | | | | | | | |
| | | - Reclamation dredging and filling for Portion 1 of HKLR; | | | | | | | |
| 6.1 | - | The filling material for the other parts of the works are the same as Sequence A; | All other areas/backfilling works | Contractor | TM-EIAO | | Y | | N/A |
| 6.1 | 5.7 | Cage type silt curtain (with steel enclosure) shall be used for grab dredgers working in the site of HKBCF and TM- CLKL southern reclamation. Cage type silt curtains will be applied round all grab dredgers at other works area. | grab dredging | Contractor | TM-EIAO | | Y | | ~ |
| 6.1 | Annex A | A layer of floating type silt curtain will be applied around all works as defined in Appendix D6b. | All areas/ through out marine works | Contractor | TM-EIAO | | Y | | ~ |
| 6.1 | - | TM-CLKL northern landfall: - Reclamation filling shall not proceed until at least 200m section of leading seawall at both the east and west sides of the reclamation are formed above +2.5 mPD, except for 100m gaps for marine access; | L | Contractor | TM-EIAO | | Y | | ~ |

Legend: D=Design, C=Construction, O=Operation

| EIA Reference | EM&A Manual | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Imj | plementa Stages | ition | Status * |
|------------------|----------------|---|--|-------------------------|---|-----|--------------------|-------|----------|
| | Reference | | | | | D | C | 0 | |
| General Marine W | orks | | | | | | | | |
| 6.1 | - | Use of TBM for the construction of the submarine tunnel. | Tunnel works / Construction phase | Contractor | TM-EIAO | | Y | | N/A |
| 6.1 | - | Export dredged spoils from NWWCZ. | All areas as much as possible / dredging activities | Contractor | DASO Permit conditions | | Y | | ✓ |
| 6.1 | - | Where public fill is proposed for filling below +2.5mPD, the fine content in the public fill will be controlled to 25% | All areas/ backfilling works | Contractor | TM-EIAO | | Y | | N/A |
| 6.1 | - | Where sand fill is proposed for filling below +2.5mPD, the fine content in the sand fill will be controlled to 5%. | All areas/ backfilling works | Contractor | TM-EIAO | | Y | | N/A |
| 6.1 | - | Mechanical grabs shall be designed and maintained to avoid spillage and should seal tightly while being lifted. | All areas/ throughout construction period | Contractor | Marine Fill Committee Guidelines. DASO permit conditions. | | Y | | Ý |
| 6.1 | - | Barges and hopper dredgers shall have tight fitting seals to their bottom openings to prevent leakage of material. | All areas/ throughout construction period | Contractor | Marine Fill Committee Guidelines. DASO permit conditions. | | Y | | ~ |
| 6.1 | - | Any pipe leakages shall be repaired quickly. Plant should not be operated with leaking pipes. | All areas/ throughout construction period | Contractor | Marine Fill Committee Guidelines. DASO permit conditions. | | Y | | - |
| 6.1 | - | Loading of barges and hoppers shall be controlled to prevent splashing of dredged material to the surrounding water. Barges or hoppers shall not be filled to a level which will cause overflow of materials or pollution of water during loading or transportation. | construction period | Contractor | Marine Fill Committee Guidelines. DASO permit conditions. | | Y | | × |

Legend: D=Design, C=Construction, O=Operation

| EIA Reference | EM&A Manual | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Imp | olementa Stages | tion | Status * |
|---------------|----------------|--|---|-------------------------|---|-----|--------------------|------|----------|
| | Reference | | | | | D | C | 0 | |
| 6.1 | - | Excess material shall be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved. | All areas/ throughout construction period | Contractor | Marine Fill Committee Guidelines. DASO permit conditions. | | Y | | ~ |
| 6.1 | - | Adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action; | All areas/ throughout construction period | Contractor | Marine Fill Committee Guidelines. DASO permit conditions. | | Y | | N/A |
| 6.1 | - | All vessels shall be sized such that adequate clearance is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash. | construction period | Contractor | Marine Fill Committee Guidelines. DASO permit conditions. | | Y | | N/A |
| 6.1 | - | The works shall not cause foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the works site. | | Contractor | Marine Fill Committee Guidelines. DASO permit conditions. | | Y | | ~ |
| 6.1 | 5.2 | Silt curtain shall have proved effectiveness from the producer and shall be fully maintained throughout the works by the contractor. | All areas/ throughout construction period | Contractor | TM-EIAO | | Y | | 1 |
| 6.1 | - | The daily maximum production rates shall not exceed those assumed in the water quality assessment. | All areas/ throughout construction period | Contractor | TM-EIAO | | Y | | ~ |
| 6.1 | - | The dredging and filling works shall be scheduled to spread the works evenly over a working day. | All areas/ throughout construction period | Contractor | TM-EIAO | | Y | | ~ |

Legend: D=Design, C=Construction, O=Operation

| EIA Reference | EM&A Manual | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Imp | lementa Stages | tion | Status * |
|---------------|----------------|---|---|-------------------------|-------------------------------------|-----|-------------------|------|----------|
| | Reference | | | | | D | С | 0 | |
| Land Works | | | | | | | | | |
| 6.1 | - | Wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters. | All areas/ throughout construction period | Contractor | TM-EIAO | | Y | | √ |
| 6.1 | - | Sewage effluent and discharges from on-site kitchen facilities shall be directed to Government sewer in accordance with the requirements of the WPCO or collected for disposal offsite. The use of soakaways shall be avoided. | construction period | Contractor | TM-EIAO | | Y | | ~ |
| 6.1 | - | Storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks. | * | Contractor | TM-EIAO | | Y | | 1 |
| 6.1 | - | Silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm. | | Contractor | TM-EIAO | | Y | | 1 |
| 6.1 | - | Temporary access roads should be surfaced with crushed stone or gravel. | All areas/ throughout construction period | Contractor | TM-EIAO | | Y | | ~ |
| 6.1 | - | Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. | | Contractor | TM-EIAO | | Y | | 1 |
| 6.1 | - | Measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system. | All areas/ throughout construction period | Contractor | TM-EIAO | | Y | | ✓ |
| 6.1 | - | Open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms. | | Contractor | TM-EIAO | | Y | | √ |

Legend: D=Design, C=Construction, O=Operation

| EIA Reference | EM&A Manual | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Imp | olementa Stages | tion | Status * |
|---------------|----------------|---|--|-------------------------|--|-----|--------------------|------|----------|
| | Reference | | | | | D | С | 0 | |
| 6.1 | 5.8 | Manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers. | construction period | Contractor | TM-EIAO | | Y | | 1 |
| 6.1 | - | Discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system. | | Contractor | TM-EIAO | | Y | | √ |
| 6.1 | - | All vehicles and plant should be cleaned before they leave the construction site to ensure that no earth, mud or debris is deposited by them on roads. A wheel washing bay should be provided at every site exit. | construction period | Contractor | TM-EIAO | | Y | | × |
| 6.1 | - | Wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain. | All areas/ throughout construction period | Contractor | TM-EIAO | | Y | | √ |
| 6.1 | - | Section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel. | All areas/ throughout construction period | Contractor | TM-EIAO | | Y | | ✓ |
| 6.1 | - | Wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects. | All areas/ throughout construction period | Contractor | TM-EIAO | | Y | | √ |
| 6.1 | - | Vehicle and plant servicing areas, vehicle wash bays and lubrication facilities shall be located under roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor in accordance with the requirements of the WPCO or collected for off site disposal. | construction period | Contractor | TM-EIAO | | Y | | N/A |
| 6.1 | - | The Contractor shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately. | | Contractor | TM-EIAO | | Y | | <> |
| 6.1 | - | Waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance. | All areas/ throughout construction period | Contractor | TM-EIAO Waste Disposal Ordinance | | Y | | ~ |

Legend: D=Design, C=Construction, O=Operation

| EIA Reference | Manual | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Imp | lementa Stages | tion | Status * |
|---------------|-----------|---|--|-------------------------|-------------------------------------|-----|-------------------|------|----------|
| | Reference | | | | | D | C | 0 | |
| 6.1 | | All fuel tanks and chemical storage areas should be provided with locks and be sited on sealed areas. The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank. | construction period | Contractor | TM-EIAO | | Y | | <> |
| 6.1 | | Surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the stormwater system. | All areas/ throughout construction period | Contractor | TM-EIAO | | Y | | ~ |

Legend: D=Design, C=Construction, O=Operation

| EIA Reference | EM&A Manual | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Stages | | | Status * |
|-------------------|----------------|--|--|---|-------------------------------------|--------|---|---|---|
| | Reference | | | | | D | C | 0 | 1 |
| 6.1 | - | Roadside gullies to trap silt and grit shall be provided prior to discharging the stormwater into the marine environment. The sumps will be maintained and cleaned at regular intervals. | | Design Consultant/ Contractor | TM-EIAO | Y | | Y | · |
| 6.1 | Section 5 | All construction works shall be subject to routine audit to ensure implementation of all EIA recommendations and good working practice. | All areas/ throughout l construction period | Contractor | EM&A Manual | | Y | | · |
| Water Quality Mor | nitoring | | | | | | | | |
| 6.1 | Section 5 | Water quality monitoring shall be undertaken for suspended solids, turbidity, and dissolved oxygen. Nutrients and metal parameters shall also be measured for Mf sediment operations (only HKBCF and HKLR required handling of Mf sediment) during baseline, backfilling and post construction period. One year operation phase water quality monitoring at designated stations. | s as defined in EM&A Manual, Section 5/ Before, through-out marine construction period, post construction and monthly | Contractor | EM&A Manual | | Y | Y | ~ |
| ECOLOGY | | | | | | | | | |
| 8.14 | 6.3 | Specification for and implement pre, during and post construction dolphin abundance monitoring. | All Areas/Detailed Design/ during construction works/post construction | Design Consultant/ Contractor | TMEIA | Y | Y | Y | √ |
| 8.14 | 6.3,6.5 | Specification and implementation of 250m dolphin exclusion zone. | All dredging and reclamation areas/Detailed Design/during all reclamation and dredging works | Design Consultant/ Contractor | TMEIA | Y | Y | | * |
| 8.15 | 6.3, 6.5 | Specification and deployment of an artificial reef of an area of 3,600m2 in an area where fishing activities are prohibited. | f Area of prohibited fishing activities/Detailed Design/towards end of construction period | TM-CLKL/ HKBCF Design Consultant/TM- CLKL/ HKBCF Contractor | TMEIA | Y | | Y | N/A. To be implemente d by AFCD. |
| 8.14 | 6.3, 6.5 | Specification and implementation of marine vessel control specifications | All areas/Detailed Design/during construction works | Design Consultant/ Contractor | TMEIA | Y | Y | | ✓ |

Legend: D=Design, C=Construction, O=Operation

| EIA Reference | EM&A Manual | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Imj | tion | Status * | |
|---------------|----------------|--|--|----------------------------------|-------------------------------------|-----|------|----------|----------|
| | Reference | | | | | D | C | 0 | |
| 8.14 | 6.3, 6.5 | Design and implementation of acoustic decoupling methods for dredging and reclamation works | All areas/ Detailed Design/during dredging and reclamation works | Design Consultant/ Contractor | TMEIA | Y | Y | | √ |
| 8.15 | 6.3, 6.4 | Pre-construction phase survey and coral translocation | Detailed Design/Prior to construction | Design Consultant/ Contractor | TMEIA | Y | Y | | ✓ |
| 8.15 | 6.5 | Audit coral translocation success | Post translocation | Contractor | TMEIA | | Y | | ✓ |
| 7.13 | 6.5 | The loss of habitat shall be supplemented by enhancement planting in accordance with the landscape mitigation schedule. | All areas / As soon as accessible | Contractor | TMEIA | | Y | | N/A |
| 7.13 | 6.5 | Spoil heaps shall be covered at all times. | All areas / Throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 7.13 | 6.5 | Avoid damage and disturbance to the remaining and surrounding natural habitat | All areas / Throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 7.13 | 6.5 | Placement of equipment in designated areas within the existing disturbed land | All areas / Throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 7.13 | 6.5 | Disturbed areas to be reinstated immediately after completion of the works. | All areas / Throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 7.13 | 6.5 | Construction activities should be restricted to the proposed works boundary. | All areas / Throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| LANDSCAPE | AND VISUAI | | | | | | | | |
| 10.9 | 7.6 | The colour and shape of the toll control buildings, ventilation building and administration building shall adopt a design which could blend it into the vicinity elements, and the details will be developed in detailed design stage (DM2) | All areas/detailed design | Design Consultant | TMEIA | Y | | | N/A |
| 10.9 | 7.6 | Aesthetic design of the viaduct, retaining wall and other structures will be developed under ACABAS submission (DM5) | All areas/detailed design | Design Consultant | TMEIA | Y | | | N/A |
| 10.9 | 7.6 | Screening of construction works by hoardings around works area in visually unobtrusive colours, to screen works (CM5) | All areas/detailed design/ during construction/post construction | Design Consultant/ Contractor | TMEIA | Y | Y | | ✓ |
| 10.9 | 7.6 | Control night-time lighting and glare by hooding all lights (CM6) | All areas/detailed design/ during construction | Design Consultant/ Contractor | TMEIA | Y | Y | | N/A |

Legend: D=Design, C=Construction, O=Operation

| EIA Reference | EM&A Manual | Environmental Protection Measures L | Location/ Timing | Implementation Agent | n Relevant Standard or Requirement | Imj | tion | Status * | |
|---------------|----------------|--|---|----------------------------------|---|-----|------|----------|----------|
| | Reference | | | | | D | C | 0 | 1 |
| 10.9 | 7.6 | Ensure no run-off into water body adjacent to the Project Area (CM7) | All areas/detailed design/ during construction | Design Consultant/ Contractor | TMEIA | Y | Y | | ✓ |
| 10.9 | 7.6 | Avoidance of excessive height and bulk of buildings and structures (CM8) | All areas/detailed design/ during construction | Design Consultant/ Contractor | TMEIA | Y | Y | | √ |
| 10.9 | 7.6 | Aesthetically pleasing design (visually unobtrusive and non- reflective) as regard to the form, material and finishes shall be incorporated to all buildings, engineering structures and associated infrastructure facilities (OM5) | All areas/detailed design/ during construction / during operation | Design Consultant/ Contractor | TMEIA | Y | Y | Y | N/A |
| 10.9 | 7.6 | Avoidance of excessive height and bulk of buildings and structures (OM6) | All areas/detailed design/ during construction / during operation | Design Consultant/ Contractor | TMEIA | Y | Y | Y | N/A |
| WASTE | | | | | | | | | |
| 12.6 | | The Contractor shall identify a coordinator for the management of waste. | Contract mobilisation | Contractor | TMEIA | | Y | | ✓ |
| 12.6 | | The Contractor shall prepare and implement a Waster Management Plan which specifies procedures such as a ticketing system, to facilitate tracking of loads and to ensure that illegal disposal of wastes does not occur, and protocols for the maintenance of records of the quantities of wastes generated, recycled and disposed. A recording system for the amount of waste generated, recycled and disposed (locations) should be established. | | Contractor | TMEIA, Works Branch Technical Circular No. 5/99 for the Trip-ticket System for Disposal of Construction and Demolition Material | | Y | | |

Legend: D=Design, C=Construction, O=Operation

| EIA Reference | EM&A Manual | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Imj | plementa Stages | tion | Status * |
|---------------|----------------|---|---|-------------------------|--|-----|--------------------|------|----------|
| | Reference | | | | | D | C | 0 | |
| 12.6 | | The Contractor shall apply for and obtain the appropriate licenses for the disposal of public fill, chemical waste and effluent discharges. | Contract mobilisation | Contractor | TMEIA, Land (Miscellaneous Provisions) Ordinance (Cap 28); Waste Disposal Ordinance (Cap 354); Dumping at Sea Ordinance (Cap 466); Water Pollution Control Ordinance. | | Y | | ~ |
| 12.6 | 8.1 | Training shall be provided to workers about the concepts of site cleanliness and appropriate waste management procedures including waste reduction, reuse and recycling. | | Contractor | TMEIA | | Y | | ✓ |
| 12.6 | 8.1 | The extent of cutting operation should be optimised where possible. Earth retaining structures and bored pile walls should be proposed to minimise the extent of cutting. | 0 | Contractor | TMEIA | | Y | | ~ |
| 12.6 | 8.1 | The surplus surcharge should be transferred to a fill bank | Reclamation areas / after surcharge works | Contractor | TMEIA | | Y | | N/A |
| 12.6 | 8.1 | Rock armour from the existing seawall should be reused on the new sloping seawall as far as possible | All areas / throughout construction period | Contractor | TMEIA | | Y | | ~ |
| 12.6 | 8.1 | The site and surroundings shall be kept tidy and litter free. | All areas / throughout construction period | Contractor | TMEIA | | Y | | ~ |
| 12.6 | 8.1 | No waste shall be burnt on site. | All areas / throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 12.6 | 8.1 | Provisions to be made in contract documents to allow and promote the use of recycled aggregates where appropriate. | Detailed Design | Design Consultant | TMEIA | Y | | | |
| 12.6 | 8.1 | The Contractor shall be prohibited from disposing of C&D materials at any sensitive locations. The Contractor should propose the final disposal sites in the EMP and WMP for approval before implementation. | construction period | Contractor | TMEIA | | Y | | |

Legend: D=Design, C=Construction, O=Operation

| EIA Reference | EM&A Manual | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Imj | plementa Stages | tion | Status * |
|---------------|----------------|---|---|-------------------------|-------------------------------------|-----|--------------------|------|----------|
| | Reference | | | | | D | C | 0 | 1 |
| 12.6 | 8.1 | Stockpiled material shall be covered by tarpaulin and /or watered as appropriate to prevent windblown dust/ surface run off. | All areas / throughout construction period | Contractor | TMEIA | | Y | | ~ |
| 12.6 | 8.1 | Excavated material in trucks shall be covered by tarpaulins to reduce the potential for spillage and dust generation. | All areas / throughout construction period | Contractor | TMEIA | | Y | | ~ |
| 12.6 | 8.1 | Wheel washing facilities shall be used by all trucks leaving the site to prevent transfer of mud onto public roads. | All areas / throughout construction period | Contractor | TMEIA | | Y | | √ |
| 12.6 | 8.1 | Dredged marine mud shall be disposed of in a gazetted marine disposal ground under the requirements of the Dumping at Seas Ordinance. | | Contractor | TMEIA | | Y | | ✓ |
| 12.6 | 8.1 | Standard formwork or pre-fabrication should be used as far as practicable so as to minimise the C&D materials arising. The use of more durable formwork/plastic facing for construction works should be considered. The use of wooden hoardings should be avoided and metal hoarding should be used to facilitate recycling. Purchasing of construction materials should avoid over-ordering and wastage. | construction period | Contractor | TMEIA | | Y | | 1 |
| 12.6 | 8.1 | The Contractor should recycle as many C&D materials (this is a waste section) as possible on-site. The public fill and C&D waste should be segregated and stored in separate containers or skips to facilitate the reuse or recycling of materials and proper disposal. Where practicable, the concrete and masonry should be crushed and used as fill materials. Steel reinforcement bar should be collected for use by scrap steel mills. Different areas of the sites should be considered for segregation and storage activities. | construction period | Contractor | TMEIA | | Y | | · · |
| 12.6 | 8.1 | All falsework will be steel instead of wood. | All areas / throughout construction period | Contractor | TMEIA | | Y | | √ |

Legend: D=Design, C=Construction, O=Operation

| EIA Reference | EM&A Manual Reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Imp | plementa Stages | tion | Status * |
|---------------|-----------------------------|--|---|-------------------------|-------------------------------------|-----|--------------------|------|----------|
| | Kererence | | | | | D | C | 0 | |
| 12.6 | 8.1 | Chemical waste producers should register with the EPD. Chemical waste should be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes as follows: <i>f</i> suitable for the substance to be held, resistant to corrosion, maintained in good conditions and securely closed; <i>f</i> Having a capacity of <450L unless the specifications have been approved by the EPD; and <i>f</i> Displaying a label in English and Chinese according to the instructions prescribed in Schedule 2 of the Regulations. <i>f</i> Clearly labelled and used solely for the storage of chemical wastes; <i>f</i> Enclosed with at least 3 sides; <i>f</i> Impermeable floor and bund with capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in the area, whichever is greatest; <i>f</i> Sufficiently covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary); and <i>f</i> Incompatible materials are adequately separated. | construction period | Contractor | TMEIA | | Y | | |
| 12.6 | 8.1 | Waste oils, chemicals or solvents shall not be disposed of to drain, | All areas / throughout construction period | Contractor | TMEIA | | Y | | ~ |
| 12.6 | 8.1 | Adequate numbers of portable toilets should be provided for on- site workers. Portable toilets should be maintained in reasonable states, which will not deter the workers from utilising them. | All areas / throughout construction period | Contractor | TMEIA | | Y | | ~ |
| 12.6 | 8.1 | Night soil should be regularly collected by licensed collectors. | All areas / throughout construction period | Contractor | TMEIA | | Y | | N/A |

| EIA Reference | EM&A Manual | | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Status * |
|---------------|----------------|---|---|-------------------------|-------------------------------------|--------------------------|---|---|----------|
| | Reference | | | | | D | C | 0 | |
| 12.6 | 8.1 | General refuse arising on-site should be stored in enclosed bins or compaction units separately from C&D and chemical wastes. Sufficient dustbins shall be provided for storage of waste as required under the Public Cleansing and Prevention of Nuisances By- laws. In addition, general refuse shall be cleared daily and shall be disposed of to the nearest licensed landfill or refuse transfer station. Burning of refuse on construction sites is prohibited. | construction period | Contractor | TMEIA | | Y | | <> |
| 12.6 | 8.1 | All waste containers shall be in a secure area on hardstanding; | All areas / throughout construction period | Contractor | TMEIA | | Y | | 1 |
| 12.6 | 8.1 | Training shall be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including waste reduction, reuse and recycling. | | Contractor | TMEIA | | Y | | - |
| 12.6 | 8.1 | Office wastes can be reduced by recycling of paper if such volume is sufficiently large to warrant collection. Participation in a local collection scheme by the Contractor should be advocated. Waste separation facilities for paper, aluminium cans, plastic bottles, etc should be provided on-site. | construction period | Contractor | TMEIA | | Y | | × |
| 12.6 | Section 8 | EM&A of waste handling, storage, transportation, disposal procedures and documentation through the site audit programme shall be undertaken. | Ū. | Contractor | EM&A Manual | | Y | | ✓ |
| CULTURAL HI | ERITAGE | | | | | | | | |
| 11.8 | Section 9 | EM&A in the form of audit of the mitigation measures | All areas / throughout construction period | Highways Department | EIAO-TM | | Y | | N/A |

* Remarks:

- ✓ Compliance of Mitigation Measures
- <> Compliance of Mitigation but need improvement
- x Non-compliance of Mitigation Measures
- ▲ Non-compliance of Mitigation Measures but rectified by Contractor
- Δ Deficiency of Mitigation Measures but rectified by Contractor
- N/A Not Applicable in Reporting Period

Legend: D=Design, C=Construction, O=Operation

Appendix D

Summary of Action and Limit Levels

| Parameters | Action | Limit |
|--|-------------|-------|
| 24 Hour TSP Level in µg/m ³ | ASR1 = 213 | 260 |
| | ASR5 = 238 | |
| | AQMS1 = 213 | |
| | ASR6 = 238 | |
| | ASR10 = 214 | |
| 1 Hour TSP Level in $\mu g / m^3$ | ASR1 = 331 | 500 |
| C C | ASR5 = 340 | |
| | AQMS1 = 335 | |
| | ASR6 = 338 | |
| | ASR10 = 337 | |

Table D1Action and Limit Levels for 1-hour and 24-hour TSP

Table D2Action and Limit Levels for Impact Dolphin Monitoring

| | North Lantau Social Cluster | | | | |
|---|--|---|--|--|--|
| | NEL | NWL | | | |
| Action Level | STG < 70% of baseline & | STG < 70% of baseline & | | | |
| | ANI < 70% of baseline | ANI < 70% of baseline | | | |
| Limit Level | [STG < 40% of baseli | [STG < 40% of baseline & ANI < 40% of baseline] | | | |
| | and | | | | |
| | STG < 40% of baseli | ne & ANI < 40% of baseline | | | |
| Notes: | | | | | |
| 1. STG means qua | . STG means quarterly encounter rate of number of dolphin sightings, which is 6.00 in | | | | |
| NEL and 9.85 in NWL during the baseline monitoring period | | | | | |

2. ANI means quarterly encounter rate of total number of dolphins, which is **22.19 in NEL** and **44.66 in NWL** during the baseline monitoring period

3. For North Lantau Social Cluster, AL will be trigger if NEL or NWL fall below the criteria; LL will be triggered if both NEL and NWL fall below the criteria.

Table D3Derived Value of Action Level (AL) and Limit Level (LL)

| North Lantau Social Cluster | | | | |
|-----------------------------|--|--|--|--|
| NEL | NWL | | | |
| STG < 4.2 & ANI< 15.5 | STG < 6.9 & ANI < 31.3 | | | |
| NEL = [STG < | < 2.4 & ANI <8.9] | | | |
| á | and | | | |
| NWL = [STG < | NWL = [STG < 3.9 & ANI <17.9] | | | |
| | NEL STG < 4.2 & ANI< 15.5 NEL = [STG < | | | |

Appendix E

Copies of Calibration Certificates for Air Quality Monitoring

| Location Calibrated by Date | : | ASR 5 P.F.Yeung 10/10/2015 |
|--|----------|--|
| <u>Sampler</u> Model Serial Number | : | TE-5170 S/N 0816 |
| Calibration Orfice and Standard Serial Number Service Date Slope (m) Intercept (b) Correlation Coefficient(r) | Calibrat | tion Relationship 2454 24 Mar 2015 2.09532 -0.03812 0.99994 |
| <u>Standard Condition</u> Pstd (hpa) Tstd (K) <u>Calibration Condition</u> Pa (hpa) Ta(K) | : | 1013 298.18 1014 299 |

| Resi | stance Plate | dH [green liquid] | Z | X=Qstd | IC | Y |
|------|--------------|-------------------|-------|-------------------|---------|-------------|
| | | (inch water) | | (cubic meter/min) | (chart) | (corrected) |
| 1 | 18 holes | 11.8 | 3.431 | 1.656 | 55 | 54.94 |
| 2 | 13 holes | 9.4 | 3.062 | 1.480 | 50 | 49.94 |
| 3 | 10 holes | 7.0 | 2.643 | 1.279 | 44 | 43.95 |
| 4 | 7 holes | 4.8 | 2.188 | 1.063 | 36 | 35.96 |
| 5 | 5 holes | 2.8 | 1.671 | 0.816 | 28 | 27.97 |

 $Notes: Z=SQRT \{ dH(Pa/Pstd)(Tstd/Ta) \}, X=Z/m-b, Y(Corrected Flow)=IC* \{ SQRT(Pa/Pstd)(Tstd/Ta) \}$

Sampler Calibration Relationship (Linear Regression)

Slope(m):32.462 Intercept(b): 1.692 Correlation Coefficient(r): 0.9990

Checked by: Magnum Fan

| Location Calibrated by Date | : : : | ASR10 P.F.Yeung 10/10/2015 |
|--|------------------------------|--|
| Sampler | | |
| Model | : | TE-5170 |
| Serial Number | : | S/N 8162 |
| Calibration Orfice and Standard Serial Number Service Date Slope (m) Intercept (b) Correlation Coefficient(r) | Calibrat : : : : | tion Relationship 2454 24 Mar 2015 2.09532 -0.03812 0.99994 |
| <u>Standard Condition</u> Pstd (hpa) Tstd (K) | : | 1013 298.18 |
| <u>Calibration Condition</u> Pa (hpa) Ta(K) | : | 1014 299 |

| Resi | stance Plate | dH [green liquid] | Ζ | X=Qstd | IC | Y |
|------|--------------|-------------------|-------|-------------------|---------|-------------|
| | | (inch water) | | (cubic meter/min) | (chart) | (corrected) |
| 1 | 18 holes | 11.6 | 3.402 | 1.642 | 57 | 56.93 |
| 2 | 13 holes | 9.8 | 3.127 | 1.510 | 52 | 51.94 |
| 3 | 10 holes | 7.6 | 2.754 | 1.332 | 46 | 45.95 |
| 4 | 7 holes | 4.8 | 2.188 | 1.063 | 38 | 37.96 |
| 5 | 5 holes | 2.93 | 1.710 | 0.834 | 30 | 29.96 |

Notes:Z=SQRT{dH(Pa/Pstd)(Tstd/Ta)}, X=Z/m-b, Y(Corrected Flow)=IC*{SQRT(Pa/Pstd)(Tstd/Ta)}

Sampler Calibration Relationship (Linear Regression)

Slope(m):<u>32.799</u> Intercept(b): <u>2.688</u>

Correlation Coefficient(r): 0.9993

Checked by: <u>Magnum Fan</u>

| Location Calibrated by Date | : | AQMS1 P.F.Yeung 10/10/2015 |
|--|------------|---|
| <u>Sampler</u> Model Serial Number | | TE-5170 S/N 1253 |
| Calibration Orfice and Standard C Serial Number Service Date Slope (m) Intercept (b) Correlation Coefficient(r) | alibration | n Relationship 2454 24 Mar 2015 2.09532 -0.03812 0.99994 |
| <u>Standard Condition</u> Pstd (hpa) Tstd (K) <u>Calibration Condition</u> Pa (hpa) Ta(K) | : | 1013 298.18 1014 299 |

| Resi | stance Plate | dH [green liquid] | Ζ | X=Qstd | IC | Y |
|------|--------------|-------------------|-------|-------------------|---------|-------------|
| | | (inch water) | | (cubic meter/min) | (chart) | (corrected) |
| 1 | 18 holes | 11.6 | 3.402 | 1.642 | 53 | 52.94 |
| 2 | 13 holes | 9.2 | 3.030 | 1.464 | 47 | 46.94 |
| 3 | 10 holes | 6.6 | 2.566 | 1.243 | 40 | 39.95 |
| 4 | 7 holes | 4.2 | 2.047 | 0.995 | 32 | 31.96 |
| 5 | 5 holes | 2.9 | 1.701 | 0.830 | 26 | 25.97 |

 $Notes: Z=SQRT \{ dH(Pa/Pstd)(Tstd/Ta) \}, X=Z/m-b, Y(Corrected \ Flow) = IC* \{ SQRT(Pa/Pstd)(Tstd/Ta) \} \}$

Sampler Calibration Relationship (Linear Regression)

Slope(m):32.903 Intercept(b):-1.074

Correlation Coefficient(r): 0.9998

Checked by: <u>Magnum Fan</u>

| Location Calibrated by Date | : : : | ASR 1 P.F.Yeung 10/10/2015 |
|---|----------------|----------------------------------|
| <u>Sampler</u> Model Serial Number | : | TE-5170 S/N 0146 |
| Calibration Orfice and Standard | <u>Calibra</u> | 2,2,2,4,0,2,1,0 |
| Service Date Slope (m) | : : | 2434 24 Mar 2015 2.09532 |
| Intercept (b) Correlation Coefficient(r) | : | -0.03812 0.99994 |
| | | |

| <u>Standard Condition</u> Pstd (hpa) Tstd (K) | : | 1013 298.18 |
|---|---|----------------|
| Calibration Condition Pa (hpa) Ta(K) | : | 1014 299 |

| Resistance Plate | | dH [green liquid] | Ζ | X=Qstd | IC | Y |
|------------------|----------|-------------------|-------|-------------------|---------|-------------|
| | | (inch water) | | (cubic meter/min) | (chart) | (corrected) |
| 1 | 18 holes | 11.8 | 3.431 | 1.656 | 55 | 54.94 |
| 2 | 13 holes | 9.4 | 3.062 | 1.480 | 50 | 49.94 |
| 3 | 10 holes | 7.0 | 2.643 | 1.279 | 44 | 43.95 |
| 4 | 7 holes | 4.8 | 2.188 | 1.063 | 36 | 35.96 |
| 5 | 5 holes | 2.8 | 1.671 | 0.816 | 28 | 27.97 |

Notes:Z=SQRT{dH(Pa/Pstd)(Tstd/Ta)}, X=Z/m-b, Y(Corrected Flow)=IC*{SQRT(Pa/Pstd)(Tstd/Ta)}

Sampler Calibration Relationship (Linear Regression)

Slope(m):<u>32.462</u> Intercept(b): <u>1.692</u> Correlation Coefficient(r): <u>0.9990</u>

Checked by: <u>Magnum Fan</u>

| Location Calibrated by Date | : : : | ASR 6 P.F.Yeung 10/10/2015 |
|--|---|--|
| Sampler | | |
| Model | : | TE-5170 |
| Serial Number | : | S/N 3957 |
| Calibration Orfice and Standa Serial Number Service Date Slope (m) Intercept (b) Correlation Coefficient(r) | <u>rd Calibrati</u> : : : : | on Relationship 2454 24 Mar 2015 2.09532 -0.03812 0.99994 |
| Standard Condition | | 1012 |
| Pstd (hpa) | : | 1013 |
| Tstd (K) | : | 298.18 |
| Calibration Condition | | |

| Ta(H | Κ) | : | 299 | | |
|------|--------------|-----------------------------------|-------|-----------------------------|----|
| Resi | stance Plate | dH [green liquid] (inch water) | Z | X=Qstd (cubic meter/min) | () |
| 1 | 10.1 1 | 12.0 | 2.460 | 1.((0 | |

:

| Resistance Plate | | dH [green liquid] | Ζ | X=Qstd | IC | Y |
|------------------|----------|-------------------|-------|-------------------|---------|-------------|
| | | (inch water) | | (cubic meter/min) | (chart) | (corrected) |
| 1 | 18 holes | 12.0 | 3.460 | 1.669 | 54 | 53.94 |
| 2 | 13 holes | 9.8 | 3.127 | 1.510 | 48 | 47.94 |
| 3 | 10 holes | 7.1 | 2.661 | 1.288 | 41 | 40.95 |
| 4 | 7 holes | 4.5 | 2.119 | 1.029 | 33 | 32.96 |
| 5 | 5 holes | 2.8 | 1.671 | 0.816 | 26 | 25.97 |

1014

Notes:Z=SQRT{dH(Pa/Pstd)(Tstd/Ta)}, X=Z/m-b, Y(Corrected Flow)=IC*{SQRT(Pa/Pstd)(Tstd/Ta)}

Sampler Calibration Relationship (Linear Regression)

Slope(m):32.335

Pa (hpa)

Intercept(b): -0.477

Correlation Coefficient(r): 0.9995

Checked by: Magnum Fan

| Location Calibrated by Date | : | ASR 5 P.F.Yeung 10/12/2015 |
|--|----------|--|
| <u>Sampler</u> Model Serial Number | : | TE-5170 S/N 0816 |
| Calibration Orfice and Standard Serial Number Service Date Slope (m) Intercept (b) Correlation Coefficient(r) | Calibrat | tion Relationship 2454 14 Mar 2015 2.09532 -0.03812 0.99994 |
| <u>Standard Condition</u> Pstd (hpa) Tstd (K) <u>Calibration Condition</u> Pa (hpa) Ta(K) | : | 1013 298.18 1016 293 |

| Resistance Plate | | dH [green liquid] | Z | X=Qstd | IC | Y |
|------------------|----------|-------------------|-------|-------------------|---------|-------------|
| | | (inch water) | | (cubic meter/min) | (chart) | (corrected) |
| 1 | 18 holes | 11.8 | 3.469 | 1.674 | 56 | 56.56 |
| 2 | 13 holes | 9.7 | 3.146 | 1.519 | 51 | 51.51 |
| 3 | 10 holes | 7.2 | 2.710 | 1.312 | 44 | 44.44 |
| 4 | 7 holes | 4.8 | 2.213 | 1.074 | 37 | 37.37 |
| 5 | 5 holes | 2.8 | 1.690 | 0.825 | 28 | 28.28 |

 $Notes: Z=SQRT \{ dH(Pa/Pstd)(Tstd/Ta) \}, X=Z/m-b, Y(Corrected Flow)=IC* \{ SQRT(Pa/Pstd)(Tstd/Ta) \}$

Sampler Calibration Relationship (Linear Regression)

Slope(m):32.998 Intercept(b): 1.367 Correlation Coefficient(r): 0.9995

Checked by: Magnum Fan

Date: 15/12/2015

| Location Calibrated by Date | : | ASR10 P.F.Yeung 10/12/2015 |
|-----------------------------------|-----------|----------------------------------|
| Sampler | | |
| Model | : | TE-5170 |
| Serial Number | : | S/N 8162 |
| Calibration Orfice and Standard | d Calibra | tion Relationship |
| Serial Number | : | 2454 |
| Service Date | • | 14 Mar 2015 |
| Slope (m) | : | 2.09532 |
| Intercept (b) | : | -0.03812 |
| Correlation Coefficient(r) | : | 0.99994 |
| Standard Condition | | |
| Standard Condition | | 1012 |
| Pstd (hpa) | • | 1013 |
| Tstd (K) | : | 298.18 |
| Calibration Condition | | |
| Pa (hpa) | : | 1016 |
| Ta(K) | • | 293 |
| 1 ((15) | • | 275 |

| Resistance Plate | | dH [green liquid] | Ζ | X=Qstd | IC | Y |
|------------------|----------|-------------------|-------|-------------------|---------|-------------|
| | | (inch water) | | (cubic meter/min) | (chart) | (corrected) |
| 1 | 18 holes | 11.8 | 3.469 | 1.674 | 56 | 56.56 |
| 2 | 13 holes | 9.5 | 3.113 | 1.504 | 50 | 50.50 |
| 3 | 10 holes | 6.8 | 2.634 | 1.275 | 44 | 44.44 |
| 4 | 7 holes | 4.5 | 2.143 | 1.041 | 37 | 37.37 |
| 5 | 5 holes | 2.8 | 1.690 | 0.825 | 30 | 30.30 |

Notes:Z=SQRT{dH(Pa/Pstd)(Tstd/Ta)}, X=Z/m-b, Y(Corrected Flow)=IC*{SQRT(Pa/Pstd)(Tstd/Ta)}

Sampler Calibration Relationship (Linear Regression)

Slope(m):<u>30.331</u> Intercept(b): <u>5.505</u>

Correlation Coefficient(r): 0.9992

Checked by: <u>Magnum Fan</u>

Date: 15/12/15

High-Volume TSP Sampler 5-Point Calibration Record

| Location Calibrated by Date | : | AQMS1 P.F.Yeung 10/12/2015 |
|--|------------|---|
| <u>Sampler</u> Model Serial Number | : | TE-5170 S/N 1253 |
| Calibration Orfice and Standard C Serial Number Service Date Slope (m) Intercept (b) Correlation Coefficient(r) | alibration | n Relationship 2454 14 Mar 2015 2.09532 -0.03812 0.99994 |
| <u>Standard Condition</u> Pstd (hpa) Tstd (K) <u>Calibration Condition</u> Pa (hpa) Ta(K) | : | 1013 298.18 1016 293 |

| Resi | stance Plate | dH [green liquid] | Ζ | X=Qstd | IC | Y |
|------|--------------|-------------------|-------|-------------------|---------|-------------|
| | | (inch water) | | (cubic meter/min) | (chart) | (corrected) |
| 1 | 18 holes | 11.7 | 3.454 | 1.667 | 55 | 55.55 |
| 2 | 13 holes | 9.7 | 3.146 | 1.519 | 50 | 50.50 |
| 3 | 10 holes | 7.2 | 2.710 | 1.312 | 44 | 44.44 |
| 4 | 7 holes | 4.5 | 2.143 | 1.041 | 36 | 36.36 |
| 5 | 5 holes | 2.7 | 1.660 | 0.810 | 28 | 28.28 |

 $Notes: Z=SQRT \{ dH(Pa/Pstd)(Tstd/Ta) \}, X=Z/m-b, Y(Corrected \ Flow) = IC* \{ SQRT(Pa/Pstd)(Tstd/Ta) \} \}$

Sampler Calibration Relationship (Linear Regression)

Slope(m):31.314 Intercept(b):3.263

Correlation Coefficient(r): 0.9994

Checked by: <u>Magnum Fan</u>

Date: 15/12/2015

High-Volume TSP Sampler 5-Point Calibration Record

| Location Calibrated by Date | : | ASR 1 P.F.Yeung 10/12/2015 |
|--|---|----------------------------------|
| <u>Sampler</u> Model Serial Number | : | TE-5170 S/N 0146 |

| Calibration Orfice and Standard | Calibra | tion Relationship |
|---------------------------------|---------|-------------------|
| Serial Number | : | 2454 |
| Service Date | : | 24 Mar 2015 |
| Slope (m) | : | 2.09532 |
| Intercept (b) | : | -0.03812 |
| Correlation Coefficient(r) | : | 0.99994 |

| Standard Condition | | |
|-----------------------|---|--------|
| Pstd (hpa) | : | 1013 |
| Tstd (K) | : | 298.18 |
| | | |
| Calibration Condition | | |
| Pa (hpa) | : | 1016 |
| Ta(K) | : | 293 |

| Resi | stance Plate | dH [green liquid] | Ζ | X=Qstd | IC | Y |
|------|--------------|-------------------|-------|-------------------|---------|-------------|
| | | (inch water) | | (cubic meter/min) | (chart) | (corrected) |
| 1 | 18 holes | 11.5 | 3.425 | 1.653 | 55 | 55.55 |
| 2 | 13 holes | 9.0 | 3.030 | 1.465 | 48 | 48.48 |
| 3 | 10 holes | 6.6 | 2.595 | 1.257 | 42 | 42.42 |
| 4 | 7 holes | 4.6 | 2.166 | 1.052 | 34 | 34.34 |
| 5 | 5 holes | 2.8 | 1.690 | 0.825 | 26 | 26.26 |

Notes:Z=SQRT{dH(Pa/Pstd)(Tstd/Ta)}, X=Z/m-b, Y(Corrected Flow)=IC*{SQRT(Pa/Pstd)(Tstd/Ta)}

Sampler Calibration Relationship (Linear Regression)

Slope(m):<u>35.166</u> Intercept(b): <u>-2.551</u> Correlation Coefficient(r): <u>0.9991</u>

Checked by: <u>Magnum Fan</u> I

Date: 15/12/2015

High-Volume TSP Sampler 5-Point Calibration Record

| Location Calibrated by Date | : | ASR 6 P.F.Yeung 10/12/2015 |
|--|-----------|--|
| Sampler Model | : | TE-5170 |
| Serial Number | : | S/N 3957 |
| Calibration Orfice and Standard Serial Number Service Date Slope (m) Intercept (b) Correlation Coefficient(r) | l Calibra | tion Relationship 2454 24 Mar 2015 2.09532 -0.03812 0.99994 |
| <u>Standard Condition</u> Pstd (hpa) Tstd (K) Calibration Condition | : | 1013 298.18 |

| Calibration Condition | | |
|-----------------------|---|------|
| Pa (hpa) | : | 1016 |
| Ta(K) | : | 293 |
| | | |

| Resi | stance Plate | dH [green liquid] | Ζ | X=Qstd | IC | Y |
|------|--------------|-------------------|-------|-------------------|---------|-------------|
| | | (inch water) | | (cubic meter/min) | (chart) | (corrected) |
| 1 | 18 holes | 12.2 | 3.528 | 1.702 | 54 | 54.54 |
| 2 | 13 holes | 9.2 | 3.063 | 1.480 | 48 | 48.48 |
| 3 | 10 holes | 6.7 | 2.614 | 1.266 | 41 | 41.41 |
| 4 | 7 holes | 4.4 | 2.119 | 1.029 | 34 | 34.34 |
| 5 | 5 holes | 2.6 | 1.629 | 0.795 | 27 | 27.27 |

Notes:Z=SQRT{dH(Pa/Pstd)(Tstd/Ta)}, X=Z/m-b, Y(Corrected Flow)=IC*{SQRT(Pa/Pstd)(Tstd/Ta)}

Sampler Calibration Relationship (Linear Regression)

Slope(m):30.338

Intercept(b): 3.148

Correlation Coefficient(r): 0.9997

Checked by: Magnum Fan

Date: 15/12/2015

ENVIROTECH SERVICES CO.

| Date of Calibration : | 29 June 2015 |
|--------------------------|---|
| Brand of Test Meter: | Davis |
| Model: | Weather Wizard III (s/n: WE90911A30) |
| Location : | ASR5 |
| Procedures : | |
| 1. Wind Still Test: | The wind speed sensor was hold by hand until it keep still |
| 2. Wind Speed Test: | The wind meter was on-site calibrated against the Anemometer |
| 3. Wind Direction Test : | The wind meter was on-site calibrated against the marine compass at four directions |
| Results: | |

Calibration Report of Wind Meter

Wind Still Test

| Wind Speed (m/s) | |
|------------------|--|
| 0.00 | |

Wind Speed Test

| Davis (m/s) | Anemomete (m/s) |
|-------------|-----------------|
| 1.9 | 1.8 |
| 2.4 | 2.2 |
| 2.9 | 3.1 |

Wind Direction Test

| Davis (o) | Marine Compass (o) |
|-----------|--------------------|
| 269 | 270 |
| . 1 | 0 |
| 88 | 90 |
| 181 | 180 |

Calibrated by:

Checked by :

Yeung Ping Fai (Technical Officer)

Ho Kam Fat (Senior Technical Officer)

ENVIROTECH SERVICES CO.

| Date of Calibration : | 10 November 2015 |
|------------------------|---|
| Brand of Test Meter: | Davis |
| Model: | Weather Wizard III (s/n: WE90911A30) |
| Location : | ASR5 |
| Procedures : | |
| 1. Wind Still Test: | The wind speed sensor was hold by hand until it keep still |
| 2. Wind Speed Test: | The wind meter was on-site calibrated against the Anemometer |
| 3. Wind Direction Test | The wind meter was on-site calibrated against the marine compass at four directions |
| Results: | |

Calibration Report of Wind Meter

Wind Still Test

| 4 | Wind Speed (m/s) | 8 |
|-------|------------------|---|
| | 0.00 | |

Wind Speed Test

| Davis (m/s) | Anemomete (m/s) |
|-------------|-----------------|
| 1.6 | 1.4 |
| 2.1 | 2.5 |
| 2.5 | 2.9 |

Wind Direction Test

| | Davis (o) | | Marine Compass (o) | |
|---|-----------|-----------|--------------------|--|
| | 271 | | 270 | |
| | 2 | | 0 | |
| | 91 | | 90 | |
| ÷ | 179 | 500 10 | 180 | |

Calibrated by:

Jai Yeung Ping Fai

(Technical Officer)

Checked by :

.

Ho Kam Fat (Senior Technical Officer)



TISCH ENVIRONMENTAL, INC. 145 SOUTH MIAMI AVE VILLAGE OF CLEVES, OH 45002 513.467.9000 877.263.7610 TOLL FREE 513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

| Date - Ma Operator | | Rootsmeter Orifice I.I | -, | 438320 2454 | Ta (K) - Pa (mm) - | 292 756.92 |
|---------------------------------|-------------------------|---------------------------|--------------------------------------|--|----------------------------------|--------------------------------------|
| ======= PLATE OR Run # | VOLUME START (m3) | VOLUME STOP (m3) | DIFF VOLUME (m3) | DIFF TIME (min) | METER DIFF Hg (mm) | ORFICE DIFF H2O (in.) |
| 1 2 3 4 5 | NA NA NA NA | NA NA NA NA | 1.00 1.00 1.00 1.00 1.00 | 1.4460 1.0300 0.9180 0.8780 0.7240 | 3.2 6.4 7.9 8.7 12.6 | 2.00 4.00 5.00 5.50 8.00 |

DATA TABULATION

| Vstd | (x axis) Qstd | (y axis) | | | Va | (x axis) Qa | (y axis) |
|--|--|--|----------|--|--|--|--|
| 1.0121 1.0078 1.0057 1.0047 0.9994 | 0.6999 0.9785 1.0955 1.1443 1.3805 | 1.4258 2.0163 2.2543 2.3644 2.8515 | | | 0.9958 0.9916 0.9895 0.9885 0.9883 | 0.6886 0.9627 1.0779 1.1258 1.3582 | 0.8784 1.2422 1.3888 1.4566 1.7568 |
| Qstd sloj intercep coeffici | t (b) = | 2.09532 -0.03812 0.99994 | | | Qa slop intercep coeffici | t (b) = | 1.31205 -0.02349 0.99994 |
| y axis = | SQRT [H20 (I | Pa/760) (298/ | Ta)] | | y axis = | SQRT [H20 (' | Ta/Pa)] |

CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta)
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa] Qa = Va/Time

For subsequent flow rate calculations:

Qstd = $1/m\{ [SQRT(H2O(Pa/760)(298/Ta))] - b \}$ Qa = $1/m\{ [SQRT H2O(Ta/Pa)] - b \}$



輝創工程有限公司

Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration 校正證書

Certificate No. : C153422 證書編號

| Manufacturer / 集 Model No. / 型號 Serial No. / 編號 Supplied By / 委 | | Anemometer Lutron AM-4201 AF.27513 Envirotech Services Co. Shop 6, G/F., Casio Mansio Hong Kong | n, 209 Shaukeiwan Road | of Receipt 1, | |
|--|---|---|-------------------------|------------------|-----------------|
| TEST CONDIT | TIONS / 測詞 | 试條件 | | | |
| Temperature / 溫 Line Voltage / 霍 | | 3 ± 2)°C - | Relative H | umidity / オ | 相對濕度 : (55±20)% |
| TEST SPECIFI Calibration check | | / 測試規範 | | | |
| DATE OF TES | | | | | |
| TEST RESULT | S/汇试结 | 果 | | | |
| The results apply | y to the part | icular unit-under-test only. he subsequent page(s). | | | |
| The results apply The results are d The test equipme | y to the part letailed in th ent used for | icular unit-under-test only. | ational Standards via : | | |
| The results apply The results are d The test equipme | y to the part letailed in th ent used for | icular unit-under-test only. le subsequent page(s). calibration are traceable to Na | ational Standards via : | | |
| The results apply The results are d The test equipme | y to the part letailed in th ent used for | icular unit-under-test only. le subsequent page(s). calibration are traceable to Na | ational Standards via : | | |
| The results apply The results are d The test equipme | y to the part letailed in th ent used for | icular unit-under-test only. le subsequent page(s). calibration are traceable to Na | ational Standards via : | | |

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。



輝創工程有限公司

Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration 校正證書

Certificate No. : C153422 證書編號

- 1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.
- 2. The results presented are the mean of 10 measurements at each calibration point.

3. Test equipment :

| Equipment ID | Description | Certificate No. |
|--------------|-------------------------------------|-----------------|
| CL386 | Multi-function Measuring Instrument | S12109 |

- 4. Test procedure : MA130N.
- 5. Results :

Air Velocity

| Applied | UUT | | | |
|------------------|---------|-------|----------------------------|-----------------|
| Applied Value | Reading | Value | ertainty | |
| (m/s) | (m/s) | (m/s) | Expanded Uncertainty (m/s) | Coverage Factor |
| 1.9 | 1.8 | +0.1 | 0.2 | 2.0 |
| 4.0 | 3.9 | +0.1 | 0.2 | 2.0 |
| 6.0 | 6.0 | 0.0 | 0.3 | 2.0 |
| 8.0 | 8.1 | -0.1 | 0.3 | 2.0 |
| 10.0 | 10.3 | -0.3 | 0.4 | 2.0 |

Remarks : - The Measured Corrections are defined as :

Value = Applied Value - UUT Reading

- The expanded uncertainties are for a level of confidence of 95 %.

Note :

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部後印本證書需先獲本實驗所書面批准。

Appendix F

EM&A Monitoring Schedules

HY/2012/08 - Tuen Mun - Chek Lap Kok Link Northern Connection Sub-sea Tunnel Section Air Quality Impact Monitoring Schedule - December 2015

Air quality monitoring stations: ASR1, ASR5, ASR6, ASR10, AQMS1

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|----------------------|--|----------------------|----------------------|--|----------------------|-----------------------|
| | | 01-Dec | 02-Dec | 03-Dec | | 05-Dec |
| | | 1-hour TSP - 3 times | | | 1-hour TSP - 3 times | |
| | | 24-hour TSP - 1 time | | | 24-hour TSP - 1 time | |
| | | Impact AQM | | | Impact AQM | |
| 06-Dec | 07-Dec | | 09-Dec | | | 12-Dec |
| | 1-hour TSP - 3 times | | | 1-hour TSP - 3 times | | |
| | 24-hour TSP - 1 time | | | 24-hour TSP - 1 time | | |
| | Impact AQM | | | Impact AQM | | |
| 13-Dec | 14-Dec | 15-Dec | | 17-Dec | 18-Dec | |
| 1-hour TSP - 3 times | | | 1-hour TSP - 3 times | | | 1-hour TSP - 3 times |
| 24-hour TSP - 1 time | | | 24-hour TSP - 1 time | | | 24-hour TSP - 1 time |
| Impact AQM | | | Impact AQM | | | Impact AQM |
| 20-Dec | 21-Dec | 22-Dec | | 24-Dec | | public holiday 26-Dec |
| | | 1-hour TSP - 3 times | | | 1-hour TSP - 3 times | |
| | | 24-hour TSP - 1 time | | | 24-hour TSP - 1 time | |
| | | Impact AQM | | | Impact AQM | |
| 27-Dec | | 29-Dec | 30-Dec | | | |
| | 1-hour TSP - 3 times 24-hour TSP - 1 time | | | 1-hour TSP - 3 times 24-hour TSP - 1 time | | |
| | Impact AQM | | | Impact AQM | | |

HY/2012/08 - Tuen Mun - Chek Lap Kok Link Northern Connection Sub-sea Tunnel Section Tentative Air Quality Impact Monitoring Schedule - January 2016

Air quality monitoring stations: ASR1, ASR5, ASR6, ASR10, AQMS1

| Com days | B d e under s | Ture deur | | Thursday | Entiday | Caturday |
|----------------------|----------------------|----------------------|----------------------|----------------------|---------------------------------|----------------------|
| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday public holiday 01-Jan | Saturday 02-Ja |
| | | | | | public holiday 01-Jan | 02-Ja |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| 03-Jan | 04-Jan | 05-Jan | 06-Jan | 07-Jan | 08-Jan | 09-Ja |
| 1-hour TSP - 3 times | | | 1-hour TSP - 3 times | | | 1-hour TSP - 3 times |
| 24-hour TSP - 1 time | | | 24-hour TSP - 1 time | | | 24-hour TSP - 1 time |
| | | | | | | |
| | | | | | | |
| Impact AQM 10-Jan | 11-Jan | | Impact AQM 13-Jan | 14-Jan | 15-Jan | Impact AQM 16-Ja |
| 10-0411 | 11-0dil | 1-hour TSP - 3 times | 10-0411 | 14 0411 | 1-hour TSP - 3 times | 10.00 |
| | | 24-hour TSP - 1 time | | | 24-hour TSP - 1 time | |
| | | | | | | |
| | | | | | | |
| | | Impact AQM | | | Impact AQM | |
| 17-Jan | | 19-Jan | 20-Jan | | 22-Jan | 23-Ja |
| | 1-hour TSP - 3 times | | | 1-hour TSP - 3 times | | |
| | 24-hour TSP - 1 time | | | 24-hour TSP - 1 time | | |
| | | | | | | |
| | Impact AQM | | | Impact AQM | | |
| 24-Jan | 25-Jan | 26-Jan | 27-Jan | 28-Jan | 29-Jan | 30-Ja |
| 1-hour TSP - 3 times | | | 1-hour TSP - 3 times | | | 1-hour TSP - 3 times |
| 24-hour TSP - 1 time | | | 24-hour TSP - 1 time | | | 24-hour TSP - 1 time |
| | | | | | | |
| | | | | | | |
| Impact AQM 31-Jan | | | Impact AQM | | | Impact AQM |
| ST-Jan | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

HY/2012/08 - Tuen Mun - Chek Lap Kok Link Northern Connection Sub-sea Tunnel Section Impact Dolphin Monitoring Survey Monitoring Schedule - December 2015

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|--------|------------------------------|------------------------------|------------------------------|----------|-----------------------|-----------------------|
| | | 1-Dec | | 3-Dec | 4-Dec | 5-Dec |
| | | | Impact Dolphin Monitoring | | | |
| 6-Dec | 7-Dec | 8-Dec | 9-Dec | 10-Dec | 11-Dec | 12-Dec |
| | Impact Dolphin Monitoring | | Impact Dolphin Monitoring | | | |
| 13-Dec | 14-Dec | 15-Dec | 16-Dec | 17-Dec | 18-Dec | 19-Dec |
| | | Impact Dolphin Monitoring | | | | |
| 20-Dec | 21-Dec | 22-Dec | 23-Dec | 24-Dec | public holiday 25-Dec | public holiday 26-Dec |
| | | | | | | |
| 27-Dec | 28-Dec | 29-Dec | 30-Dec | 31-Dec | | |
| | | | | | | |

HY/2012/08 - Tuen Mun - Chek Lap Kok Link Northern Connection Sub-sea Tunnel Section Tentative Impact Dolphin Monitoring Survey Monitoring Schedule - January 2016

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|--------|------------------------------|------------------------------|------------------------------|----------|------------------------------|----------|
| | | | | | public holiday 1-Jan | 2-Jan |
| | | | | | | |
| 3-Jan | 4-Jan | 5-Jan | 6-Jan | | | 9-Jan |
| | | | | | Impact Dolphin Monitoring | |
| 10-Jan | 11-Jan | | 13-Jan | 14-Jan | 15-Jan | 16-Jan |
| | | Impact Dolphin Monitoring | | | | |
| 17-Jan | | | | 21-Jan | 22-Jan | 23-Jan |
| | Impact Dolphin Monitoring | | Impact Dolphin Monitoring | | | |
| 24-Jan | 25-Jan | 26-Jan | 27-Jan | 28-Jan | 29-Jan | 30-Jan |
| | | | | | | |
| 31-Jan | | | | | | |
| | | | | | | |

Appendix G

Impact Air Quality Monitoring Results

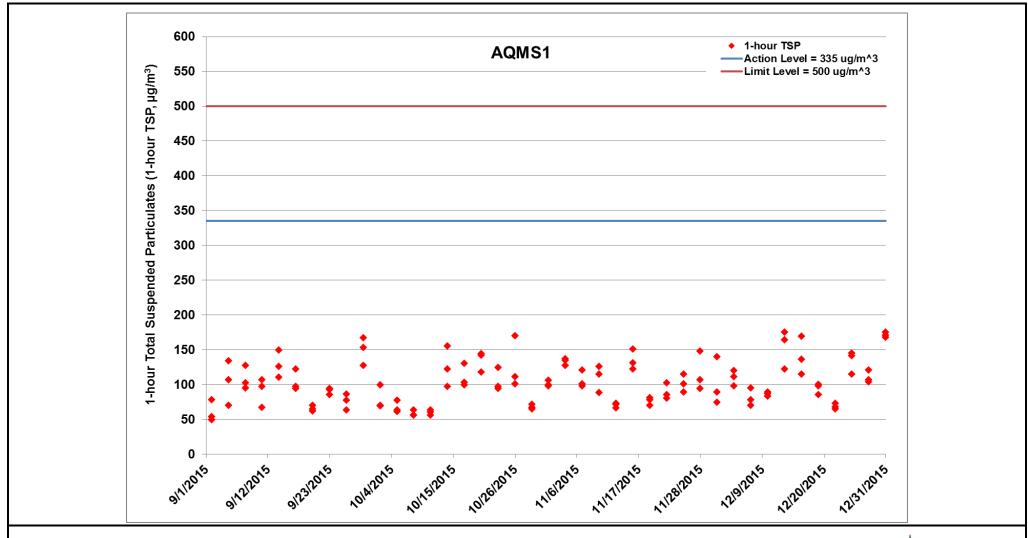


Figure G.1 Impact Monitoring – 1-hour Total Suspended Particulates (μg/m³) at AQMS1 between 1 September 2015 and 31 December 2015 during impact monitoring period. The weather conditions during the monitoring period varied from sunny to cloudy. Major land-based construction activities included: Construction of capping beam and base slab for Ventilation Shaft at Works Area – Portion N-C (1/9/2015 – 31/12/2015) and Box Culvert Extension (1/9/2015 – 31/12/2015). *Ref:* 0212330_Impact AQM graphs_ December 2015_REV a.xlsx



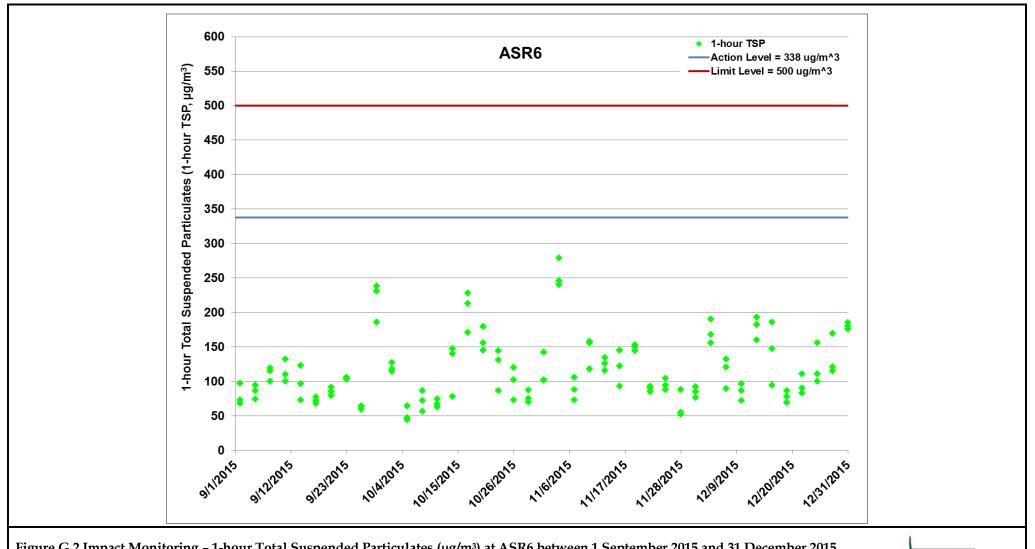


Figure G.2 Impact Monitoring – 1-hour Total Suspended Particulates (µg/m³) at ASR6 between 1 September 2015 and 31 December 2015 during impact monitoring period. The weather conditions during the monitoring period varied from sunny to cloudy. Major land-based construction activities included: Construction of capping beam and base slab for Ventilation Shaft at Works Area – Portion N-C (1/9/2015 – 31/12/2015) and Box Culvert Extension (1/9/2015 – 31/12/2015). *Ref:* 0212330_Impact AQM graphs_ December 2015_REV a.xlsx



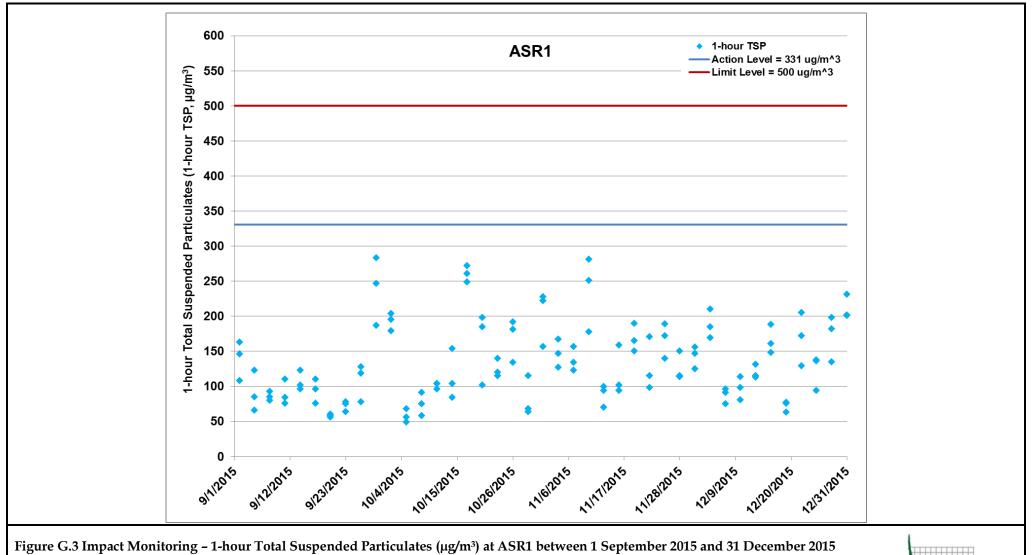
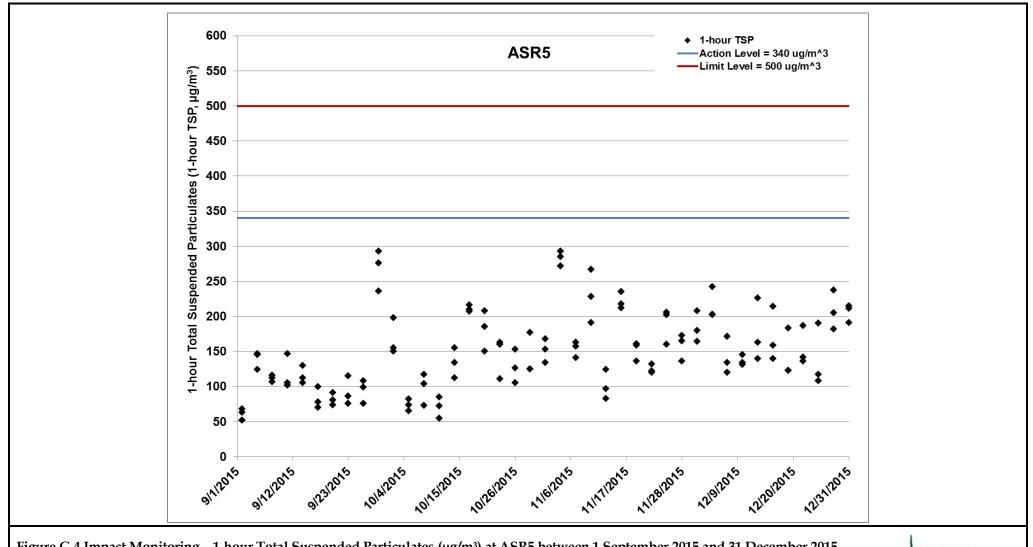


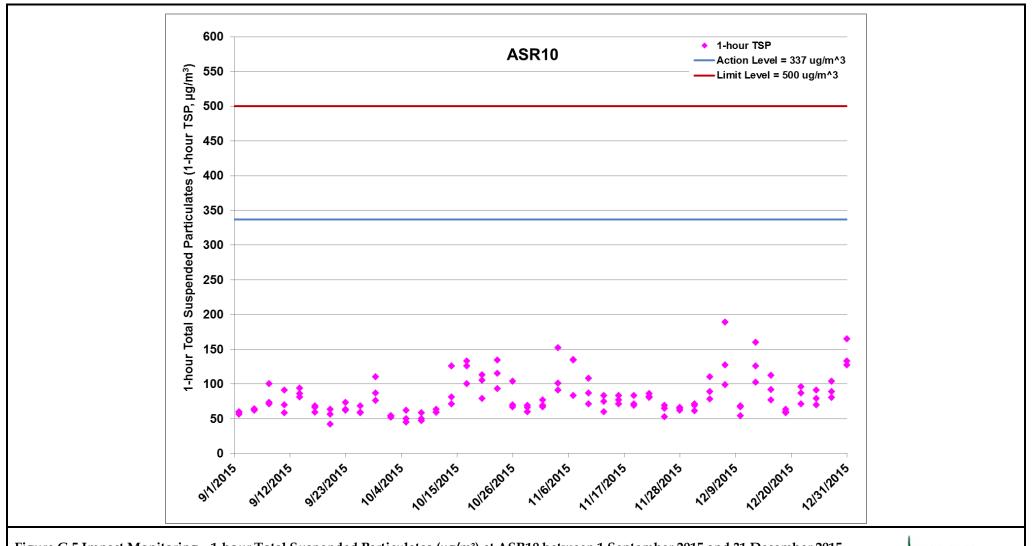
Figure G.3 Impact Monitoring – 1-hour Total Suspended Particulates (µg/m³) at ASR1 between 1 September 2015 and 31 December 2015 during impact monitoring period. The weather conditions during the monitoring period varied from sunny to cloudy. Major land-based construction activities included: Construction of capping beam and base slab for Ventilation Shaft at Works Area – Portion N-C (1/9/2015 – 31/12/2015) and Box Culvert Extension (1/9/2015 – 31/12/2015). *Ref:* 0212330_Impact AQM graphs_ December 2015_REV a.xlsx





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Figure G.4 Impact Monitoring – 1-hour Total Suspended Particulates (µg/m³) at ASR5 between 1 September 2015 and 31 December 2015 during impact monitoring period. The weather conditions during the monitoring period varied from sunny to cloudy. Major land-based construction activities included: Construction of capping beam and base slab for Ventilation Shaft at Works Area – Portion N-C (1/9/2015 – 31/12/2015) and Box Culvert Extension (1/9/2015 – 31/12/2015). *Ref:* 0212330_Impact AQM graphs_ December 2015_REV a.xlsx



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Figure G.5 Impact Monitoring – 1-hour Total Suspended Particulates (µg/m³) at ASR10 between 1 September 2015 and 31 December 2015 during impact monitoring period. The weather conditions during the monitoring period varied from sunny to cloudy. Major land-based construction activities included: Construction of capping beam and base slab for Ventilation Shaft at Works Area – Portion N-C (1/9/2015 – 31/12/2015) and Box Culvert Extension (1/9/2015 – 31/12/2015). *Ref:* 0212330_Impact AQM graphs_ December 2015_REV a.xlsx

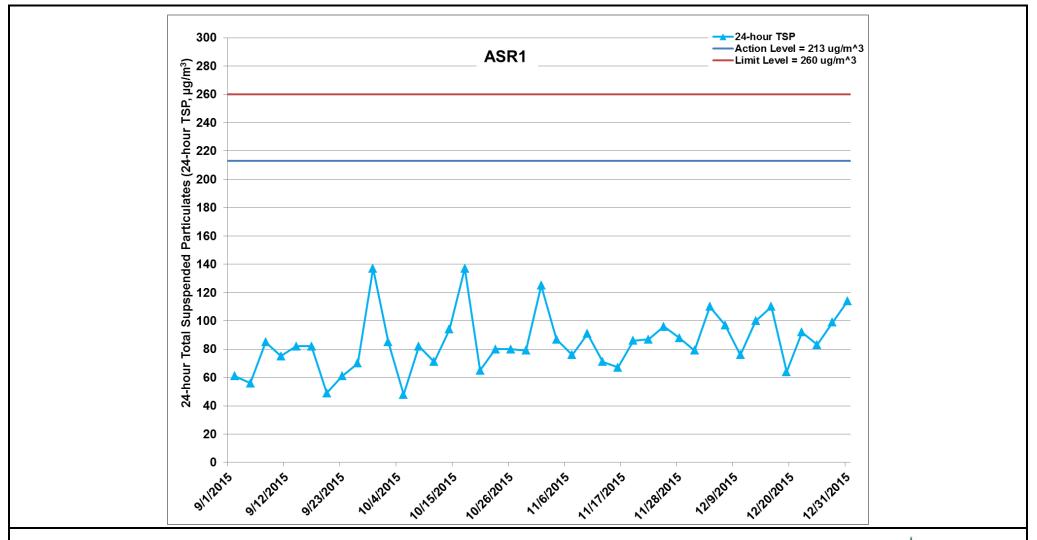


Figure G.6 Impact Monitoring – 24-hour Total Suspended Particulates (µg/m³) at ASR1 between 1 September 2015 and 31 December 2015 during impact monitoring period. The weather conditions during the monitoring period varied from sunny to cloudy. Major land-based construction activities included: Construction of capping beam and base slab for Ventilation Shaft at Works Area – Portion N-C (1/9/2015 – 31/12/2015) and Box Culvert Extension (1/9/2015 – 31/12/2015). *Ref:* 0212330_Impact AQM graphs_ December 2015_REV a.xlsx



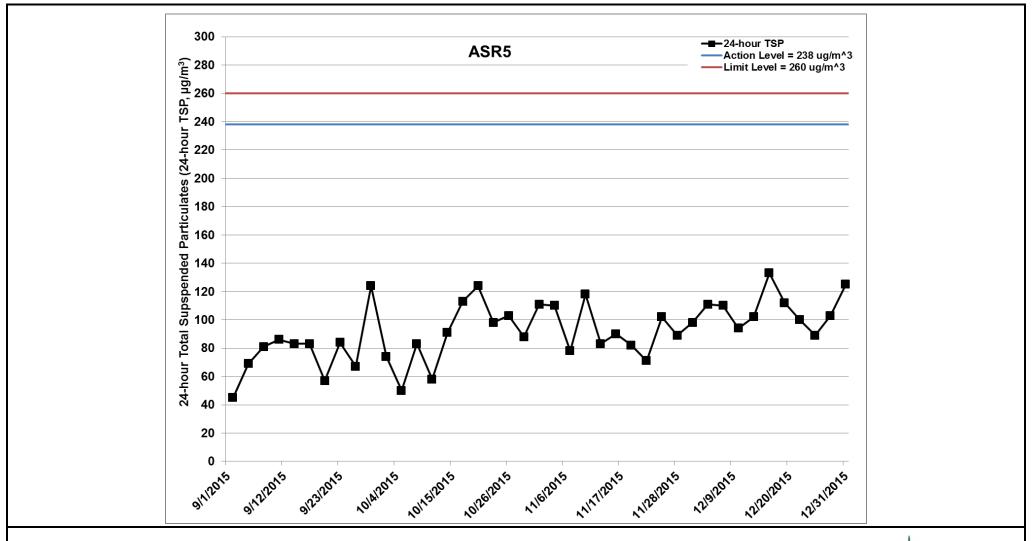


Figure G.7 Impact Monitoring – 24-hour Total Suspended Particulates (µg/m³) at ASR5 between 1 September 2015 and 31 December 2015 during impact monitoring period. The weather conditions during the monitoring period varied from sunny to cloudy. Major land-based construction activities included: Construction of capping beam and base slab for Ventilation Shaft at Works Area – Portion N-C (1/9/2015 – 31/12/2015) and Box Culvert Extension (1/9/2015 – 31/12/2015). *Ref:* 0212330_Impact AQM graphs_ December 2015_REV a.xlsx



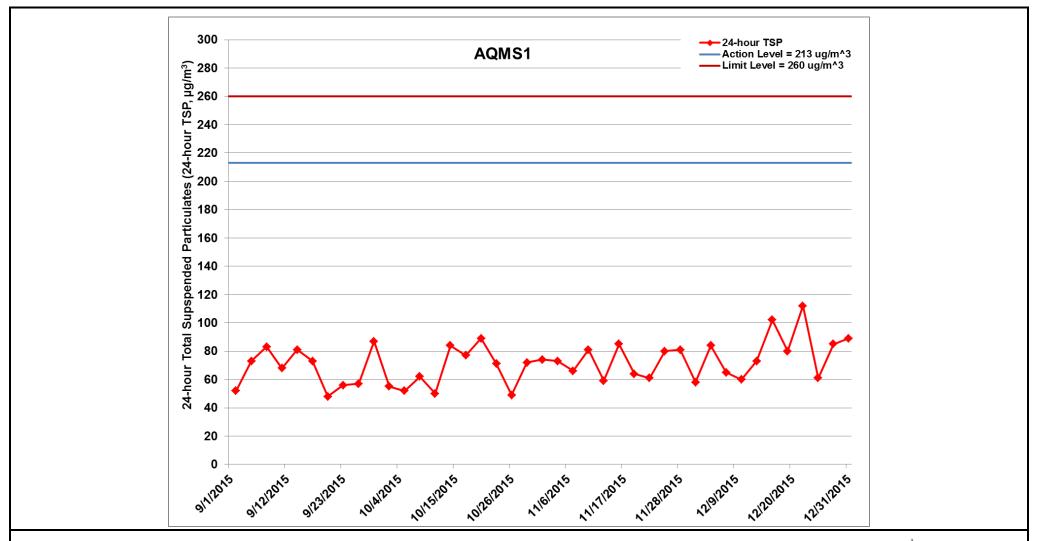


Figure G.8 Impact Monitoring – 24-hour Total Suspended Particulates (μ g/m³) at AQMS1 between 1 September 2015 and 31 December 2015 during impact monitoring period. The weather conditions during the monitoring period varied from sunny to cloudy. Major land-based construction activities included: Construction of capping beam and base slab for Ventilation Shaft at Works Area – Portion N-C (1/9/2015 – 31/12/2015) and Box Culvert Extension (1/9/2015 – 31/12/2015). *Ref:* 0212330_Impact AQM graphs_ December 2015_REV a.xlsx



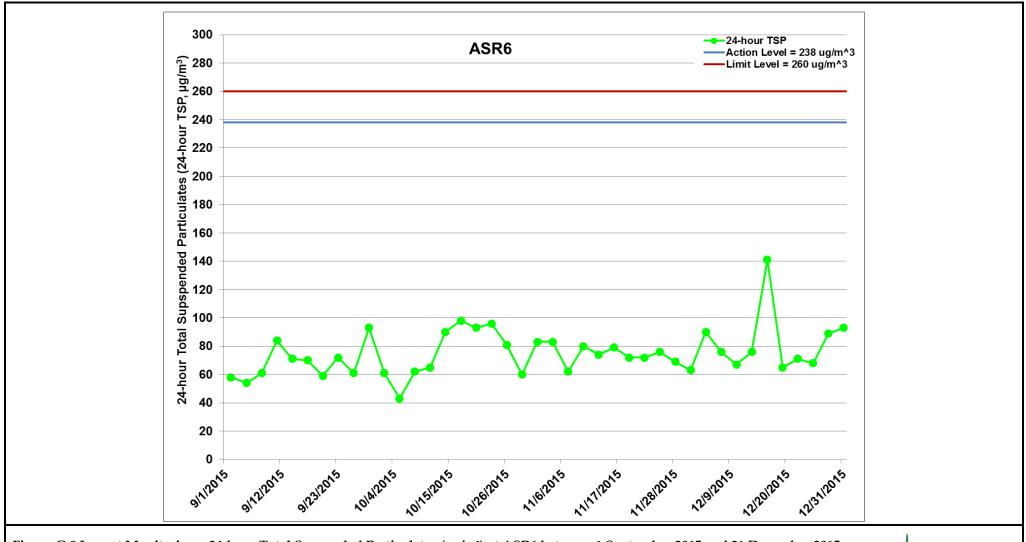


Figure G.9 Impact Monitoring – 24-hour Total Suspended Particulates (µg/m³) at ASR6 between 1 September 2015 and 31 December 2015 during impact monitoring period. The weather conditions during the monitoring period varied from sunny to cloudy. Major land-based construction activities included: Construction of capping beam and base slab for Ventilation Shaft at Works Area – Portion N-C (1/9/2015 – 31/12/2015) and Box Culvert Extension (1/9/2015 – 31/12/2015). *Ref:* 0212330_Impact AQM graphs_ December 2015_REV a.xlsx



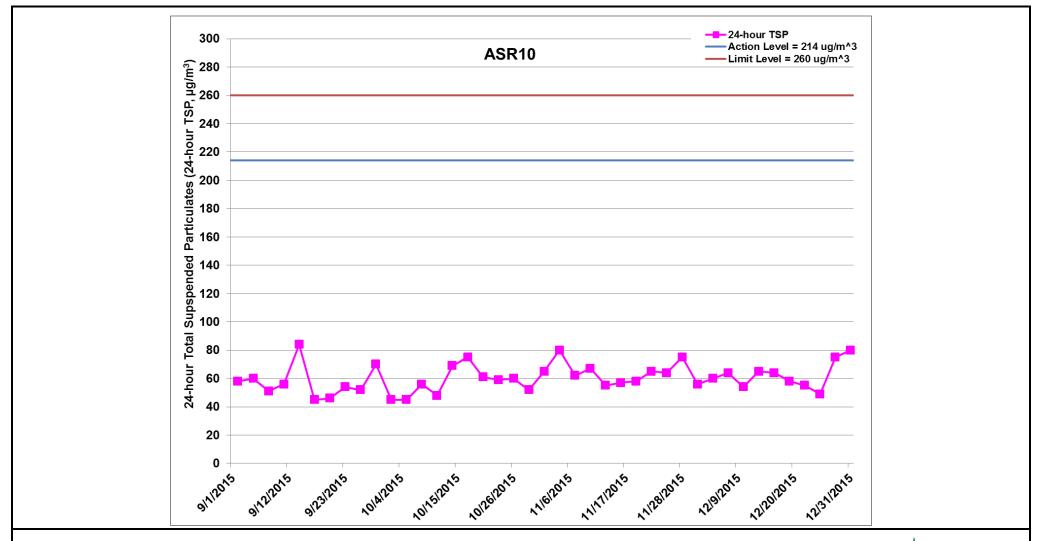


Figure G.10 Impact Monitoring – 24-hour Total Suspended Particulates (µg/m³) at ASR10 between 1 September 2015 and 31 December 2015 during impact monitoring period. The weather conditions during the monitoring period varied from sunny to cloudy. Major land-based construction activities included: Construction of capping beam and base slab for Ventilation Shaft at Works Area – Portion N-C (1/9/2015 – 31/12/2015) and Box Culvert Extension (1/9/2015 – 31/12/2015). *Ref:* 0212330_Impact AQM graphs_ December 2015_REV a.xlsx



| Project | Works | Date | Station | Weather | Start time | Parameters | Results | units |
|---------|------------|------------|---------|---------|------------|------------|---------|-------|
| TMCLKL | HY/2012/08 | 2015-12-01 | AQMS1 | Sunny | 13:25 | 1-hour TSP | 140 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-01 | AQMS1 | Sunny | 14:27 | 1-hour TSP | 89 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-01 | AQMS1 | Sunny | 15:29 | 1-hour TSP | 74 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-01 | ASR1 | Sunny | 13:14 | 1-hour TSP | 156 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-01 | ASR1 | Sunny | 14:16 | 1-hour TSP | 147 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-01 | ASR1 | Sunny | 15:18 | 1-hour TSP | 125 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-01 | ASR10 | Sunny | 12:42 | 1-hour TSP | 71 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-01 | ASR10 | Sunny | 13:44 | 1-hour TSP | 61 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-01 | ASR10 | Sunny | 14:46 | 1-hour TSP | 69 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-01 | ASR5 | Sunny | 13:03 | 1-hour TSP | 208 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-01 | ASR5 | Sunny | 14:05 | 1-hour TSP | 180 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-01 | ASR5 | Sunny | 15:07 | 1-hour TSP | 164 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-01 | ASR6 | Sunny | 12:53 | 1-hour TSP | 92 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-01 | ASR6 | Sunny | 13:55 | 1-hour TSP | 85 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-01 | ASR6 | Sunny | 14:57 | 1-hour TSP | 76 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-04 | AQMS1 | Sunny | 09:04 | 1-hour TSP | 111 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-04 | AQMS1 | Sunny | 10:06 | 1-hour TSP | 98 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-04 | AQMS1 | Sunny | 11:08 | 1-hour TSP | 120 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-04 | ASR1 | Sunny | 08:53 | 1-hour TSP | 210 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-04 | ASR1 | Sunny | 09:55 | 1-hour TSP | 169 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-04 | ASR1 | Sunny | 10:57 | 1-hour TSP | 185 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-04 | ASR10 | Sunny | 08:20 | 1-hour TSP | 78 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-04 | ASR10 | Sunny | 09:22 | 1-hour TSP | 89 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-04 | ASR10 | Sunny | 10:24 | 1-hour TSP | 110 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-04 | ASR5 | Sunny | 08:42 | 1-hour TSP | 242 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-04 | ASR5 | Sunny | 09:44 | 1-hour TSP | 203 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-04 | ASR5 | Sunny | 10:46 | 1-hour TSP | 202 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-04 | ASR6 | Sunny | 08:30 | 1-hour TSP | 190 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-04 | ASR6 | Sunny | 09:32 | 1-hour TSP | 156 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-04 | ASR6 | Sunny | 10:34 | 1-hour TSP | 168 | ug/m3 |

| Project | Works | Date | Station | Weather | Start time | Parameters | Results | units |
|---------|------------|------------|---------|---------|------------|------------|---------|-------|
| TMCLKL | HY/2012/08 | 2015-12-07 | AQMS1 | Cloudy | 14:20 | 1-hour TSP | 95 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-07 | AQMS1 | Cloudy | 15:22 | 1-hour TSP | 70 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-07 | AQMS1 | Cloudy | 16:24 | 1-hour TSP | 78 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-07 | ASR1 | Cloudy | 14:08 | 1-hour TSP | 96 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-07 | ASR1 | Cloudy | 15:10 | 1-hour TSP | 75 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-07 | ASR1 | Cloudy | 16:12 | 1-hour TSP | 91 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-07 | ASR10 | Cloudy | 13:36 | 1-hour TSP | 189 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-07 | ASR10 | Cloudy | 14:38 | 1-hour TSP | 127 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-07 | ASR10 | Cloudy | 15:40 | 1-hour TSP | 99 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-07 | ASR5 | Cloudy | 13:57 | 1-hour TSP | 134 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-07 | ASR5 | Cloudy | 14:59 | 1-hour TSP | 120 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-07 | ASR5 | Cloudy | 16:01 | 1-hour TSP | 171 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-07 | ASR6 | Cloudy | 13:47 | 1-hour TSP | 121 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-07 | ASR6 | Cloudy | 14:49 | 1-hour TSP | 89 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-07 | ASR6 | Cloudy | 15:51 | 1-hour TSP | 132 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-10 | AQMS1 | Sunny | 14:25 | 1-hour TSP | 83 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-10 | AQMS1 | Sunny | 15:27 | 1-hour TSP | 87 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-10 | AQMS1 | Sunny | 16:29 | 1-hour TSP | 89 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-10 | ASR1 | Sunny | 14:14 | 1-hour TSP | 114 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-10 | ASR1 | Sunny | 15:16 | 1-hour TSP | 98 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-10 | ASR1 | Sunny | 16:18 | 1-hour TSP | 81 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-10 | ASR10 | Sunny | 13:43 | 1-hour TSP | 54 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-10 | ASR10 | Sunny | 14:45 | 1-hour TSP | 68 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-10 | ASR10 | Sunny | 15:47 | 1-hour TSP | 67 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-10 | ASR5 | Sunny | 14:04 | 1-hour TSP | 131 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-10 | ASR5 | Sunny | 15:06 | 1-hour TSP | 145 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-10 | ASR5 | Sunny | 16:08 | 1-hour TSP | 134 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-10 | ASR6 | Sunny | 13:53 | 1-hour TSP | 96 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-10 | ASR6 | Sunny | 14:55 | 1-hour TSP | 72 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-10 | ASR6 | Sunny | 15:57 | 1-hour TSP | 86 | ug/m3 |

| Project | Works | Date | Station | Weather | Start time | Parameters | Results | units |
|---------|------------|------------|---------|---------|------------|------------|---------|-------|
| TMCLKL | HY/2012/08 | 2015-12-13 | AQMS1 | Sunny | 13:45 | 1-hour TSP | 122 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-13 | AQMS1 | Sunny | 14:47 | 1-hour TSP | 164 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-13 | AQMS1 | Sunny | 15:49 | 1-hour TSP | 175 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-13 | ASR1 | Sunny | 13:33 | 1-hour TSP | 115 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-13 | ASR1 | Sunny | 14:35 | 1-hour TSP | 113 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-13 | ASR1 | Sunny | 15:37 | 1-hour TSP | 131 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-13 | ASR10 | Sunny | 13:00 | 1-hour TSP | 102 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-13 | ASR10 | Sunny | 14:02 | 1-hour TSP | 160 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-13 | ASR10 | Sunny | 15:04 | 1-hour TSP | 126 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-13 | ASR5 | Sunny | 13:22 | 1-hour TSP | 140 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-13 | ASR5 | Sunny | 14:24 | 1-hour TSP | 226 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-13 | ASR5 | Sunny | 15:26 | 1-hour TSP | 163 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-13 | ASR6 | Sunny | 13:12 | 1-hour TSP | 160 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-13 | ASR6 | Sunny | 14:14 | 1-hour TSP | 182 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-13 | ASR6 | Sunny | 15:16 | 1-hour TSP | 193 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-16 | AQMS1 | Sunny | 13:53 | 1-hour TSP | 169 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-16 | AQMS1 | Sunny | 14:55 | 1-hour TSP | 136 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-16 | AQMS1 | Sunny | 15:57 | 1-hour TSP | 115 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-16 | ASR1 | Sunny | 13:42 | 1-hour TSP | 188 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-16 | ASR1 | Sunny | 14:44 | 1-hour TSP | 148 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-16 | ASR1 | Sunny | 15:46 | 1-hour TSP | 161 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-16 | ASR10 | Sunny | 13:19 | 1-hour TSP | 112 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-16 | ASR10 | Sunny | 14:21 | 1-hour TSP | 92 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-16 | ASR10 | Sunny | 15:23 | 1-hour TSP | 77 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-16 | ASR5 | Sunny | 13:30 | 1-hour TSP | 159 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-16 | ASR5 | Sunny | 14:32 | 1-hour TSP | 214 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-16 | ASR5 | Sunny | 15:34 | 1-hour TSP | 140 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-16 | ASR6 | Sunny | 13:29 | 1-hour TSP | 186 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-16 | ASR6 | Sunny | 14:31 | 1-hour TSP | 147 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-16 | ASR6 | Sunny | 15:33 | 1-hour TSP | 94 | ug/m3 |

| Project | Works | Date | Station | Weather | Start time | Parameters | Results | units |
|---------|------------|------------|---------|---------|------------|------------|---------|-------|
| TMCLKL | HY/2012/08 | 2015-12-19 | AQMS1 | Sunny | 14:10 | 1-hour TSP | 85 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-19 | AQMS1 | Sunny | 15:12 | 1-hour TSP | 100 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-19 | AQMS1 | Sunny | 16:14 | 1-hour TSP | 98 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-19 | ASR1 | Sunny | 13:59 | 1-hour TSP | 77 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-19 | ASR1 | Sunny | 15:01 | 1-hour TSP | 63 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-19 | ASR1 | Sunny | 16:03 | 1-hour TSP | 76 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-19 | ASR10 | Sunny | 13:26 | 1-hour TSP | 63 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-19 | ASR10 | Sunny | 14:28 | 1-hour TSP | 60 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-19 | ASR10 | Sunny | 15:30 | 1-hour TSP | 58 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-19 | ASR5 | Sunny | 13:47 | 1-hour TSP | 123 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-19 | ASR5 | Sunny | 14:49 | 1-hour TSP | 123 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-19 | ASR5 | Sunny | 15:51 | 1-hour TSP | 183 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-19 | ASR6 | Sunny | 13:37 | 1-hour TSP | 78 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-19 | ASR6 | Sunny | 14:39 | 1-hour TSP | 86 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-19 | ASR6 | Sunny | 15:41 | 1-hour TSP | 69 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-22 | AQMS1 | Sunny | 14:00 | 1-hour TSP | 68 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-22 | AQMS1 | Sunny | 15:02 | 1-hour TSP | 73 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-22 | AQMS1 | Sunny | 16:04 | 1-hour TSP | 65 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-22 | ASR1 | Sunny | 13:49 | 1-hour TSP | 205 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-22 | ASR1 | Sunny | 14:51 | 1-hour TSP | 172 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-22 | ASR1 | Sunny | 15:53 | 1-hour TSP | 129 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-22 | ASR10 | Sunny | 13:16 | 1-hour TSP | 96 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-22 | ASR10 | Sunny | 14:18 | 1-hour TSP | 87 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-22 | ASR10 | Sunny | 15:20 | 1-hour TSP | 71 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-22 | ASR5 | Sunny | 13:38 | 1-hour TSP | 136 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-22 | ASR5 | Sunny | 14:40 | 1-hour TSP | 187 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-22 | ASR5 | Sunny | 15:42 | 1-hour TSP | 142 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-22 | ASR6 | Sunny | 13:27 | 1-hour TSP | 111 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-22 | ASR6 | Sunny | 14:29 | 1-hour TSP | 90 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-22 | ASR6 | Sunny | 15:31 | 1-hour TSP | 83 | ug/m3 |

| Project | Works | Date | Station | Weather | Start time | Parameters | Results | units |
|---------|------------|------------|---------|---------|------------|------------|---------|-------|
| TMCLKL | HY/2012/08 | 2015-12-25 | AQMS1 | Cloudy | 14:01 | 1-hour TSP | 145 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-25 | AQMS1 | Cloudy | 15:03 | 1-hour TSP | 115 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-25 | AQMS1 | Cloudy | 16:05 | 1-hour TSP | 141 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-25 | ASR1 | Cloudy | 13:49 | 1-hour TSP | 138 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-25 | ASR1 | Cloudy | 14:51 | 1-hour TSP | 94 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-25 | ASR1 | Cloudy | 15:53 | 1-hour TSP | 136 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-25 | ASR10 | Cloudy | 13:17 | 1-hour TSP | 79 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-25 | ASR10 | Cloudy | 14:19 | 1-hour TSP | 70 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-25 | ASR10 | Cloudy | 15:21 | 1-hour TSP | 91 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-25 | ASR5 | Cloudy | 13:38 | 1-hour TSP | 117 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-25 | ASR5 | Cloudy | 14:40 | 1-hour TSP | 108 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-25 | ASR5 | Cloudy | 15:42 | 1-hour TSP | 190 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-25 | ASR6 | Cloudy | 13:27 | 1-hour TSP | 100 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-25 | ASR6 | Cloudy | 14:29 | 1-hour TSP | 111 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-25 | ASR6 | Cloudy | 15:31 | 1-hour TSP | 156 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-28 | AQMS1 | Cloudy | 14:27 | 1-hour TSP | 104 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-28 | AQMS1 | Cloudy | 15:29 | 1-hour TSP | 121 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-28 | AQMS1 | Cloudy | 16:31 | 1-hour TSP | 107 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-28 | ASR1 | Cloudy | 14:16 | 1-hour TSP | 198 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-28 | ASR1 | Cloudy | 15:18 | 1-hour TSP | 182 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-28 | ASR1 | Cloudy | 16:20 | 1-hour TSP | 135 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-28 | ASR10 | Cloudy | 13:43 | 1-hour TSP | 104 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-28 | ASR10 | Cloudy | 14:45 | 1-hour TSP | 80 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-28 | ASR10 | Cloudy | 15:47 | 1-hour TSP | 89 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-28 | ASR5 | Cloudy | 14:06 | 1-hour TSP | 237 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-28 | ASR5 | Cloudy | 15:08 | 1-hour TSP | 205 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-28 | ASR5 | Cloudy | 16:10 | 1-hour TSP | 182 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-28 | ASR6 | Cloudy | 13:55 | 1-hour TSP | 169 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-28 | ASR6 | Cloudy | 14:57 | 1-hour TSP | 121 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-28 | ASR6 | Cloudy | 15:59 | 1-hour TSP | 115 | ug/m3 |

| Project | Works | Date | Station | Weather | Start time | Parameters | Results | units |
|---------|------------|------------|---------|---------|------------|-------------|---------|-------|
| TMCLKL | HY/2012/08 | 2015-12-31 | AQMS1 | Sunny | 13:55 | 1-hour TSP | 171 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-31 | AQMS1 | Sunny | 14:57 | 1-hour TSP | 168 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-31 | AQMS1 | Sunny | 15:59 | 1-hour TSP | 175 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-31 | ASR1 | Sunny | 13:45 | 1-hour TSP | 231 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-31 | ASR1 | Sunny | 14:47 | 1-hour TSP | 201 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-31 | ASR1 | Sunny | 15:49 | 1-hour TSP | 202 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-31 | ASR10 | Sunny | 13:11 | 1-hour TSP | 133 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-31 | ASR10 | Sunny | 14:13 | 1-hour TSP | 165 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-31 | ASR10 | Sunny | 15:15 | 1-hour TSP | 127 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-31 | ASR5 | Sunny | 13:33 | 1-hour TSP | 211 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-31 | ASR5 | Sunny | 14:35 | 1-hour TSP | 191 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-31 | ASR5 | Sunny | 15:37 | 1-hour TSP | 215 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-31 | ASR6 | Sunny | 13:22 | 1-hour TSP | 185 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-31 | ASR6 | Sunny | 14:24 | 1-hour TSP | 176 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-31 | ASR6 | Sunny | 15:26 | 1-hour TSP | 180 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-01 | AQMS1 | Sunny | 16:31 | 24-hour TSP | 58 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-01 | ASR1 | Sunny | 16:20 | 24-hour TSP | 79 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-01 | ASR10 | Sunny | 15:48 | 24-hour TSP | 56 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-01 | ASR5 | Sunny | 16:09 | 24-hour TSP | 98 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-01 | ASR6 | Sunny | 15:59 | 24-hour TSP | 63 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-04 | AQMS1 | Sunny | 12:10 | 24-hour TSP | 84 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-04 | ASR1 | Sunny | 11:59 | 24-hour TSP | 110 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-04 | ASR10 | Sunny | 11:26 | 24-hour TSP | 60 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-04 | ASR5 | Sunny | 11:48 | 24-hour TSP | 111 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-04 | ASR6 | Sunny | 11:36 | 24-hour TSP | 90 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-07 | AQMS1 | Sunny | 17:26 | 24-hour TSP | 65 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-07 | ASR1 | Sunny | 17:14 | 24-hour TSP | 97 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-07 | ASR10 | Sunny | 16:42 | 24-hour TSP | 64 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-07 | ASR5 | Sunny | 17:03 | 24-hour TSP | 110 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-07 | ASR6 | Sunny | 16:53 | 24-hour TSP | 76 | ug/m3 |

| Project | Works | Date | Station | Weather | Start time | Parameters | Results | units |
|---------|------------|------------|---------|---------|------------|-------------|---------|-------|
| TMCLKL | HY/2012/08 | 2015-12-10 | AQMS1 | Sunny | 17:31 | 24-hour TSP | 60 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-10 | ASR1 | Sunny | 17:20 | 24-hour TSP | 76 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-10 | ASR10 | Sunny | 16:49 | 24-hour TSP | 54 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-10 | ASR5 | Sunny | 17:10 | 24-hour TSP | 94 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-10 | ASR6 | Sunny | 16:59 | 24-hour TSP | 67 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-13 | AQMS1 | Sunny | 16:51 | 24-hour TSP | 73 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-13 | ASR1 | Sunny | 16:39 | 24-hour TSP | 100 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-13 | ASR10 | Sunny | 16:06 | 24-hour TSP | 65 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-13 | ASR5 | Sunny | 16:28 | 24-hour TSP | 102 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-13 | ASR6 | Sunny | 16:18 | 24-hour TSP | 76 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-16 | AQMS1 | Sunny | 16:59 | 24-hour TSP | 102 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-16 | ASR1 | Sunny | 16:48 | 24-hour TSP | 110 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-16 | ASR10 | Sunny | 16:25 | 24-hour TSP | 64 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-16 | ASR5 | Sunny | 16:36 | 24-hour TSP | 133 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-16 | ASR6 | Sunny | 16:35 | 24-hour TSP | 141 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-19 | AQMS1 | Sunny | 17:16 | 24-hour TSP | 80 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-19 | ASR1 | Sunny | 17:05 | 24-hour TSP | 64 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-19 | ASR10 | Sunny | 16:32 | 24-hour TSP | 58 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-19 | ASR5 | Sunny | 16:53 | 24-hour TSP | 112 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-19 | ASR6 | Sunny | 16:43 | 24-hour TSP | 65 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-22 | AQMS1 | Sunny | 17:06 | 24-hour TSP | 112 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-22 | ASR1 | Sunny | 16:35 | 24-hour TSP | 92 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-22 | ASR10 | Sunny | 16:22 | 24-hour TSP | 55 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-22 | ASR5 | Sunny | 16:44 | 24-hour TSP | 100 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-22 | ASR6 | Sunny | 16:33 | 24-hour TSP | 71 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-25 | AQMS1 | Cloudy | 17:07 | 24-hour TSP | 61 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-25 | ASR1 | Cloudy | 16:55 | 24-hour TSP | 83 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-25 | ASR10 | Cloudy | 16:23 | 24-hour TSP | 49 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-25 | ASR5 | Cloudy | 16:44 | 24-hour TSP | 89 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-25 | ASR6 | Cloudy | 16:33 | 24-hour TSP | 68 | ug/m3 |

| Project | Works | Date | Station | Weather | Start time | Parameters | Results | units |
|---------|------------|------------|---------|---------|------------|-------------|---------|-------|
| TMCLKL | HY/2012/08 | 2015-12-28 | AQMS1 | Cloudy | 17:33 | 24-hour TSP | 85 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-28 | ASR1 | Cloudy | 17:22 | 24-hour TSP | 99 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-28 | ASR10 | Cloudy | 16:49 | 24-hour TSP | 75 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-28 | ASR5 | Cloudy | 17:12 | 24-hour TSP | 103 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-28 | ASR6 | Cloudy | 17:01 | 24-hour TSP | 89 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-31 | AQMS1 | Sunny | 17:01 | 24-hour TSP | 89 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-31 | ASR1 | Sunny | 16:51 | 24-hour TSP | 114 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-31 | ASR10 | Sunny | 16:17 | 24-hour TSP | 80 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-31 | ASR5 | Sunny | 16:39 | 24-hour TSP | 125 | ug/m3 |
| TMCLKL | HY/2012/08 | 2015-12-31 | ASR6 | Sunny | 16:28 | 24-hour TSP | 93 | ug/m3 |

Appendix H

Meteorological Data

| Meteorological Data for Impact Monitoring in the reporting period | | | | | | | | | |
|---|--------------|-----------------------------|-----------------------------------|--|--|--|--|--|--|
| Date (yy-mm-dd) | Time (24hrs) | Average of Wind Speed (m/s) | Average of Wind Direction(degree) | | | | | | |
| 15/12/01 | 1:00 | 0.4 | 344 | | | | | | |
| 15/12/01 | 2:00 | 0 | - | | | | | | |
| 15/12/01 | 3:00 | 0 | - | | | | | | |
| 15/12/01 | 4:00 | 0 | - | | | | | | |
| 15/12/01 | 5:00 | 0.9 | 46 | | | | | | |
| 15/12/01 | 6:00 | 0 | - | | | | | | |
| 15/12/01 | 7:00 | 0 | - | | | | | | |
| 15/12/01 | 8:00 | 0.4 | 32 | | | | | | |
| 15/12/01 | 9:00 | 0 | - | | | | | | |
| 15/12/01 | 10:00 | 0.9 | 91 | | | | | | |
| 15/12/01 | 11:00 | 1.3 | 89 | | | | | | |
| 15/12/01 | 12:00 | 1.8 | 100 | | | | | | |
| 15/12/01 | 13:00 | 2.2 | 124 | | | | | | |
| 15/12/01 | 14:00 | 2.7 | 115 | | | | | | |
| 15/12/01 | 15:00 | 2.7 | 143 | | | | | | |
| 15/12/01 | 16:00 | 2.2 | 151 | | | | | | |
| 15/12/01 | 16:00 | 2.7 | 162 | | | | | | |
| | | 2.2 | 162 | | | | | | |
| 15/12/01 | 18:00 | | | | | | | | |
| 15/12/01 | 19:00 | 2.2 | 169 | | | | | | |
| 15/12/01 | 20:00 | 2.2 | 134 | | | | | | |
| 15/12/01 | 21:00 | 1.8 | 151 | | | | | | |
| 15/12/01 | 22:00 | 2.2 | 87 | | | | | | |
| 15/12/01 | 23:00 | 2.7 | 122 | | | | | | |
| 15/12/01 | 0:00 | 1.8 | 134 | | | | | | |
| 15/12/02 | 1:00 | 0.9 | 101 | | | | | | |
| 15/12/02 | 2:00 | 0.4 | 125 | | | | | | |
| 15/12/02 | 3:00 | 0.9 | 124 | | | | | | |
| 15/12/02 | 4:00 | 0.9 | 133 | | | | | | |
| 15/12/02 | 5:00 | 0.9 | 65 | | | | | | |
| 15/12/02 | 6:00 | 0.4 | 51 | | | | | | |
| 15/12/02 | 7:00 | 0.4 | 57 | | | | | | |
| 15/12/02 | 8:00 | 0.4 | 129 | | | | | | |
| 15/12/02 | 9:00 | 0.9 | 105 | | | | | | |
| 15/12/02 | 10:00 | 1.8 | 115 | | | | | | |
| 15/12/02 | 11:00 | 2.2 | 130 | | | | | | |
| 15/12/02 | 12:00 | 2.2 | 104 | | | | | | |
| 15/12/02 | 13:00 | 2.2 | 116 | | | | | | |
| 15/12/02 | 14:00 | 1.8 | 173 | | | | | | |
| 15/12/02 | 15:00 | 1.8 | 165 | | | | | | |
| 15/12/02 | 16:00 | 1.3 | 159 | | | | | | |
| 15/12/02 | 17:00 | 0.9 | 148 | | | | | | |
| 15/12/02 | 18:00 | 0.4 | 95 | | | | | | |
| 15/12/02 | 19:00 | 0 | - | | | | | | |
| 15/12/02 | 20:00 | 0.9 | 132 | | | | | | |
| 15/12/02 | 21:00 | 1.3 | 114 | | | | | | |
| 15/12/02 | 22:00 | 0.9 | 85 | | | | | | |
| 15/12/02 | 23:00 | 0 | | | | | | | |
| 15/12/02 | 0:00 | 1.3 | 5 | | | | | | |
| 15/12/04 | 1:00 | 2.7 | 44 | | | | | | |
| 15/12/04 | 2:00 | 3.1 | 32 | | | | | | |
| 15/12/04 | 3:00 | 3.6 | 45 | | | | | | |
| 15/12/04 | 4:00 | 3.1 | 63 | | | | | | |
| 15/12/04 | 5:00 | 3.6 | 41 | | | | | | |
| 13/12/04 | 5.00 | 5.0 | 41 | | | | | | |

| | Meteorolo | gical Data for Impact Monitoring in th | e reporting period |
|-----------------|--------------|--|-----------------------------------|
| Date (yy-mm-dd) | Time (24hrs) | Average of Wind Speed (m/s) | Average of Wind Direction(degree) |
| 15/12/04 | 7:00 | 3.1 | 52 |
| 15/12/04 | 8:00 | 2.7 | 55 |
| 15/12/04 | 9:00 | 3.1 | 56 |
| 15/12/04 | 10:00 | 3.1 | 44 |
| 15/12/04 | 11:00 | 2.7 | 43 |
| 15/12/04 | 12:00 | 2.7 | 39 |
| 15/12/04 | 13:00 | 2.2 | 65 |
| 15/12/04 | 14:00 | 2.7 | 67 |
| 15/12/04 | 15:00 | 2.2 | 50 |
| 15/12/04 | 16:00 | 1.3 | 25 |
| 15/12/04 | 17:00 | 2.2 | 38 |
| 15/12/04 | 18:00 | 2.2 | 42 |
| 15/12/04 | 19:00 | 1.8 | 54 |
| 15/12/04 | 20:00 | 1.8 | 49 |
| 15/12/04 | 21:00 | 1.8 | 60 |
| 15/12/04 | 22:00 | 2.7 | 58 |
| 15/12/04 | 23:00 | 1.3 | 51 |
| 15/12/04 | 0:00 | 1.8 | 55 |
| 15/12/05 | 1:00 | 1.8 | 47 |
| 15/12/05 | 2:00 | 2.2 | 53 |
| 15/12/05 | 3:00 | 2.2 | 63 |
| 15/12/05 | 4:00 | 0.9 | 71 |
| 15/12/05 | 5:00 | 1.3 | 63 |
| 15/12/05 | 6:00 | 2.7 | 95 |
| 15/12/05 | 7:00 | 4.5 | 114 |
| 15/12/05 | 8:00 | 4.9 | 106 |
| 15/12/05 | 9:00 | 4.9 | 111 |
| 15/12/05 | 10:00 | 4 | 117 |
| 15/12/05 | 11:00 | 4.9 | 123 |
| 15/12/05 | 12:00 | 6.3 | 131 |
| 15/12/05 | 13:00 | 3.1 | 125 |
| 15/12/05 | 14:00 | 0.9 | 116 |
| 15/12/05 | 15:00 | 2.7 | 347 |
| 15/12/05 | 16:00 | 4.5 | 335 |
| 15/12/05 | 17:00 | 4.9 | 5 |
| 15/12/05 | 18:00 | 4.5 | 10 |
| 15/12/05 | 19:00 | 4.5 | 46 |
| 15/12/05 | 20:00 | 6.3 | 52 |
| 15/12/05 | 21:00 | 5.8 | 59 |
| 15/12/05 | 22:00 | 6.7 | 63 |
| 15/12/05 | 23:00 | 6.7 | 64 |
| 15/12/05 | 0:00 | 1.8 | 51 |
| 15/12/07 | 1:00 | 1.3 | 66 |
| 15/12/07 | 2:00 | 0.4 | 3 |
| 15/12/07 | 3:00 | 1.8 | 354 |
| 15/12/07 | 4:00 | 1.8 | 359 |
| 15/12/07 | 5:00 | 1.8 | 8 |
| 15/12/07 | 6:00 | 1.8 | 2 |
| 15/12/07 | 7:00 | 1.3 | 5 |
| 15/12/07 | 8:00 | 1.3 | 9 |
| 15/12/07 | 9:00 | 0.9 | 13 |
| 15/12/07 | 10:00 | 0.4 | 354 |
| 15/12/07 | 11:00 | 1.3 | 355 |
| 15/12/07 | 12:00 | 1.3 | 42 |

| | Meteorolo | gical Data for Impact Monitoring in th | the reporting period |
|-----------------|--------------|--|-----------------------------------|
| Date (yy-mm-dd) | Time (24hrs) | Average of Wind Speed (m/s) | Average of Wind Direction(degree) |
| 15/12/07 | 13:00 | 1.3 | 38 |
| 15/12/07 | 14:00 | 1.3 | 39 |
| 15/12/07 | 15:00 | 1.3 | 11 |
| 15/12/07 | 16:00 | 1.3 | 4 |
| 15/12/07 | 17:00 | 1.3 | 6 |
| 15/12/07 | 18:00 | 0.4 | 42 |
| 15/12/07 | 19:00 | 0.4 | 51 |
| 15/12/07 | 20:00 | 0.9 | 10 |
| 15/12/07 | 21:00 | 0.9 | 46 |
| 15/12/07 | 22:00 | 1.3 | 52 |
| 15/12/07 | 23:00 | 1.8 | 39 |
| 15/12/07 | 0:00 | 3.1 | 47 |
| 15/12/08 | 1:00 | 3.1 | 52 |
| 15/12/08 | 2:00 | 2.2 | 47 |
| 15/12/08 | 3:00 | 2.7 | 38 |
| 15/12/08 | 4:00 | 2.7 | 62 |
| 15/12/08 | 5:00 | 2.7 | 44 |
| 15/12/08 | 6:00 | 2.2 | 51 |
| 15/12/08 | 7:00 | 2.2 | 63 |
| 15/12/08 | 8:00 | 2.2 | 43 |
| 15/12/08 | 9:00 | 1.8 | 63 |
| 15/12/08 | 10:00 | 1.3 | 51 |
| 15/12/08 | 11:00 | 1.8 | 44 |
| 15/12/08 | 12:00 | 2.2 | 52 |
| 15/12/08 | 13:00 | 1.8 | 96 |
| 15/12/08 | 14:00 | 0.9 | 87 |
| 15/12/08 | 15:00 | 1.8 | 88 |
| 15/12/08 | 16:00 | 2.2 | 46 |
| 15/12/08 | 17:00 | 1.3 | 38 |
| 15/12/08 | 18:00 | 0.9 | 49 |
| 15/12/08 | 19:00 | 1.3 | 52 |
| 15/12/08 | 20:00 | 2.2 | 57 |
| 15/12/08 | 21:00 | 1.3 | 56 |
| 15/12/08 | 22:00 | 1.8 | 49 |
| 15/12/08 | 23:00 | 0.4 | 23 |
| 15/12/08 | 0:00 | 0.9 | 42 |
| 15/12/10 | 1:00 | 0 | - |
| 15/12/10 | 2:00 | 1.8 | 46 |
| 15/12/10 | 3:00 | 0.4 | 51 |
| 15/12/10 | 4:00 | 0.4 | 46 |
| 15/12/10 | 5:00 | 0.9 | 5 |
| 15/12/10 | 6:00 | 1.3 | 358 |
| 15/12/10 | 7:00 | 0.9 | 352 |
| 15/12/10 | 8:00 | 0 | 552 |
| 15/12/10 | 9:00 | 0.9 | 3 |
| 15/12/10 | 10:00 | 0.9 | 5 |
| 15/12/10 | 10:00 | 1.8 | 5 |
| 15/12/10 | 12:00 | 2.2 | 10 |
| | | | 8 |
| 15/12/10 | 13:00 | 0.9 | |
| 15/12/10 | 14:00 | 0.4 | 163 |
| 15/12/10 | 15:00 | 0.4 | 171 |
| 15/12/10 | 16:00 | 0.9 | 163 |
| 15/12/10 | 17:00 | 0.9 | 321 |
| 15/12/10 | 18:00 | 0.9 | 303 |

| | Meteorolo | gical Data for Impact Monitoring in th | the reporting period | | | | | |
|-----------------|--------------|--|----------------------------------|--|--|--|--|--|
| Date (yy-mm-dd) | Time (24hrs) | Average of Wind Speed (m/s) | Average of Wind Direction(degree | | | | | |
| 15/12/10 | 19:00 | 0.9 | 351 | | | | | |
| 15/12/10 | 20:00 | 1.3 | 10 | | | | | |
| 15/12/10 | 21:00 | 2.2 | 12 | | | | | |
| 15/12/10 | 22:00 | 1.8 | 24 | | | | | |
| 15/12/10 | 23:00 | 1.3 | 36 | | | | | |
| 15/12/10 | 0:00 | 0.9 | 48 | | | | | |
| 15/12/11 | 1:00 | 2.2 | 51 | | | | | |
| 15/12/11 | 2:00 | 4 | 63 | | | | | |
| 15/12/11 | 3:00 | 4 | 55 | | | | | |
| 15/12/11 | 4:00 | 3.1 | 48 | | | | | |
| 15/12/11 | 5:00 | 1.8 | 47 | | | | | |
| 15/12/11 | 6:00 | 1.3 | 59 | | | | | |
| 15/12/11 | 7:00 | 1.8 | 65 | | | | | |
| 15/12/11 | 8:00 | 0 | - | | | | | |
| 15/12/11 | 9:00 | 0.4 | 58 | | | | | |
| 15/12/11 | 10:00 | 1.3 | 63 | | | | | |
| 15/12/11 | 11:00 | 1.8 | 55 | | | | | |
| 15/12/11 | 12:00 | 1.3 | 232 | | | | | |
| 15/12/11 | 13:00 | 0.9 | 62 | | | | | |
| 15/12/11 | 14:00 | 1.3 | 226 | | | | | |
| 15/12/11 | 15:00 | 0.9 | 216 | | | | | |
| 15/12/11 | 16:00 | 0.9 | 271 | | | | | |
| 15/12/11 | 17:00 | 0.4 | 50 | | | | | |
| 15/12/11 | 18:00 | 0.4 | 312 | | | | | |
| 15/12/11 | 19:00 | 0 | - | | | | | |
| 15/12/11 | 20:00 | 0 | - | | | | | |
| 15/12/11 | 21:00 | 1.3 | 46 | | | | | |
| 15/12/11 | 22:00 | 1.3 | 51 | | | | | |
| 15/12/11 | 23:00 | 1.3 | 67 | | | | | |
| 15/12/11 | 0:00 | 0.9 | 57 | | | | | |
| 15/12/13 | 1:00 | 2.2 | 96 | | | | | |
| 15/12/13 | 2:00 | 3.1 | 122 | | | | | |
| 15/12/13 | 3:00 | 2.7 | 98 | | | | | |
| 15/12/13 | 4:00 | 2.7 | 85 | | | | | |
| 15/12/13 | 5:00 | 2.2 | 91 | | | | | |
| 15/12/13 | 6:00 | 2.7 | 86 | | | | | |
| 15/12/13 | 7:00 | 3.1 | 84 | | | | | |
| 15/12/13 | 8:00 | 3.6 | 87 | | | | | |
| 15/12/13 | 9:00 | 3.6 | 92 | | | | | |
| 15/12/13 | 10:00 | 3.6 | 100 | | | | | |
| 15/12/13 | 11:00 | 3.6 | 103 | | | | | |
| 15/12/13 | 12:00 | 4 | 124 | | | | | |
| 15/12/13 | 13:00 | 3.6 | 96 | | | | | |
| 15/12/13 | 14:00 | 4 | 134 | | | | | |
| 15/12/13 | 15:00 | 3.1 | 142 | | | | | |
| 15/12/13 | 16:00 | 3.1 | 126 | | | | | |
| 15/12/13 | 17:00 | 3.1 | 151 | | | | | |
| 15/12/13 | 18:00 | 1.8 | 133 | | | | | |
| 15/12/13 | 19:00 | 2.2 | 124 | | | | | |
| 15/12/13 | 20:00 | 1.8 | 117 | | | | | |
| 15/12/13 | 21:00 | 1.8 | 151 | | | | | |
| 15/12/13 | 22:00 | 2.7 | 126 | | | | | |
| 15/12/13 | 23:00 | 2.7 | 98 | | | | | |
| 15/12/13 | 0:00 | 1.8 | 74 | | | | | |

| | Meteorolog | gical Data for Impact Monitoring in th | reporting period | | | | | |
|-----------------|--------------|--|----------------------------------|--|--|--|--|--|
| Date (yy-mm-dd) | Time (24hrs) | Average of Wind Speed (m/s) | Average of Wind Direction(degree | | | | | |
| 15/12/14 | 1:00 | 1.8 | 105 | | | | | |
| 15/12/14 | 2:00 | 1.3 | 126 | | | | | |
| 15/12/14 | 3:00 | 0 | - | | | | | |
| 15/12/14 | 4:00 | 0 | - | | | | | |
| 15/12/14 | 5:00 | 0 | - | | | | | |
| 15/12/14 | 6:00 | 0 | - | | | | | |
| 15/12/14 | 7:00 | 0 | - | | | | | |
| 15/12/14 | 8:00 | 0 | - | | | | | |
| 15/12/14 | 9:00 | 0.9 | 341 | | | | | |
| 15/12/14 | 10:00 | 1.3 | 326 | | | | | |
| 15/12/14 | 11:00 | 1.8 | 355 | | | | | |
| 15/12/14 | 12:00 | 1.3 | 6 | | | | | |
| 15/12/14 | 13:00 | 1.8 | 47 | | | | | |
| 15/12/14 | 14:00 | 2.7 | 65 | | | | | |
| 15/12/14 | 15:00 | 1.3 | 71 | | | | | |
| 15/12/14 | 16:00 | 1.3 | 26 | | | | | |
| 15/12/14 | 17:00 | 1.3 | 5 | | | | | |
| 15/12/14 | 18:00 | 0.9 | 10 | | | | | |
| 15/12/14 | 19:00 | 1.3 | 8 | | | | | |
| 15/12/14 | 20:00 | 1.8 | 6 | | | | | |
| 15/12/14 | 21:00 | 0.9 | 344 | | | | | |
| 15/12/14 | 22:00 | 0.4 | 25 | | | | | |
| 15/12/14 | 23:00 | 0.9 | 22 | | | | | |
| 15/12/14 | 0:00 | 0.4 | 340 | | | | | |
| 15/12/16 | 1:00 | 0.9 | 21 | | | | | |
| 15/12/16 | 2:00 | 1.3 | 5 | | | | | |
| 15/12/16 | 3:00 | 2.2 | 3 | | | | | |
| 15/12/16 | 4:00 | 0.4 | 2 | | | | | |
| 15/12/16 | 5:00 | 0.4 | 338 | | | | | |
| 15/12/16 | 6:00 | 1.3 | 1 | | | | | |
| 15/12/16 | 7:00 | 1.8 | 6 | | | | | |
| 15/12/16 | 8:00 | 3.1 | 10 | | | | | |
| 15/12/16 | 9:00 | 3.6 | 25 | | | | | |
| 15/12/16 | 10:00 | 4.9 | 22 | | | | | |
| 15/12/16 | 11:00 | 5.4 | 47 | | | | | |
| 15/12/16 | 12:00 | 5.4 | 51 | | | | | |
| 15/12/16 | 13:00 | 4.9 | 63 | | | | | |
| 15/12/16 | 14:00 | 3.6 | 52 | | | | | |
| 15/12/16 | 15:00 | 2.2 | 42 | | | | | |
| 15/12/16 | 16:00 | 2.2 | 50 | | | | | |
| 15/12/16 | 17:00 | 3.1 | 3 | | | | | |
| 15/12/16 | 18:00 | 2.7 | 1 | | | | | |
| 15/12/16 | 19:00 | 1.8 | 5 | | | | | |
| 15/12/16 | 20:00 | 1.3 | 355 | | | | | |
| 15/12/16 | 21:00 | 2.2 | 21 | | | | | |
| 15/12/16 | 22:00 | 3.6 | 28 | | | | | |
| 15/12/16 | 23:00 | 1.8 | 44 | | | | | |
| 15/12/16 | 0:00 | 0 | - | | | | | |
| 15/12/17 | 1:00 | 0.9 | 4 | | | | | |
| 15/12/17 | 2:00 | 0.9 | 2 | | | | | |
| 15/12/17 | 3:00 | 2.2 | 8 | | | | | |
| 15/12/17 | 4:00 | 1.8 | 26 | | | | | |
| 15/12/17 | 5:00 | 1.8 | 24 | | | | | |
| 15/12/17 | 6:00 | 5.4 | 15 | | | | | |

| | Meteorolog | gical Data for Impact Monitoring in th | the reporting period | | | | | |
|-----------------|--------------|--|----------------------------------|--|--|--|--|--|
| Date (yy-mm-dd) | Time (24hrs) | Average of Wind Speed (m/s) | Average of Wind Direction(degree | | | | | |
| 15/12/17 | 7:00 | 5.4 | 11 | | | | | |
| 15/12/17 | 8:00 | 5.4 | 60 | | | | | |
| 15/12/17 | 9:00 | 5.8 | 9 | | | | | |
| 15/12/17 | 10:00 | 6.3 | 46 | | | | | |
| 15/12/17 | 11:00 | 7.2 | 35 | | | | | |
| 15/12/17 | 12:00 | 5.8 | 44 | | | | | |
| 15/12/17 | 13:00 | 4 | 49 | | | | | |
| 15/12/17 | 14:00 | 3.1 | 33 | | | | | |
| 15/12/17 | 15:00 | 3.1 | 62 | | | | | |
| 15/12/17 | 16:00 | 2.2 | 51 | | | | | |
| 15/12/17 | 17:00 | 2.2 | 46 | | | | | |
| 15/12/17 | 18:00 | 2.2 | 51 | | | | | |
| 15/12/17 | 19:00 | 1.8 | 22 | | | | | |
| 15/12/17 | 20:00 | 0.9 | 5 | | | | | |
| 15/12/17 | 21:00 | 1.3 | 22 | | | | | |
| 15/12/17 | 22:00 | 1.8 | 36 | | | | | |
| 15/12/17 | 23:00 | 2.7 | 41 | | | | | |
| 15/12/17 | 0:00 | 4 | 58 | | | | | |
| 15/12/19 | 1:00 | 2.7 | 36 | | | | | |
| 15/12/19 | 2:00 | 2.7 | 63 | | | | | |
| 15/12/19 | 3:00 | 1.8 | 42 | | | | | |
| 15/12/19 | 4:00 | 2.2 | 47 | | | | | |
| 15/12/19 | 5:00 | 2.2 | 52 | | | | | |
| 15/12/19 | 6:00 | 3.1 | 60 | | | | | |
| 15/12/19 | 7:00 | 1.3 | 74 | | | | | |
| 15/12/19 | 8:00 | 3.1 | 63 | | | | | |
| 15/12/19 | 9:00 | 1.8 | 55 | | | | | |
| 15/12/19 | 10:00 | 2.7 | 38 | | | | | |
| 15/12/19 | 11:00 | 3.6 | 34 | | | | | |
| 15/12/19 | 12:00 | 4.5 | 36 | | | | | |
| 15/12/19 | 13:00 | 2.2 | 54 | | | | | |
| 15/12/19 | 14:00 | 1.8 | 28 | | | | | |
| 15/12/19 | 15:00 | 1.3 | 41 | | | | | |
| 15/12/19 | 16:00 | 0.9 | 122 | | | | | |
| 15/12/19 | 17:00 | 0.9 | 171 | | | | | |
| 15/12/19 | 18:00 | 0.4 | 128 | | | | | |
| 15/12/19 | 19:00 | 1.8 | 23 | | | | | |
| 15/12/19 | 20:00 | 1.8 | 8 | | | | | |
| 15/12/19 | 21:00 | 1.8 | 23 | | | | | |
| 15/12/19 | 22:00 | 3.1 | 45 | | | | | |
| 15/12/19 | 23:00 | 3.6 | 55 | | | | | |
| 15/12/19 | 0:00 | 3.6 | 63 | | | | | |
| 15/12/20 | 1:00 | 3.1 | 48 | | | | | |
| 15/12/20 | 2:00 | 2.7 | 63 | | | | | |
| 15/12/20 | 3:00 | 1.3 | 21 | | | | | |
| 15/12/20 | 4:00 | 0.9 | 96 | | | | | |
| 15/12/20 | 5:00 | 1.3 | 47 | | | | | |
| 15/12/20 | 6:00 | 0.9 | 104 | | | | | |
| 15/12/20 | 7:00 | 0.9 | 52 | | | | | |
| 15/12/20 | 8:00 | 0.9 | 96 | | | | | |
| 15/12/20 | 9:00 | 0 | | | | | | |
| 15/12/20 | 10:00 | 0 | | | | | | |
| 15/12/20 | 11:00 | 0.4 | 20 | | | | | |
| 15/12/20 | 12:00 | 0.4 | 14 | | | | | |

| | Meteorolog | gical Data for Impact Monitoring in th | e reporting period |
|-----------------|--------------|--|-----------------------------------|
| Date (yy-mm-dd) | Time (24hrs) | Average of Wind Speed (m/s) | Average of Wind Direction(degree) |
| 15/12/20 | 13:00 | 0.9 | 3 |
| 15/12/20 | 14:00 | 0.9 | 46 |
| 15/12/20 | 15:00 | 1.8 | 52 |
| 15/12/20 | 16:00 | 0.4 | 58 |
| 15/12/20 | 17:00 | 0.9 | 57 |
| 15/12/20 | 18:00 | 2.2 | 39 |
| 15/12/20 | 19:00 | 1.3 | 95 |
| 15/12/20 | 20:00 | 0.4 | 77 |
| 15/12/20 | 21:00 | 0.4 | 51 |
| 15/12/20 | 22:00 | 0.4 | 76 |
| 15/12/20 | 23:00 | 0 | - |
| 15/12/20 | 0:00 | 0.9 | 40 |
| 15/12/22 | 1:00 | 0.4 | 123 |
| 15/12/22 | 2:00 | 2.2 | 115 |
| 15/12/22 | 3:00 | 2.2 | 104 |
| 15/12/22 | 4:00 | 1.8 | 99 |
| 15/12/22 | 5:00 | 0.4 | 87 |
| 15/12/22 | 6:00 | 0.4 | 85 |
| 15/12/22 | 7:00 | 0 | - |
| 15/12/22 | 8:00 | 0.9 | 104 |
| 15/12/22 | 9:00 | 1.8 | 123 |
| 15/12/22 | 10:00 | 1.8 | 88 |
| 15/12/22 | 11:00 | 0.9 | 91 |
| 15/12/22 | 12:00 | 0.4 | 168 |
| 15/12/22 | 13:00 | 2.2 | 122 |
| 15/12/22 | 14:00 | 1.3 | 144 |
| 15/12/22 | 15:00 | 1.8 | 151 |
| 15/12/22 | 16:00 | 2.2 | 132 |
| 15/12/22 | 17:00 | 2.7 | 161 |
| 15/12/22 | 18:00 | 2.2 | 171 |
| 15/12/22 | 19:00 | 0.9 | 144 |
| 15/12/22 | 20:00 | 0 | - |
| 15/12/22 | 21:00 | 0.9 | 165 |
| 15/12/22 | 22:00 | 1.8 | 103 |
| 15/12/22 | 23:00 | 1.8 | 95 |
| 15/12/22 | 0:00 | 1.3 | 104 |
| 15/12/23 | 1:00 | 1.3 | 111 |
| 15/12/23 | 2:00 | 1.3 | 115 |
| 15/12/23 | 3:00 | 1.3 | 89 |
| 15/12/23 | 4:00 | 0.9 | 97 |
| 15/12/23 | 5:00 | 0.9 | 103 |
| 15/12/23 | 6:00 | 0.4 | 118 |
| 15/12/23 | 7:00 | 0 | |
| 15/12/23 | 8:00 | 0 | - |
| 15/12/23 | 9:00 | 0 | - |
| 15/12/23 | 10:00 | 0 | |
| 15/12/23 | 11:00 | 0 | - |
| 15/12/23 | 12:00 | 0 | - |
| 15/12/23 | 13:00 | 1.3 | 96 |
| 15/12/23 | 14:00 | 1.8 | 88 |
| 15/12/23 | 15:00 | 1.8 | 94 |
| 15/12/23 | 16:00 | 1.3 | 87 |
| 15/12/23 | 17:00 | 1.8 | 98 |
| 15/12/23 | 18:00 | 1.3 | 99 |

| | Meteorolo | gical Data for Impact Monitoring in th | he reporting period | | | | | |
|-----------------|--------------|--|----------------------------------|--|--|--|--|--|
| Date (yy-mm-dd) | Time (24hrs) | Average of Wind Speed (m/s) | Average of Wind Direction(degree | | | | | |
| 15/12/23 | 19:00 | 1.3 | 100 | | | | | |
| 15/12/23 | 20:00 | 0.9 | 123 | | | | | |
| 15/12/23 | 21:00 | 0.9 | 128 | | | | | |
| 15/12/23 | 22:00 | 0.9 | 69 | | | | | |
| 15/12/23 | 23:00 | 0.9 | 75 | | | | | |
| 15/12/23 | 0:00 | 0 | - | | | | | |
| 15/12/25 | 1:00 | 3.6 | 351 | | | | | |
| 15/12/25 | 2:00 | 3.6 | 5 | | | | | |
| 15/12/25 | 3:00 | 3.6 | 356 | | | | | |
| 15/12/25 | 4:00 | 2.2 | 342 | | | | | |
| 15/12/25 | 5:00 | 0.9 | 331 | | | | | |
| 15/12/25 | 6:00 | 0.9 | 351 | | | | | |
| 15/12/25 | 7:00 | 0.9 | 5 | | | | | |
| 15/12/25 | 8:00 | 0.9 | 359 | | | | | |
| 15/12/25 | 9:00 | 1.3 | 44 | | | | | |
| 15/12/25 | 10:00 | 0.9 | 14 | | | | | |
| 15/12/25 | 11:00 | 0.4 | 85 | | | | | |
| 15/12/25 | 12:00 | 0.4 | 92 | | | | | |
| 15/12/25 | 13:00 | 0.4 | 22 | | | | | |
| 15/12/25 | 14:00 | 0.9 | 351 | | | | | |
| 15/12/25 | 15:00 | 1.8 | 5 | | | | | |
| 15/12/25 | 16:00 | 1.8 | 46 | | | | | |
| 15/12/25 | 17:00 | 1.8 | 51 | | | | | |
| 15/12/25 | 18:00 | 1.3 | 3 | | | | | |
| 15/12/25 | 19:00 | 0.4 | 25 | | | | | |
| 15/12/25 | 20:00 | 1.3 | 11 | | | | | |
| 15/12/25 | 21:00 | 1.3 | 13 | | | | | |
| 15/12/25 | 22:00 | 1.3 | 22 | | | | | |
| 15/12/25 | 23:00 | 2.7 | 56 | | | | | |
| 15/12/25 | 0:00 | 4 | 54 | | | | | |
| 15/12/26 | 1:00 | 3.1 | 49 | | | | | |
| 15/12/26 | 2:00 | 2.7 | 53 | | | | | |
| 15/12/26 | 3:00 | 1.8 | 55 | | | | | |
| 15/12/26 | 4:00 | 1.8 | 47 | | | | | |
| 15/12/26 | 5:00 | 1.8 | 40 | | | | | |
| 15/12/26 | 6:00 | 2.2 | 51 | | | | | |
| 15/12/26 | 7:00 | 2.2 | 63 | | | | | |
| 15/12/26 | 8:00 | 2.7 | 51 | | | | | |
| 15/12/26 | 9:00 | 2.2 | 40 | | | | | |
| 15/12/26 | 10:00 | 3.1 | 38 | | | | | |
| 15/12/26 | 11:00 | 0.9 | 42 | | | | | |
| 15/12/26 | 12:00 | 0.9 | 55 | | | | | |
| 15/12/26 | 13:00 | 1.3 | 41 | | | | | |
| 15/12/26 | 14:00 | 0.9 | 33 | | | | | |
| 15/12/26 | 15:00 | 0 | - | | | | | |
| 15/12/26 | 16:00 | 2.7 | 6 | | | | | |
| 15/12/26 | 17:00 | 2.7 | 3 | | | | | |
| 15/12/26 | 18:00 | 2.2 | 344 | | | | | |
| 15/12/26 | 19:00 | 2.2 | 7 | | | | | |
| 15/12/26 | 20:00 | 1.3 | 12 | | | | | |
| 15/12/26 | 21:00 | 0.9 | 8 | | | | | |
| 15/12/26 | 22:00 | 0.9 | 16 | | | | | |
| 15/12/26 | 23:00 | 0.4 | 355 | | | | | |
| 15/12/26 | 0:00 | 0.9 | 52 | | | | | |

| | Meteorolo | gical Data for Impact Monitoring in th | ie reporting period | | | | |
|-----------------|--------------|--|-----------------------------------|--|--|--|--|
| Date (yy-mm-dd) | Time (24hrs) | Average of Wind Speed (m/s) | Average of Wind Direction(degree) | | | | |
| 15/12/28 | 1:00 | 2.7 | 44 | | | | |
| 15/12/28 | 2:00 | 2.7 | 16 | | | | |
| 15/12/28 | 3:00 | 2.2 | 48 | | | | |
| 15/12/28 | 4:00 | 2.2 | 23 | | | | |
| 15/12/28 | 5:00 | 2.2 | 49 | | | | |
| 15/12/28 | 6:00 | 3.6 | 41 | | | | |
| 15/12/28 | 7:00 | 2.7 | 51 | | | | |
| 15/12/28 | 8:00 | 1.3 | 56 | | | | |
| 15/12/28 | 9:00 | 3.6 | 54 | | | | |
| 15/12/28 | 10:00 | 3.1 | 63 | | | | |
| 15/12/28 | 11:00 | 2.7 | 50 | | | | |
| 15/12/28 | 12:00 | 2.2 | 66 | | | | |
| 15/12/28 | 13:00 | 1.3 | 37 | | | | |
| 15/12/28 | 14:00 | 1.8 | 33 | | | | |
| 15/12/28 | 15:00 | 2.2 | 52 | | | | |
| 15/12/28 | 16:00 | 2.2 | 59 | | | | |
| 15/12/28 | 17:00 | 1.3 | 95 | | | | |
| 15/12/28 | 18:00 | 1.3 | 109 | | | | |
| 15/12/28 | 19:00 | 1.3 | 121 | | | | |
| 15/12/28 | 20:00 | 1.3 | 100 | | | | |
| 15/12/28 | 21:00 | 0.4 | 111 | | | | |
| 15/12/28 | 22:00 | 0.9 | 56 | | | | |
| 15/12/28 | 23:00 | 1.3 | 13 | | | | |
| 15/12/28 | 0:00 | 2.2 | 47 | | | | |
| 15/12/29 | 1:00 | 2.7 | 50 | | | | |
| 15/12/29 | 2:00 | 1.8 | 66 | | | | |
| 15/12/29 | 3:00 | 0.9 | 49 | | | | |
| 15/12/29 | 4:00 | 1.8 | 48 | | | | |
| 15/12/29 | 5:00 | 1.8 | 44 | | | | |
| 15/12/29 | 6:00 | 1.8 | 38 | | | | |
| 15/12/29 | 7:00 | 1.3 | 2 | | | | |
| 15/12/29 | 8:00 | 1.3 | 17 | | | | |
| 15/12/29 | 9:00 | 1.8 | 100 | | | | |
| 15/12/29 | 10:00 | 1.8 | 63 | | | | |
| 15/12/29 | 11:00 | 2.2 | 66 | | | | |
| 15/12/29 | 12:00 | 2.2 | 120 | | | | |
| 15/12/29 | 13:00 | 2.7 | 132 | | | | |
| 15/12/29 | 14:00 | 2.2 | 119 | | | | |
| 15/12/29 | 15:00 | 1.3 | 165 | | | | |
| 15/12/29 | 16:00 | 1.3 | 171 | | | | |
| 15/12/29 | 17:00 | 0.9 | 13 | | | | |
| 15/12/29 | 18:00 | 0.4 | 172 | | | | |
| 15/12/29 | 19:00 | 0.4 | 349 | | | | |
| 15/12/29 | 20:00 | 0.9 | 102 | | | | |
| 15/12/29 | 21:00 | 1.3 | 113 | | | | |
| 15/12/29 | 22:00 | 1.3 | 111 | | | | |
| 15/12/29 | 23:00 | 0.9 | 63 | | | | |
| 15/12/29 | 0:00 | 0.9 | 65 | | | | |
| 15/12/31 | 1:00 | 1.8 | 57 | | | | |
| 15/12/31 | 2:00 | 1.8 | 69 | | | | |
| 15/12/31 | 3:00 | 1.3 | 71 | | | | |
| 15/12/31 | 4:00 | 2.7 | 44 | | | | |
| 15/12/31 | 5:00 | 2.7 | 53 | | | | |
| 15/12/31 | 6:00 | 3.6 | 57 | | | | |

| Meteorological Data for Impact Monitoring in the reporting period | | | | | | | | |
|---|--------------|-----------------------------|-----------------------------------|--|--|--|--|--|
| Date (yy-mm-dd) | Time (24hrs) | Average of Wind Speed (m/s) | Average of Wind Direction(degree) | | | | | |
| 15/12/31 | 7:00 | 3.6 | 52 | | | | | |
| 15/12/31 | 8:00 | 2.7 | 61 | | | | | |
| 15/12/31 | 9:00 | 2.7 | 66 | | | | | |
| 15/12/31 | 10:00 | 2.2 | 65 | | | | | |
| 15/12/31 | 11:00 | 1.8 | 21 | | | | | |
| 15/12/31 | 12:00 | 2.2 | 39 | | | | | |
| 15/12/31 | 13:00 | 1.8 | 34 | | | | | |
| 15/12/31 | 14:00 | 1.3 | 51 | | | | | |
| 15/12/31 | 15:00 | 1.3 | 270 | | | | | |
| 15/12/31 | 16:00 | 0.9 | 301 | | | | | |
| 15/12/31 | 17:00 | 1.3 | 322 | | | | | |
| 15/12/31 | 18:00 | 0.9 | 351 | | | | | |
| 15/12/31 | 19:00 | 0 | - | | | | | |
| 15/12/31 | 20:00 | 0 | - | | | | | |
| 15/12/31 | 21:00 | 0.9 | 177 | | | | | |
| 15/12/31 | 22:00 | 0.9 | 96 | | | | | |
| 15/12/31 | 23:00 | 0 | - | | | | | |
| 15/12/31 | 0:00 | 0 | - | | | | | |
| 16/01/01 | 1:00 | 0.4 | 51 | | | | | |
| 16/01/01 | 2:00 | 0.4 | 47 | | | | | |
| 16/01/01 | 3:00 | 0.9 | 97 | | | | | |
| 16/01/01 | 4:00 | 0.9 | 100 | | | | | |
| 16/01/01 | 5:00 | 1.3 | 88 | | | | | |
| 16/01/01 | 6:00 | 1.3 | 95 | | | | | |
| 16/01/01 | 7:00 | 0.9 | 42 | | | | | |
| 16/01/01 | 8:00 | 1.3 | 44 | | | | | |
| 16/01/01 | 9:00 | 0.9 | 128 | | | | | |
| 16/01/01 | 10:00 | 1.8 | 126 | | | | | |
| 16/01/01 | 11:00 | 1.3 | 144 | | | | | |
| 16/01/01 | 12:00 | 0.9 | 169 | | | | | |
| 16/01/01 | 13:00 | 1.3 | 181 | | | | | |
| 16/01/01 | 14:00 | 1.3 | 344 | | | | | |
| 16/01/01 | 15:00 | 1.3 | 301 | | | | | |
| 16/01/01 | 16:00 | 0.9 | 321 | | | | | |
| 16/01/01 | 17:00 | 0.9 | 315 | | | | | |
| 16/01/01 | 18:00 | 1.3 | 351 | | | | | |
| 16/01/01 | 19:00 | 1.3 | 35 | | | | | |
| 16/01/01 | 20:00 | 0.9 | 348 | | | | | |
| 16/01/01 | 21:00 | 0.4 | 345 | | | | | |
| 16/01/01 | 22:00 | 0 | - | | | | | |
| 16/01/01 | 23:00 | 0 | - | | | | | |
| 16/01/01 | 0:00 | 0.9 | 5 | | | | | |

Appendix I

Impact Dolphin Monitoring Survey

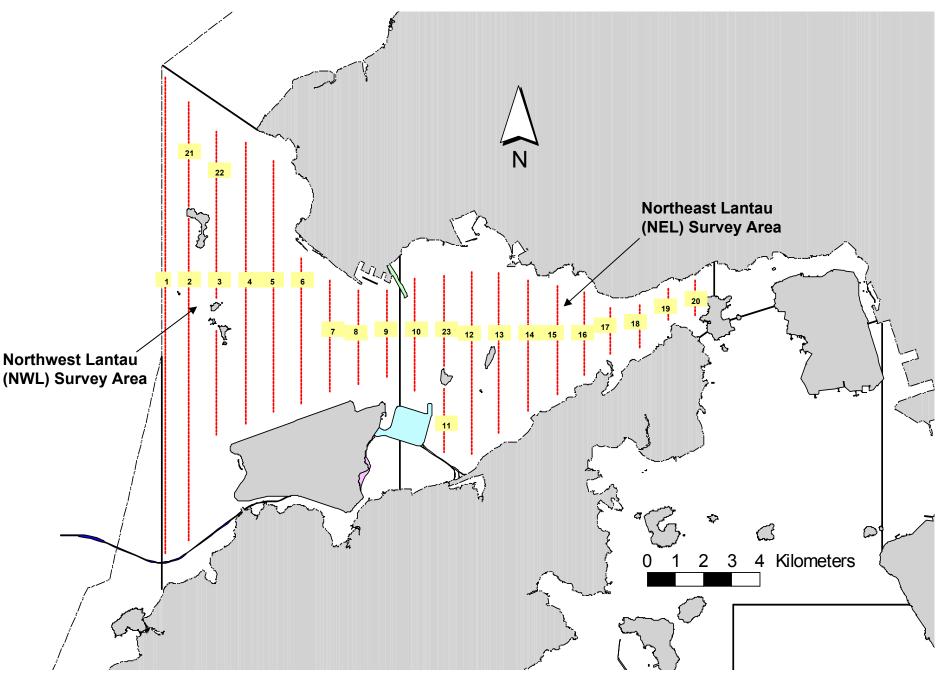


Figure 1. Transect Line Layout in Northwest and Northeast Lantau Survey Areas

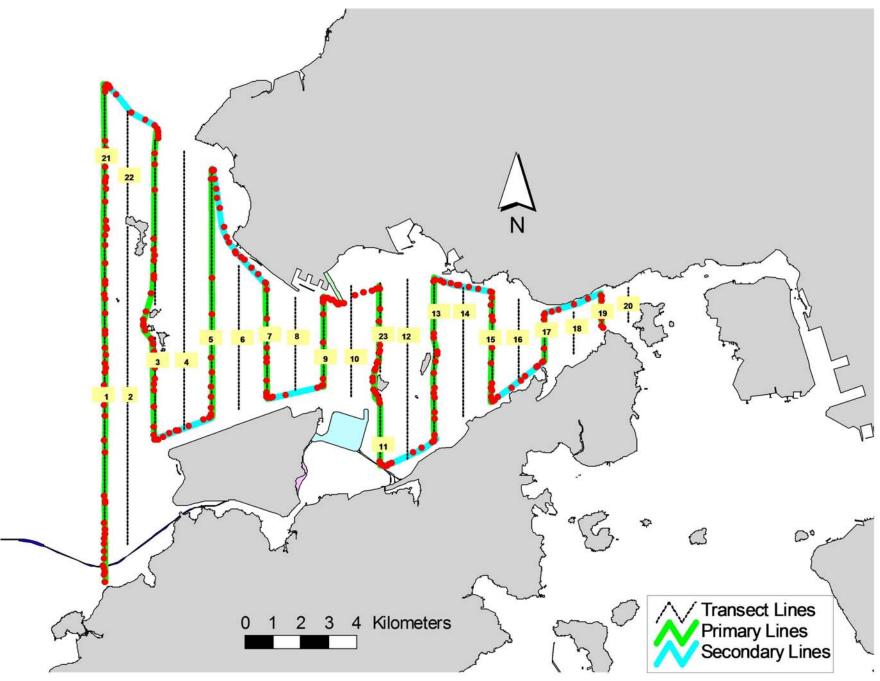


Figure 2. Survey Route on December 2nd, 2015 (from HKLR03 project)

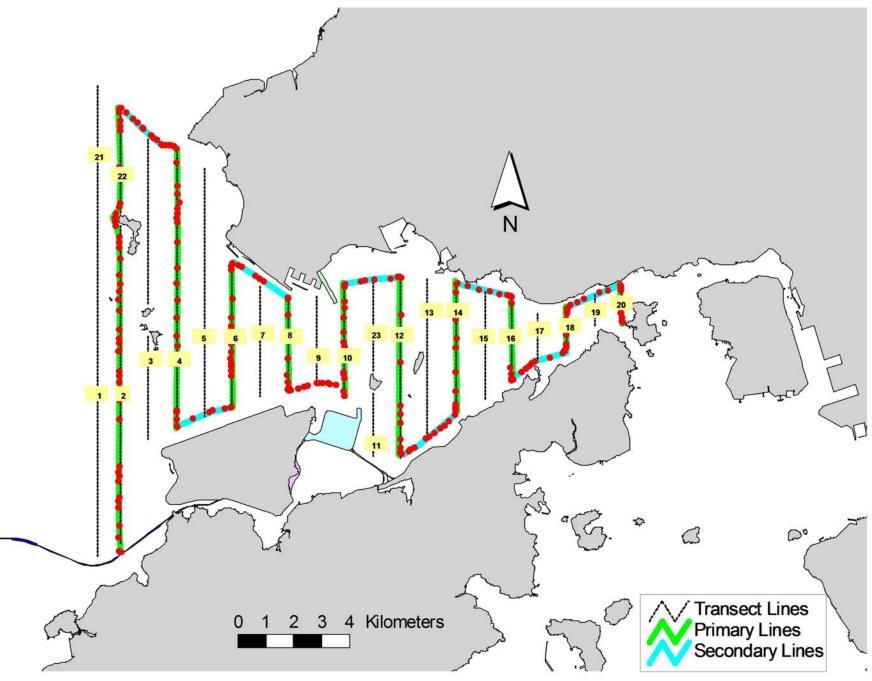


Figure 3. Survey Route on December 7th, 2015 (from HKLR03 project)

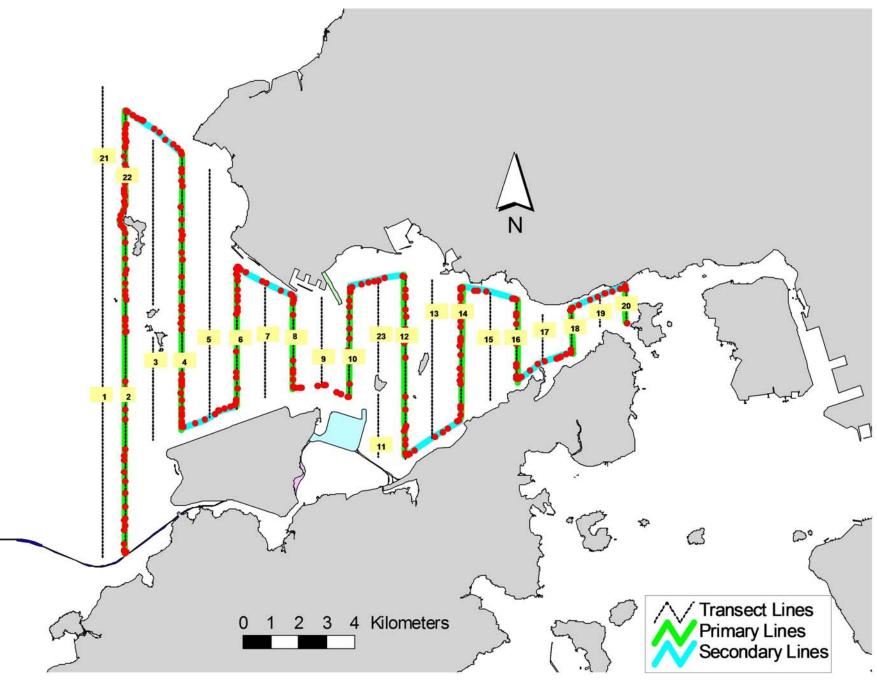


Figure 4. Survey Route on December 9th, 2015 (from HKLR03 project)

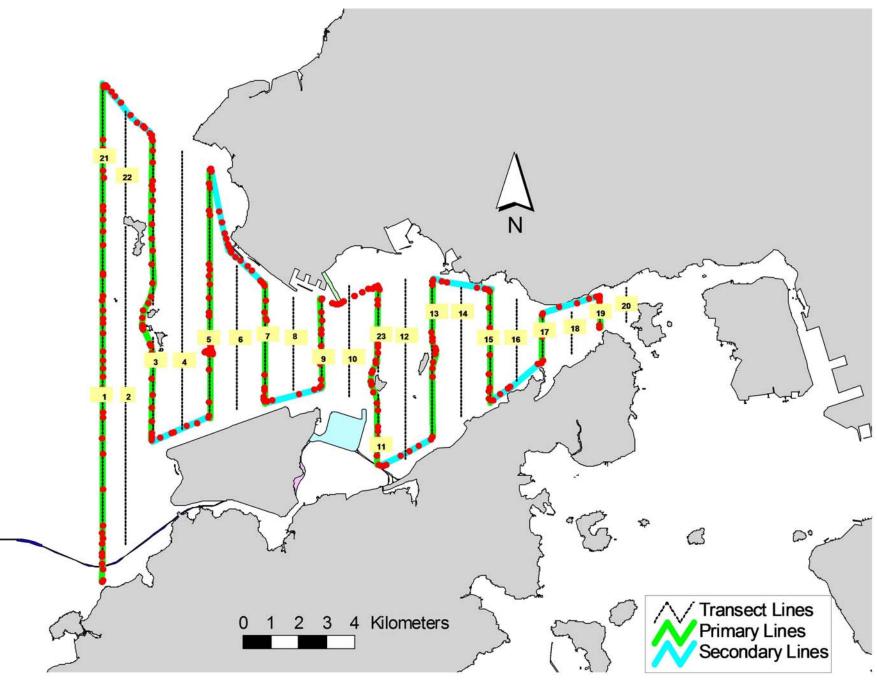


Figure 5. Survey Route on December 15th, 2015 (from HKLR03 project)

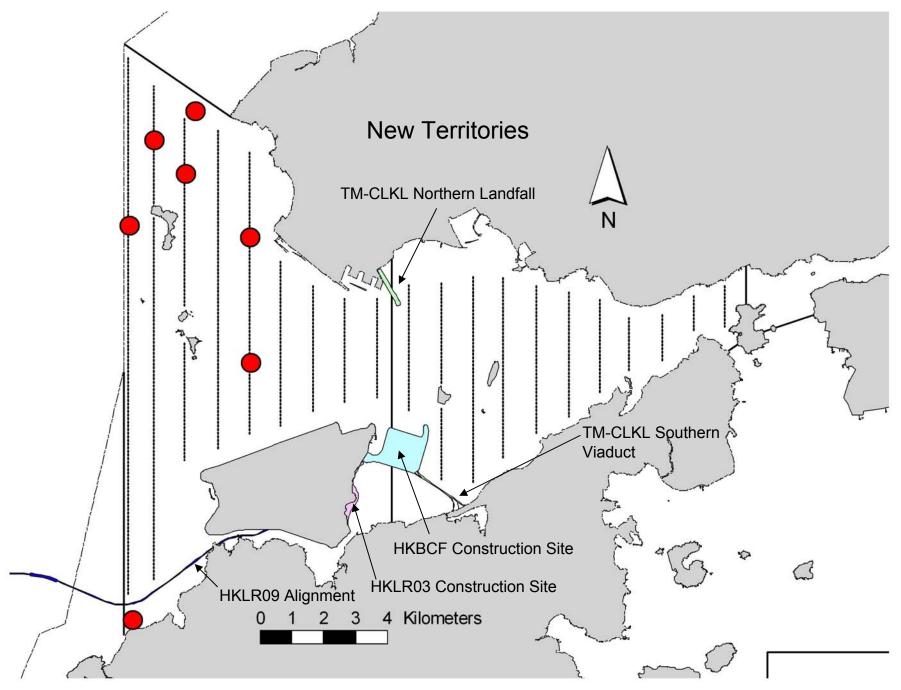


Figure 6. Distribution of Chinese White Dolphin Sightings During December 2015 HKLR03 Monitoring Surveys

Appendix I. HKLR03 Survey Effort Database (December 2015)

(Abbreviations: BEAU = Beaufort Sea State; P = Primary Line Effort; S = Secondary Line Effort)

| DATE | AREA | BEAU | EFFORT | SEASON | VESSEL | TYPE | P/S |
|-----------|-----------|--------|--------|--------|---------------|------|--------|
| 2-Dec-15 | NW LANTAU | 2 | 34.36 | WINTER | STANDARD31516 | HKLR | Р |
| 2-Dec-15 | NW LANTAU | 3 | 6.71 | WINTER | STANDARD31516 | HKLR | Р |
| 2-Dec-15 | NW LANTAU | 2 | 12.06 | WINTER | STANDARD31516 | HKLR | S |
| 2-Dec-15 | NW LANTAU | 3 | 0.90 | WINTER | STANDARD31516 | HKLR | S |
| 2-Dec-15 | NE LANTAU | 1 | 0.77 | WINTER | STANDARD31516 | HKLR | Р |
| 2-Dec-15 | NE LANTAU | 2 | 15.53 | WINTER | STANDARD31516 | HKLR | Р |
| 2-Dec-15 | NE LANTAU | 2 | 10.30 | WINTER | STANDARD31516 | HKLR | S |
| 7-Dec-15 | NE LANTAU | 2 | 18.39 | WINTER | STANDARD31516 | HKLR | Р |
| 7-Dec-15 | NE LANTAU | 3 | 1.75 | WINTER | STANDARD31516 | HKLR | Р |
| 7-Dec-15 | NE LANTAU | 2 | 9.11 | WINTER | STANDARD31516 | HKLR | S |
| 7-Dec-15 | NE LANTAU | 3 | 1.35 | WINTER | STANDARD31516 | HKLR | S |
| 7-Dec-15 | NW LANTAU | 2 | 3.22 | WINTER | STANDARD31516 | HKLR | Р |
| 7-Dec-15 | NW LANTAU | 3 | 28.58 | WINTER | STANDARD31516 | HKLR | Р |
| 7-Dec-15 | NW LANTAU | 2 | 0.27 | WINTER | STANDARD31516 | HKLR | S |
| 7-Dec-15 | NW LANTAU | 3 | 7.53 | WINTER | STANDARD31516 | HKLR | S |
| 9-Dec-15 | NW LANTAU | 2 | 1.20 | WINTER | STANDARD31516 | HKLR | Р |
| 9-Dec-15 | NW LANTAU | 3 | 13.30 | WINTER | STANDARD31516 | HKLR | Р |
| 9-Dec-15 | NW LANTAU | 4 | 14.71 | WINTER | STANDARD31516 | HKLR | Р |
| 9-Dec-15 | NW LANTAU | 5 | 2.69 | WINTER | STANDARD31516 | HKLR | Р |
| 9-Dec-15 | NW LANTAU | 2 | 1.10 | WINTER | STANDARD31516 | HKLR | S |
| 9-Dec-15 | NW LANTAU | 3 | 1.84 | WINTER | STANDARD31516 | HKLR | S |
| 9-Dec-15 | NW LANTAU | 4 | 4.72 | WINTER | STANDARD31516 | HKLR | S |
| 9-Dec-15 | NE LANTAU | 2 | 12.20 | WINTER | STANDARD31516 | HKLR | Р |
| 9-Dec-15 | NE LANTAU | 3 | 7.10 | WINTER | STANDARD31516 | HKLR | Р |
| 9-Dec-15 | NE LANTAU | 2 | 8.50 | WINTER | STANDARD31516 | HKLR | S |
| 9-Dec-15 | NE LANTAU | 3 | 2.30 | WINTER | STANDARD31516 | HKLR | S |
| 15-Dec-15 | NW LANTAU | 2 | 10.12 | WINTER | STANDARD31516 | HKLR | Р |
| 15-Dec-15 | NW LANTAU | 3 | 17.24 | WINTER | STANDARD31516 | HKLR | Р |
| 15-Dec-15 | NW LANTAU | 4 | 13.57 | WINTER | STANDARD31516 | HKLR | Р |
| 15-Dec-15 | NW LANTAU | 2 | 2.83 | WINTER | STANDARD31516 | HKLR | S |
| 15-Dec-15 | NW LANTAU | 3 | 10.47 | WINTER | STANDARD31516 | HKLR | S |
| 15-Dec-15 | NE LANTAU | 2 | 15.04 | WINTER | STANDARD31516 | HKLR | Р |
| 15-Dec-15 | NE LANTAU | 3 2 | 1.60 | | STANDARD31516 | HKLR | P S |
| 15-Dec-15 | NE LANTAU | 2 | 10.16 | WINTER | STANDARD31516 | HKLR | З |
| | | | | | | | |

| DATE | STG # | TIME | HRD SZ | AREA | BEAU | PSD | EFFORT | TYPE | NORTHING | EASTING | SEASON | BOAT ASSOC. | P/S |
|-----------|-------|------|--------|-----------|------|-----|--------|------|----------|---------|--------|-------------|-----|
| 2-Dec-15 | 1 | 1058 | 1 | NW LANTAU | 2 | 477 | ON | HKLR | 826399 | 804684 | WINTER | NONE | Р |
| 2-Dec-15 | 2 | 1149 | 2 | NW LANTAU | 2 | 257 | ON | HKLR | 827946 | 806459 | WINTER | NONE | Р |
| 7-Dec-15 | 1 | 1449 | 10 | NW LANTAU | 3 | 553 | ON | HKLR | 828945 | 805462 | WINTER | NONE | Р |
| 9-Dec-15 | 1 | 1209 | 9 | NW LANTAU | 4 | 126 | ON | HKLR | 829795 | 806761 | WINTER | NONE | S |
| 15-Dec-15 | 1 | 1015 | 1 | NW LANTAU | 2 | ND | OFF | HKLR | 814683 | 804794 | WINTER | NONE | N/A |
| 15-Dec-15 | 2 | 1303 | 2 | NW LANTAU | 2 | 169 | ON | HKLR | 822328 | 808518 | WINTER | NONE | Р |
| 15-Dec-15 | 3 | 1329 | 3 | NW LANTAU | 3 | 236 | ON | HKLR | 826060 | 808504 | WINTER | NONE | Р |
| | | | | | | | | | | | | | |

Appendix II. HKLR03 Chinese White Dolphin Sighting Database (December 2015) (Abberviations: STG# = Sighting Number; HRD SZ = Dolphin Herd Size; BEAU = Beaufort Sea State; PSD = Perpendicular Distance; BOAT ASSOC. = Fishing Boat Association P/S: Sighting Made on Primary/Secondary Lines

Appendix III. Individual dolphins identified during HKLR03 monitoring surveys in December 2015

| ID# | DATE | STG# | AREA |
|-------|----------|------|-----------|
| CH34 | 09/12/15 | 1 | NW LANTAU |
| NL33 | 07/12/15 | 1 | NW LANTAU |
| | 09/12/15 | 1 | NW LANTAU |
| NL48 | 09/12/15 | 1 | NW LANTAU |
| NL104 | 09/12/15 | 1 | NW LANTAU |
| | 15/12/15 | 3 | NW LANTAU |
| NL136 | 09/12/15 | 1 | NW LANTAU |
| NL202 | 07/12/15 | 1 | NW LANTAU |
| NL210 | 07/12/15 | 1 | NW LANTAU |
| NL220 | 09/12/15 | 1 | NW LANTAU |
| | 15/12/15 | 3 | NW LANTAU |
| NL233 | 07/12/15 | 1 | NW LANTAU |
| NL261 | 15/12/15 | 2 | NW LANTAU |
| NL269 | 09/12/15 | 1 | NW LANTAU |
| NL272 | 07/12/15 | 1 | NW LANTAU |
| | 15/12/15 | 2 | NW LANTAU |
| NL280 | 07/12/15 | 1 | NW LANTAU |
| NL284 | 07/12/15 | 1 | NW LANTAU |
| NL286 | 02/12/15 | 1 | NW LANTAU |
| | 02/12/15 | 2 | NW LANTAU |
| | 07/12/15 | 1 | NW LANTAU |
| | | | |



Appendix IV. Photographs of Identified Individual Dolphins in December 2015 (HKLR03)



Appendix IV. (cont'd)





Appendix IV. (cont'd)

Appendix J

Event and Action Plan

Event and Action Plan for Impact Air Monitoring

| | | | Action | | | | |
|--|--|----------------------|---|----------------|---|----------------------------|---|
| | ET (a) | | IEC (a) | | SOR (a) | | Contractor(s) |
| Action Level Exceedance | | | | | | | |
| 1. 2. 3. 4. 5. 6. 7. | Identify the source. Repeat measurement to confirm finding. If two consecutive measurements exceed Action Level, the exceedance is then confirmed. Inform the IEC and the SOR. Investigate the cause of exceedance and check Contractor's working procedures to determine possible mitigation to be implemented. If the exceedance is confirmed to be Project related after investigation, increase monitoring frequency to daily. Discuss with the IEC and the Contractor on remedial actions required. If exceedance continues, arrange meeting with the IEC and the SOR. | 1. 2. 3. 4. | Check monitoring data submitted by the ET. Check the Contractor's working method. If the exceedance is confirmed to be Project related after investigation, discuss with the ET and the Contractor on possible remedial measures. Advise the SOR on the effectiveness of the proposed remedial measures. Supervise implementation of | 1. 2. 3. | Confirm receipt of notification of failure in writing. Notify the Contractor. Ensure remedial measures properly implemented. | 1. 2. 3. 4. 5. | Rectify any unacceptable practice Amend working methods if appropriate If the exceedance is confirmed to be Project related, submit proposals for remedial actions to IEC within 3 working days of notification Implement the agreed proposals Amend proposal if |
| 8. | If exceedance stops, cease additional monitoring. | | remedial measures. | | | | appropriate |

| | | | Action | | | | | | | |
|------------------------|---|----------|---|----------|---|----------|---|--|--|--|
| | ET (a) | | IEC (a) | | SOR (a) | | Contractor(s) | | | |
| Limit Level Exceedance | | | | | | | | | | |
| | Identify the source. Repeat measurement to confirm finding. If two consecutive measurements exceed Limit | 1. 2. | Check monitoring data submitted by the ET. Check Contractor's working | 1. | Confirm receipt of notification of failure in writing. | 1. | Take immediate action to avoid further exceedance. | | | |
| 2 | Level, the exceedance is then confirmed. Inform the IEC, the SOR, the DEP and the Contractor. Investigate the cause of exceedance and check Contractor's working procedures to determine possible mitigation to be implemented. | 3. | method. If the exceedance is confirmed to be Project related after investigation, discuss with the ET and the Contractor on possible remedial measures. | 2. 3. | Notify the Contractor. If the exceedance is confirmed to be Project related after investigation, in consultation with the IEC, agree with the Contractor on the remedial measures to be | 2. | If the exceedance is confirmed to be Project related after investigation, submit proposals for remedia actions to IEC within 3 | | | |
| Į | implemented.5. If the exceedance is confirmed to be Project related after investigation, increase monitoring frequency to daily. | 4. | Advise the SOR on the effectiveness of the proposed remedial measures. | 4. | implemented. Ensure remedial measures are properly implemented. | 3. | working days of notification. Implement the agreed proposals. | | | |
| (| Carry out analysis of the Contractor's working procedures to determine possible mitigation to be implemented. | 5. | Supervise implementation of remedial measures. | 5. | If exceedance continues, consider what activity of the work is responsible and | 4. 5. | Amend proposal if appropriate. Stop the relevant | | | |
| : | 7. Arrange meeting with the IEC and the SOR to discuss the remedial actions to be taken. | | | | instruct the Contractor to stop that activity of work | | activity of works as determined by the SO | | | |
| ٤ | Assess effectiveness of the Contractor's remedial actions and keep the IEC, the DEP and the SOR informed of the results. | | | | until the exceedance is abated. | | until the exceedance is abated. | | | |
| 9 | If exceedance stops, cease additional monitoring. | | | | | | | | | |

Note: (a) ET - Environmental Team; IEC - Independent Environmental Checker; SOR - Supervising Officer's Representative

Event/Action Plan for Impact Dolphin Monitoring

| EVENT | ACTION | | | | | | |
|--------------|--|--|---|---|--|--|--|
| | ET | IEC | SOR | Contractor | | | |
| Action Level | Repeat statistical data analysis to confirm findings; Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences; Identify source(s) of impact; Inform the IEC, SOR and Contractor; Check monitoring data. Review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary. | Check monitoring data submitted by ET and Contractor; Discuss monitoring results and finding with the ET and the Contractor. | Discuss monitoring with the IEC and any other measures proposed by the ET; If SOR is satisfied with the proposal of any other measures, SOR to signify the agreement in writing on the measures to be implemented. | Inform the SOR and confirm notification of the non-compliance in writing; Discuss with the ET and the IEC and propose measures to the IEC and the SOR; Implement the agreed measures. | | | |
| Limit Level | Repeat statistical data analysis to confirm findings; Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences; | Check monitoring data submitted by ET and Contractor; Discuss monitoring results and findings with the ET and the Contractor; Attend the meeting to discuss with ET, SOR and | Attend the meeting to discuss with ET, IEC and Contractor the necessity of additional dolphin monitoring and any other potential mitigation measures. If SOR is satisfied with the | Inform the SOR and confirm notification of the non-compliance in writing; Attend the meeting to discuss with ET, IEC and SOR the necessity of additional dolphin monitoring and any other | | | |

| EVENT | | | | |
|-------|---|--|---|--|
| | ET | IEC | SOR | Contractor |
| | Identify source(s) of impact; Inform the IEC, SOR and Contractor of findings; Check monitoring data; Repeat review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary. If ET proves that the source of impact is caused by any of the construction activity by the works contract, ET to arrange a meeting to discuss with IEC, SOR and Contractor the necessity of additional dolphin monitoring and/or any other potential mitigation measures (e.g., consider to modify the perimeter silt curtain or construction activity etc.) and submit to IEC a proposal of additional dolphin monitoring and/or mitigation measures where necessary. | Contractor the necessity of additional dolphin monitoring and any other potential mitigation measures. 4. Review proposals for additional monitoring and any other mitigation measures submitted by ET and Contractor and advise SOR of the results and findings accordingly. 5. Supervise / Audit the implementation of additional monitoring and/or any other mitigation measures and advise SOR the results and findings accordingly. | proposals for additional dolphin monitoring and/or any other mitigation measures submitted by ET and Contractor and verified by IEC, SOR to signify the agreement in writing on such proposals and any other mitigation measures. 3. Supervise the implementation of additional monitoring and/or any other mitigation measures. | potential mitigation measures. 3. Jointly submit with ET to IEC a proposal of additional dolphin monitoring and/or any other mitigation measures when necessary. 4. Implement the agreed additional dolphin monitoring and/or any other mitigation measures. |

Note: ET – Environmental Team, IEC – Independent Environmental Checker, SOR – Supervising Officer's Representative

Appendix K

Cumulative Statistics on Exceedances, Complaints, Notifications of Summons and Successful Prosecutions

Table K1Cumulative Statistics on Exceedances

| Parameters | Level of Exceedance | Total No. recorded in this reporting month | Total No. recorded since project commencement |
|----------------|---------------------|--|---|
| 1-hr TSP | Action | 0 | 30 |
| | Limit | 0 | 2 |
| 24-hr TSP | Action | 0 | 5 |
| | Limit | 0 | 1 |
| Water Quality | Action | 0 | 6 |
| | Limit | 0 | 1 |
| Impact Dolphin | Action | 0 | 9 |
| Monitoring | Limit | 0 | 3 |

Table K2Cumulative Statistics on Complaints, Notifications of Summons and
Successful Prosecutions

| Reporting Period | Cumulative Statistics | | | | | |
|---|-----------------------|-----------------------------|----------------------------|--|--|--|
| | Complaints | Notifications of Summons | Successful Prosecutions | | | |
| This Reporting Month (December 2015) | 0 | 0 | 0 | | | |
| Total No. received since project commencement | 4 | 0 | 0 | | | |

Appendix L

Waste Flow Table



Monthly Summary Waste Flow Table Name of Department:

Contract No. / Works Order No.: <u>HY/2012/08</u>

Monthly Summary Waste Flow Table for <u>December 2015</u>

HyD

[to be submitted not later than the 15th day of each month following reporting

month] (All quantities shall be rounded off to 3 decimal places.)

| | Monthly Break-down of <u>Inert</u> Construction & Demolition Materials (i.e. Public Fill Materials) | | | | | | | |
|--------------------------|---|--|-------------------------------|---------------------------------|-----------------------------------|--|--|--|
| Month | (a)=(b)+(c)+(d)+(e) Total Quantity Generated | (b) Hard Rock and Large Broken Concrete | (c) Reused in the Contract | (d) Reused in other Projects | (e) Disposed of as Public Fill | | | |
| | (in '000 ton) | (in '000 ton) | (in '000 ton) | (in '000 ton) | (in '000 ton) | | | |
| Sub-total | 64.216 | 0.000 | 0.000 | 0.000 | 64.216 | | | |
| Jan-2015 | 30.877 | 0.000 | 0.000 | 0.000 | 30.877 | | | |
| Feb-2015 | 4.152 | 0.000 | 0.000 | 0.000 | 4.152 | | | |
| Mar-2015 | 36.718 | 0.000 | 0.000 | 0.000 | 36.718 | | | |
| Apr-2015 | 62.847 | 0.000 | 0.000 | 0.000 | 62.847 | | | |
| May-2015 | 121.436 | 0.000 | 0.000 | 0.000 | 121.436 | | | |
| Jun-2015 | 247.282 | 0.000 | 0.000 | 0.000 | 247.282 | | | |
| Half Year Sub-total | 503.312 | 0.000 | 0.000 | 0.000 | 503.312 | | | |
| Jul-2015 | 233.422 | 0.000 | 0.000 | 0.000 | 233.422 | | | |
| Aug-2015 | 62.367 | 0.000 | 0.000 | 0.000 | 62.367 | | | |
| Sep-2015 | 9.555 | 0.000 | 0.000 | 0.000 | 9.555 | | | |
| Oct-2015 | 7.218 | 0.000 | 0.000 | 0.000 | 7.218 | | | |
| Nov-2015 | 11.578 | 0.000 | 0.000 | 0.000 | 11.578 | | | |
| Dec-2015 | 38.600 | 0.000 | 0.000 | 0.000 | 38.600 | | | |
| Project Total Quantities | 930.268 | 0.000 | 0.000 | 0.000 | 930.268 | | | |



| | Actual Quantities of <u>Non-inert</u> Construction Waste Generated Monthly | | | | | | | | |
|--------------------------|--|---------------------------|-------------|----------------|---------------------------------------|----------|----------------|----------|--|
| Month | Me | fetals Paper/ cardboard p | | oard packaging | rd packaging Plastics (see Note 3) | | Chemical Waste | | Others, e.g. General Refuse disposed at Landfill |
| | (in '000kg) | | (in '000kg) | | (in '000kg) | | (in '000kg) | | (in '000ton) |
| | generated | recycled | generated | recycled | generated | recycled | generated | Disposed | generated |
| Sub-total | 0.000 | 0.000 | 1.050 | 1.050 | 0.000 | 0.000 | 0.110 | 0.110 | 0.605 |
| Jan-2015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.080 |
| Feb-2015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.074 |
| Mar-2015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.115 |
| Apr-2015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.091 |
| May-2015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.600 | 1.600 | 0.108 |
| Jun-2015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.120 |
| Half Year Sub-total | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.600 | 1.600 | 0.588 |
| Jul-2015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.172 |
| Aug-2015 | 0.000 | 0.000 | 0.300 | 0.300 | 0.000 | 0.000 | 0.000 | 0.000 | 0.246 |
| Sep-2015 | 0.000 | 0.000 | 0.300 | 0.300 | 0.220 | 0.220 | 0.000 | 0.000 | 0.195 |
| Oct-2015 | 0.000 | 0.000 | 0.300 | 0.300 | 0.000 | 0.000 | 0.000 | 0.000 | 0.177 |
| Nov-2015 | 0.000 | 0.000 | 0.200 | 0.200 | 5.950 | 5.950 | 0.000 | 0.000 | 0.093 |
| Dec-2015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.700 | 0.700 | 0.000 | 0.000 | 0.141 |
| Project Total Quantities | 0.000 | 0.000 | 2.150 | 2.150 | 6.870 | 6.870 | 1.710 | 1.710 | 2.217 |



| Forecast of Total Quantities of Construction and Demolition Materials to be Generated from the Contract* | | | | | | | |
|--|---|--|--|--|--|--|--|
| Total Quantity Generated | Total Quantity GeneratedHard Rock and Large Broken ConcreteReused in the ContractReused in other ProjectsDisposed of as Public Fill | | | | | | |
| (in '000 ton) | (in '000 ton) (in '000 ton) (in '000 ton) (in '000 ton) | | | | | | |
| 50.000 0.000 0.000 50.000 | | | | | | | |

| Forecast of Total Quantities of Construction and Demolition Materials to be Generated from the Contract* | | | | | | |
|--|---|-------------|-------------|--------------------------|--|--|
| Metals | Metals Paper/ cardboard packaging Plastics (see Note 3) Chemical Waste General Refuse disposed of at Landfill | | | | | |
| (in '000kg) | (in '000kg) | (in '000kg) | (in '000kg) | (in '000m ³) | | |
| 0.000 0.000 0.000 0.200 | | | | | | |

Notes:

(1) The performance targets are given in the **ER Appendix 8J Clause 14** and the EM & A Manual(s).

(2) The waste flow table shall also include C&D materials to be imported for use at the Site.

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

(4) The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where the amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000 m³. (**ER Part 8 Clause 8.8.5** (d) (ii) refers).