

Figure 1: Turbidity and pH (mean + SD) recorded during *Water Column Profiling* for disposal operations at CMP 1 in December 2013.

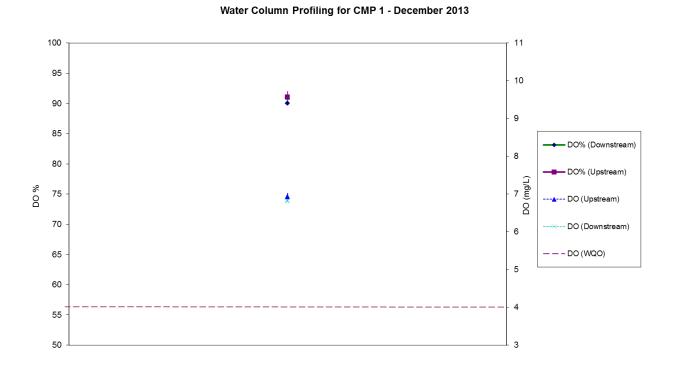


Figure 2: Dissolved Oxygen (mean + SD) recorded during *Water Column Profiling* for disposal operations at CMP 1 in December 2013.

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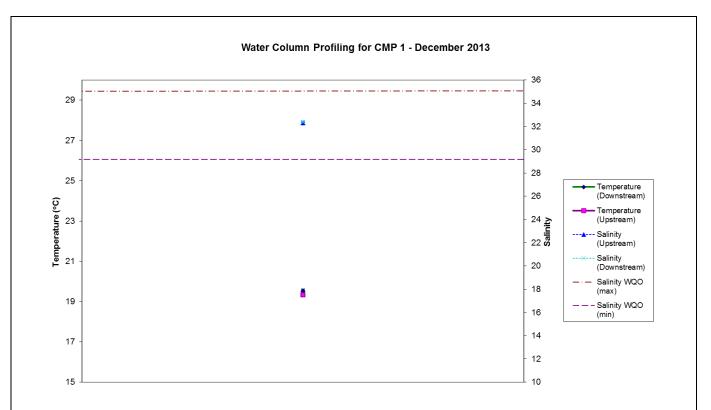
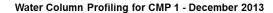


Figure 3: Salinity and Temperature (mean + SD) recorded during *Water Column Profiling* for disposal operations at CMP 1 in December 2013.



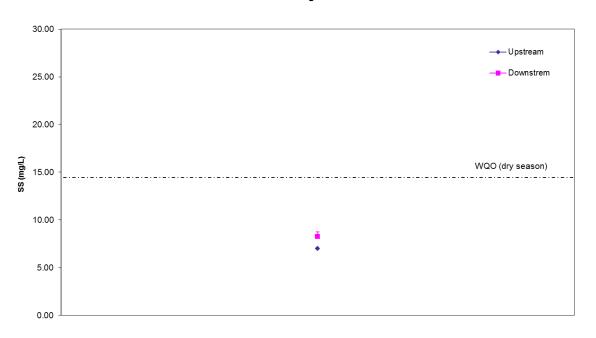


Figure 4: Suspended Solids (mean + SD) recorded during *Water Column Profiling* for disposal operations at CMP 1 in December 2013.

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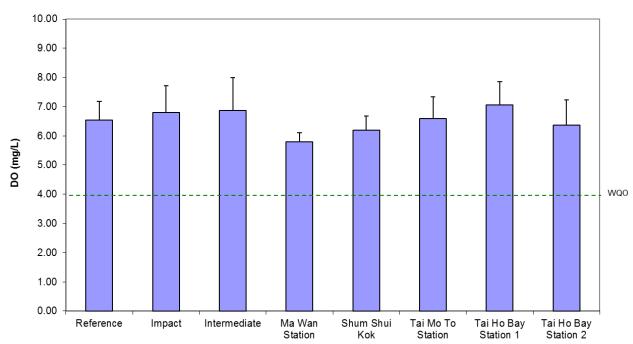
Date: 6/1/14



### Routine Water Quality Monitoring for CMP 1 - Monthly Average in October 2013 10.00 9.00 WQO 8.00 Max 7.00 WQO Min 6.00 5.00 4.00 3.00 2.00 1.00 0.00 Shum Shui Tai Ho Bay Intermediate Reference Impact Ma Wan Tai Mo To Tai Ho Bay Station Kok Station Station 1 Station 2

Monthly averaged level of pH (mean + SD) recorded during Routine Water Quality Monitoring for disposal operations at CMP 1 in October 2013.

# Routine Water Quality Monitoring for CMP 1 - Monthly Average in October 2013



Monthly averaged concentration of Dissolved Oxygen (mg/L; mean + SD) recorded during Routine Water Quality Monitoring for disposal operations at CMP 1 in October 2013.

Source: H:\Team\EM\GMS Projects\0175086 CEDD EM&A for South Brothers\02

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# Routine Water Quality Monitoring for CMP 1 - Monthly Average in October 2013 120 100 80 (%) og 60 40 20 0 Reference Impact Intermediate Ma Wan Shum Shui Tai Mo To Tai Ho Bay Tai Ho Bay Station Kok Station Station 1 Station 2

Figure 7: Monthly averaged level of Dissolved Oxygen (% saturation; mean + SD) recorded during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in October 2013.

### Routine Water Quality Monitoring for CMP 1 - Monthly Average in October 2013

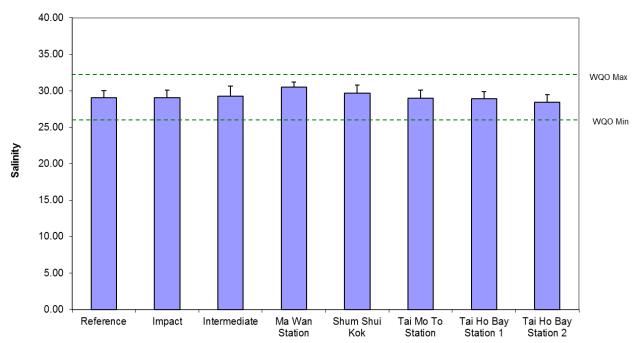


Figure 8: Monthly averaged level of Salinity (mean + SD) recorded during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in October 2013.

Source: H:\Team\EM\GMS Projects\0175086 CEDD EM&A for South Brothers\02 Deliverable\07 CMP Monthly Report\16th (December 2013)

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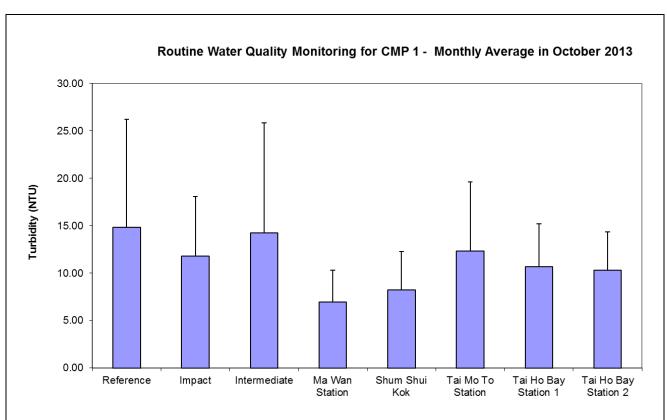


Figure 9: Monthly averaged level of Turbidity (NTU; mean + SD) recorded during Routine Water Quality Monitoring for disposal operations at CMP 1 in October 2013.

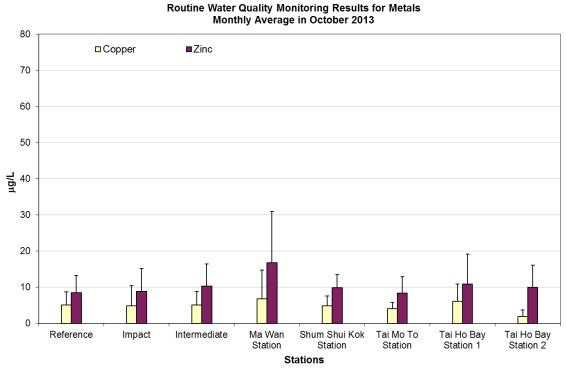


Figure 10: Monthly averaged concentration of Copper and Zinc (mean + SD) in water samples collected from Routine Water Quality Monitoring for disposal operations at CMP 1 in October 2013.

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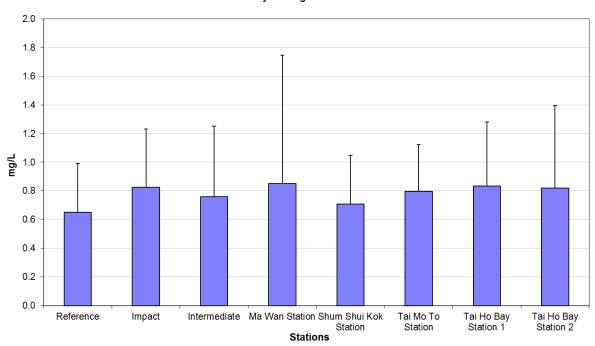
6/1/14 Date:



# **Routine Water Quality Monitoring Results for Metals** Monthly Average in October 2013 8 ■ Lead ■Nickel ■ Arsenic ■ Chromium 6 **7**61 3 2 0 Intermediate Shum Shui Kok Tai Mo To Tai Ho Bay Tai Ho Bay

Monthly averaged concentration of Lead, Nickel, Arsenic and Chromium (mean + SD) Figure 11: in water samples collected from Routine Water Quality Monitoring for disposal operations at CMP 1 in October 2013.

Routine Water Quality Monitoring Results for Biochemical Oxygen Demand (BOD<sub>5</sub>) Monthly Average in October 2013



Monthly averaged level of Biochemical Oxygen Demand (BOD<sub>5</sub>; mean + SD) in water samples collected from Routine Water Quality Monitoring for disposal operations at CMP 1 in October 2013.

Source: H:\Team\EM\GMS Projects\0175086 CEDD EM&A for South Brothers\02

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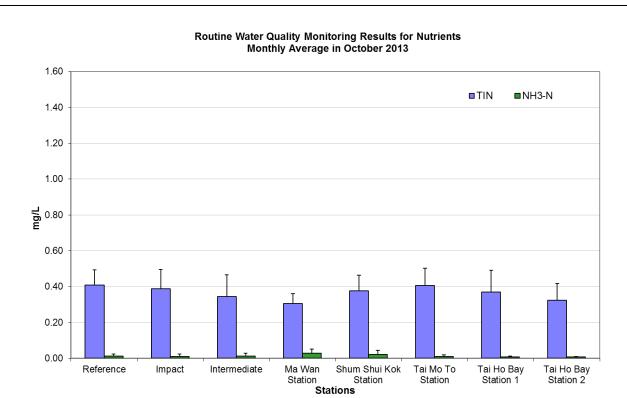


Figure 13: Monthly averaged concentration of Total Inorganic Nitrogen and NH<sub>3</sub>-N (mean + SD) in water samples collected from *Routine Water Quality Monitoring* for disposal operations at CMP 1 in October 2013.

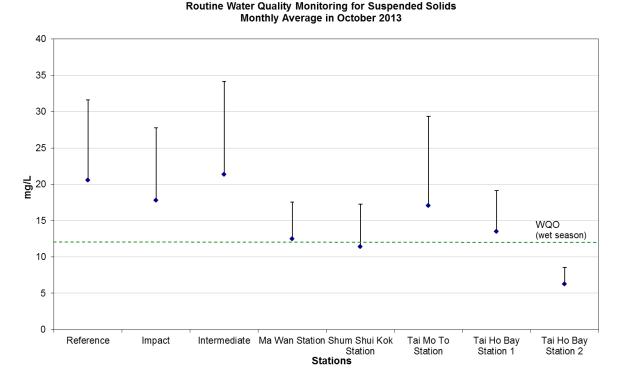


Figure 14: Monthly averaged concentration of Suspended Solids (mean + SD) in water samples collected from *Routine Water Quality Monitoring* for disposal operations at CMP 1 in October 2013.

Date: 6/1/14



### Routine Water Quality Monitoring for CMP 1 - Monthly Average in November 2013 10.00 9.00 WQO Max 8.00 7.00 WQO Min 6.00 5.00 4.00 3.00 2.00 1.00 0.00 Tai Ho Bay Tai Ho Bay Shum Shui Reference Impact Intermediate Ma Wan Tai Mo To Station Kok Station Station 1 Station 2

Figure 15: Monthly averaged level of pH (mean + SD) recorded during Routine Water Quality Monitoring for disposal operations at CMP 1 in November 2013.

### Routine Water Quality Monitoring for CMP 1 - Monthly Average in November 2013

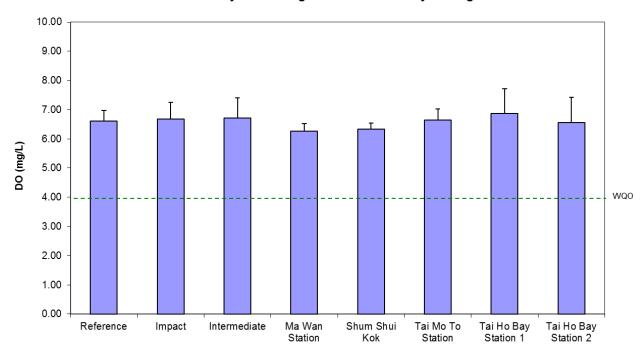


Figure 16: Monthly averaged concentration of Dissolved Oxygen (mg/L; mean + SD) recorded during Routine Water Quality Monitoring for disposal operations at CMP 1 in November 2013.

Source: H:\Team\EM\GMS Projects\0175086 CEDD EM&A for South Brothers\02

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# Routine Water Quality Monitoring for CMP 1 - Monthly Average in November 2013 120 100 80 (%) og 60 40 20 0 Reference Impact Intermediate Ma Wan Shum Shui Tai Mo To Tai Ho Bay Tai Ho Bay Station Kok Station Station 1 Station 2

Monthly averaged level of Dissolved Oxygen (% saturation; mean + SD) recorded Figure 17: during Routine Water Quality Monitoring for disposal operations at CMP 1 in November 2013.

### Routine Water Quality Monitoring for CMP 1 - Monthly Average in November 2013

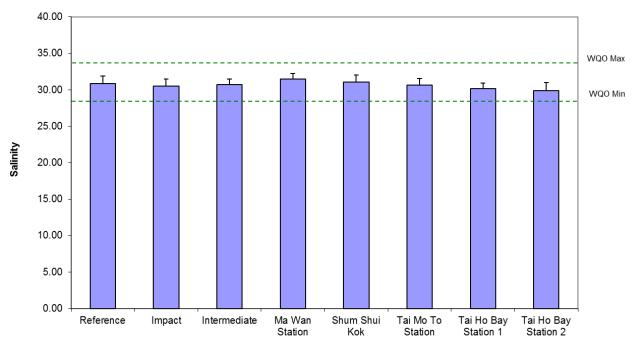


Figure 18: Monthly averaged level of Salinity (mean + SD) recorded during Routine Water Quality Monitoring for disposal operations at CMP 1 in November 2013.

Source: H:\Team\EM\GMS Projects\0175086 CEDD EM&A for South Brothers\02

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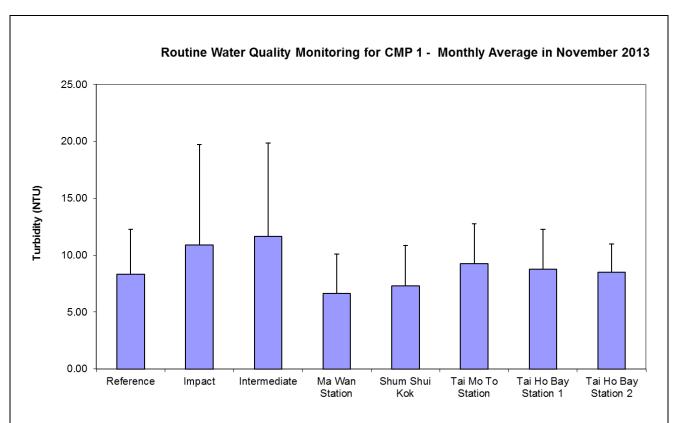


Figure 19: Monthly averaged level of Turbidity (NTU; mean + SD) recorded during Routine Water Quality Monitoring for disposal operations at CMP 1 in November 2013.

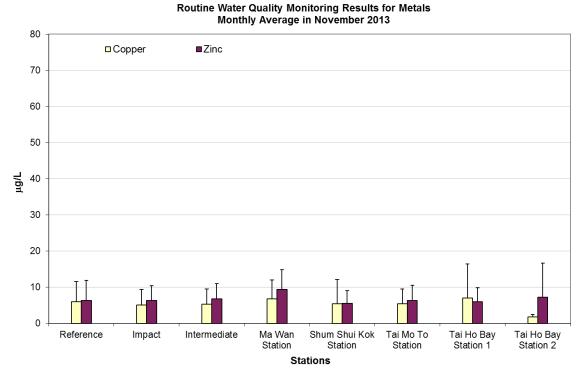


Figure 20: Monthly averaged concentration of Copper and Zinc (mean + SD) in water samples collected from Routine Water Quality Monitoring for disposal operations at CMP 1 in November 2013.

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# **Routine Water Quality Monitoring Results for Metals** Monthly Average in November 2013 8 ■ Lead ■Nickel ■ Arsenic ■ Chromium 6 ng/L 3 2 0 Intermediate Shum Shui Kok Tai Mo To Tai Ho Bay Tai Ho Bay **Stations**

Figure 21: Monthly averaged concentration of Lead, Nickel, Arsenic and Chromium (mean + SD) in water samples collected from *Routine Water Quality Monitoring* for disposal operations at CMP 1 in November 2013.

Routine Water Quality Monitoring Results for Biochemical Oxygen Demand (BOD<sub>5</sub>)
Monthly Average in November 2013

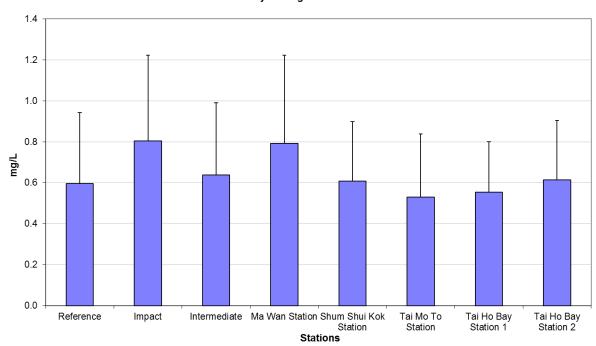


Figure 22: Monthly averaged level of Biochemical Oxygen Demand (BOD<sub>5</sub>; mean + SD) in water samples collected from *Routine Water Quality Monitoring* for disposal operations at CMP 1 in November 2013.

Source: H:\Team\EM\GMS Projects\0175086 CEDD EM&A for South Brothers\02 Deliverable\07 CMP Monthly Report\16th (December 2013)

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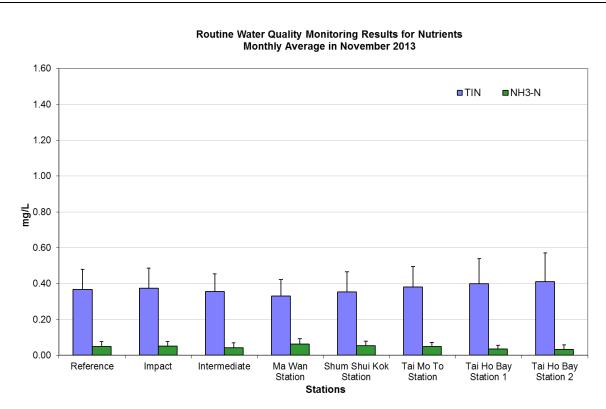


Figure 23: Monthly averaged concentration of Total Inorganic Nitrogen and NH<sub>3</sub>-N (mean + SD) in water samples collected from *Routine Water Quality Monitoring* for disposal operations at CMP 1 in November 2013.

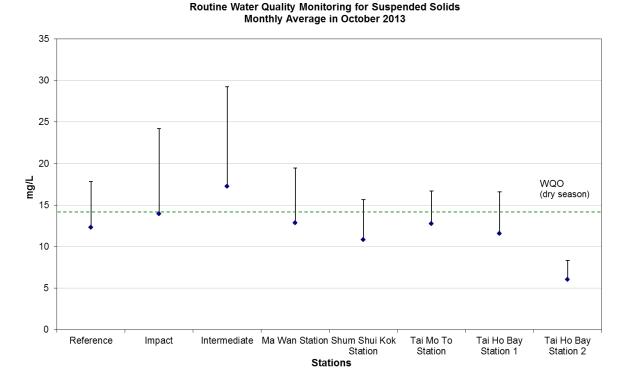


Figure 24: Monthly averaged concentration of Suspended Solids (mean + SD) in water samples collected from *Routine Water Quality Monitoring* for disposal operations at CMP 1 in November 2013.

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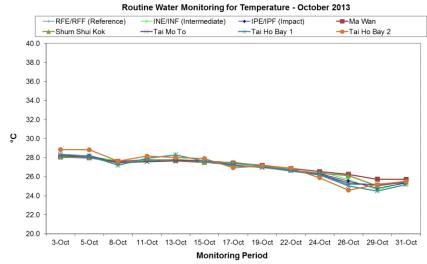


Figure 25: Daily levels of Temperature during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in October 2013.

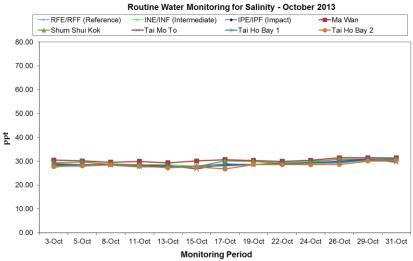


Figure 26: Daily levels of Salinity during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in October 2013.

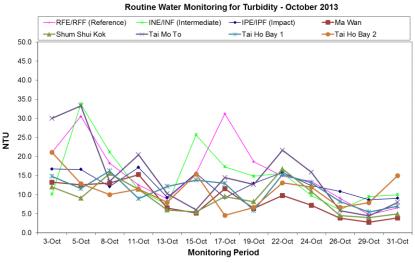


Figure 27: Daily levels of Turbidity during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in October 2013.

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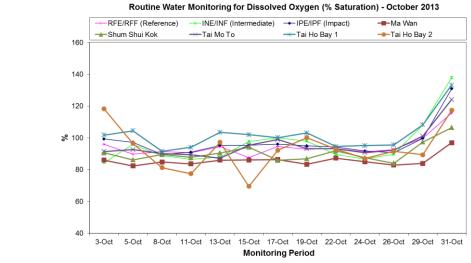


Figure 28: Daily levels of Dissolved Oxygen (%) during Routine Water Quality Monitoring for disposal operations at CMP 1 in October 2013.

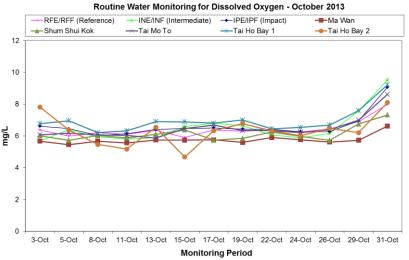


Figure 29: Daily levels of Dissolved Oxygen (mg/L) during Routine Water Quality Monitoring for disposal operations at CMP 1 in October 2013.

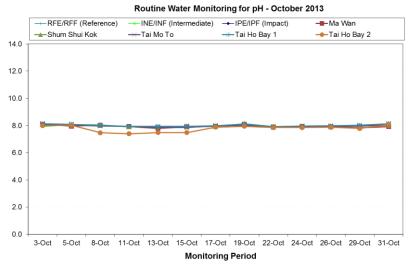


Figure 30: Daily levels of pH during Routine Water Quality Monitoring for disposal operations at CMP 1 in October 2013.

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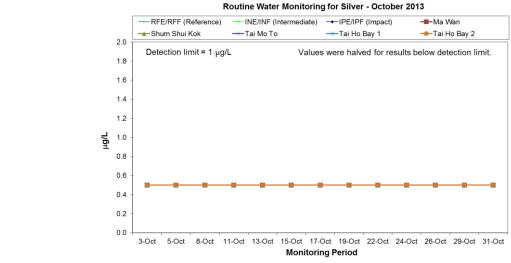


Figure 31: Daily levels of Silver during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in October 2013.

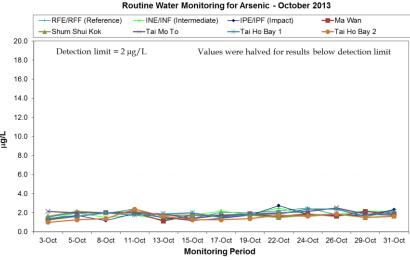


Figure 32: Daily levels of Arsenic during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in October 2013.

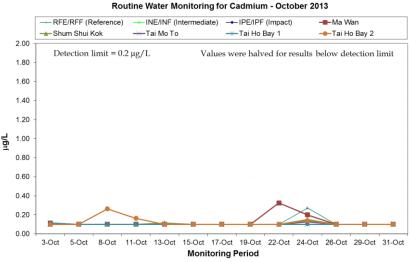


Figure 33: Daily levels of Cadmium during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in October 2013.

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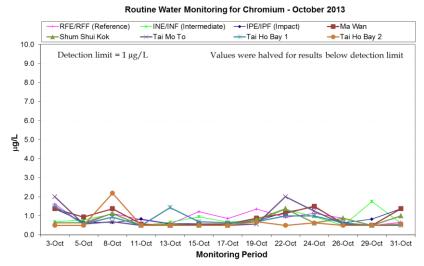


Figure 34: Daily levels of Chromium during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in October

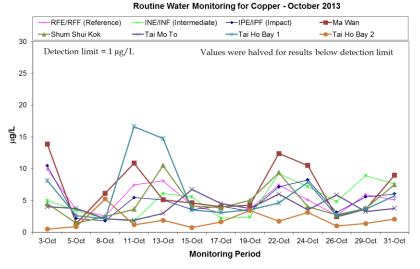


Figure 35: Daily levels of Copper during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in October 2013.

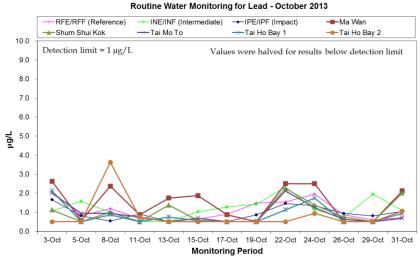


Figure 36: Daily levels of Lead during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in October 2013.

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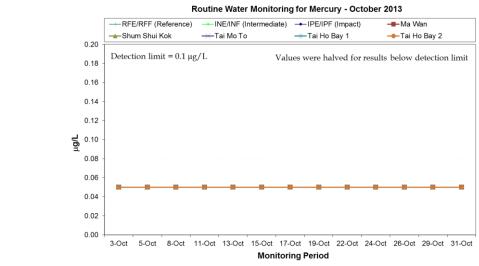


Figure 37: Daily levels of Mercury during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in October 2013.

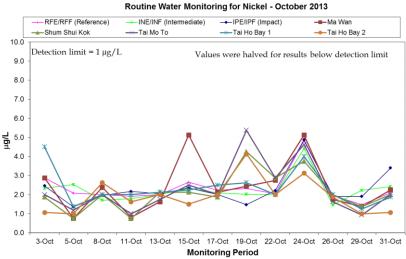


Figure 38: Daily levels of Nickel during *Routine Water Monitoring* for disposal operations at CMP 1 in October 2013.

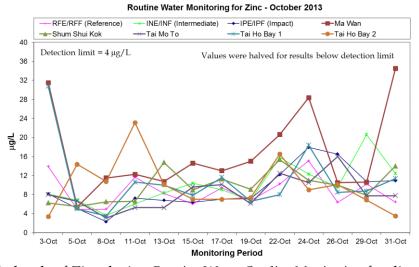


Figure 39: Daily levels of Zinc during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in October 2013.

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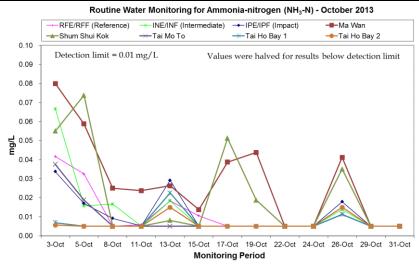


Figure 40: Daily levels of Ammonia-Nitrogen during Routine Water Quality Monitoring for for disposal operations at CMP 1 in October 2013.

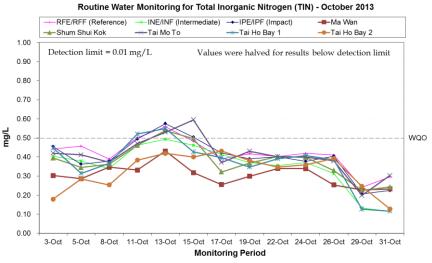


Figure 41: Daily levels of Total Inorganic Nitrogen during Routine Water Quality Monitoring for disposal operations at CMP 1 in October 2013.

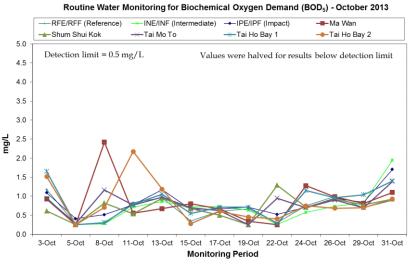


Figure 42: Daily levels of Biochemical Oxygen Demand during Routine Water Quality Monitoring for disposal operations at CMP 1 in October 2013.

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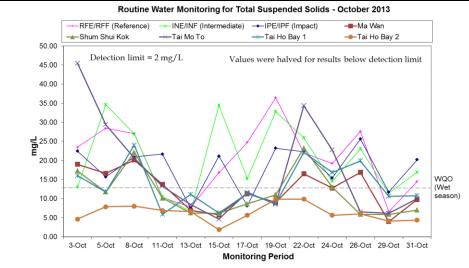


Figure 43: Daily levels of Total Suspended Solids during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in October 2013.

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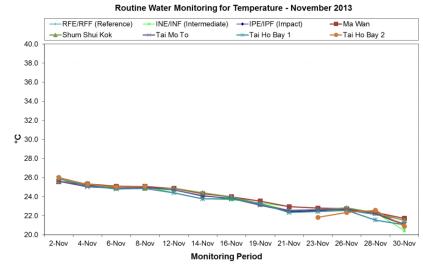


Figure 44: Daily levels of Temperature during Routine Water Quality Monitoring for disposal operations at CMP 1 in November 2013.

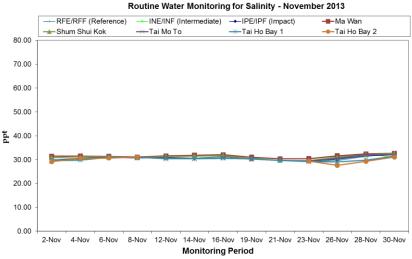


Figure 45: Daily levels of Salinity during Routine Water Quality Monitoring for disposal operations at CMP 1 in November 2013.

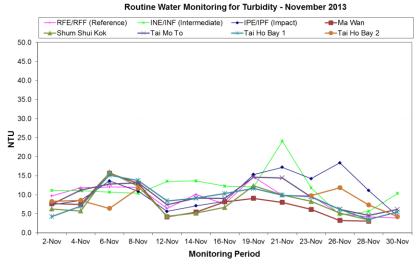


Figure 46: Daily levels of Turbidity during Routine Water Quality Monitoring for disposal operations at CMP 1 in November 2013.

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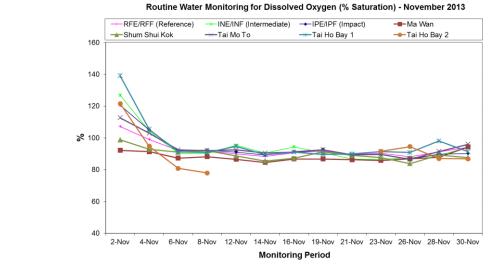


Figure 47: Daily levels of Dissolved Oxygen (%) during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in November 2013.

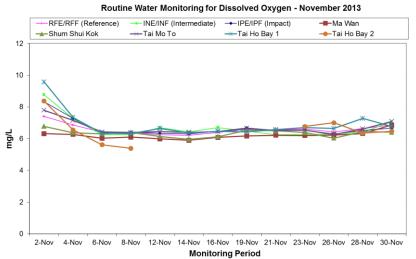


Figure 48: Daily levels of Dissolved Oxygen (mg/L) during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in November 2013.

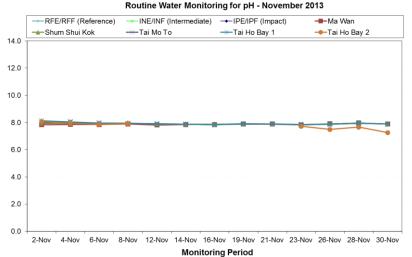


Figure 49: Daily levels of pH during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in November 2013.

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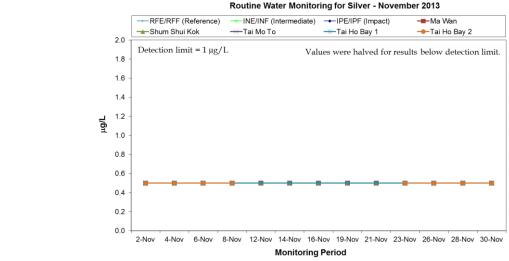


Figure 50: Daily levels of Silver during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in November 2013.

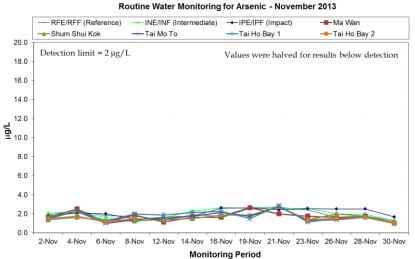


Figure 51: Daily levels of Arsenic during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in November 2013.

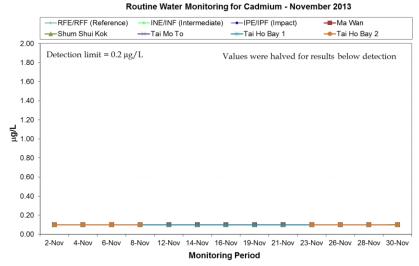


Figure 52: Daily levels of Cadmium during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in November 2013.

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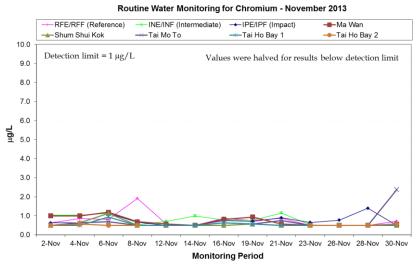


Figure 53: Daily levels of Chromium during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in November 2013.

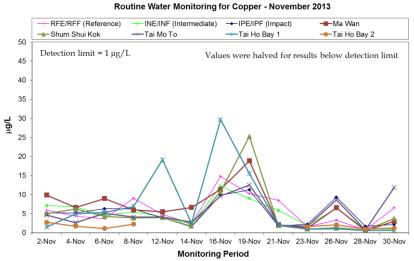


Figure 54: Daily levels of Copper during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in November 2013.

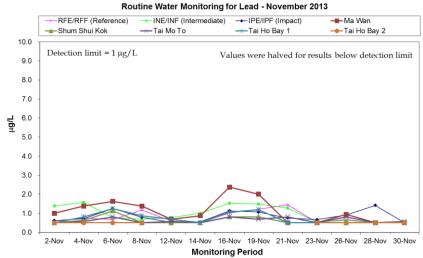


Figure 55: Daily levels of Lead during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in November 2013.

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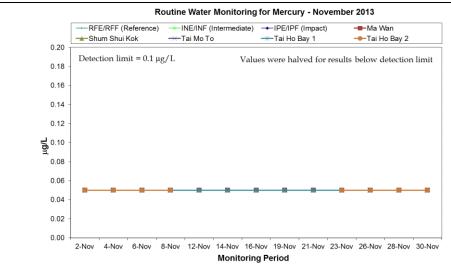


Figure 56: Daily levels of Mercury during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in November 2013.

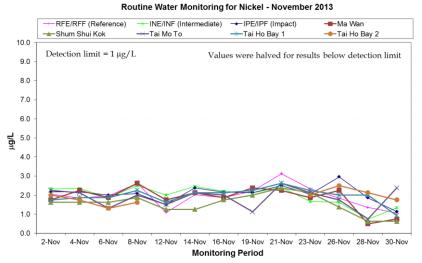


Figure 57: Daily levels of Nickel during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in November 2013.

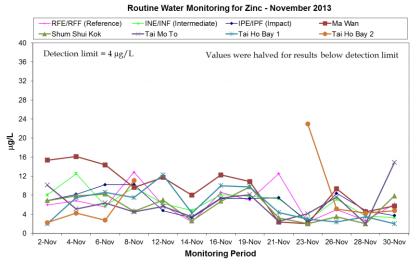


Figure 58: Daily levels of Zinc during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in November 2013.

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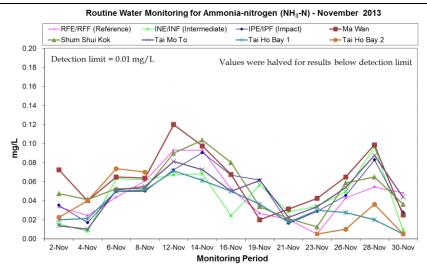


Figure 59: Daily levels of Ammonia-Nitrogen during *Routine Water Quality Monitoring* for for disposal operations at CMP 1 in November 2013.

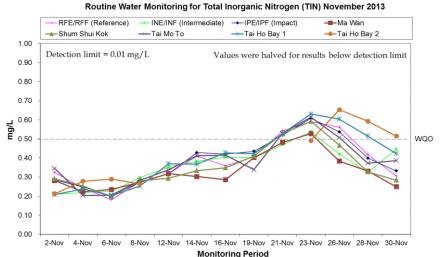


Figure 60: Daily levels of Total Inorganic Nitrogen during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in November 2013.

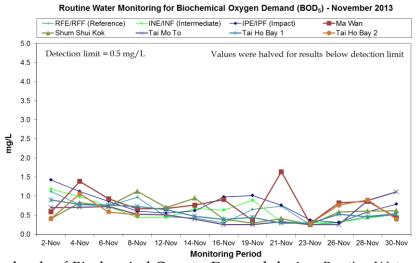


Figure 61: Daily levels of Biochemical Oxygen Demand during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in November 2013.

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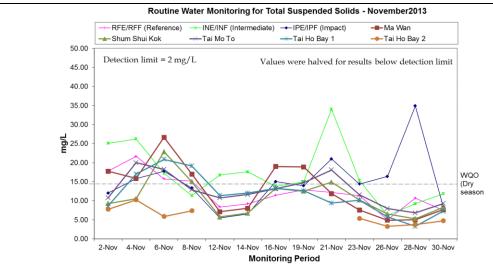


Figure 62: Daily levels of Total Suspended Solids during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in November 2013.

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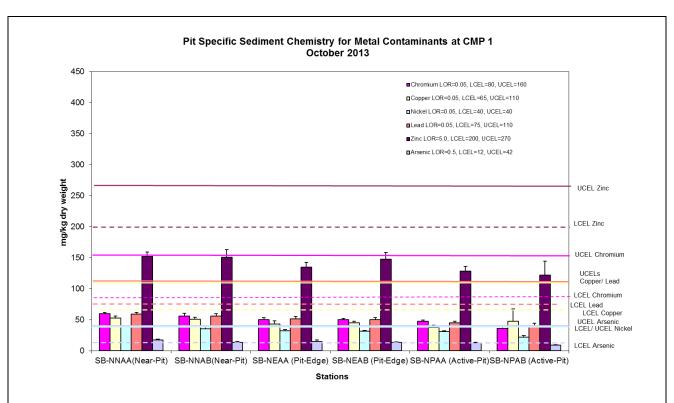


Figure 63: Concentration of Metals (Cr, Cu, Ni, Pb, Zn, As; mean +SD) in sediment samples collected from *Pit Specific Sediment Chemistry Monitoring* for CMP 1 in October 2013.

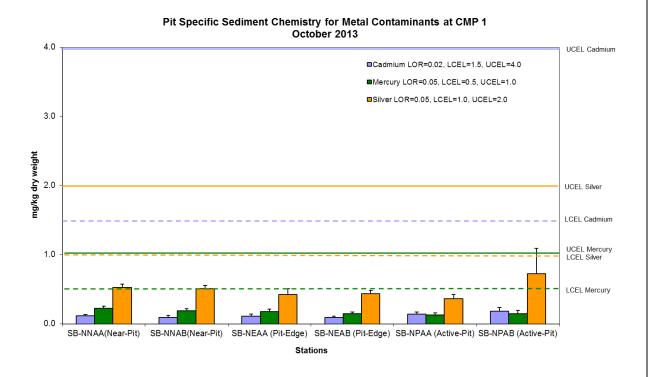


Figure 64: Concentration of Metals (Cd, Hg, Ag; mean +SD) in sediment samples collected from *Pit Specific Sediment Chemistry Monitoring* for CMP 1 in October 2013.

Date: 6/1/14



# Pit Specific Sediment Chemistry for Total Organic Carbon (TOC) at CMP 1 16,000 12,000 4,000 SB-NNAA(Near-Pit) SB-NNAB(Near-Pit) SB-NEAA (Pit-Edge) SB-NEAB (Pit-Edge) SB-NPAA (Active-Pit) SB-NPAB (Active-Pit) Stations

Figure 65: Concentration of Total Organic Carbon (mg/kg dry weight; mean +SD) in sediment samples collected from *Pit Specific Sediment Chemistry Monitoring* for CMP 1 in October 2013.

## Pit Specific Sediment Chemistry for Tributyltin (TBT) at CMP 1 in October 2013

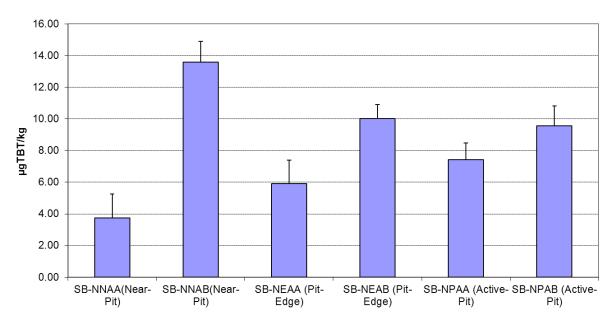


Figure 66: Concentration of Tributyltin (µg TBT/kg; mean +SD) in sediment samples collected from *Pit Specific Sediment Chemistry Monitoring* of CMP 1 in October 2013.

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Date: 6/1/14

