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Appendix 3.2 Water Quality Impact Assessment for Alternative Scenario

3.1 Introduction

The water quality impacts of an alternative dredging scenario have been assessed. This scenario includes five grab dredgers operate concurrently within the project area (**Figure A3.2.1**). It is emphasized that the scenario was not selected as a practical dredging scenario, though, the assessment results could supplement those presented in Chapter 3 of the EIA report.

The assessment here only includes impacts of SS, SS sedimentation, DO and TIN due to the dredging activities during construction phase. The requirements of the Study Brief and *Annexes 6 and 14* of the *Technical Memorandum on the Environmental Impact Assessment Process* have been followed.

While the details of the assessment methodology shall be referred to Chapter 3 of the EIA report, the alternative dredging scenario and the assessment results was presented as follows.

3.2 Modelling Scenario

The Grab dredger (GD) were assumed to be used for dredging in the Rambler Channel. The GD is commonly used for dredging of contaminated sediment likely found in the Rambler Channel.

Table A3.1: Modelling Scenarios for Dredging Operation

Rambler Channel, near WSR WSD1	Stonecutter Island	North end of the dredging zone in Northern Fairway	North end of the dredging zone in Western Fairway	South end of the dredging zone in Western Fairway
One GD	One GD	One GD	One GD	One GD

It was further assumed that GDs are operated concurrently at Northern Fairway and Western Fairway. The assumed locations of the dredgers for the modelling scenarios were detailed in **Table A3.1** and **Figures A3.2.1**. The locations were assumed to maximize the potential impacts of the sediment plumes on the nearby WSRs. The sediment loss rates were the same as those mentioned in Chapter 3 of the EIA report.

3.3 Identification of Environmental Impact

The identification of SS, DO and TIN impacts was detailed in Section 3.6.1.1 to Section 3.6.1.2 of the EIA report.

3.4 Prediction and Evaluation of Environmental Impacts

3.4.1.1 Impact of Suspended Solids

Water quality impact on the sensitive receivers during the entire duration of dredging works was simulated with the above worst-case scenarios for a typical spring neap tidal cycle during dry and wet seasons in Hong Kong. Absolute maximum surface SS concentrations for the complete simulation period at the seawater and cooling water intakes, taking into account the ambient SS concentrations, were presented for all scenarios.

The predicted SS elevations and concentrations for all scenarios in dry and wet seasons at WSRs were presented in **Table A3.2** to **Table A3.3**. The results indicated no exceedance of WSD water quality (SS) criterion at most WSD seawater intakes, SS criterion for fish culture zones, beaches and marine ecological sensitive receivers. Mitigation measure is therefore not required to reduce the SS impacts on these WSRs. However, exceedance of WSD's SS criterion of 10 mg L⁻¹ was found at the seawater intake WSD1, WSD8, WSD9 and EMSD1 due to the exceedance of ambient SS levels at the Rambler Channel and waters near Tsuen Wan (**Table 3.11** in EIA report).

The contours presented in **Appendix A3.1** to **A3.2** showed the extent of maximum surface, bottom and depth-averaged SS elevations over the complete simulation period during dry and wet seasons, respectively. As shown in these figures, the extent of SS impact appeared to be confined near the dredging areas at Rambler Channel, Northern Fairway and Western Fairway. Temporal variations of surface, mid-depth, bottom and depth-averaged SS elevations at various WSRs in close proximity to the dredging areas during dry and wet seasons were also shown in **Appendix A3.1** to **A3.2**.

Table A3.2: Predicted Suspended Solids Elevations at Gazetted Beaches, Marine Ecology, and Fisheries Sensitive Receivers

Sensitive Receivers	Assessment Point	Maximum SS Elevation (Dry Season)		Maximum SS Elevation (Wet Season)	
		Depth averaged SS Elevation (mgL ⁻¹)	SS Criteria (mgL ⁻¹)	Depth averaged SS Elevation (mgL ⁻¹)	SS Criteria (mgL ⁻¹)
Gazetted Beaches					
Tung Wan, Ma Wan	B1	0.8	3.2	0.3	2.5
Approach	B2	1.0	3.2	0.6	2.5
Ting Kau	B3	0.5	3.2	0.3	2.5
Lido	B4	0.4	3.2	0.9	2.5
Casam	B5	1.1	3.2	0.7	2.5
Hoi Mei Wan	B6	1.2	3.2	0.6	2.5
Gemini	B7	1.2	3.2	0.6	2.5
Angler's	B8	1.1	3.2	0.5	2.5
Lo So Shing	B9	<0.1	2.8	<0.1	1.9
Hung Shing Yeh	B10	<0.1	2.8	<0.1	1.9
Corals					
Pak Kok	CR1	0.9	2.2	0.4	3
Shek Kok Tsui	CR2	0.8	2.2	0.3	3
Luk Chau	CR3	0.5	1.8	0.1	1.6
Wong Chuk Kok	CR4	0.5	1.8	<0.1	1.6
Ap Lei Chau	CR5	0.5	1.8	0.1	1.6
Sandy Bay	CR6	0.6	2.2	0.3	3
Green Island	CR7	0.9	2.2	0.4	3
Kau Yi Chau	CR8	0.7	2.6	1.3	4.4
Kau Yi Chau	CR9	0.7	2.6	3.2	4.4
Kau Yi Chau	CR10	0.6	2.6	1.5	4.4
Siu Kau Yi Chau	CR11	0.7	2.6	2.4	4.4

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Sensitive Receivers	Assessment Point	Maximum SS Elevation (Dry Season)		Maximum SS Elevation (Wet Season)	
		Depth averaged		Depth averaged	
		SS Elevation (mgL ⁻¹)	SS Criteria (mgL ⁻¹)	SS Elevation (mgL ⁻¹)	SS Criteria (mgL ⁻¹)
Siu Kau Yi Chau	CR12	0.6	2.6	2.2	4.4
Siu Kau Yi Chau	CR13	0.5	2.6	1.5	4.4
Peng Chau	CR14	0.4	2.6	0.7	4.4
Peng Chau	CR15	<0.1	2.6	0.1	4.4
Peng Chau	CR16	0.4	2.6	0.8	4.4
Peng Chau	CR17	0.4	2.6	1.2	4.4
Peng Chau	CR18	0.1	2.6	0.3	4.4
Fish Culture Zone					
Ma Wan	F1	0.9	3.2	0.6	2.5
Lo Tik Wan	F2	0.2	1.8	0.1	1.6
Sok Kwu Wan	F3	<0.1	1.8	<0.1	1.6
Cheung Sha Wan	F4	<0.1	2.6	<0.1	4.4

- Value in **Bold** indicates exceedance of relevant criteria

Table A3.3: Predicted Suspended Solids Concentrations at Cooling and Sea Water Intakes

Sensitive Receivers	Assessment Point	Maximum ⁽¹⁾ SS concentration in surface layer (mgL ⁻¹)	SS Criterion (mgL ⁻¹)	
			Dry Season	Wet Season
Cooling Water Intakes				
Tsuen Wan	C1	-	12.0	10.7
MTRC Tsing Yi Station	C2	-	12.8	11.3
MTRC Kowloon Station	C3	-	7.3	6.8
China H.K. City	C4	-	7.2	6.8
Sha Wan Drive	C5	-	5.8	5.7
Queen Mary Hospital	C6	-	5.7	5.7
Wah Fu Estate	C7	-	5.8	5.6
Kwai Chung Hospital	*EMSD1	<180	11.5	11.2
WSD Flushing Water Intake				
Tsing Yi	WSD1	<10	13.5	11.4
Kennedy Town	WSD2	<10	7.6	7.0
Sheung Wan	WSD3	<10	7.3	6.9
Central Water Front	WSD4	<10	7.3	6.8
Ap Lei Chau	WSD5	<10	5.1	4.0
Kowloon South	WSD6	<10	7.4	6.8
Cheung Sha Wan	WSD7	<10	7.2	6.8
Tsuen Wan	WSD8	<10	12.2	10.8
Near Hong Kong Garden	WSD9	<10	10.8	4.6
Lamma Power Station	WSD10	<10	8.1	4.1

Sensitive Receivers	Maximum ⁽¹⁾ SS concentration in surface layer (mgL ⁻¹)			
	Assessment Point	SS Criterion (mgL ⁻¹)	Dry Season	Wet Season
Kwai Chung Hospital	*EMSD1	<10	11.5	11.2

- Value in **Bold** indicates exceedance of relevant criteria.

(1) Absolute value of SS includes the ambient SS level presented in Table 3-10 plus the SS elevations predicted.

* Note that the EMSD Code of Practice requires <180 mg L⁻¹ at cooling water intakes. As Kwai Chung Hospital is a WSR for both cooling water and salt water flushing intakes, the more conservative criterion has been applied, i.e. <10 mg L⁻¹, as required for WSD's salt water flushing water intakes.

The contours presented in **Appendix A3.3** showed the predicted daily average sedimentation per square metre during dry and wet seasons, respectively. The sedimentation rate at Peng Chau, Kau Yi Chau, Western Fairway, East Lamma Channel and north of Lamma Island where coral communities are located, will be equal to or lower than 20 g m⁻² per day (**Table A3.4**). Thus, dredging works of the Project will have negligible impact upon the coral communities at the above waters.

Table A3.4: Predicted Maximum Sedimentation Rate on Coral Communities

Sensitive Receivers	Assessment Point	Maximum Sediment Re-deposition Rate (Dry Season)		Maximum Sediment Re-deposition Rate (Wet Season)	
		SS Elevation (g m ⁻² -day ⁻¹)	Criteria (g m ⁻² -day ⁻¹)	SS Elevation (g m ⁻² -day ⁻¹)	Criteria (g m ⁻² -day ⁻¹)
Corals					
Pak Kok	CR1	10	100	2	100
Shek Kok Tsui	CR2	1	100	2	100
Luk Chau	CR3	1	100	1	100
Wong Chuk Kok	CR4	4	100	<1	100
Ap Lei Chau	CR5	7	100	2	100
Sandy Bay	CR6	4	100	2	100
Green Island	CR7	15	100	2	100
Kau Yi Chau	CR8	4	100	11	100
Kau Yi Chau	CR9	6	100	20	100
Kau Yi Chau	CR10	4	100	6	100
Siu Kau Yi Chau	CR11	2	100	17	100
Siu Kau Yi Chau	CR12	4	100	18	100
Siu Kau Yi Chau	CR13	6	100	16	100
Peng Chau	CR14	2	100	2	100
Peng Chau	CR15	<1	100	1	100
Peng Chau	CR16	3	100	8	100
Peng Chau	CR17	2	100	9	100
Peng Chau	CR18	1	100	3	100

3.4.1.2 Dissolved Oxygen and Total Inorganic Nitrogen

The predicted minimum depth-averaged and bottom layer DO, and maximum depth-averaged TIN concentrations for all scenarios in dry and wet seasons at beaches, fish culture zones, marine ecology sensitive receivers and the cooling and seawater intakes were presented in **Table A3.5**. The results indicated that no exceedance of WQO of DO and DO bottom was recorded. The TIN exceedance was

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recorded at some WSRs especially for those in the Southern WCZ. It is due to the non-compliance of the ambient TIN levels with the WQO recorded at the EPD monitoring stations (**Table 3.25** in the EIA report) as discussed previously.

As presented in **Table A3-5**, with the maximum decrease in DO predicted to be 0.02 mgL⁻¹ at WSR WSD1 and maximum increase in TIN predicted to be 0.002 mgL⁻¹ at WSR WSD1, the impact of decrease in DO and increase in TIN was considered trivial. As mentioned, the existing water quality at some areas, especially those in Southern WCZ, has already breached the WQO for TIN. The increase in TIN concentrations at all WSRs was predicted to be less than 0.002 mgL⁻¹, which was considered to be a minimal impact on the water quality.

Table A3.5: Predicted Dissolved Oxygen Concentrations

Sensitive Receivers	Assessment Point	Minimum Depth-averaged DO level (mgL ⁻¹)			Minimum Bottom DO level (mgL ⁻¹)		
		Max DO depletion (mgL ⁻¹)	Background DO (mgL ⁻¹)	Resultant DO (mgL ⁻¹)	Max DO depletion (mgL ⁻¹)	Background DO (mgL ⁻¹)	Resultant DO (mgL ⁻¹)
Dry Season							
Gazetted Beaches							
Tung Wan, Ma Wan	B1	0.003	5.5	5.50	0.004	5.7	5.70
Approach	B2	0.004	5.5	5.50	0.005	5.7	5.70
Ting Kau	B3	0.002	5.5	5.50	0.002	5.7	5.70
Lido	B4	0.001	5.5	5.50	0.002	5.7	5.70
Casam	B5	0.004	5.5	5.50	0.006	5.7	5.69
Hoi Mei Wan	B6	0.004	5.5	5.50	0.006	5.7	5.69
Gemini	B7	0.004	5.5	5.50	0.006	5.7	5.69
Angler's	B8	0.004	5.5	5.50	0.005	5.7	5.69
Lo So Shing	B9	0.000	6.1	6.10	0.000	6.3	6.30
Hung Shing Yeh	B10	0.000	6.1	6.10	0.000	6.3	6.30
Corals							
Pak Kok	CR1	0.003	5.9	5.90	0.004	6.0	6.00
Shek Kok Tsui	CR2	0.003	5.9	5.90	0.003	6.0	6.00
Luk Chau	CR3	0.002	6.2	6.20	0.002	6.2	6.20
Wong Chuk Kok	CR4	0.002	6.2	6.20	0.002	6.2	6.20
Ap Lei Chau	CR5	0.002	6.2	6.20	0.002	6.2	6.20
Sandy Bay	CR6	0.002	5.9	5.90	0.004	6.0	6.00
Green Island	CR7	0.003	5.9	5.90	0.003	6.0	6.00
Kau Yi Chau	CR8	0.003	6.0	6.00	0.003	6.1	6.10
Kau Yi Chau	CR9	0.002	6.0	6.00	0.003	6.1	6.10
Kau Yi Chau	CR10	0.002	6.0	6.00	0.002	6.1	6.10
Siu Kau Yi Chau	CR11	0.002	6.0	6.00	0.003	6.1	6.10
Siu Kau Yi Chau	CR12	0.002	6.0	6.00	0.004	6.1	6.10
Siu Kau Yi Chau	CR13	0.002	6.0	6.00	0.002	6.1	6.10
Peng Chau	CR14	0.001	6.0	6.00	0.002	6.1	6.10
Peng Chau	CR15	0.000	6.0	6.00	0.000	6.1	6.10

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Sensitive Receivers	Assessment Point	Minimum Depth-averaged DO level (mgL ⁻¹)			Minimum Bottom DO level (mgL ⁻¹)		
		Max DO depletion (mgL ⁻¹)	Background DO (mgL ⁻¹)	Resultant DO (mgL ⁻¹)	Max DO depletion (mgL ⁻¹)	Background DO (mgL ⁻¹)	Resultant DO (mgL ⁻¹)
Peng Chau	CR16	0.001	6.0	6.00	0.002	6.1	6.10
Peng Chau	CR17	0.001	6.0	6.00	0.001	6.1	6.10
Peng Chau	CR18	0.000	6.0	6.00	0.000	6.1	6.10
Fish Culture Zone							
Ma Wan	F1	0.003	5.5	5.50	0.004	5.7	5.70
Lo Tik Wan	F2	0.001	6.2	6.20	0.001	6.2	6.20
Sok Kwu Wan	F3	0.000	6.2	6.20	0.000	6.2	6.20
Cheung Sha Wan	F4	0.000	6.0	6.00	0.000	6.1	6.10
Cooling Water Intakes							
Tsuen Wan	C1	0.004	5.3	5.30	0.005	5.4	5.39
MTRC Tsing Yi Station	C2	0.008	5.3	5.29	0.011	5.4	5.39
MTRC Kowloon Station	C3	0.000	5.0	5.00	0.000	5.0	5.00
China H.K. City	C4	0.000	5.0	5.00	0.000	5.0	5.00
Sha Wan Drive	C5	0.002	5.9	5.90	0.003	6.0	6.00
Queen Mary Hospital	C6	0.002	5.9	5.90	0.003	6.0	6.00
Wah Fu Estate	C7	0.001	5.9	5.90	0.001	6.0	6.00
Kwai Chung Hospital	EMSD1	0.002	5.3	5.30	0.004	5.4	5.40
WSD Flushing Water Intake							
Tsing Yi	WSD1	0.011	5.3	5.29	0.013	5.4	5.39
Kennedy Town	WSD2	0.002	5.0	5.00	0.002	5.0	5.00
Sheung Wan	WSD3	0.000	5.0	5.00	0.000	5.0	5.00
Central Water Front	WSD4	0.000	5.0	5.00	0.001	5.0	5.00
Ap Lei Chau	WSD5	0.001	6.2	6.20	0.001	6.2	6.20
Kowloon South	WSD6	0.001	5.0	5.00	0.001	5.0	5.00
Cheung Sha Wan	WSD7	0.000	5.0	5.00	0.000	5.0	5.00
Tsuen Wan	WSD8	0.005	5.3	5.30	0.006	5.4	5.39
Near Hong Kong Garden	WSD9	0.005	5.5	5.49	0.010	5.7	5.69
Lamma Power Station	WSD10	0.000	6.1	6.10	0.000	6.3	6.30
Kwai Chung Hospital	EMSD1	0.002	5.3	5.30	0.004	5.4	5.40
Wet Season							
Gazetted Beaches							
Tung Wan, Ma Wan	B1	0.001	3.6	3.60	0.002	2.7	2.70
Approach	B2	0.002	3.6	3.60	0.003	2.7	2.70
Ting Kau	B3	0.001	3.6	3.60	0.001	2.7	2.70

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Sensitive Receivers	Assessment Point	Minimum Depth-averaged DO level (mgL ⁻¹)			Minimum Bottom DO level (mgL ⁻¹)		
		Max DO depletion (mgL ⁻¹)	Background DO (mgL ⁻¹)	Resultant DO (mgL ⁻¹)	Max DO depletion (mgL ⁻¹)	Background DO (mgL ⁻¹)	Resultant DO (mgL ⁻¹)
Lido	B4	0.003	3.6	3.60	0.006	2.7	2.69
Casam	B5	0.002	3.6	3.60	0.003	2.7	2.70
Hoi Mei Wan	B6	0.002	3.6	3.60	0.003	2.7	2.70
Gemini	B7	0.002	3.6	3.60	0.003	2.7	2.70
Angler's	B8	0.002	3.6	3.60	0.002	2.7	2.70
Lo So Shing	B9	0.000	5.3	5.30	0.000	3.3	3.30
Hung Shing Yeh	B10	0.000	5.3	5.30	0.000	3.3	3.30
Corals							
Pak Kok	CR1	0.001	3.9	3.90	0.001	2.5	2.50
Shek Kok Tsui	CR2	0.001	3.9	3.90	0.002	2.5	2.50
Luk Chau	CR3	0.000	3.7	3.70	0.000	2.7	2.70
Wong Chuk Kok	CR4	0.000	3.7	3.70	0.000	2.7	2.70
Ap Lei Chau	CR5	0.000	3.7	3.70	0.000	2.7	2.70
Sandy Bay	CR6	0.001	3.9	3.90	0.002	2.5	2.50
Green Island	CR7	0.002	3.9	3.90	0.002	2.5	2.50
Kau Yi Chau	CR8	0.005	4.4	4.40	0.011	4.1	4.09
Kau Yi Chau	CR9	0.012	4.4	4.39	0.021	4.1	4.08
Kau Yi Chau	CR10	0.005	4.4	4.39	0.010	4.1	4.09
Siu Kau Yi Chau	CR11	0.009	4.4	4.39	0.021	4.1	4.08
Siu Kau Yi Chau	CR12	0.008	4.4	4.39	0.022	4.1	4.08
Siu Kau Yi Chau	CR13	0.005	4.4	4.39	0.007	4.1	4.09
Peng Chau	CR14	0.003	4.4	4.40	0.003	4.1	4.10
Peng Chau	CR15	0.000	4.4	4.40	0.001	4.1	4.10
Peng Chau	CR16	0.003	4.4	4.40	0.005	4.1	4.10
Peng Chau	CR17	0.004	4.4	4.40	0.006	4.1	4.09
Peng Chau	CR18	0.001	4.4	4.40	0.002	4.1	4.10
Fish Culture Zone							
Ma Wan	F1	0.002	3.6	3.60	0.003	2.7	2.70
Lo Tik Wan	F2	0.000	3.7	3.70	0.001	2.7	2.70
Sok Kwu Wan	F3	0.000	3.7	3.70	0.000	2.7	2.70
Cheung Sha Wan	F4	0.000	4.4	4.40	0.000	4.1	4.10
Cooling Water Intakes							
Tsuen Wan	C1	0.006	3.9	3.89	0.009	3.3	3.29
MTRC Tsing Yi Station	C2	0.013	3.9	3.89	0.015	3.3	3.29
MTRC Kowloon Station	C3	0.000	3.6	3.60	0.000	2.6	2.60
China H.K. City	C4	0.000	3.6	3.60	0.000	2.6	2.60
Sha Wan Drive	C5	0.001	3.9	3.90	0.002	2.5	2.50
Queen Mary Hospital	C6	0.001	3.9	3.90	0.001	2.5	2.50

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Sensitive Receivers	Assessment Point	Minimum Depth-averaged DO level (mgL ⁻¹)			Minimum Bottom DO level (mgL ⁻¹)		
		Max DO depletion (mgL ⁻¹)	Background DO (mgL ⁻¹)	Resultant DO (mgL ⁻¹)	Max DO depletion (mgL ⁻¹)	Background DO (mgL ⁻¹)	Resultant DO (mgL ⁻¹)
Wah Fu Estate	C7	0.000	3.9	3.90	0.000	2.5	2.50
Kwai Chung Hospital	EMSD1	0.003	3.9	3.90	0.004	3.3	3.30
WSD Flushing Water Intake							
Tsing Yi	WSD1	0.018	3.9	3.88	0.020	3.3	3.28
Kennedy Town	WSD2	0.001	3.6	3.60	0.001	2.6	2.60
Sheung Wan	WSD3	0.001	3.6	3.60	0.001	2.6	2.60
Central Water Front	WSD4	0.000	3.6	3.60	0.001	2.6	2.60
Ap Lei Chau	WSD5	0.000	3.7	3.70	0.000	2.7	2.70
Kowloon South	WSD6	0.001	3.6	3.60	0.001	2.6	2.60
Cheung Sha Wan	WSD7	0.000	3.6	3.60	0.000	2.6	2.60
Tsuen Wan	WSD8	0.005	3.9	3.89	0.007	3.3	3.29
Near Hong Kong Garden	WSD9	0.001	3.6	3.60	0.002	2.7	2.70
Lamma Power Station	WSD10	0.000	5.3	5.30	0.000	3.3	3.30
Kwai Chung Hospital	EMSD1	0.003	3.9	3.90	0.004	3.3	3.30

- Value in **Bold** indicates exceedance of relevant criteria.

- DO concentrations include the ambient levels presented in Table 3.11 plus the DO depletions predicted.

Table A3.6: Predicted Total Inorganic Nitrogen Concentrations

Sensitive Receivers	Assessment Point	Maximum TIN concentration (mgL ⁻¹)	
		Dry Season	Wet Season
Gazetted Beaches			
Tung Wan, Ma Wan	B1	0.2902	0.3701
Approach	B2	0.2903	0.3702
Ting Kau	B3	0.2901	0.3701
Lido	B4	0.2901	0.3703
Casam	B5	0.2903	0.3702
Hoi Mei Wan	B6	0.2904	0.3702
Gemini	B7	0.2904	0.3702
Angler's	B8	0.2903	0.3701
Lo So Shing	B9	0.1100	0.3300
Hung Shing Yeh	B10	0.1100	0.3300
Corals			
Pak Kok	CR1	0.1703	0.2201
Shek Kok Tsui	CR2	0.1702	0.2201
Luk Chau	CR3	0.1402	0.2100
Wong Chuk Kok	CR4	0.1402	0.2100

Agreement CE63/2008 (CE)
 Providing Sufficient Water Depth for Kwai Tsing Container Basin
 and its Approach Channel
 Environmental Impact Assessment Report



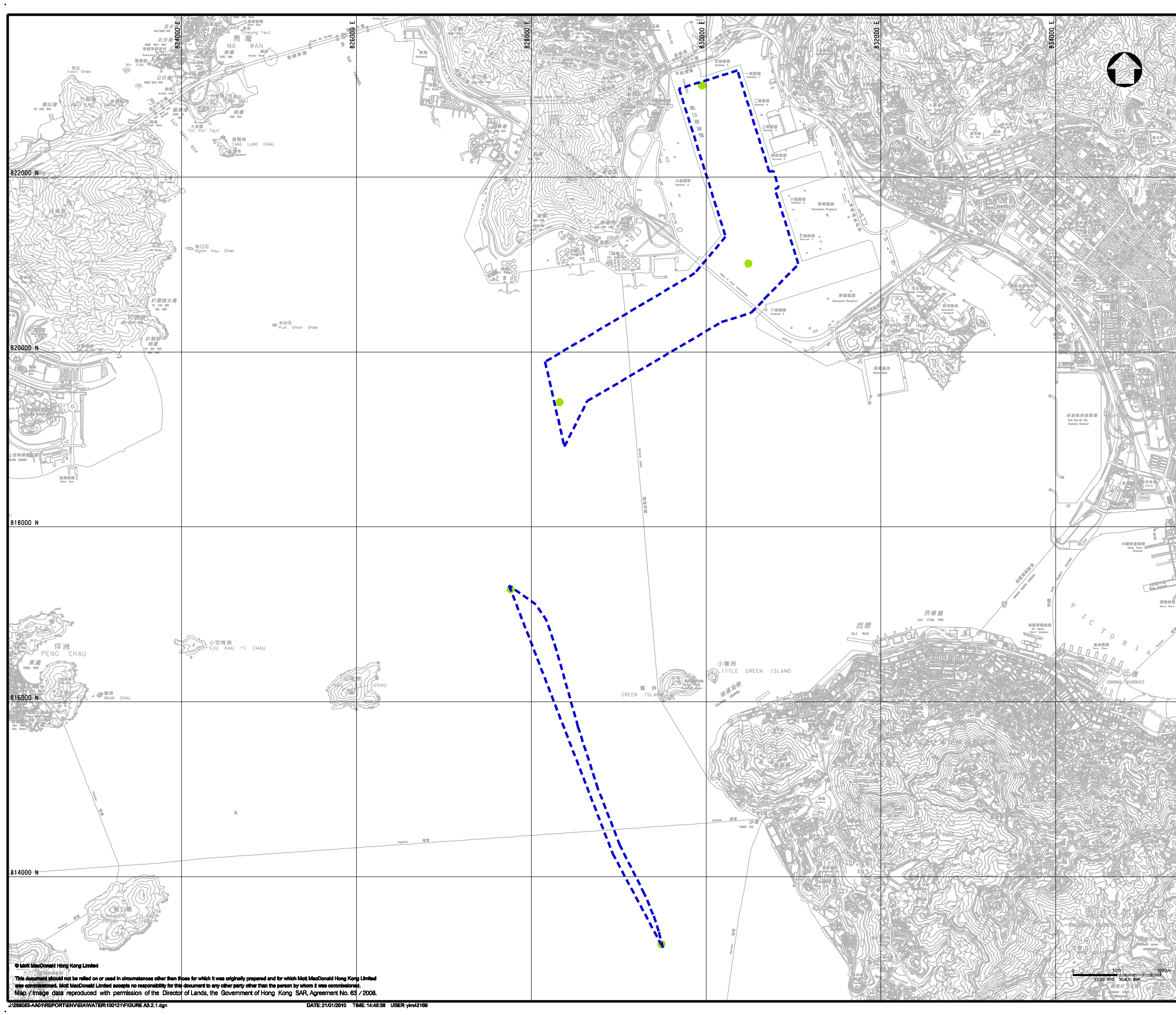
Sensitive Receivers	Assessment Point	Maximum TIN concentration (mgL ⁻¹)	
		Dry Season	Wet Season
Ap Lei Chau	CR5	0.1402	0.2100
Sandy Bay	CR6	0.1702	0.2201
Green Island	CR7	0.1703	0.2201
Kau Yi Chau	CR8	0.2502	0.5004
Kau Yi Chau	CR9	0.2502	0.5010
Kau Yi Chau	CR10	0.2502	0.5005
Siu Kau Yi Chau	CR11	0.2502	0.5007
Siu Kau Yi Chau	CR12	0.2502	0.5007
Siu Kau Yi Chau	CR13	0.2502	0.5004
Peng Chau	CR14	0.2501	0.5002
Peng Chau	CR15	0.2500	0.5000
Peng Chau	CR16	0.2501	0.5002
Peng Chau	CR17	0.2501	0.5004
Peng Chau	CR18	0.2500	0.5001
Fish Culture Zone			
Ma Wan	F1	0.2903	0.3702
Lo Tik Wan	F2	0.1400	0.2100
Sok Kwu Wan	F3	0.1400	0.2100
Cheung Sha Wan	F4	0.2500	0.5000
Cooling Water Intakes			
Tsuen Wan	C1	0.3504	0.5305
MTRC Tsing Yi Station	C2	0.3507	0.5311
MTRC Kowloon Station	C3	0.3200	0.4400
China H.K. City	C4	0.3200	0.4400
Sha Wan Drive	C5	0.1702	0.2201
Queen Mary Hospital	C6	0.1701	0.2201
Wah Fu Estate	C7	0.1701	0.2200
Kwai Chung Hospital	EMSD1	0.3502	0.5302
WSD Flushing Water Intake			
Tsing Yi	WSD1	0.3510	0.5315
Kennedy Town	WSD2	0.3201	0.4401
Sheung Wan	WSD3	0.3200	0.4401
Central Water Front	WSD4	0.3200	0.4400
Ap Lei Chau	WSD5	0.1401	0.2100
Kowloon South	WSD6	0.3201	0.4400
Cheung Sha Wan	WSD7	0.3200	0.4400
Tsuen Wan	WSD8	0.3504	0.5305
Near Hong Kong Garden	WSD9	0.2905	0.3701
Lamma Power Station	WSD10	0.1100	0.3300
Kwai Chung Hospital	EMSD1	0.3502	0.5302

- Value in **Bold** indicates exceedance of relevant criteria.

- TIN concentrations include the ambient levels presented in Table 3.11 plus the TIN elevations predicted.

259053/TNI/ENL/23/E June 2010

P:\Hong Kong\MRT\259053 KTCB\01 Project Management\71 Deliverables\07 Environmental Impact Assessment Report\3rd Final (revised)\Appendix\Chapter 3\Appendix 3.2\Appendix 3.2.doc



LEGEND:


- PROPOSED DREDGING AREA
- LOCATION OF GRAB DREDGER

P1	JAN 10	MING	FIRST ISSUE	WKM	AFK
Rev	Date	Drawn	Description	Ch'k'd	App'd



7/F West Wing Office Building
New World Centre, 20 Salisbury Road
Tsimshatsui, Kowloon
Hong Kong
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☎ +852 2827 1828
www.mottmac.com.hk

Client



THE GOVERNMENT OF THE HONG KONG
SPECIAL ADMINISTRATIVE REGION
CIVIL ENGINEERING
AND DEVELOPMENT DEPARTMENT

Project

**DREDGING WORKS IN KWAI TSING
CONTAINER BASIN AND ITS
APPROACH CHANNEL - INVESTIGATION,
DESIGN AND CONSTRUCTION**

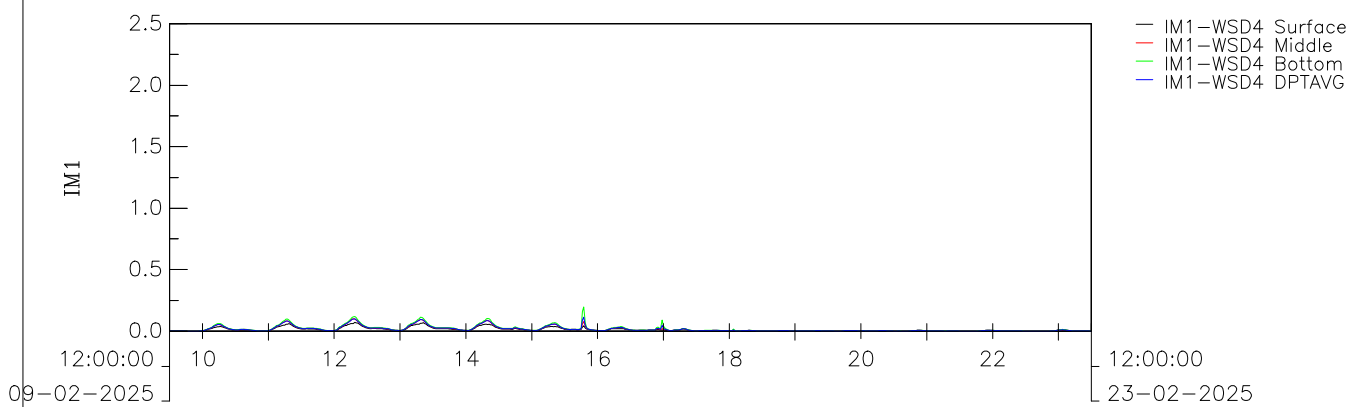
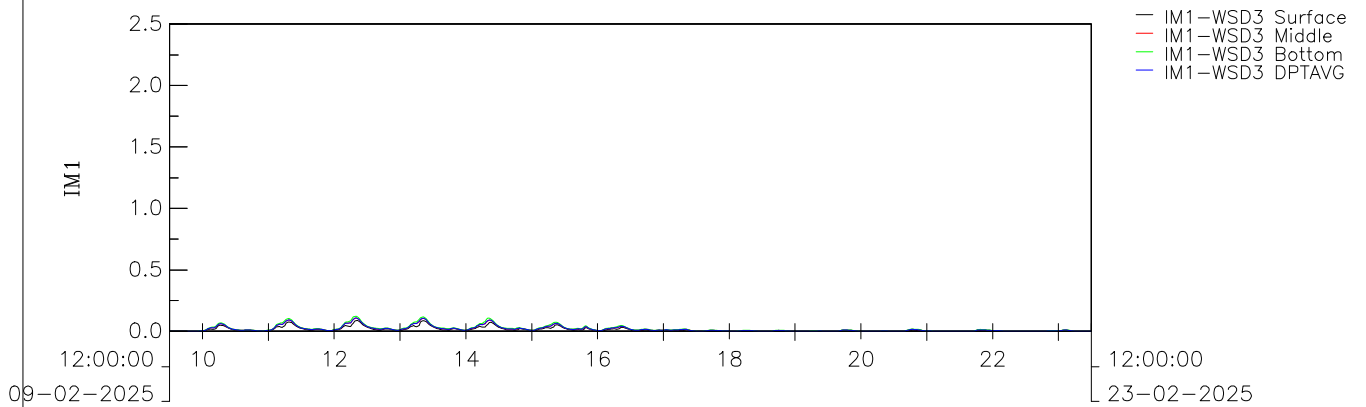
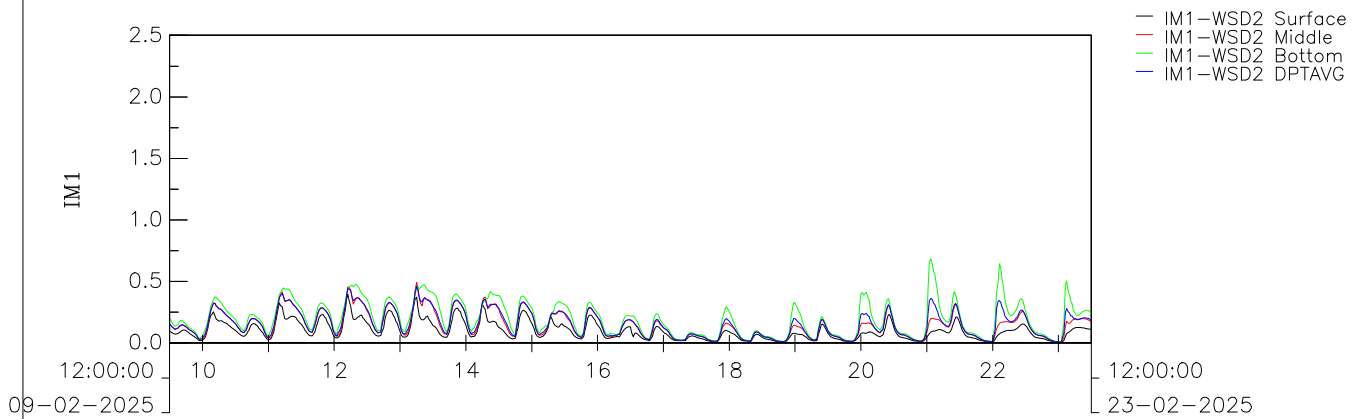
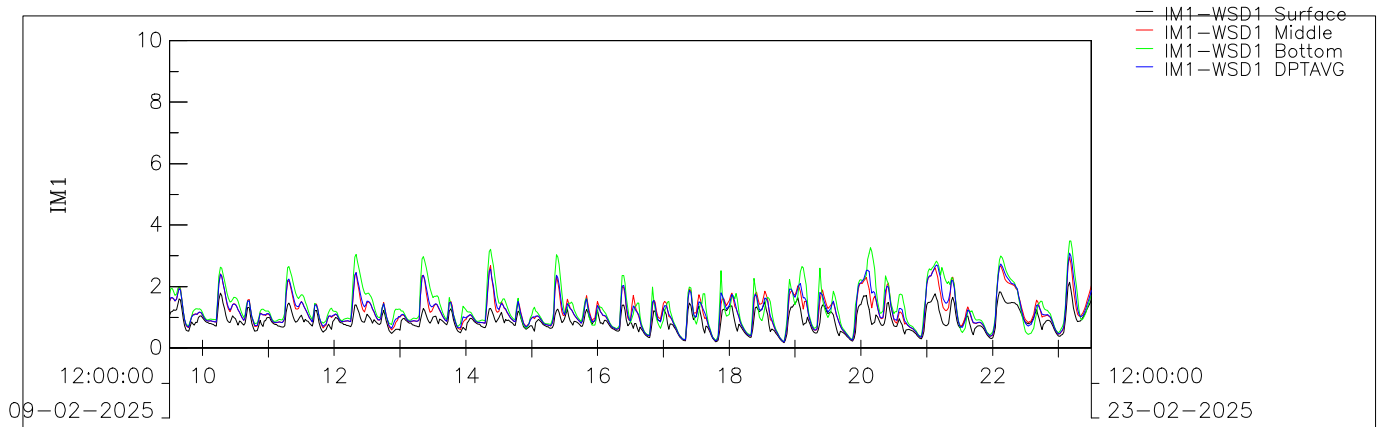
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**LOCATIONS OF GRAB DREDGERS
ASSUMED IN THE ALTERNATIVE
SCENARIO**

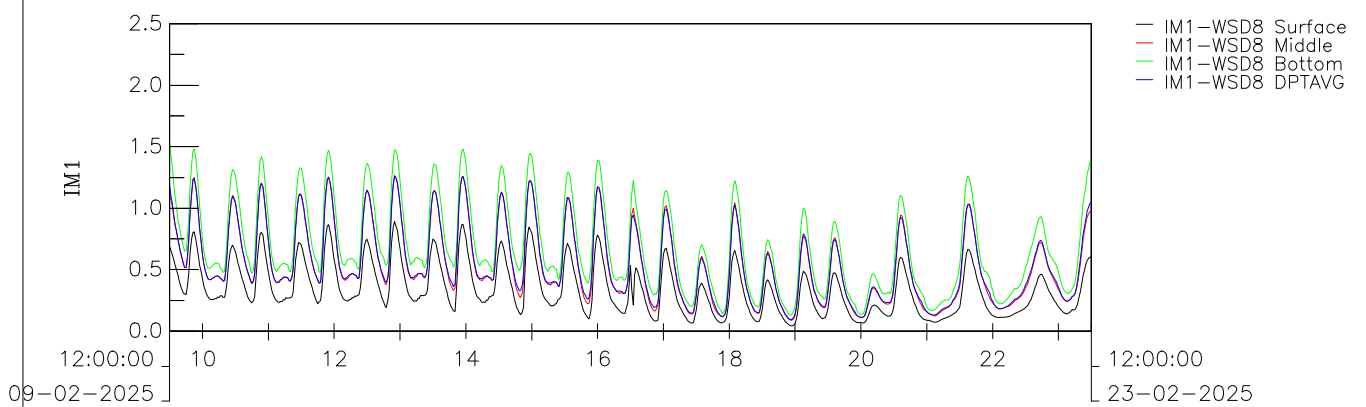
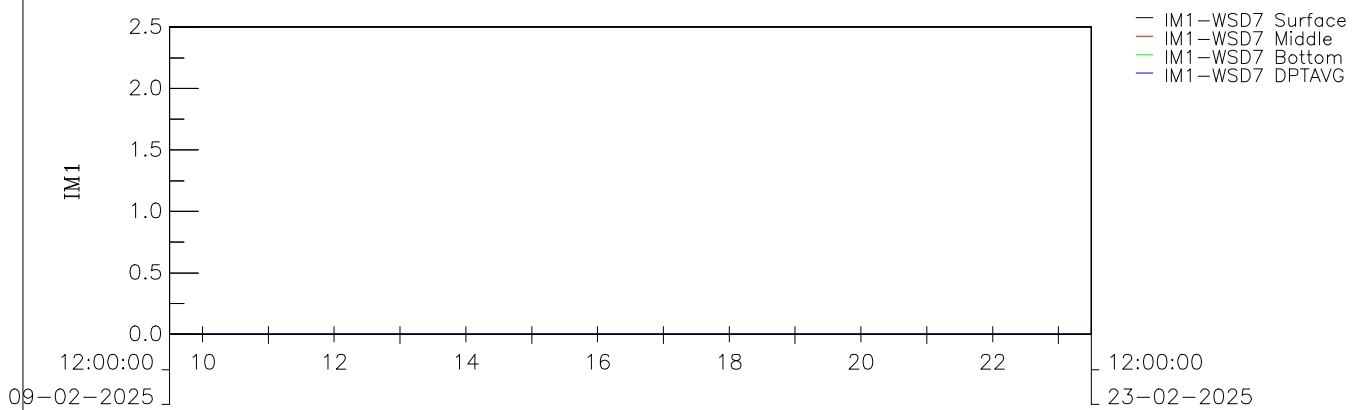
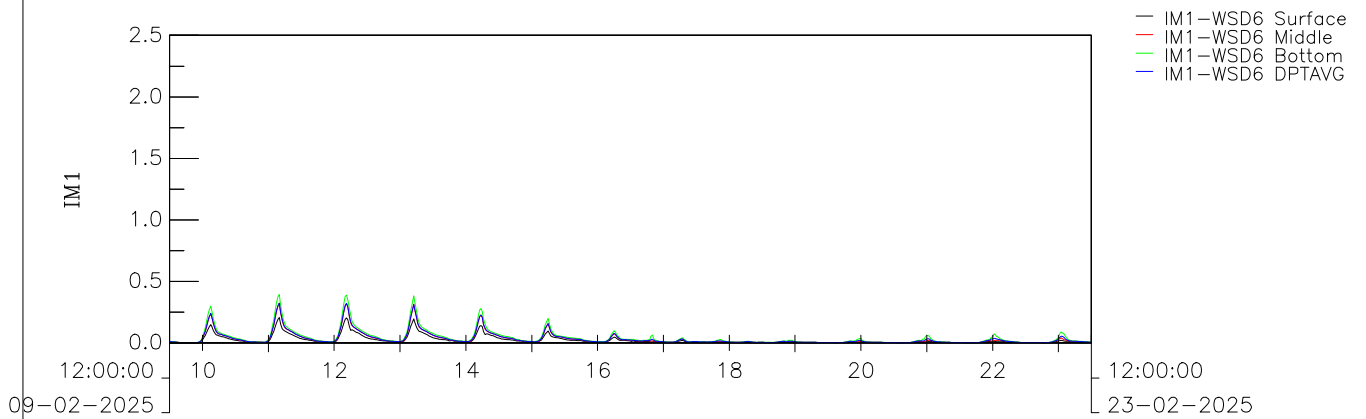
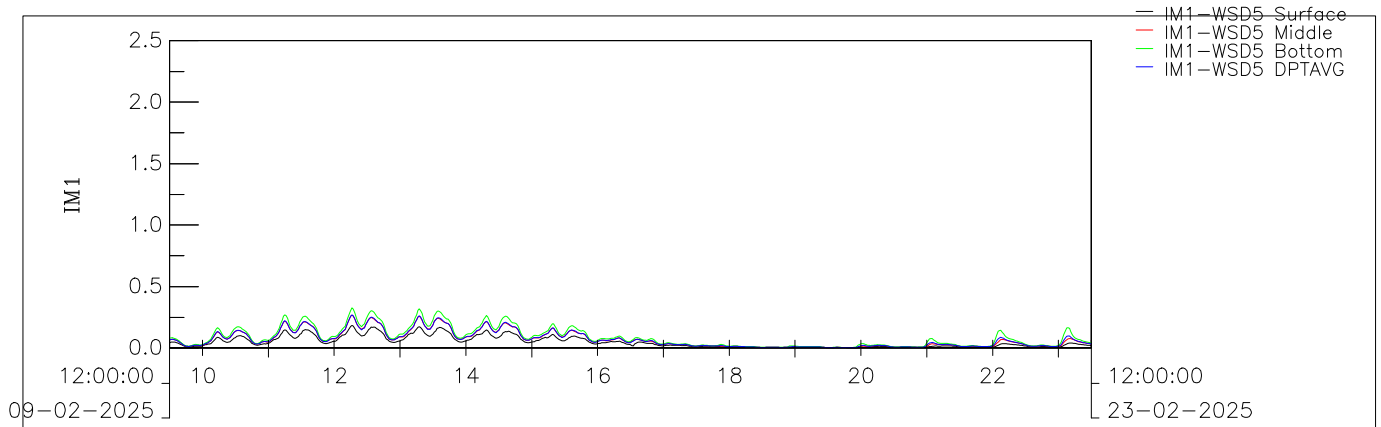
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Drawn	MING	Coordination	JC
Dwg check	WKM	Approved	AFK
Scale at A1	1:20000	Status	PRE
Rev			P1

Drawing Number **FIGURE A3.2.1**

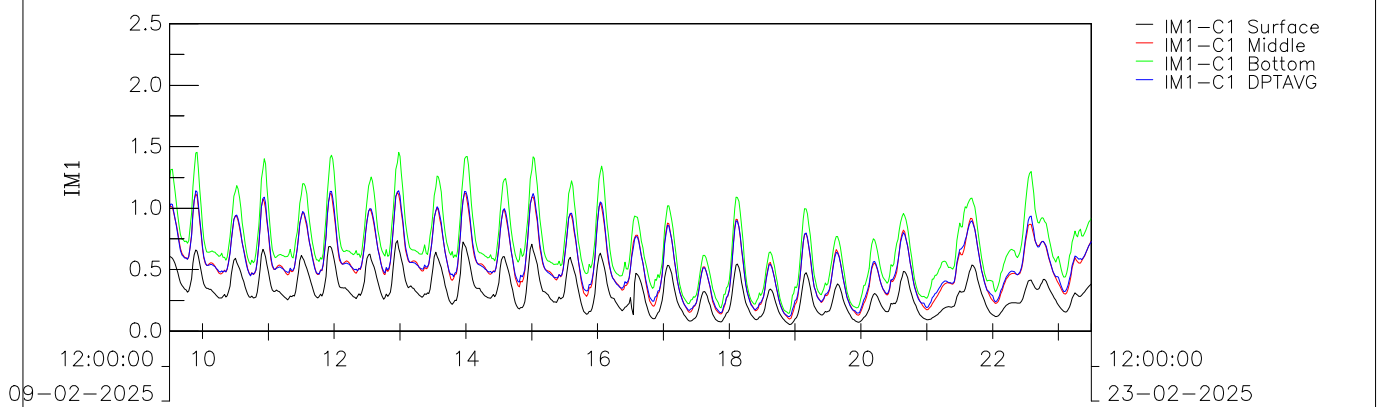
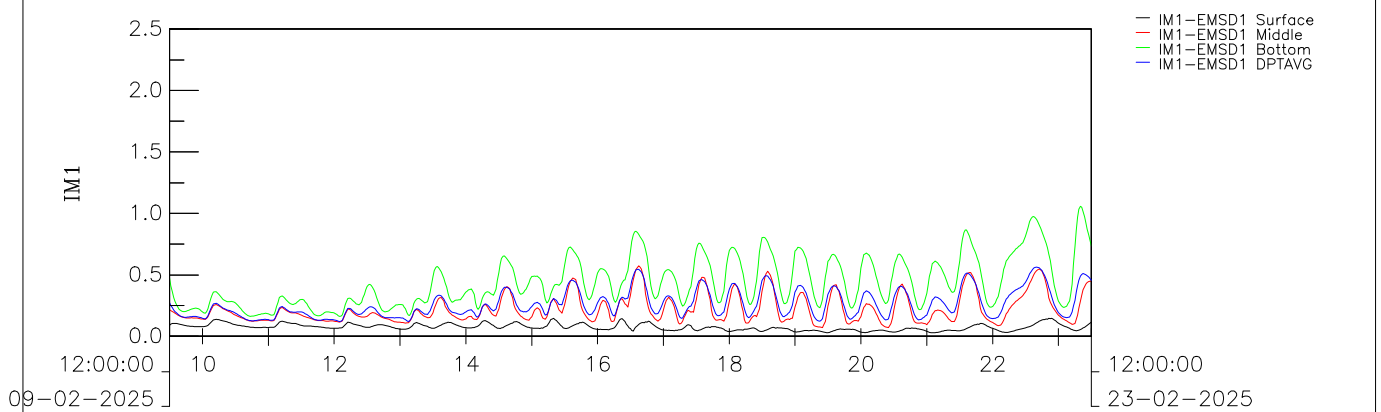
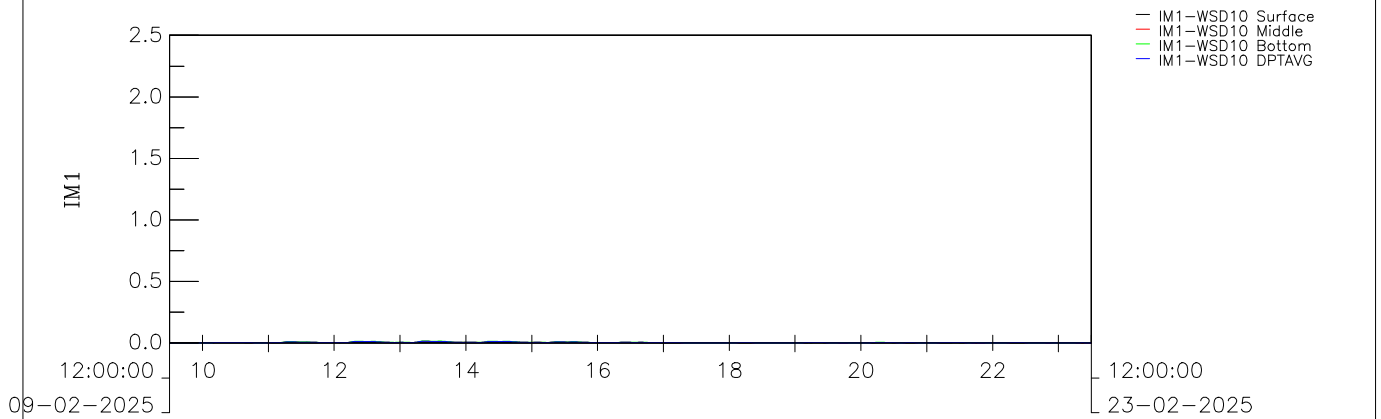
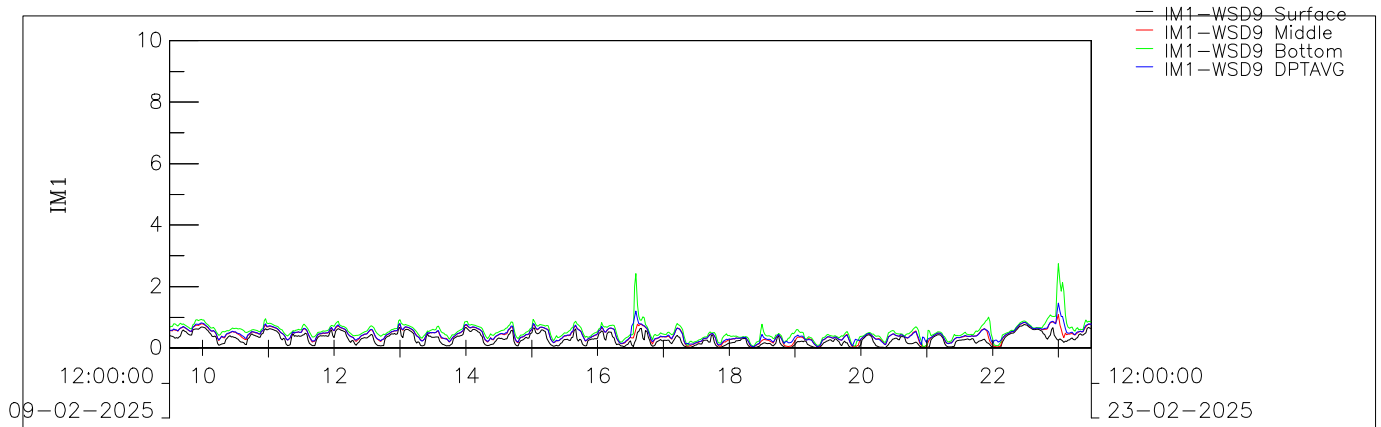
Appendix A3.1



SS Elevations (mg/L) at Stations WSD1, WSD2, WSD3, WSD4	Dry Season	
1st Plot: WSD1; 2nd Plot: WSD2; 3rd Plot: WSD3; 4th Plot: WSD4		
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SS Elevations (mg/L) at Stations WSD5, WSD6, WSD7, WSD8	Dry Season	
1st Plot: WSD5; 2nd Plot: WSD6; 3rd Plot: WSD7; 4th Plot: WSD8		
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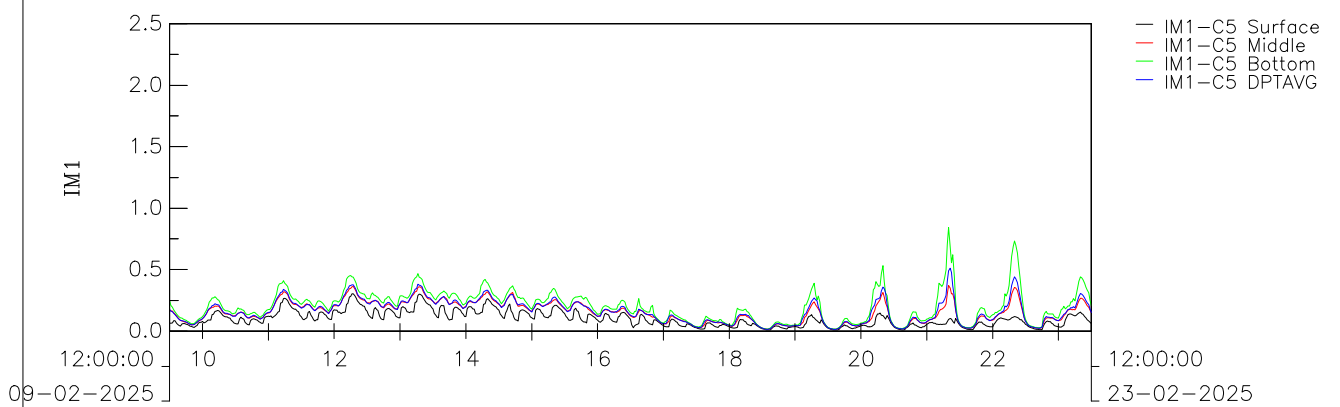
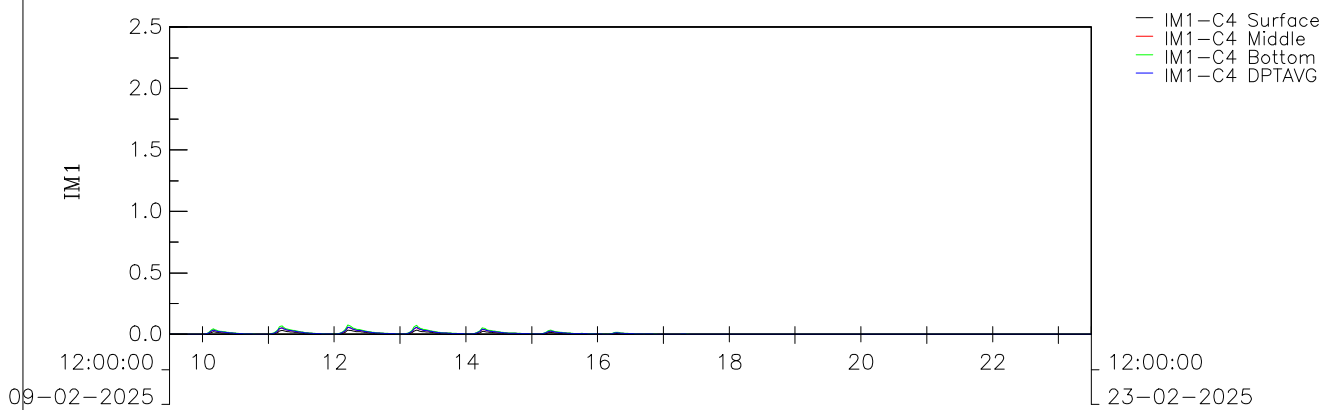
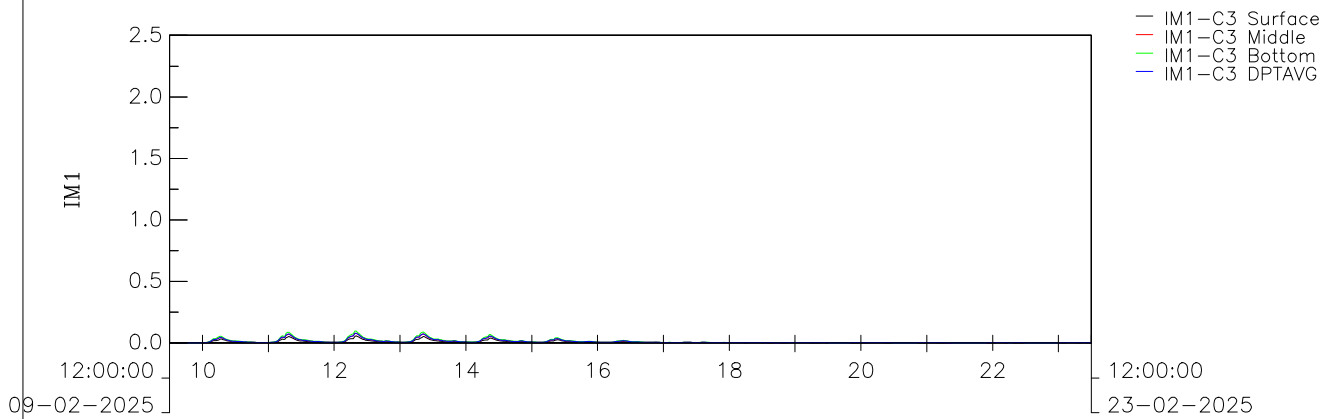
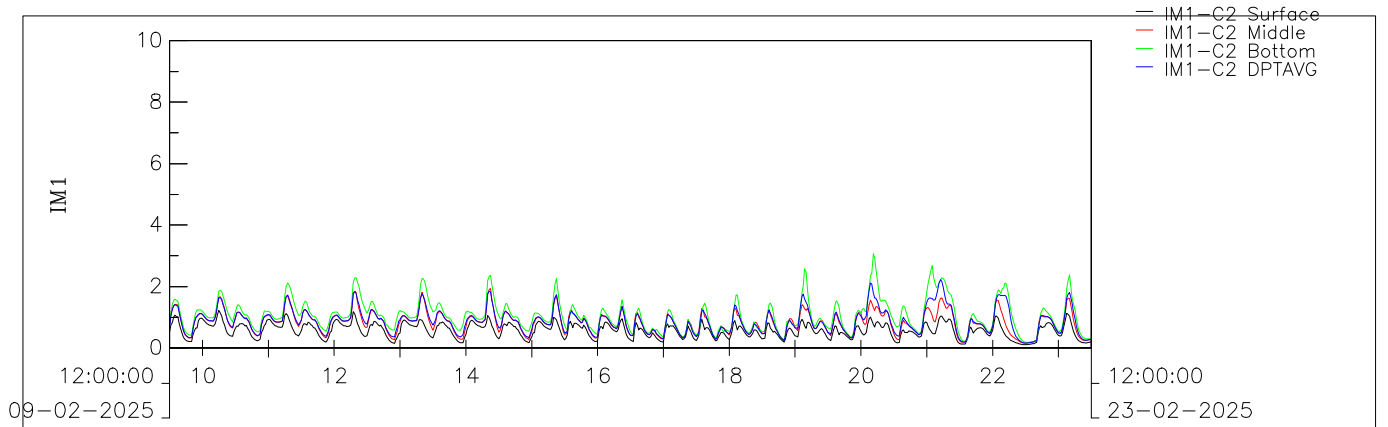


SS Elevations (mg/L) at Stations WSD9, WSD10, EMSD1, C1

Dry Season

1st Plot: WSD9; 2nd Plot: WSD10; 3rd Plot: EMSD1; 4th Plot: C1

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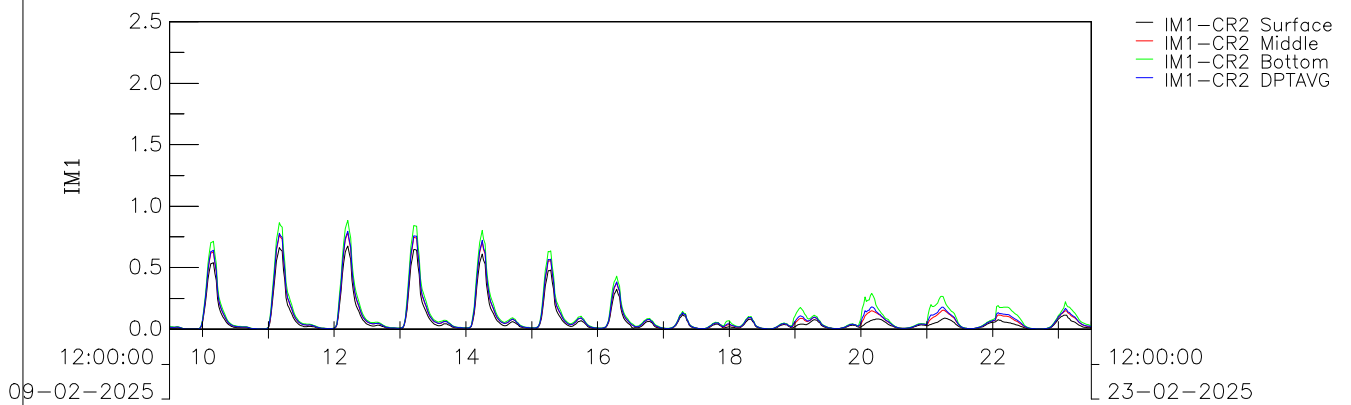
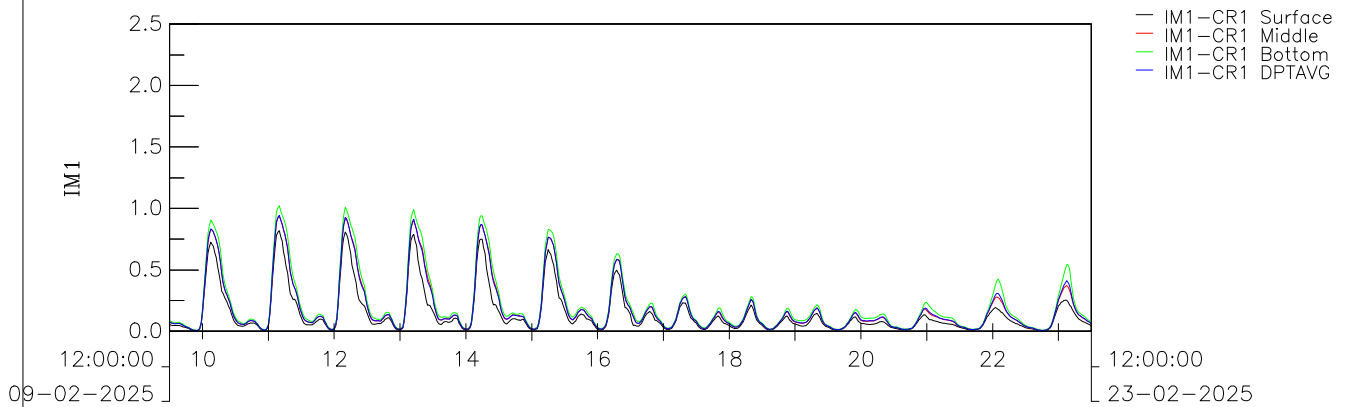
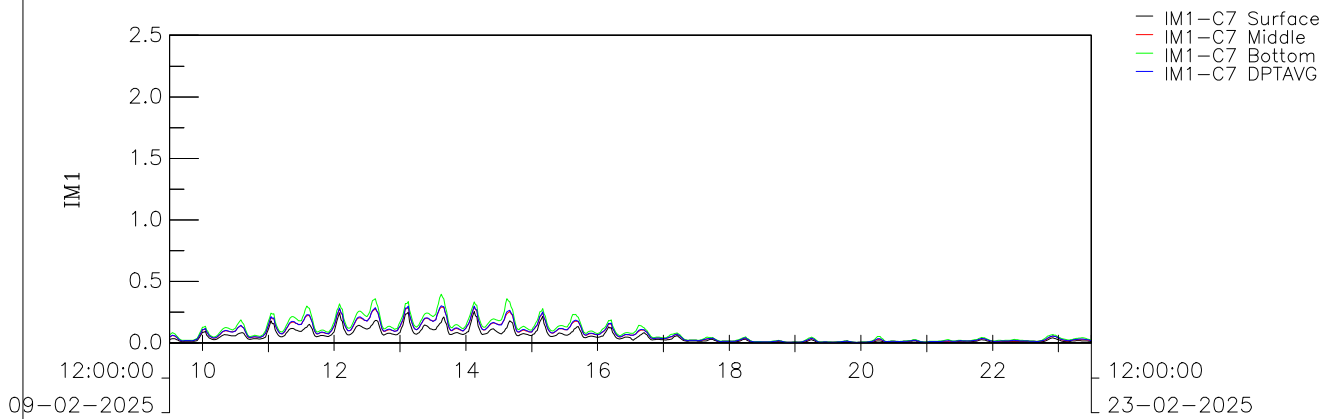
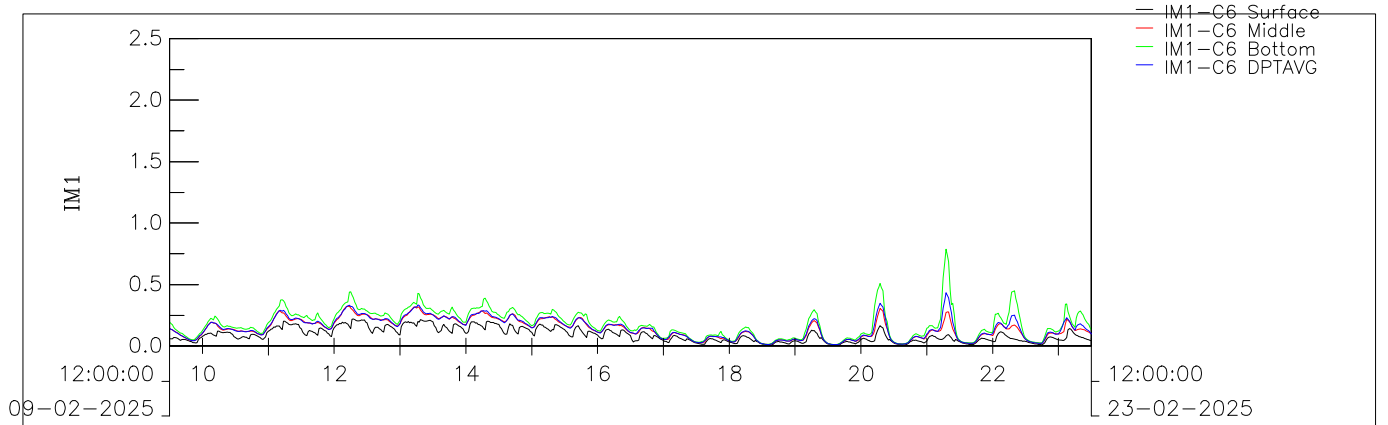


SS Elevations (mg/L) at Stations C2, C3, C4, C5

Dry Season

1st Plot: C2; 2nd Plot: C3; 3rd Plot: C4; 4th Plot: C5

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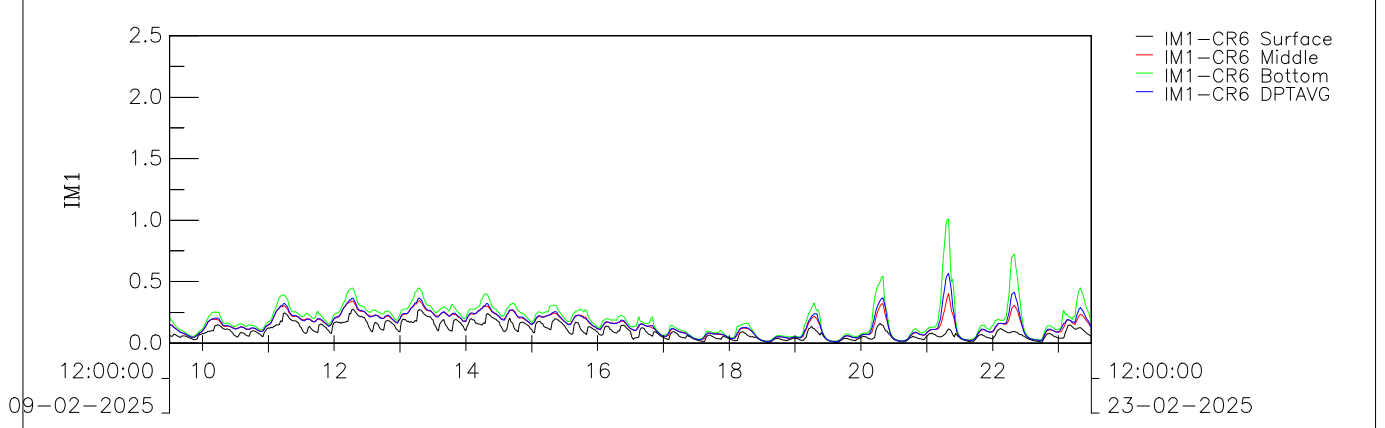
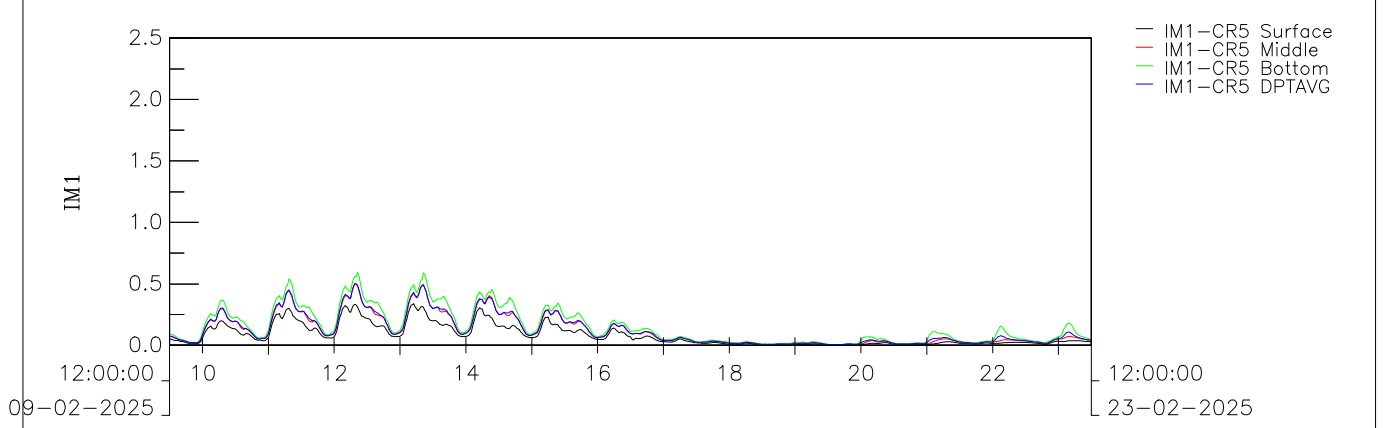
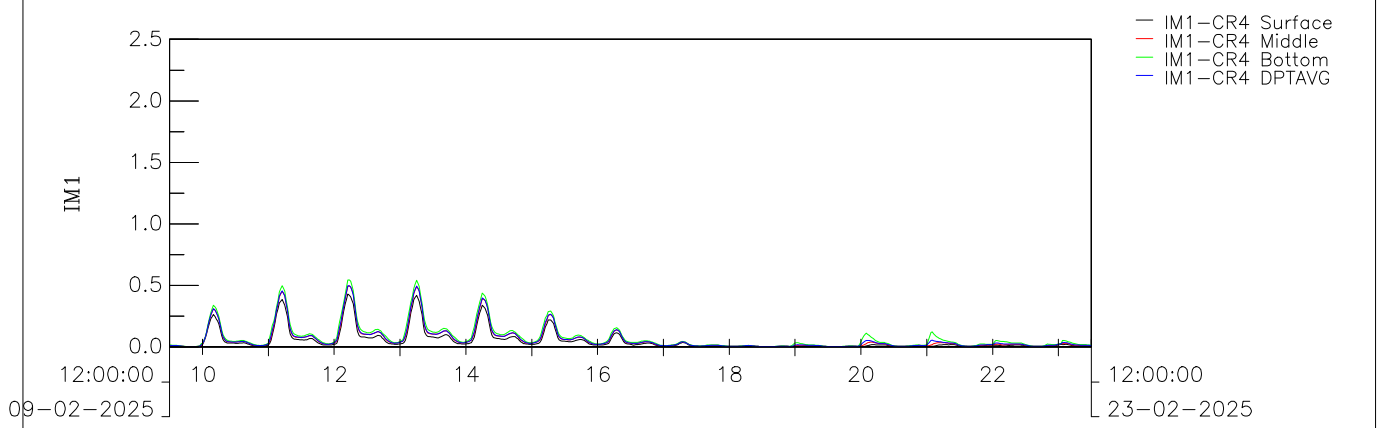
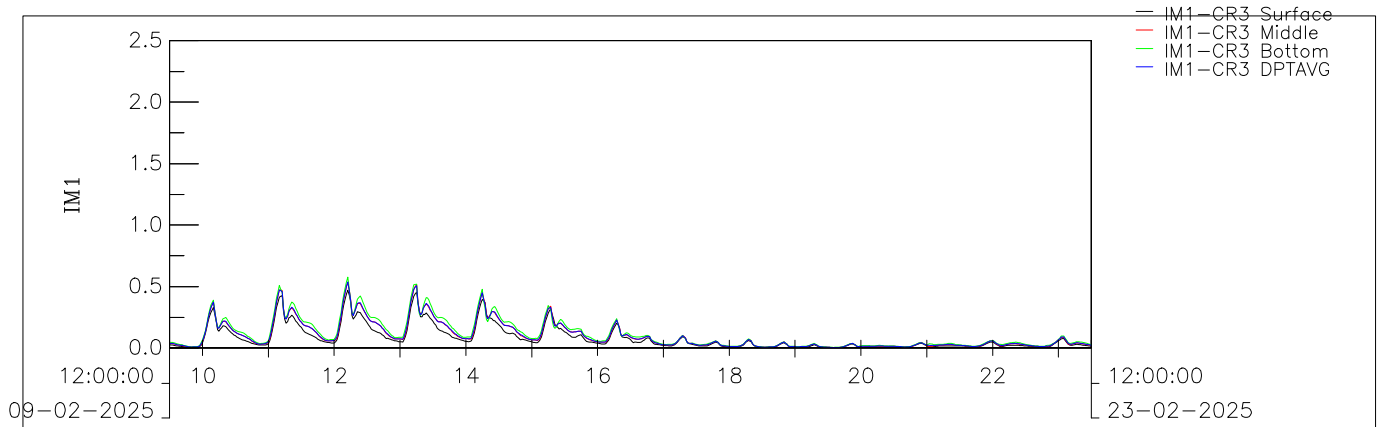


SS Elevations (mg/L) at Stations C6, C7, CR1, CR2

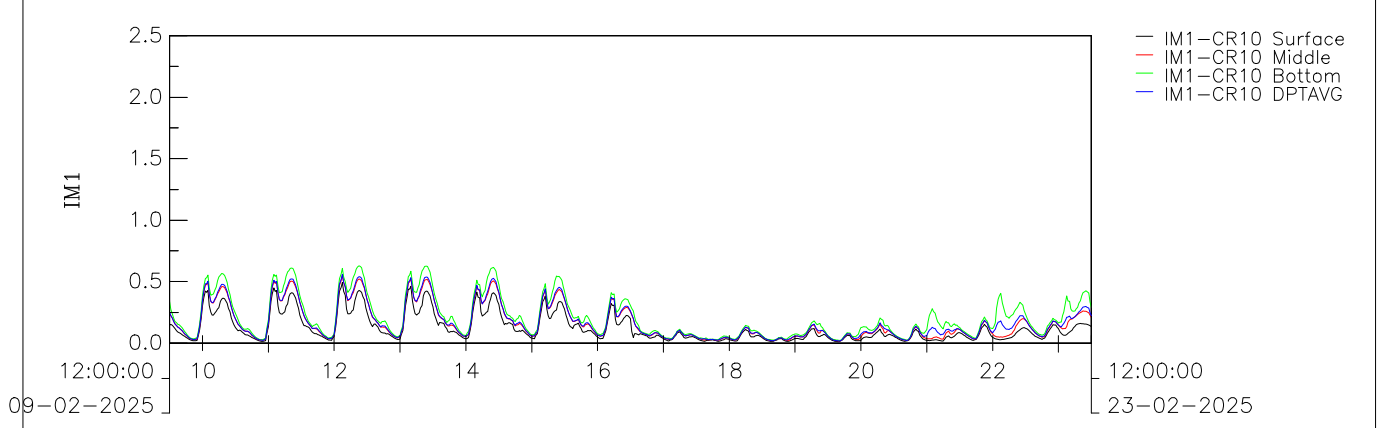
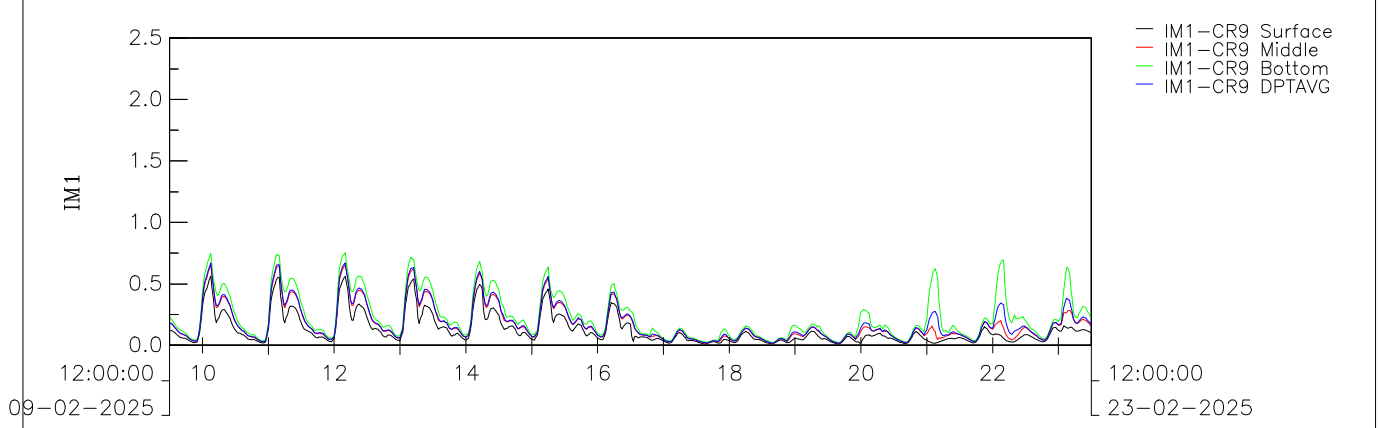
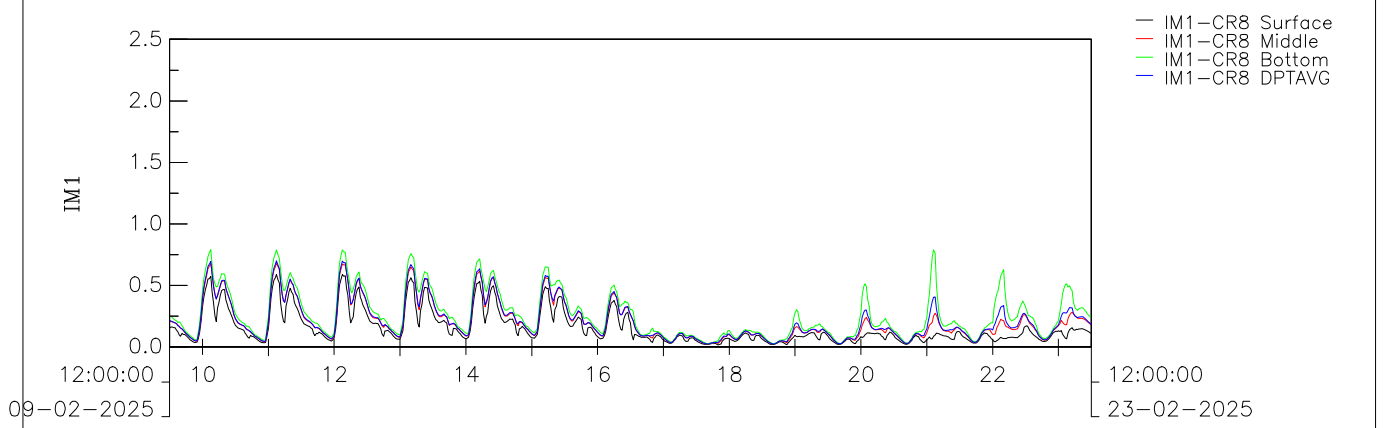
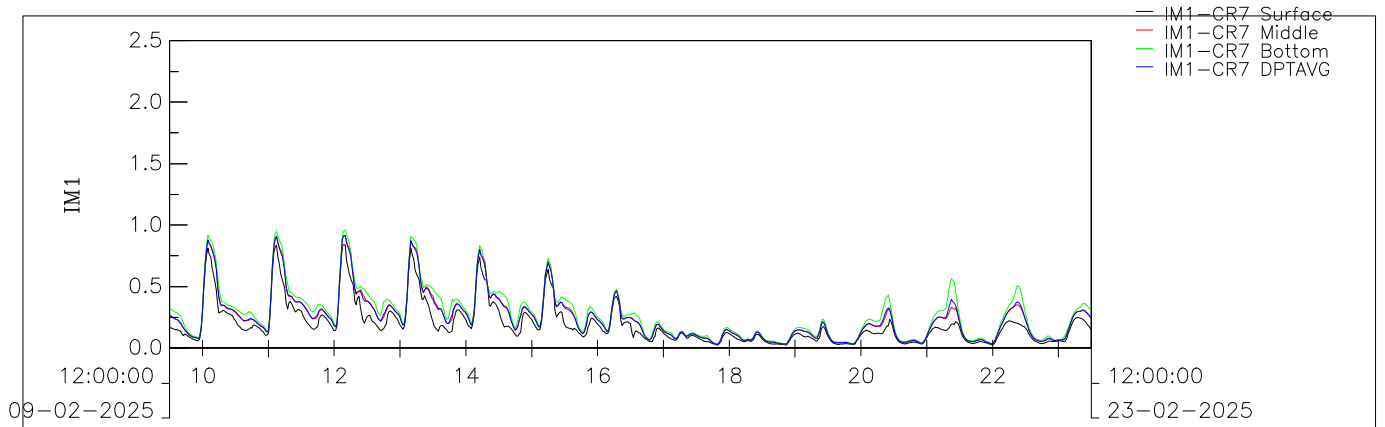
Dry Season

1st Plot: C6; 2nd Plot: C7; 3rd Plot: CR1; 4th Plot: CR2

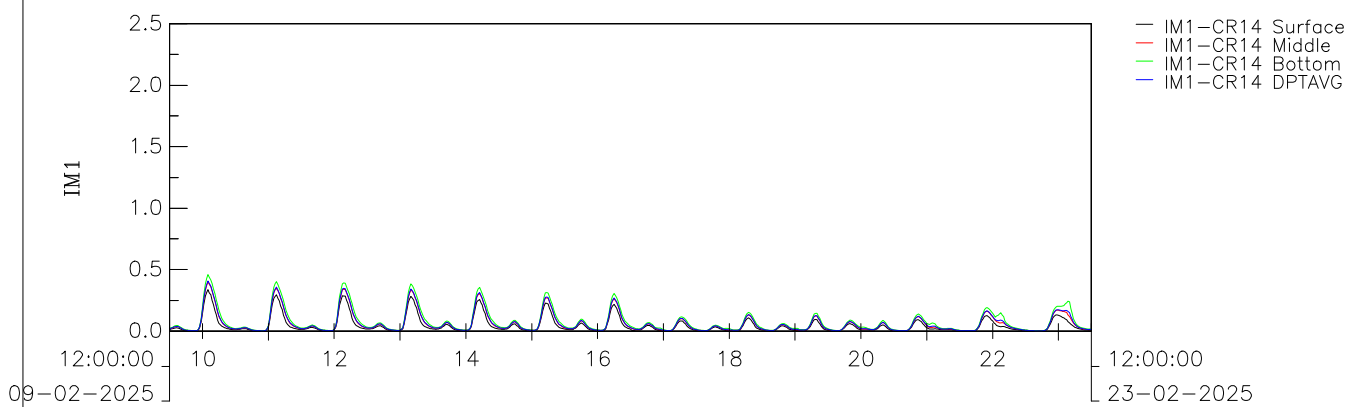
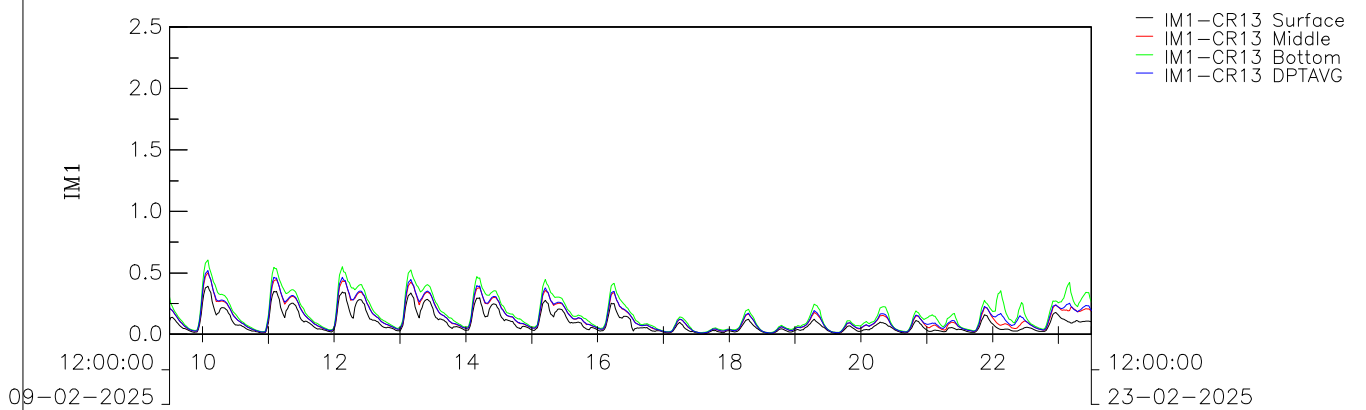
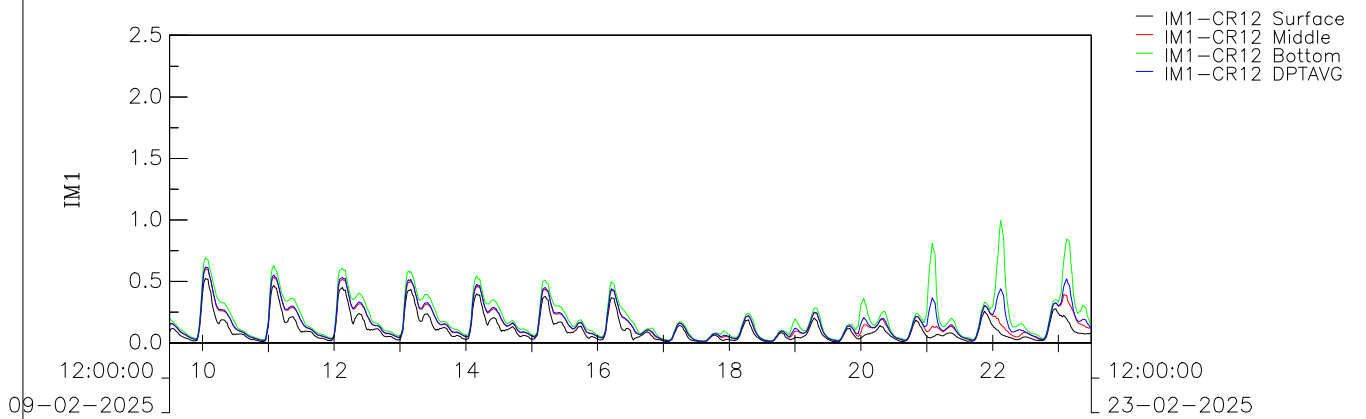
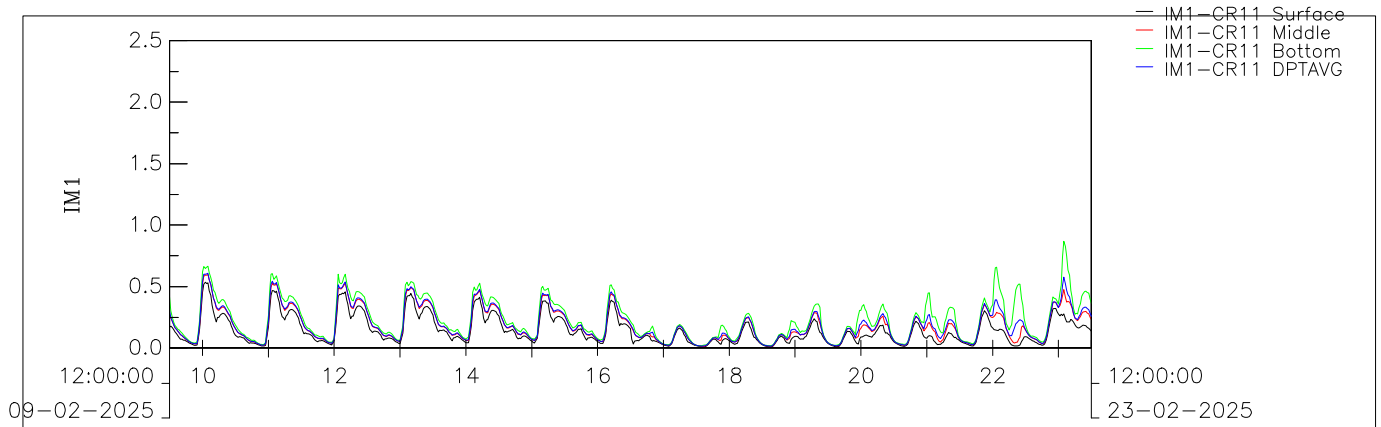
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SS Elevations (mg/L) at Stations CR3, CR4, CR5, CR6	Dry Season	
1st Plot: CR3; 2nd Plot: CR4; 3rd Plot: CR5; 4th Plot: CR6		
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SS Elevations (mg/L) at Stations CR7, CR8, CR9, CR10	Dry Season	
1st Plot: CR7; 2nd Plot: CR8; 3rd Plot: CR9; 4th Plot: CR10		
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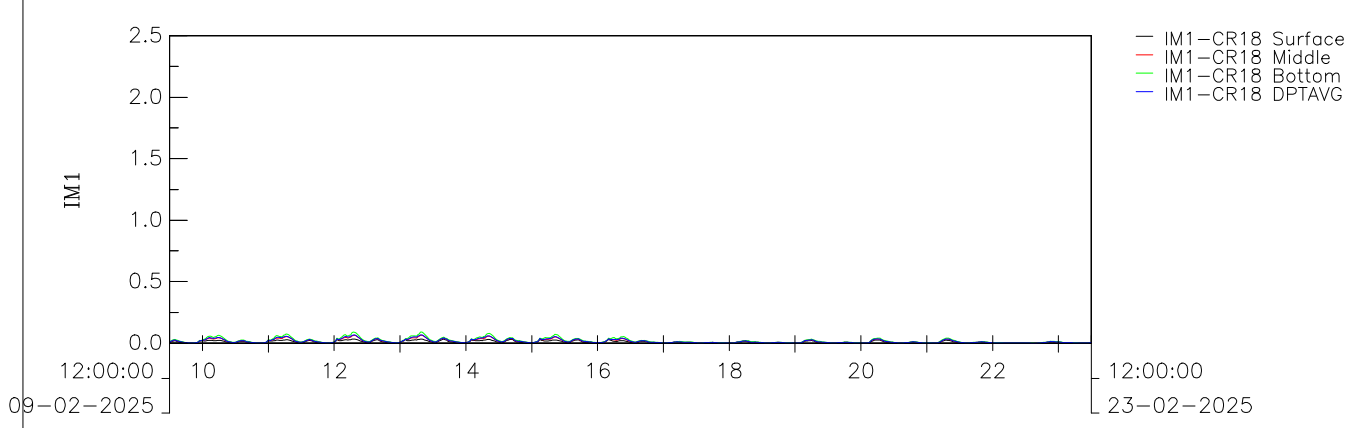
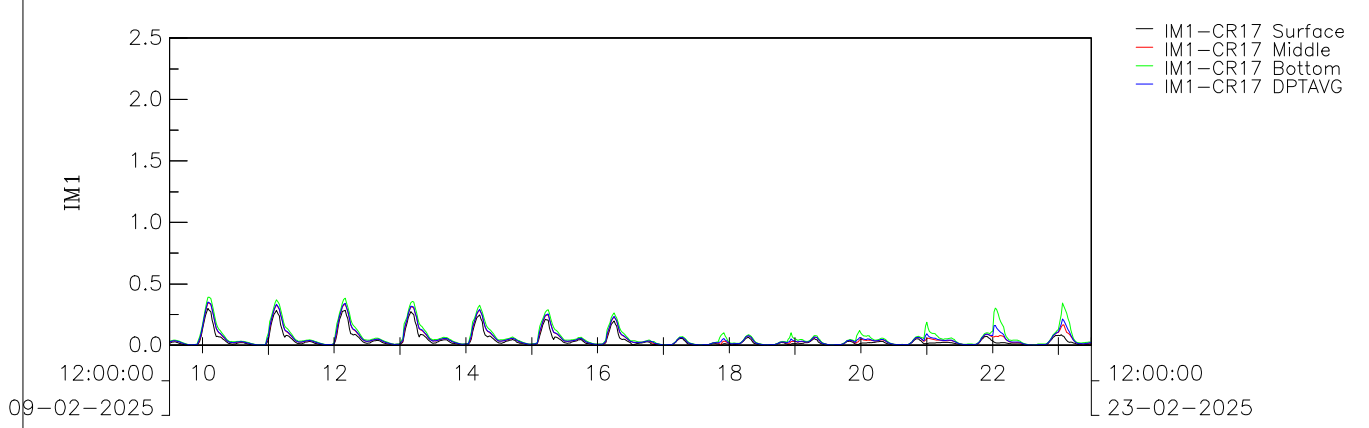
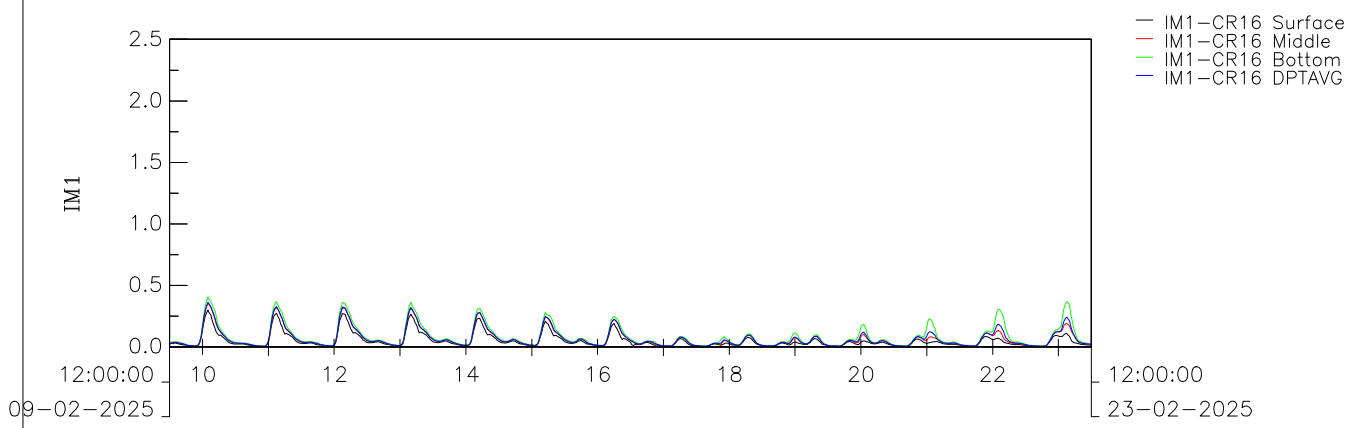
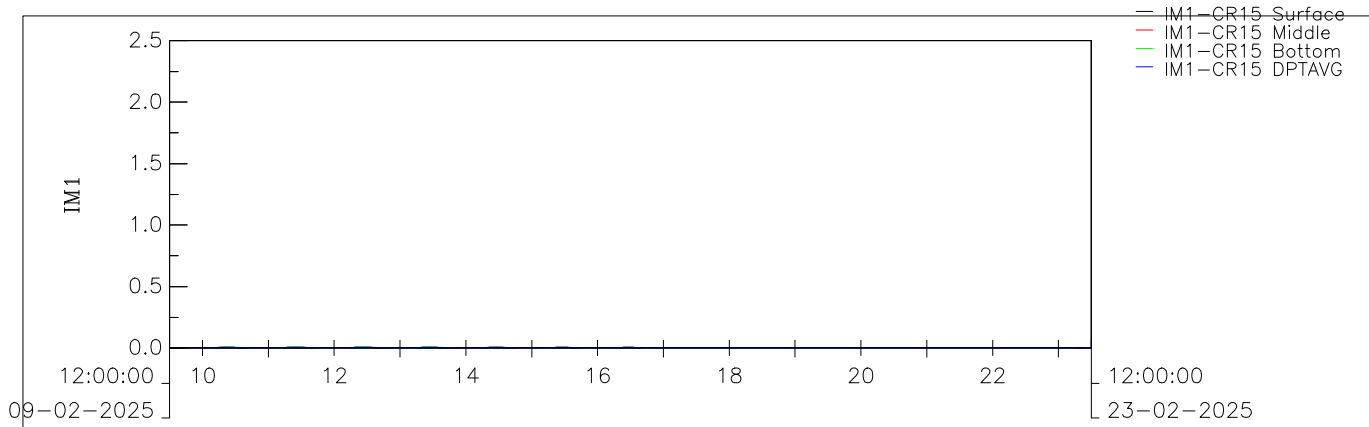


SS Elevations (mg/L) at Stations CR11, CR12, CR13, CR14

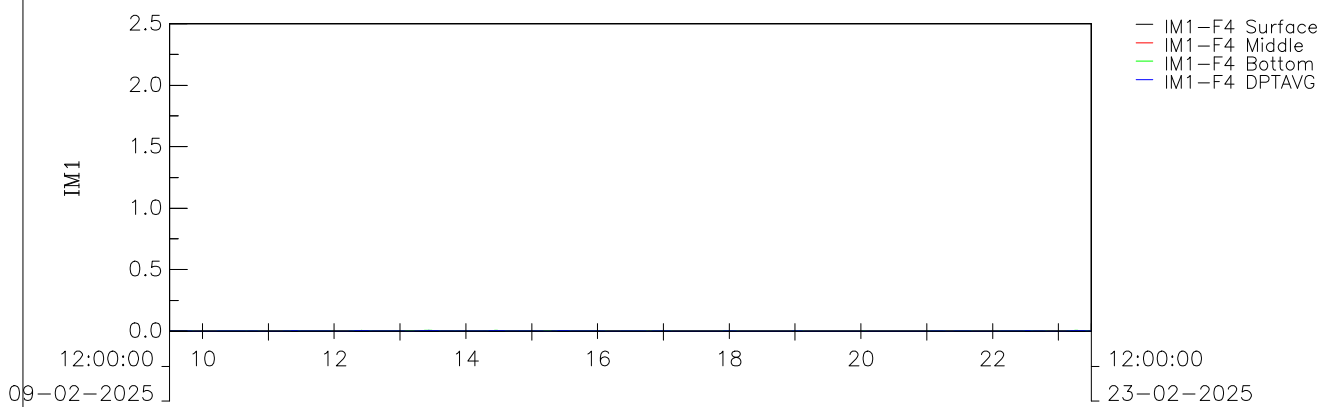
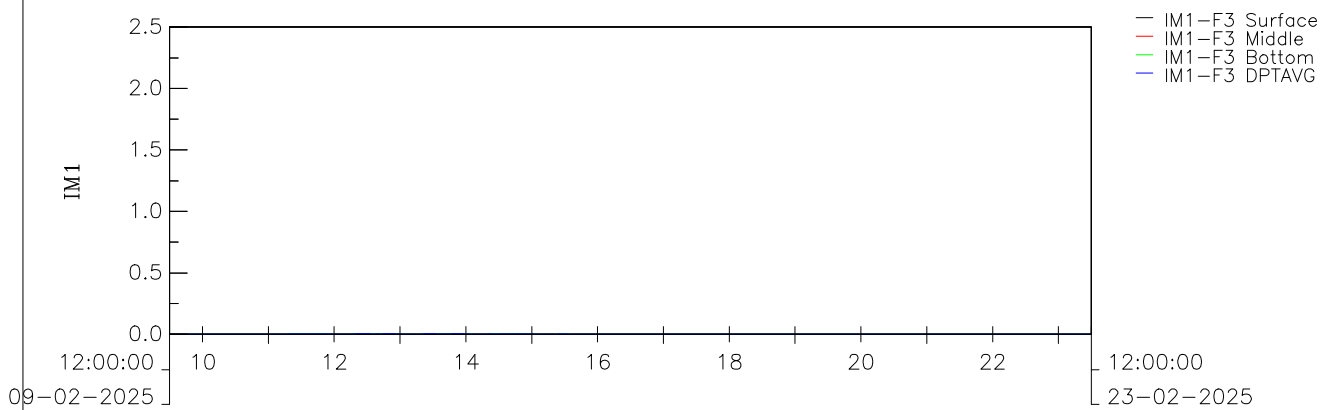
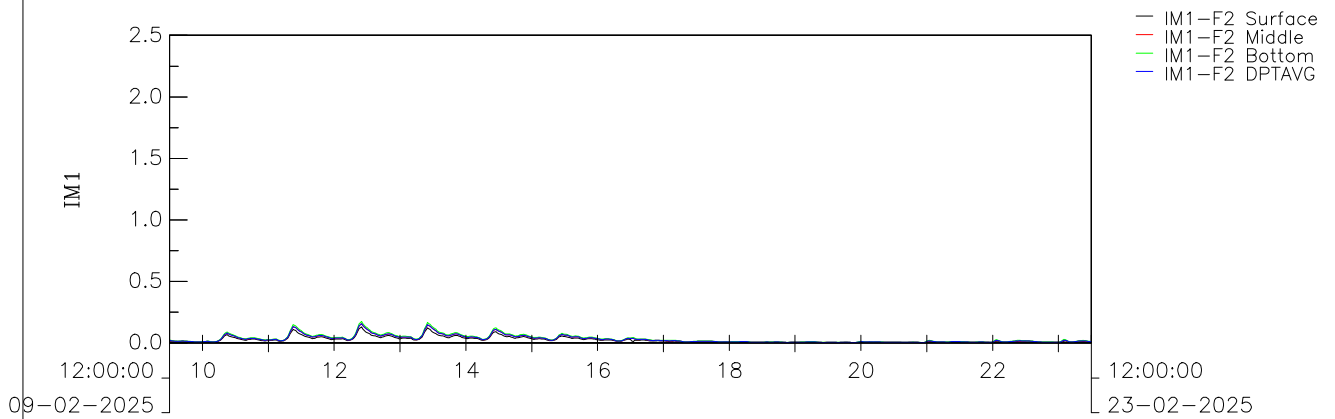
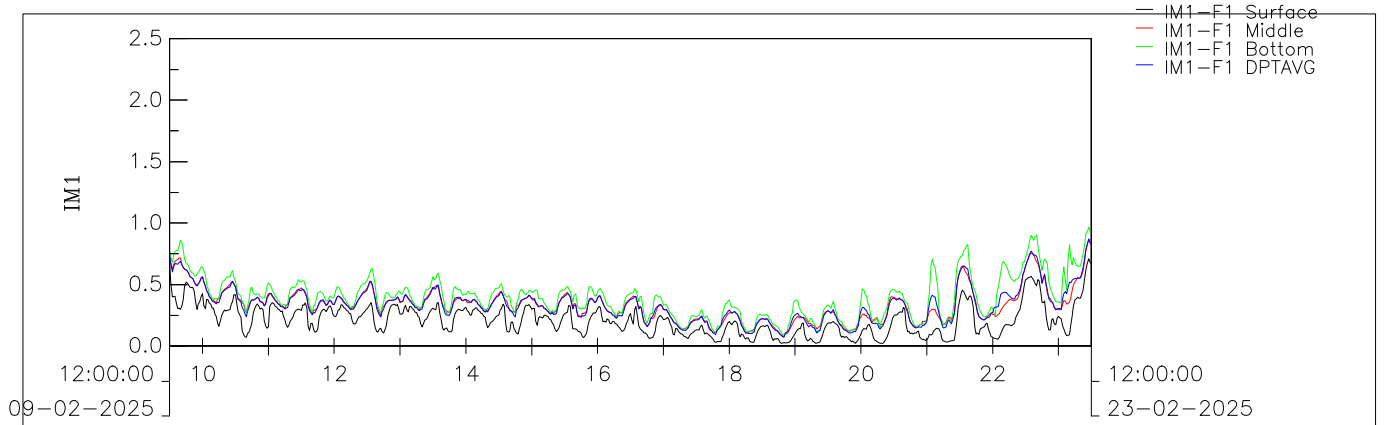
Dry Season

1st Plot: CR11; 2nd Plot: CR12; 3rd Plot: CR13; 4th Plot: CR14

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SS Elevations (mg/L) at Stations CR15, CR16, CR17, CR18	Dry Season	
1st Plot: CR15; 2nd Plot: CR16; 3rd Plot: CR17; 4th Plot: CR18		
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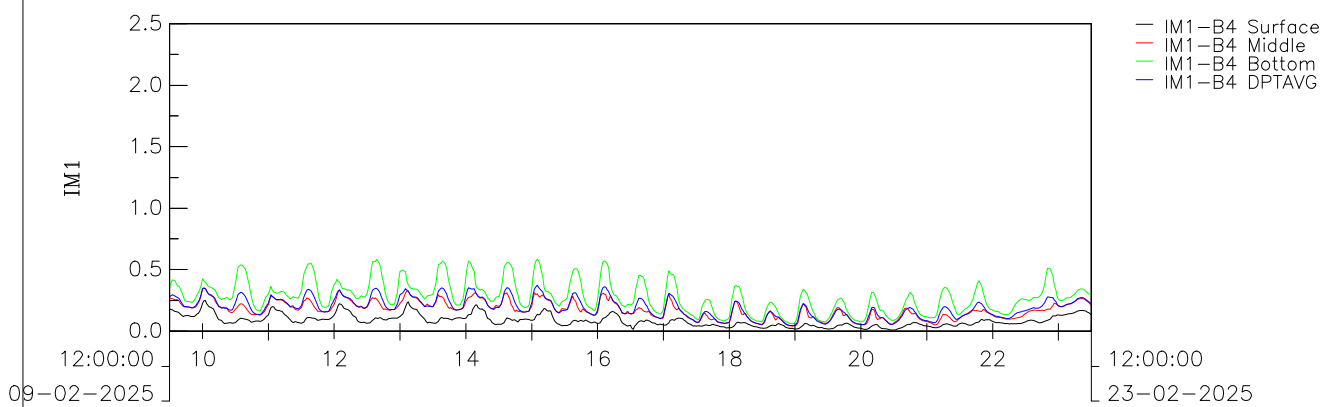
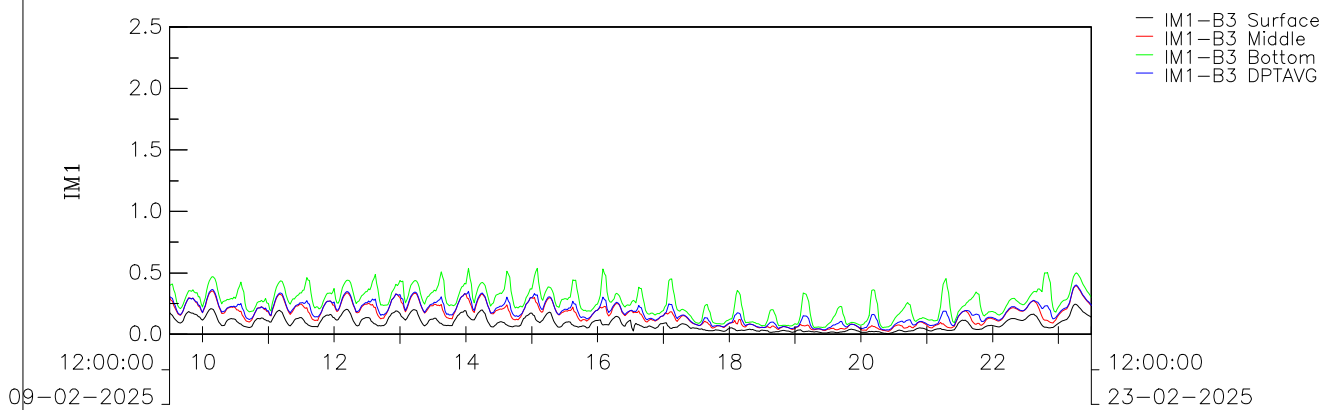
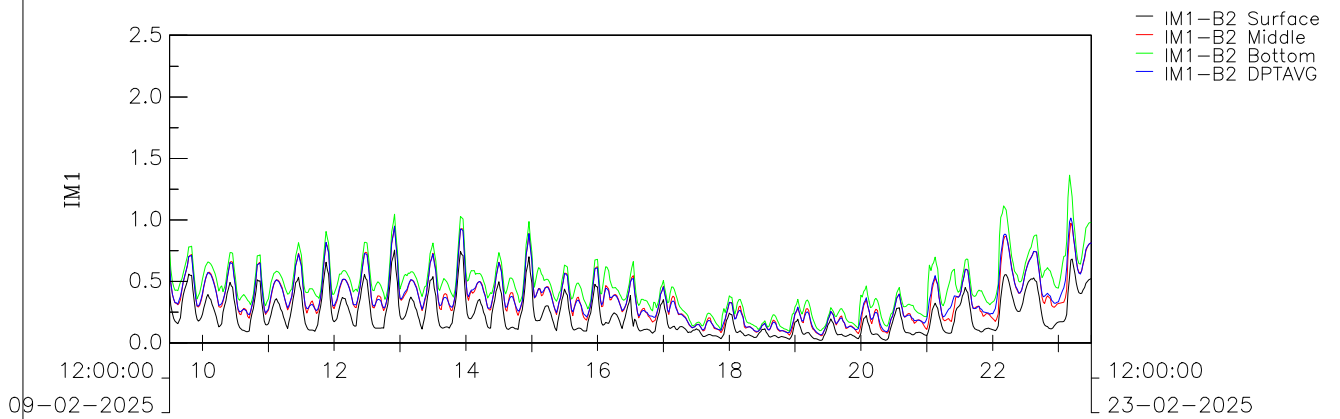
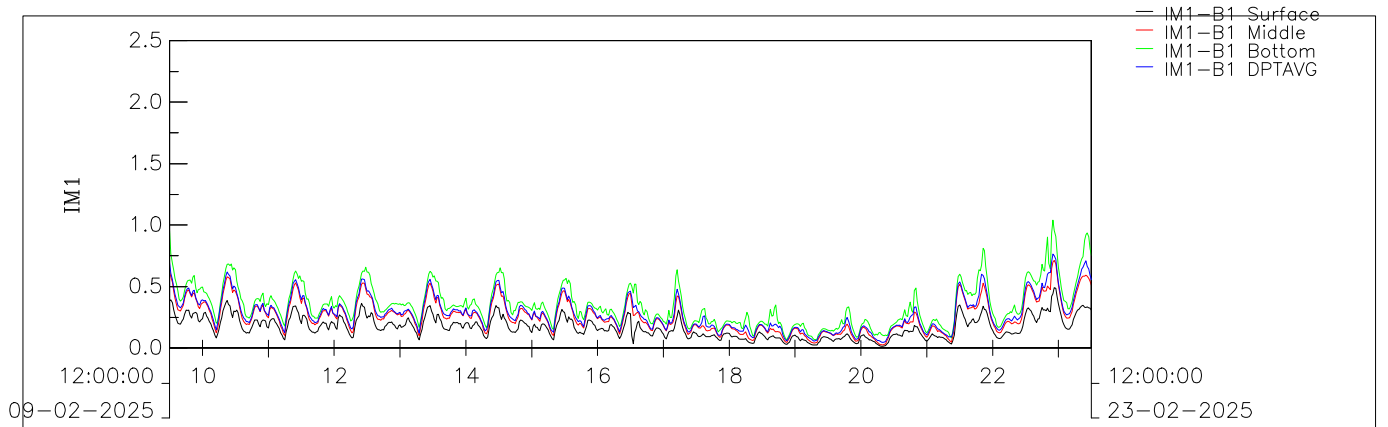


SS Elevations (mg/L) at Stations F1, F2, F3, F4

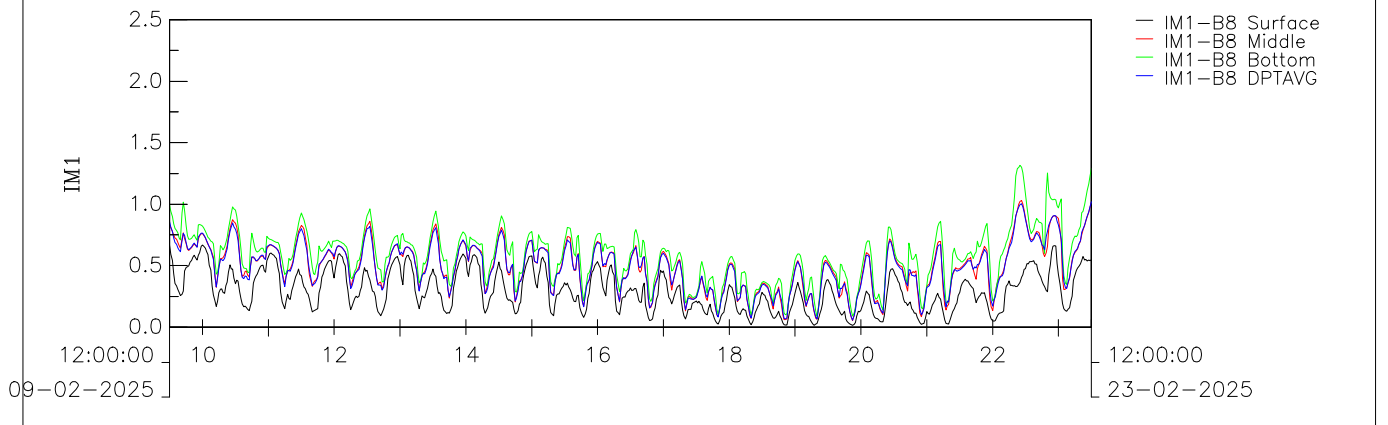
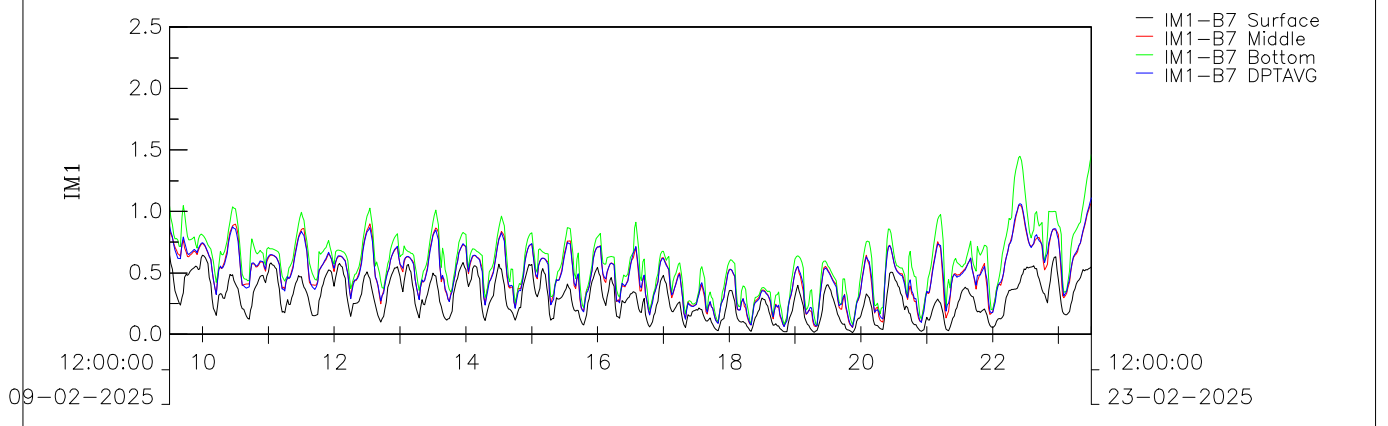
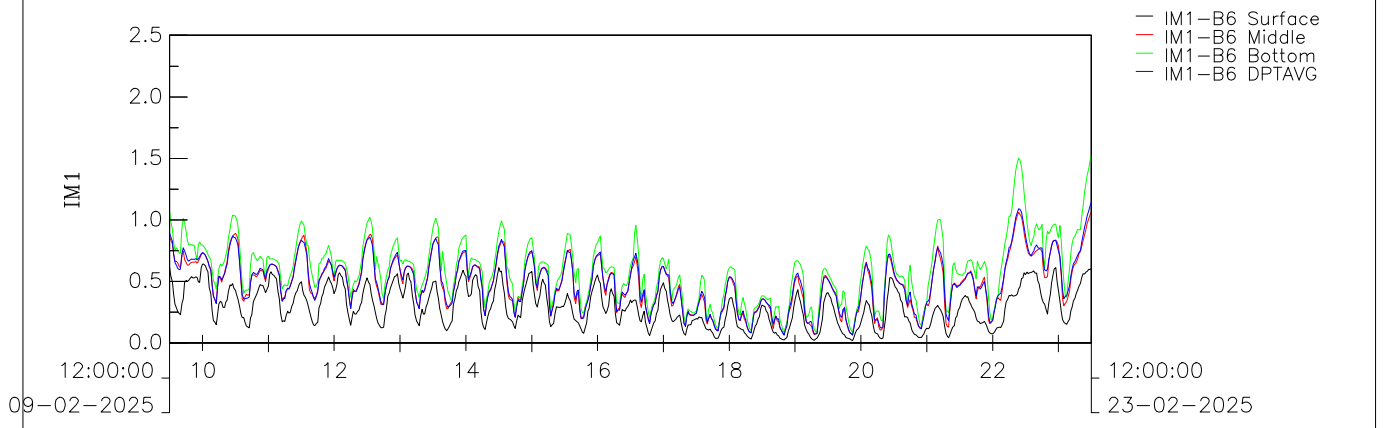
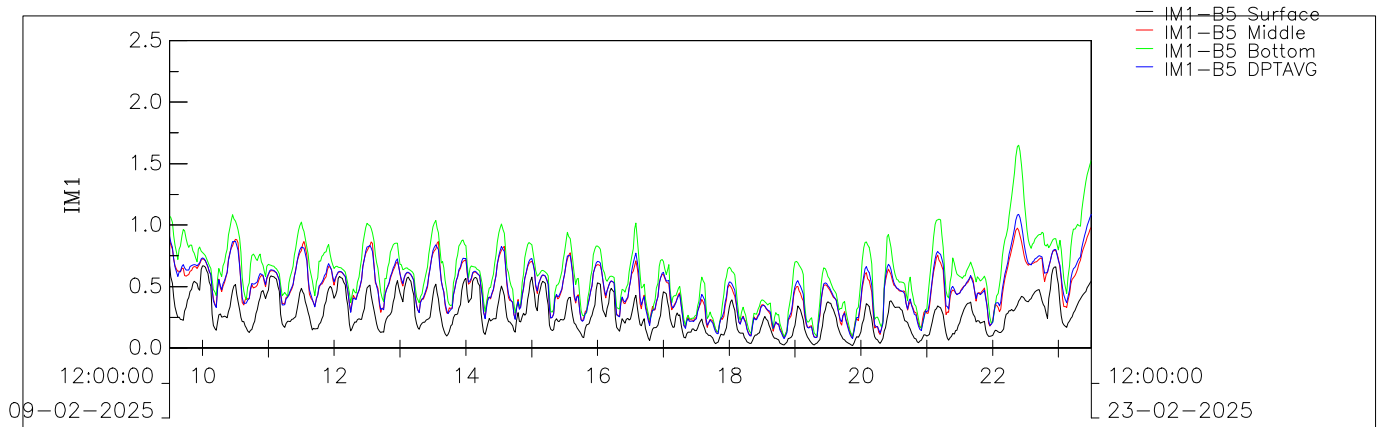
Dry Season

1st Plot: F1; 2nd Plot: F2; 3rd Plot: F3; 4th Plot: F4

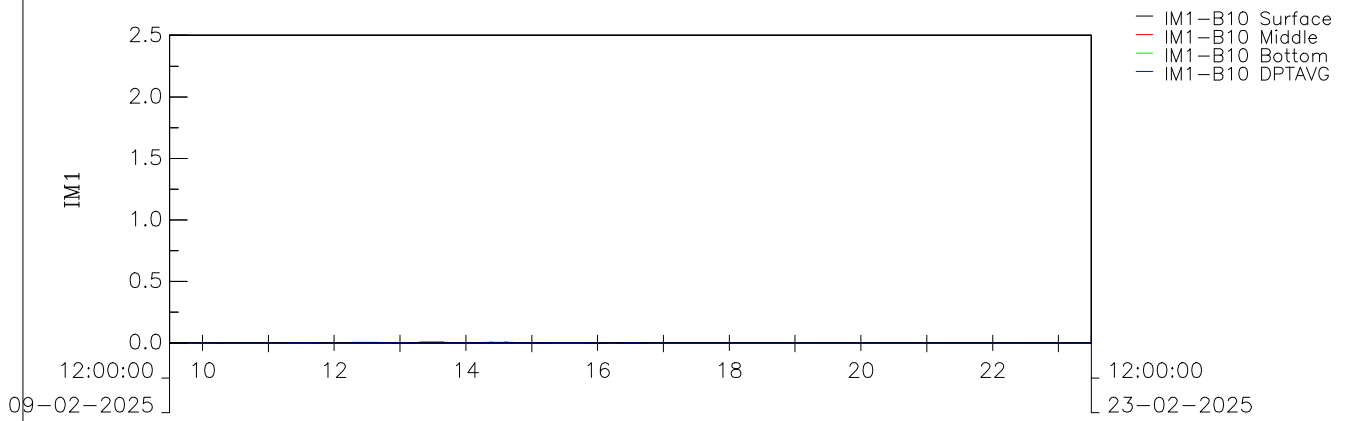
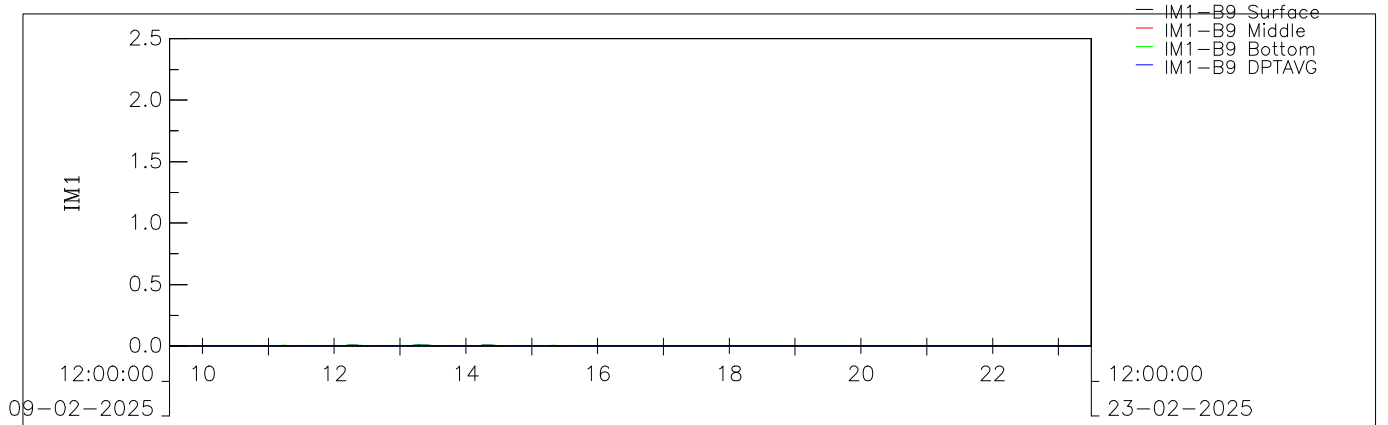
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SS Elevations (mg/L) at Stations B1, B2, B3, B4	Dry Season	
1st Plot: B1; 2nd Plot: B2; 3rd Plot: B3; 4th Plot: B4		
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SS Elevations (mg/L) at Stations B5, B6, B7, B8	Dry Season	
1st Plot: B5; 2nd Plot: B6; 3rd Plot: B7; 4th Plot: B8		
Mott MacDonald Hong Kong Ltd		

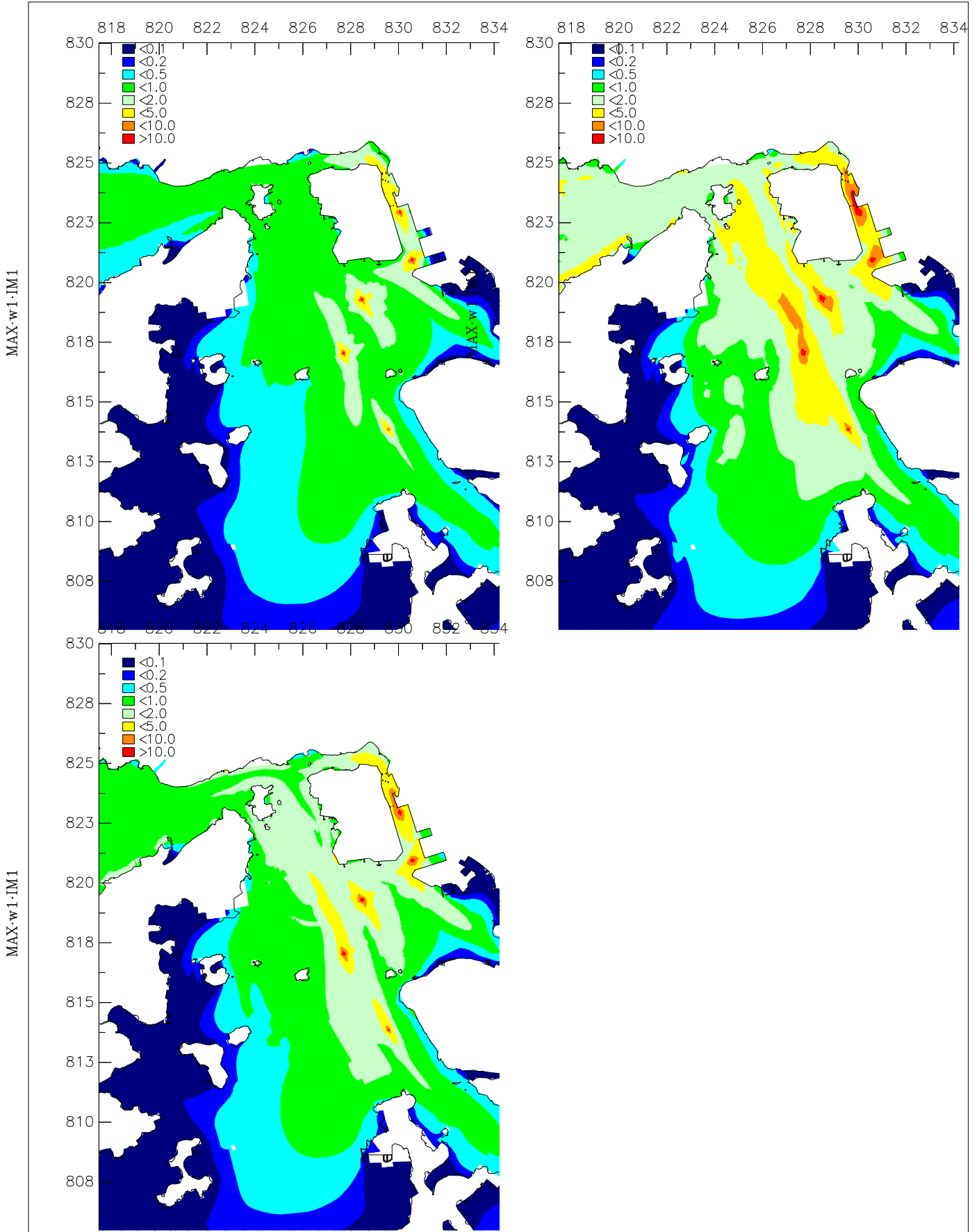


SS Elevations (mg/L) at Stations B9, B10

Dry Season

1st Plot: B9; 2nd Plot: B10

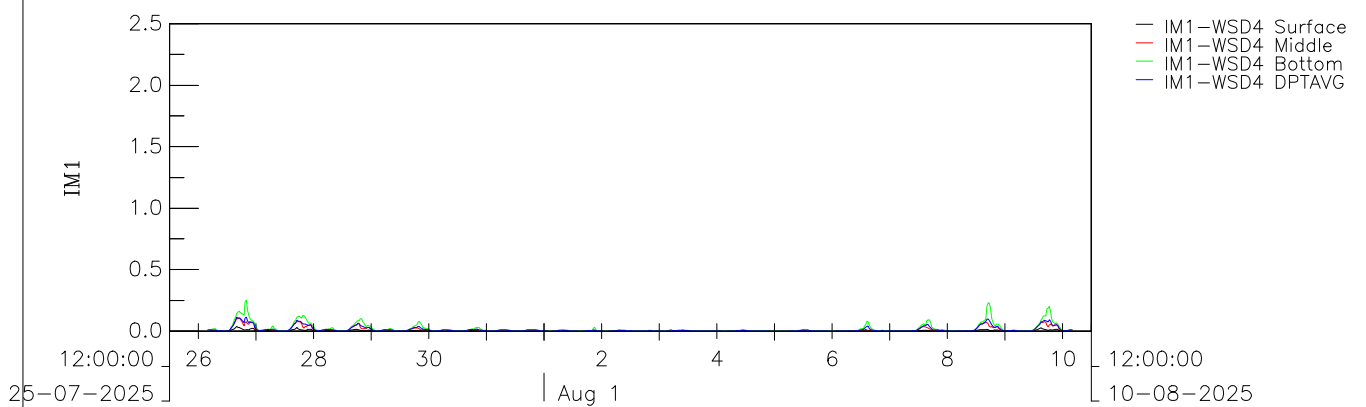
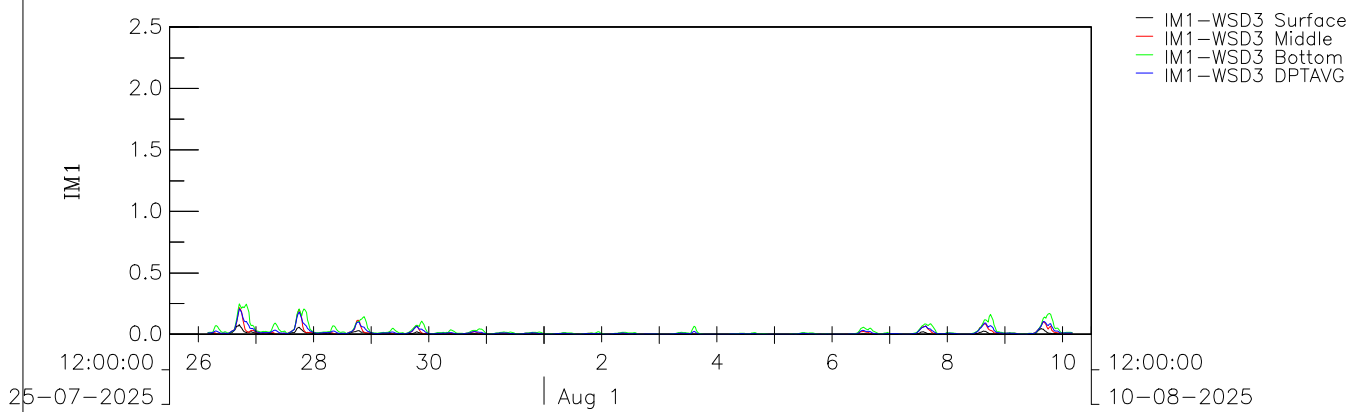
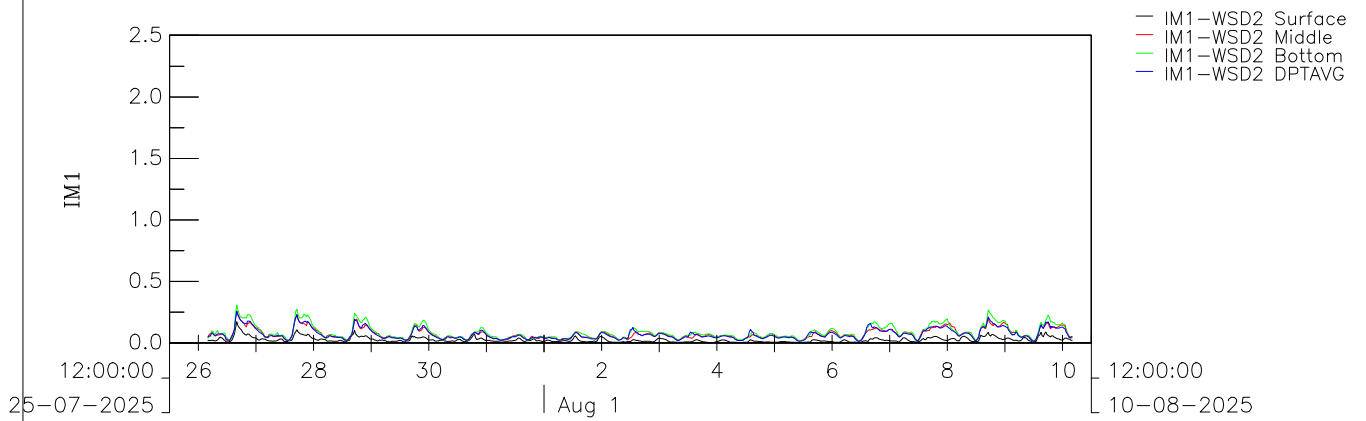
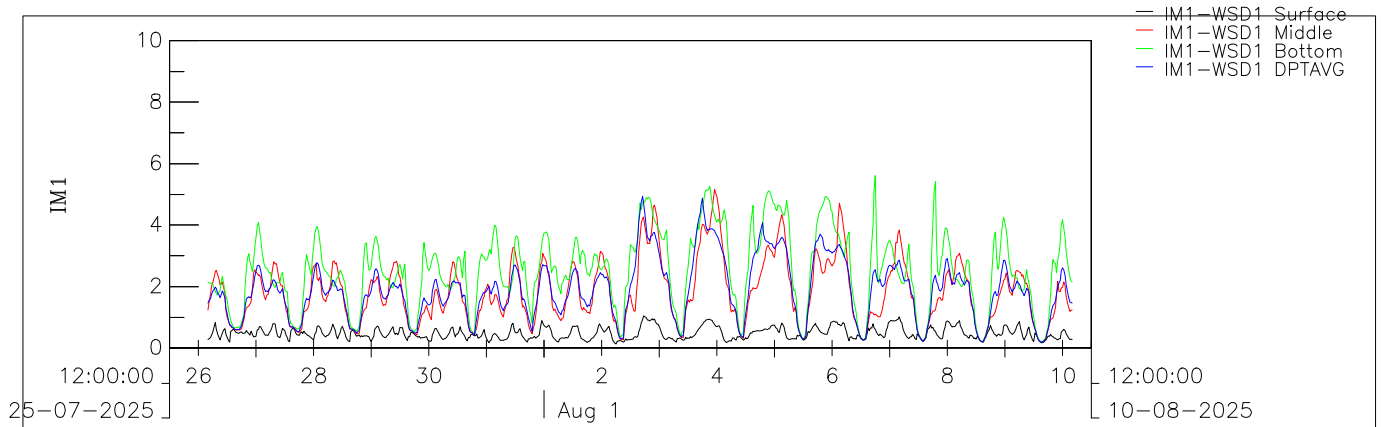
Mott MacDonald Hong Kong Ltd



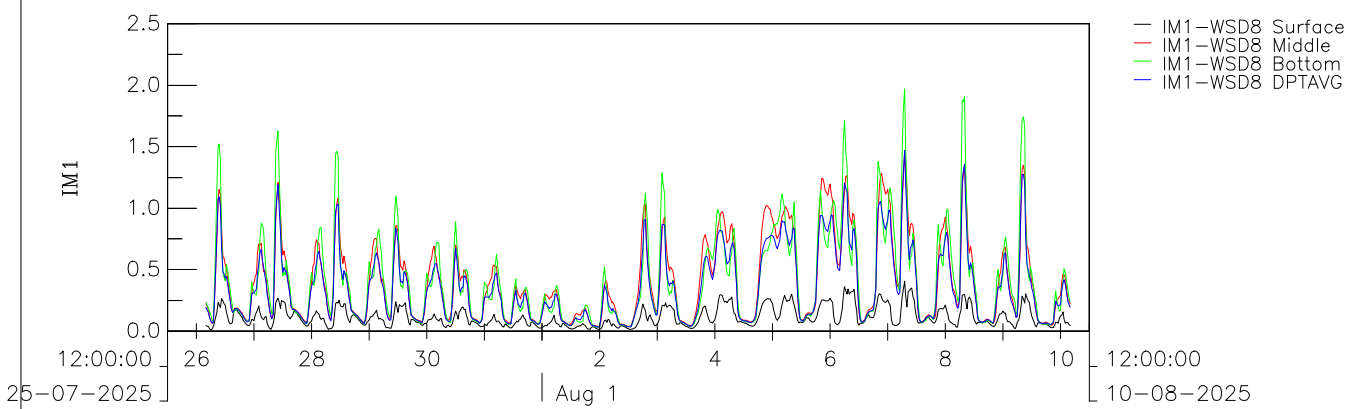
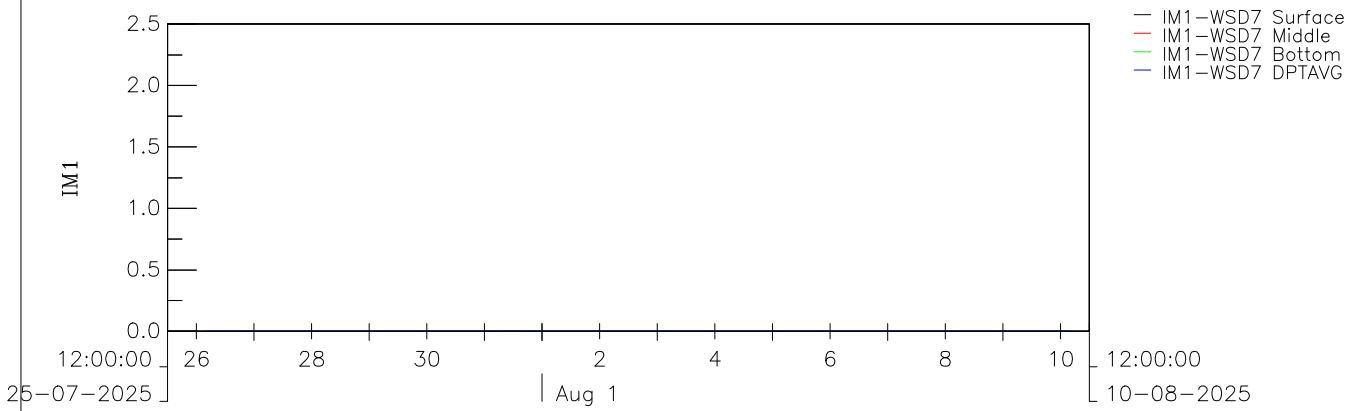
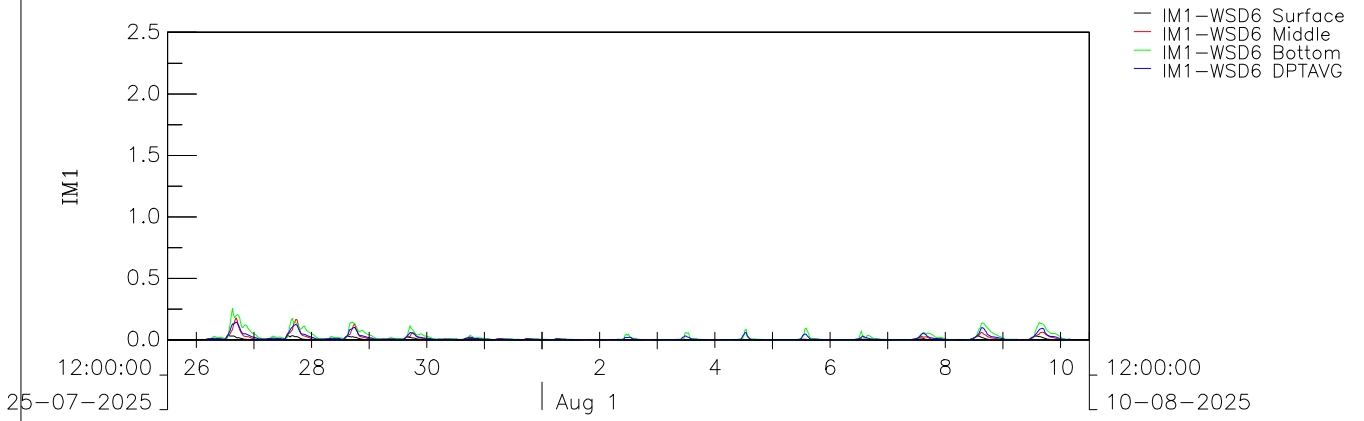
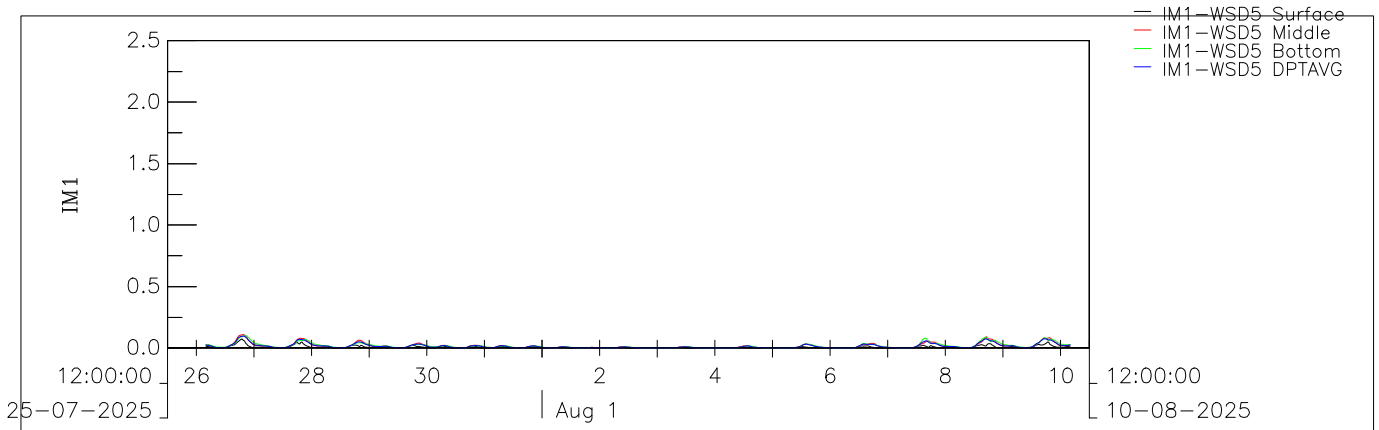
Max. SS Elevation (mg/L)
 Upper left: surface; Upper right: bottom
 Lower left: depth averaged

Dry season

Appendix A3.2



SS Elevations (mg/L) at Stations WSD1, WSD2, WSD3, WSD4	Wet Season	
1st Plot: WSD1; 2nd Plot: WSD2; 3rd Plot: WSD3; 4th Plot: WSD4		
Mott MacDonald Hong Kong Ltd		

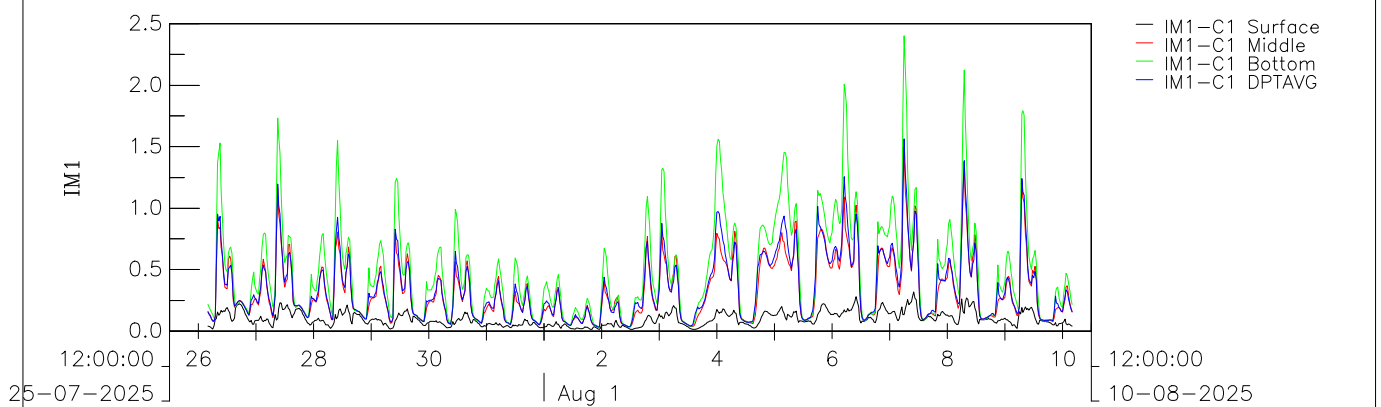
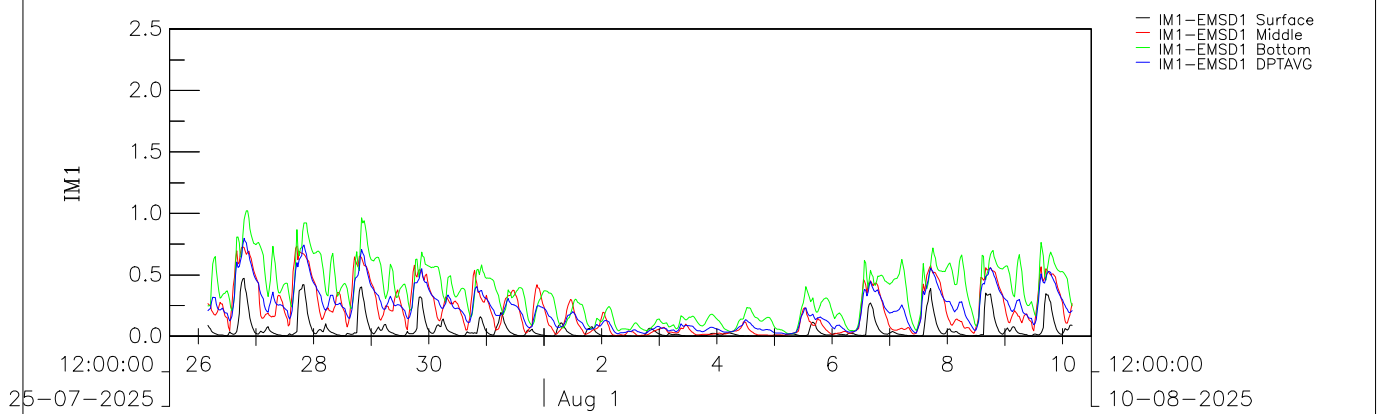
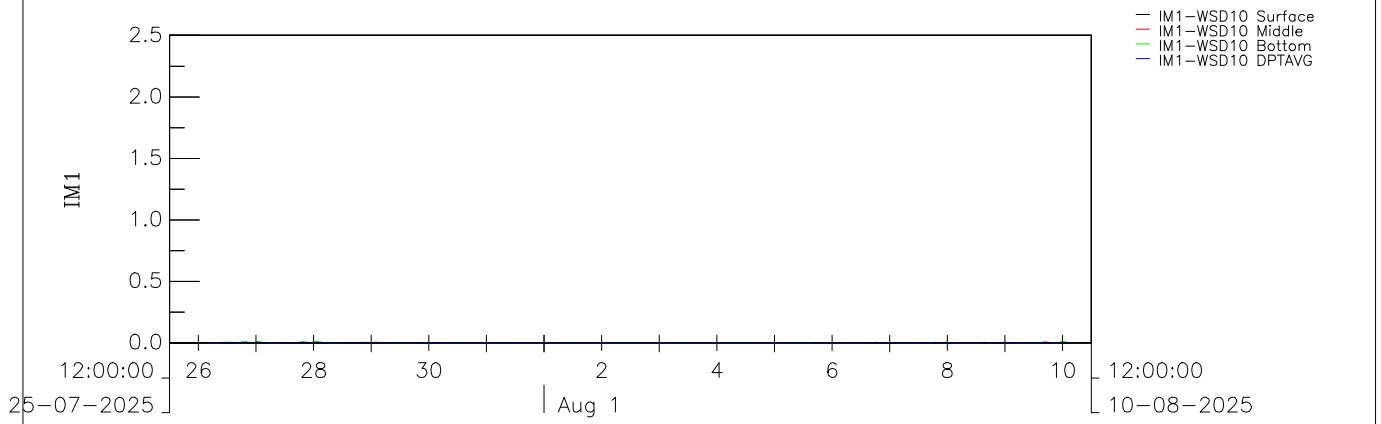
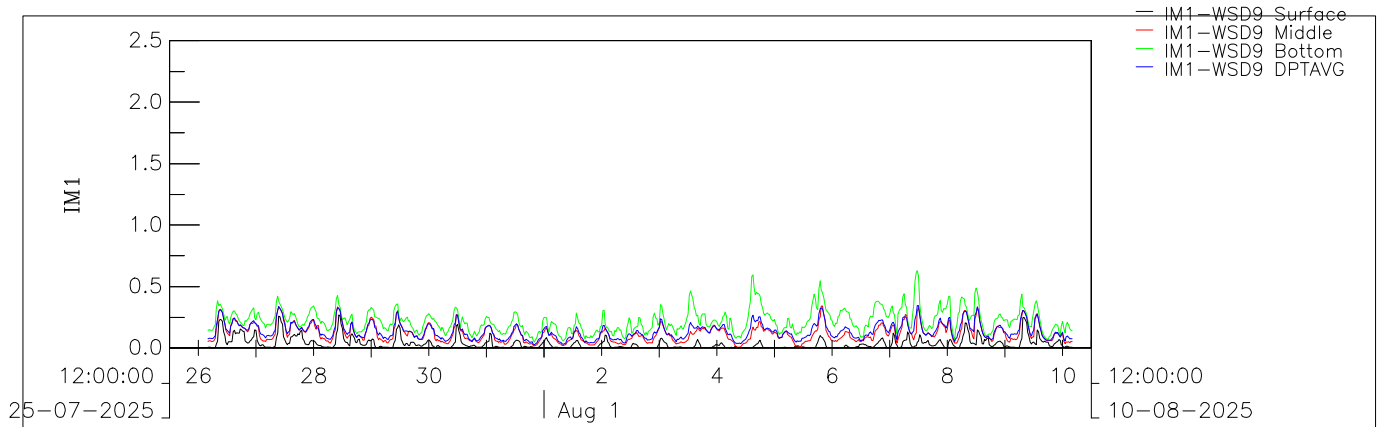


SS Elevations (mg/L) at Stations WSD5, WSD6, WSD7, WSD8

Wet Season

1st Plot: WSD5; 2nd Plot: WSD6; 3rd Plot: WSD7; 4th Plot: WSD8

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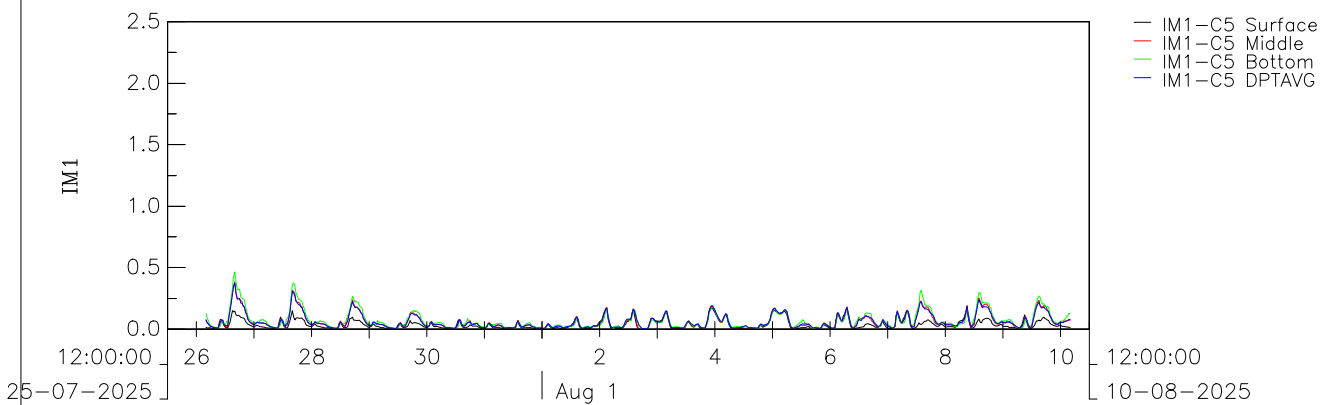
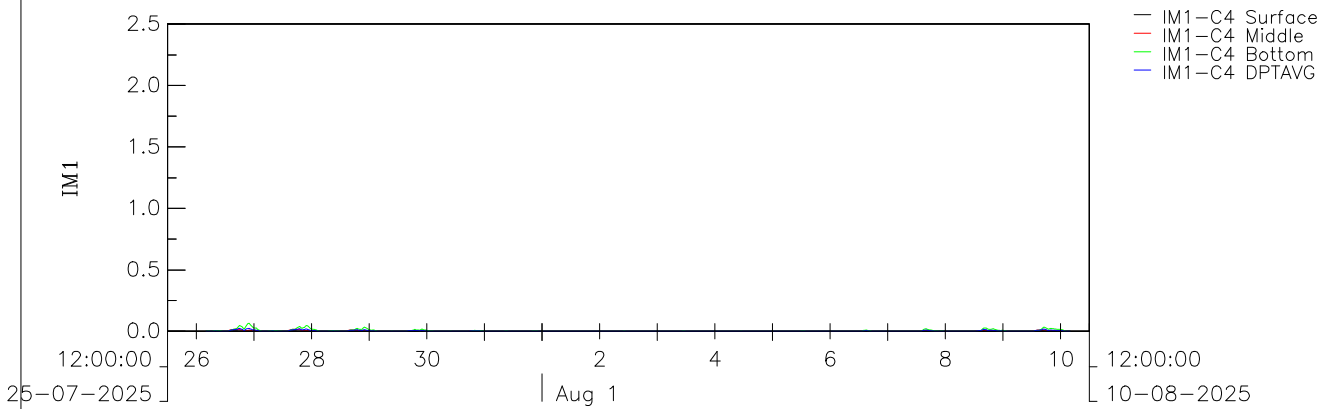
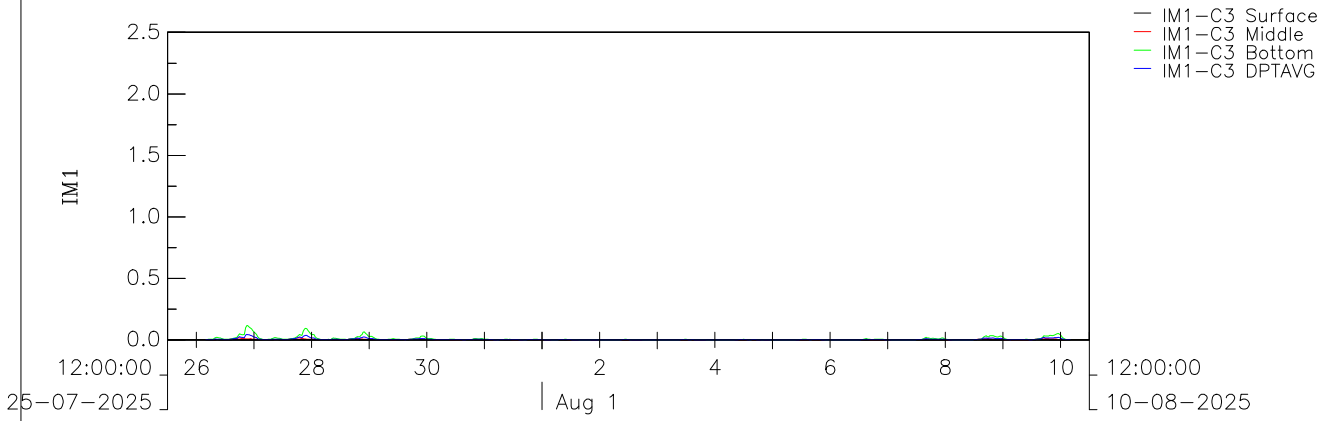
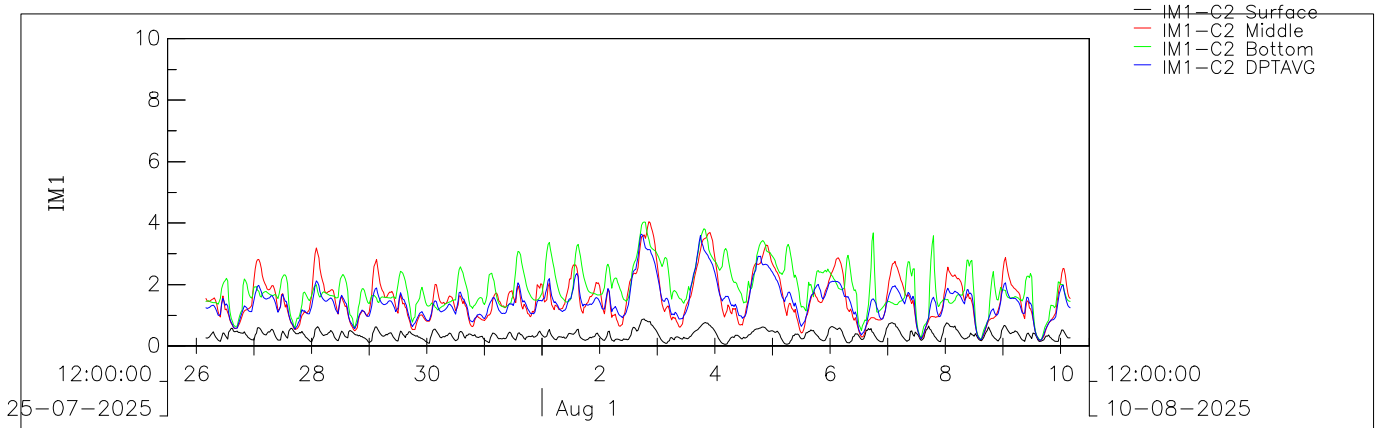


SS Elevations (mg/L) at Stations WSD9, WSD10, EMSD1, C1

Wet Season

1st Plot: WSD9; 2nd Plot: WSD10; 3rd Plot: EMSD1; 4th Plot: C1

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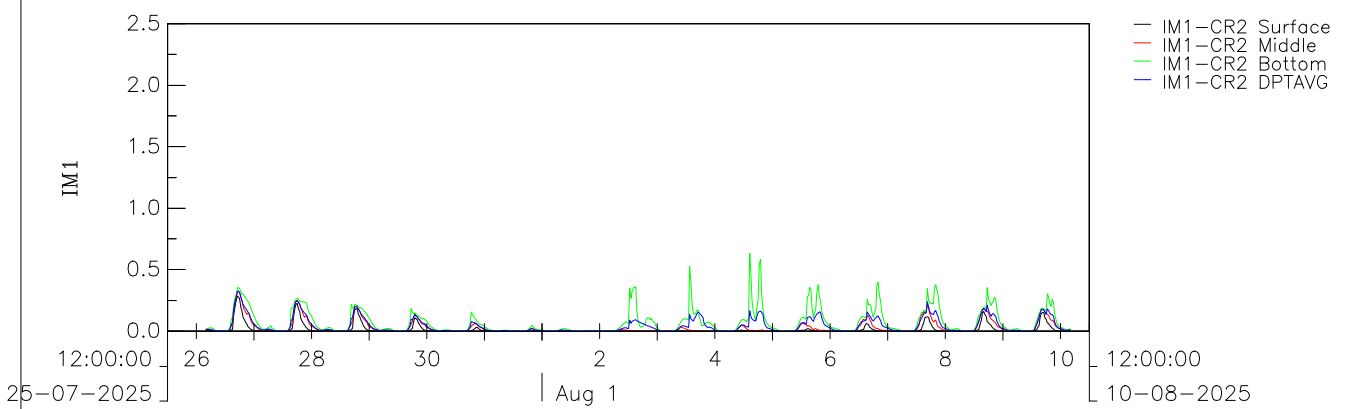
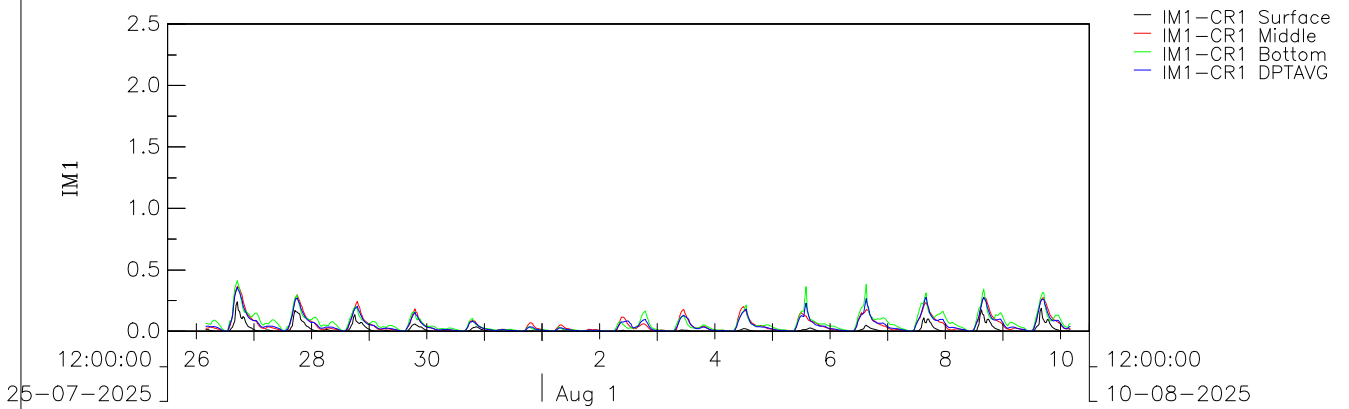
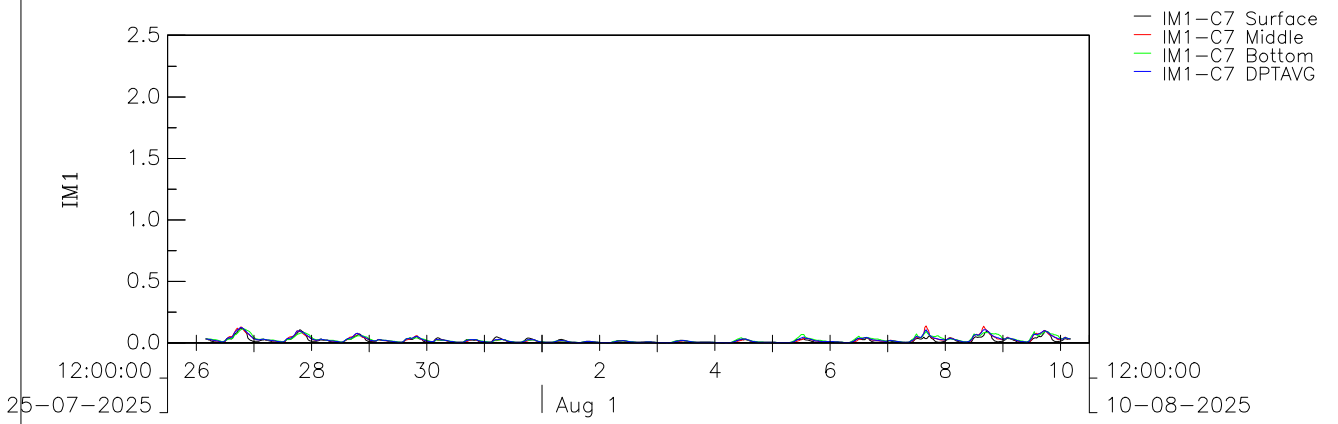
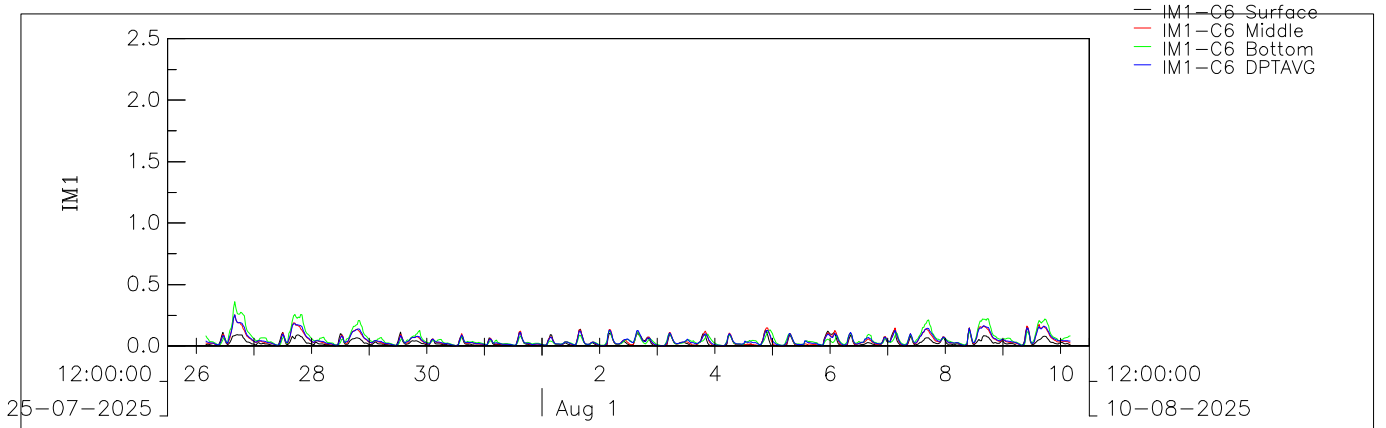


SS Elevations (mg/L) at Stations C2, C3, C4, C5

Wet Season

1st Plot: C2; 2nd Plot: C3; 3rd Plot: C4; 4th Plot: C5

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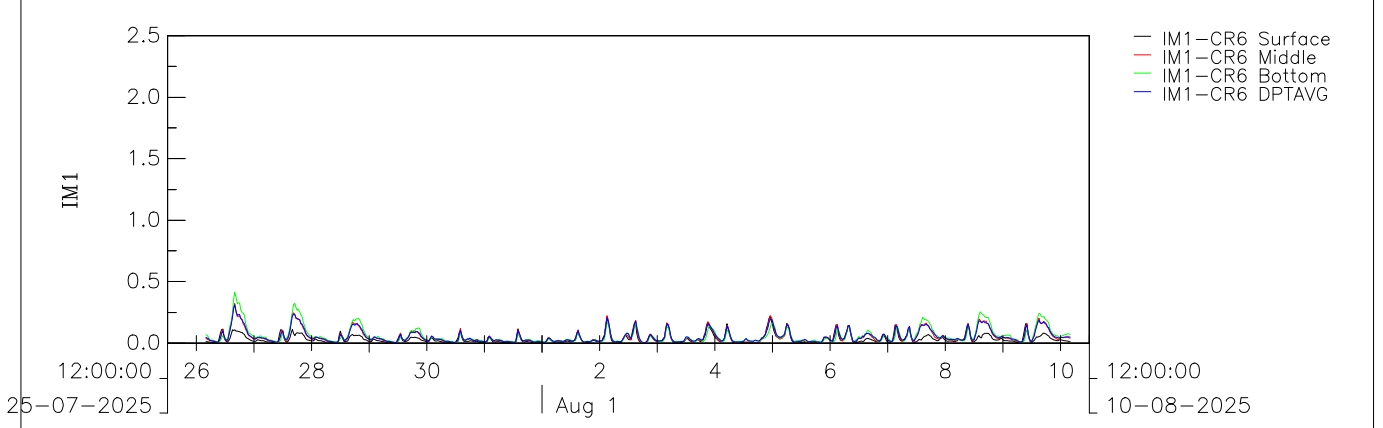
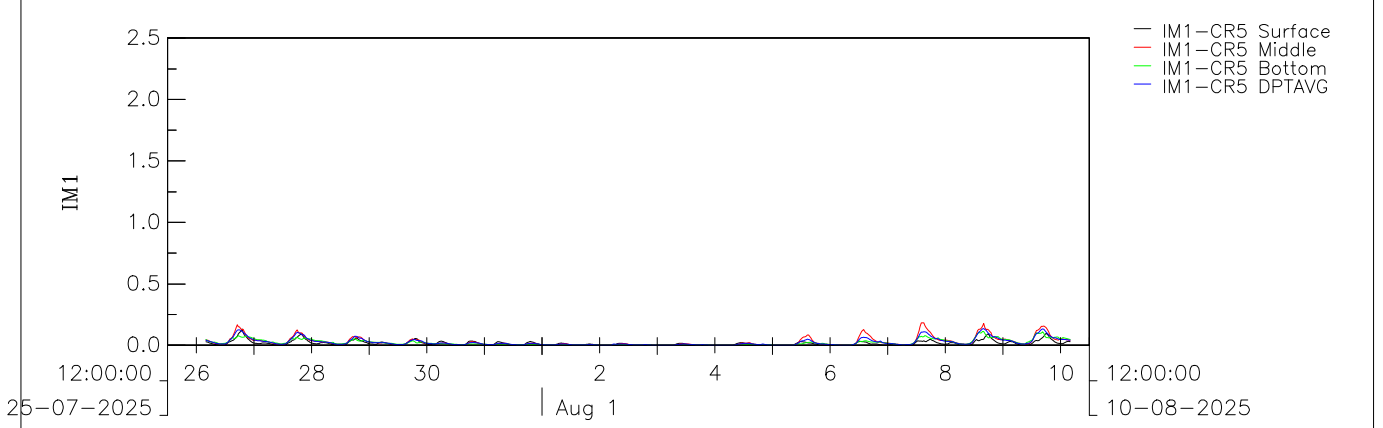
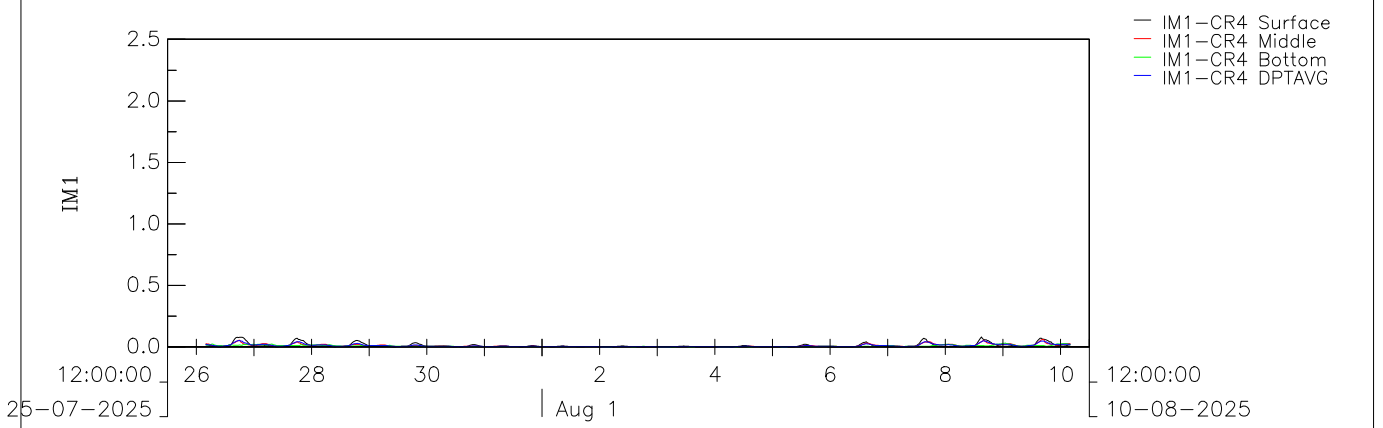
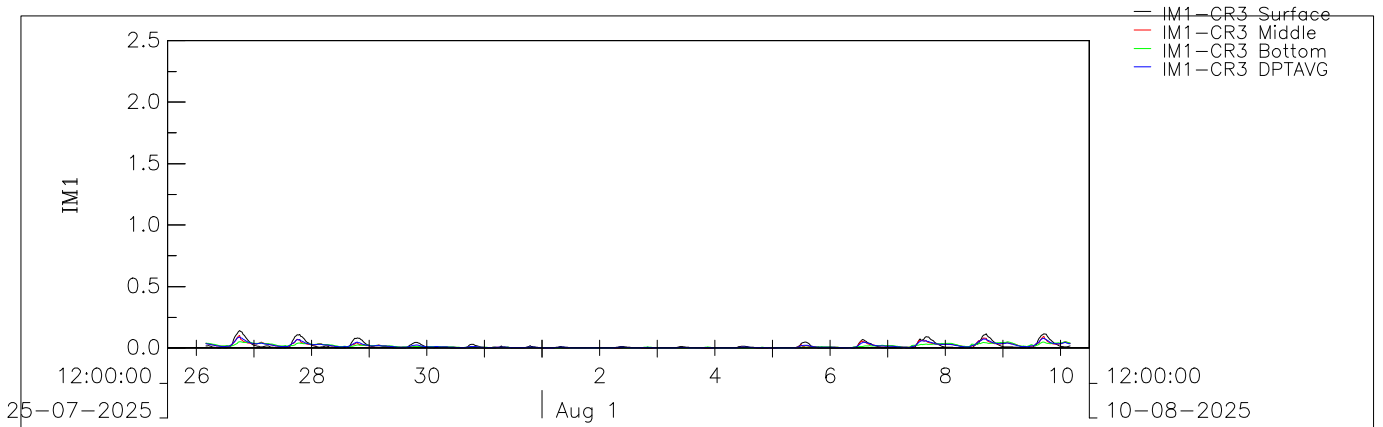


SS Elevations (mg/L) at Stations C6, C7, CR1, CR2

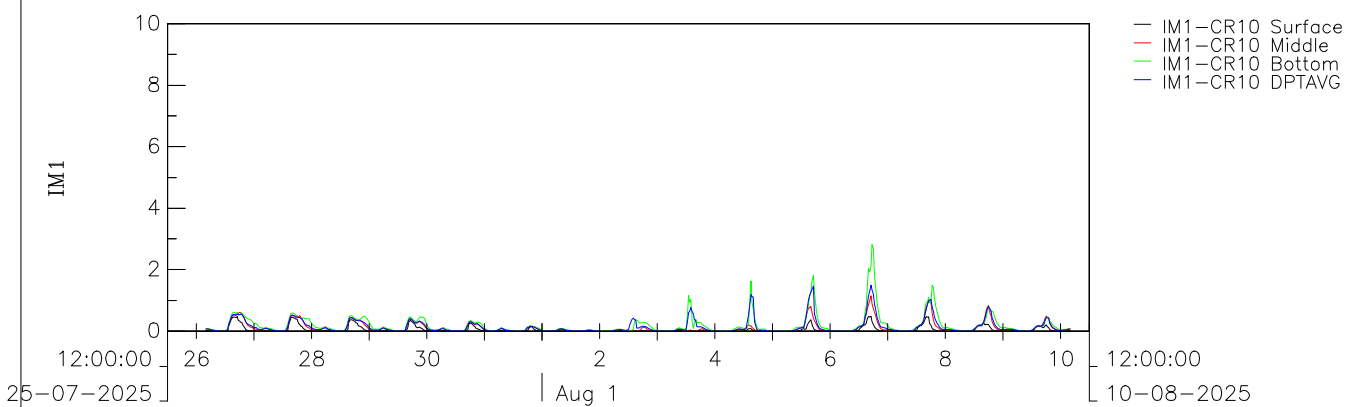
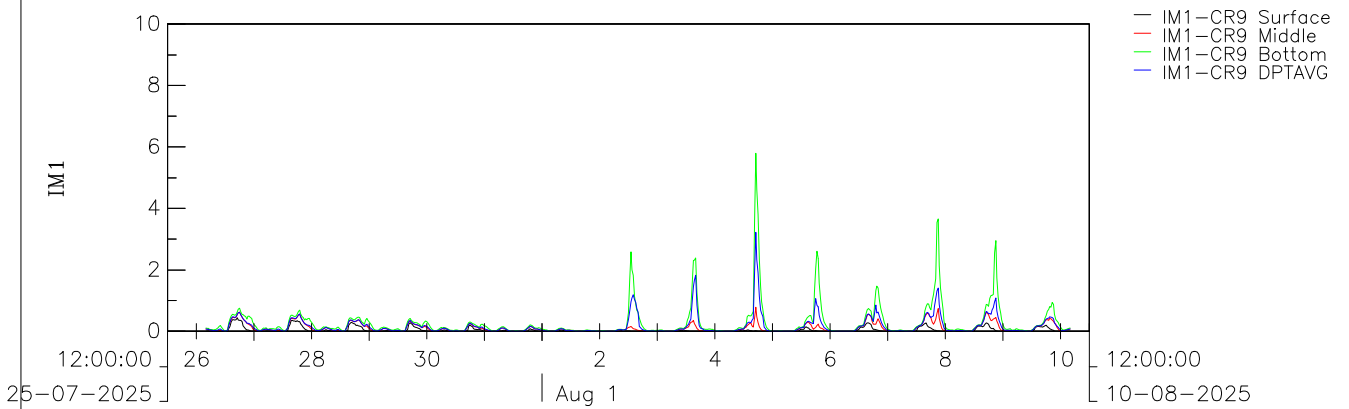
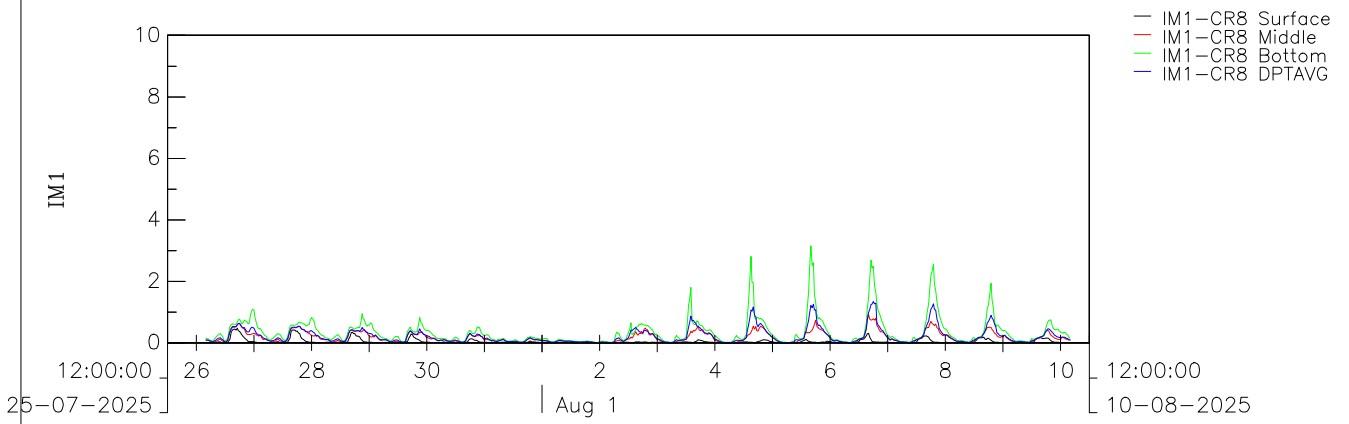
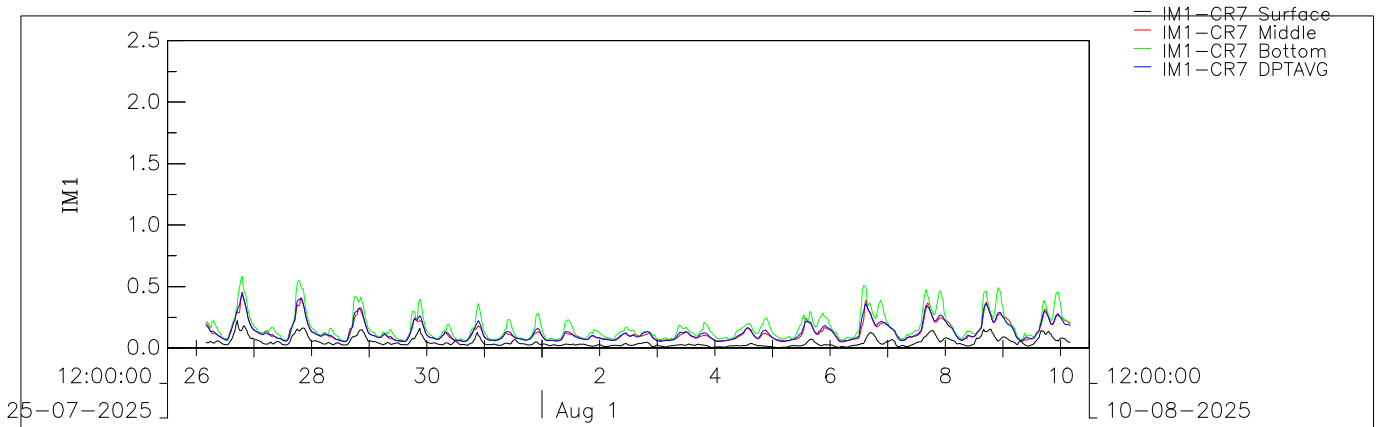
Wet Season

1st Plot: C6; 2nd Plot: C7; 3rd Plot: CR1; 4th Plot: CR2

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SS Elevations (mg/L) at Stations CR3, CR4, CR5, CR6	Wet Season	
1st Plot: CR3; 2nd Plot: CR4; 3rd Plot: CR5; 4th Plot: CR6		
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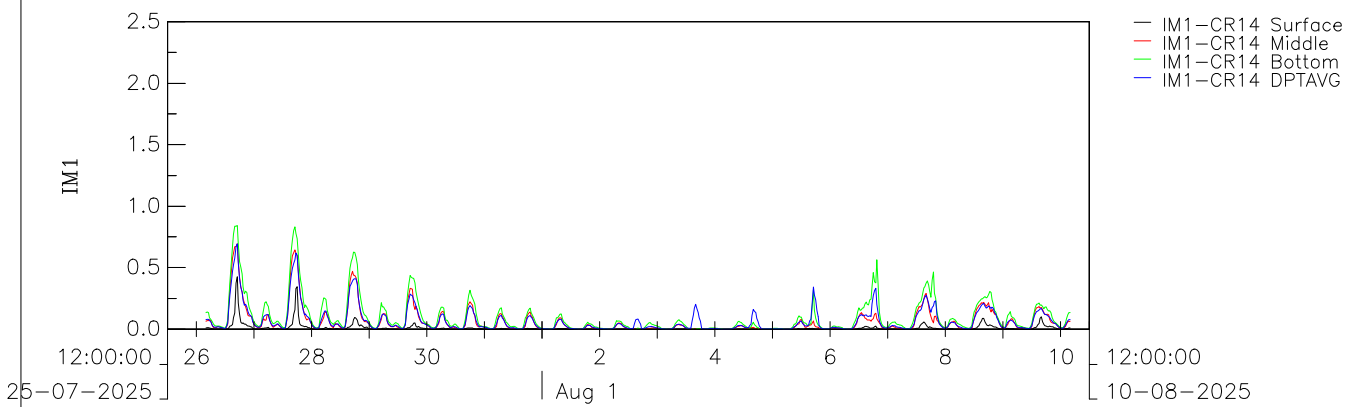
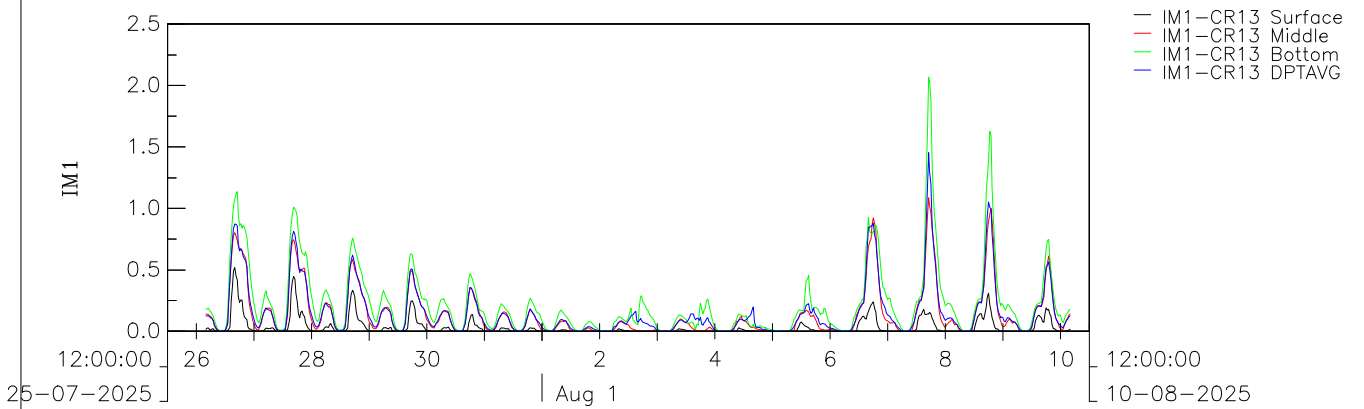
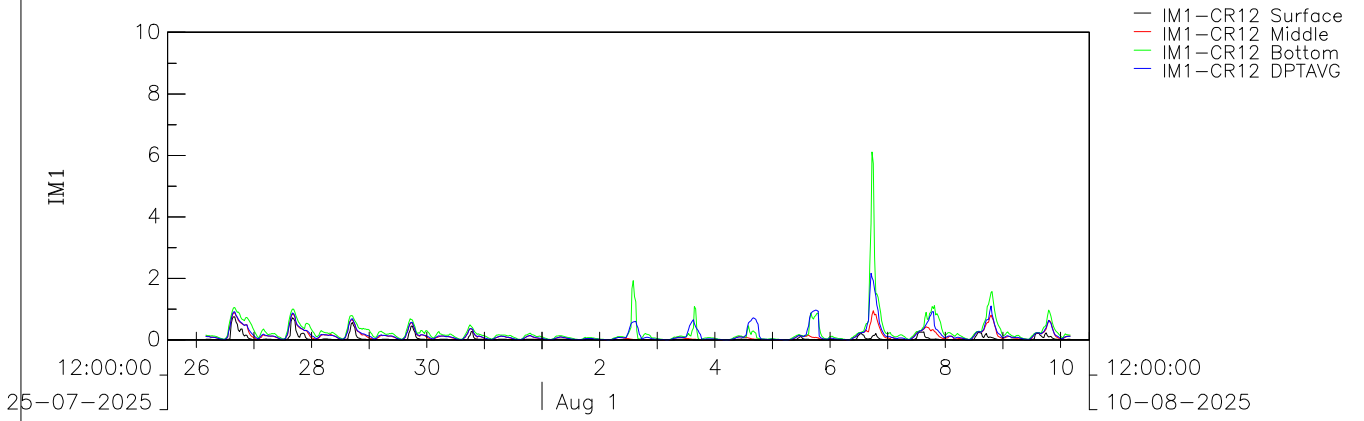
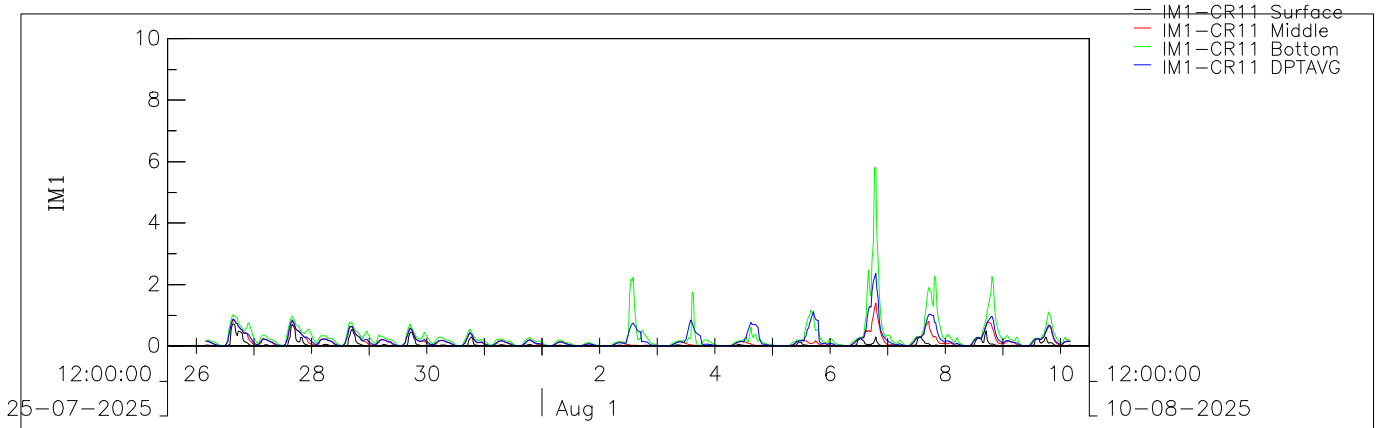


SS Elevations (mg/L) at Stations CR7, CR8, CR9, CR10

Wet Season

1st Plot: CR7; 2nd Plot: CR8; 3rd Plot: CR9; 4th Plot: CR10

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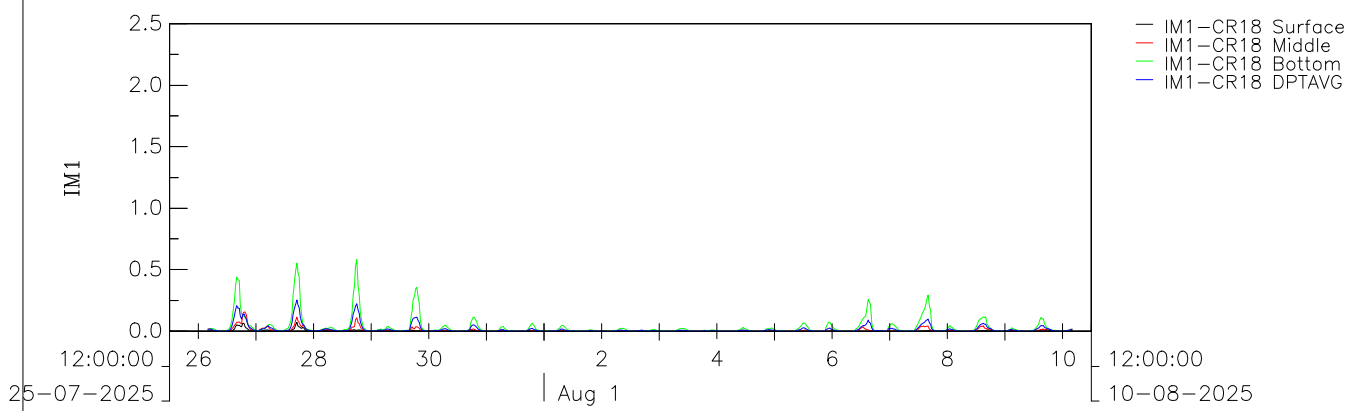
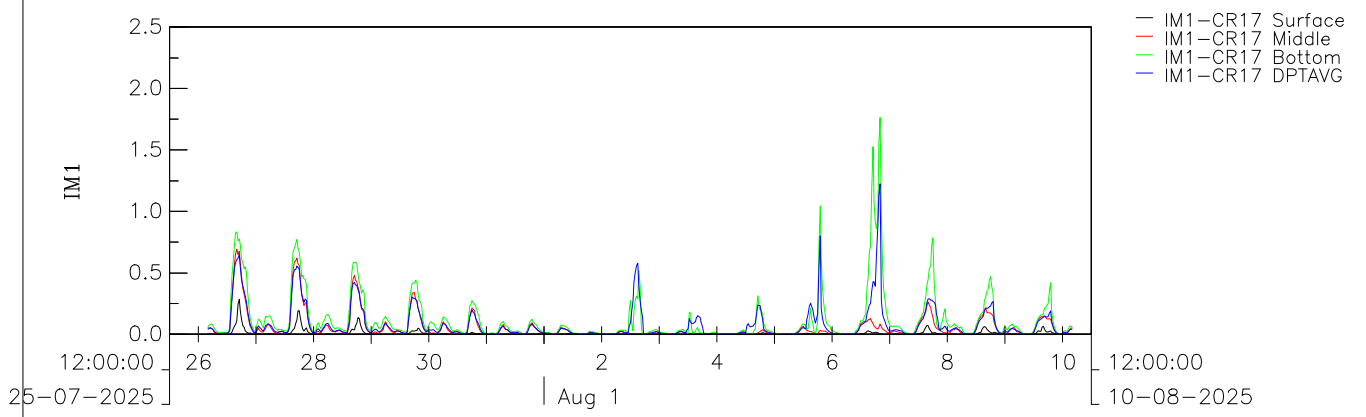
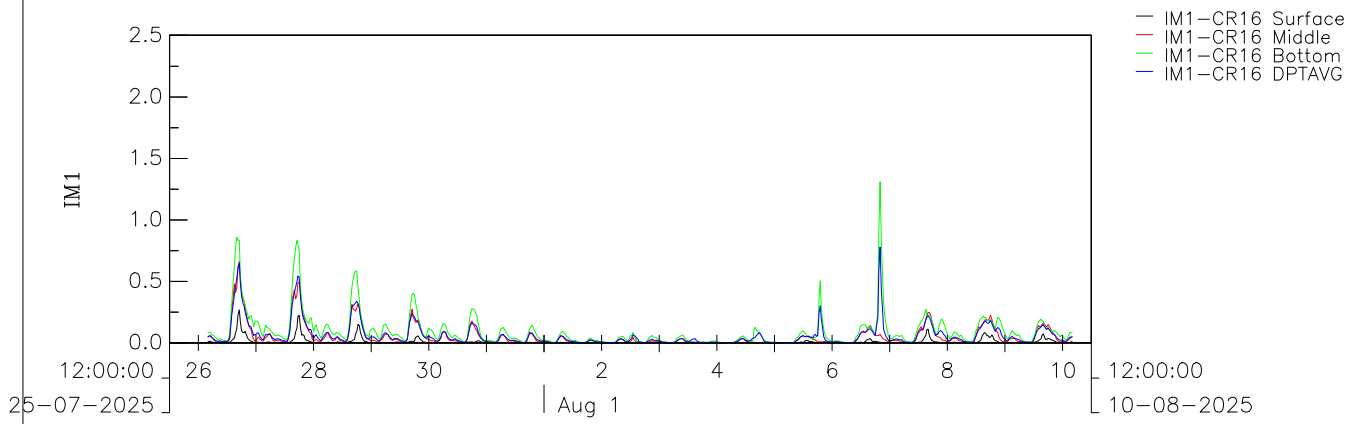
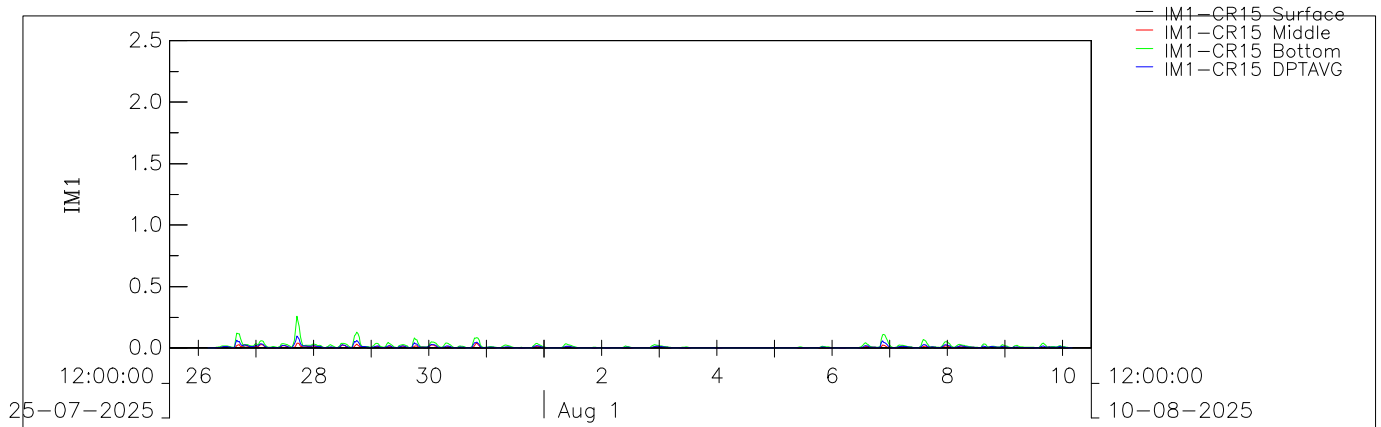


SS Elevations (mg/L) at Stations CR11, CR12, CR13, CR14

Wet Season

1st Plot: CR11; 2nd Plot: CR12; 3rd Plot: CR13; 4th Plot: CR14

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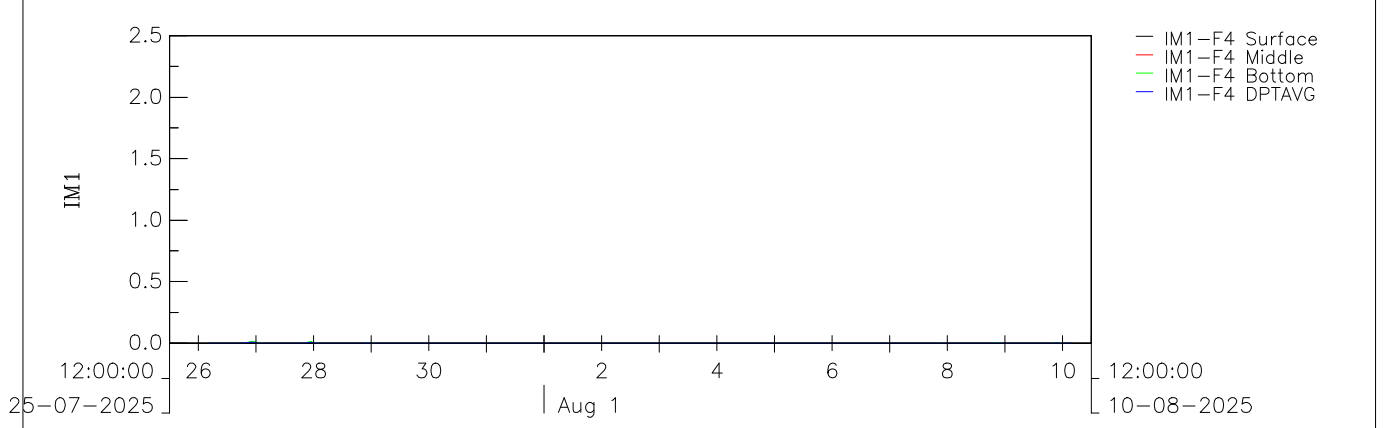
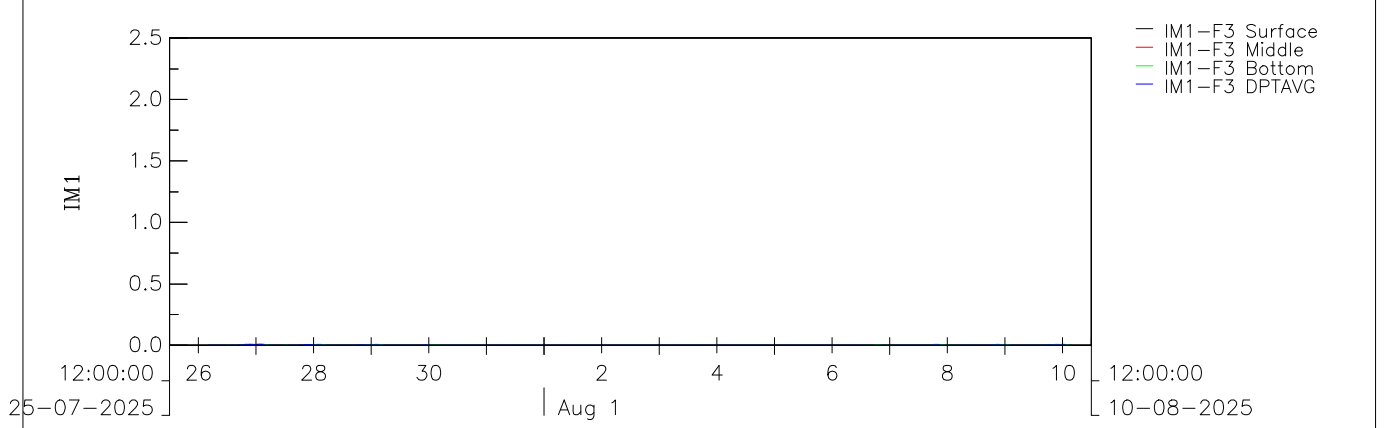
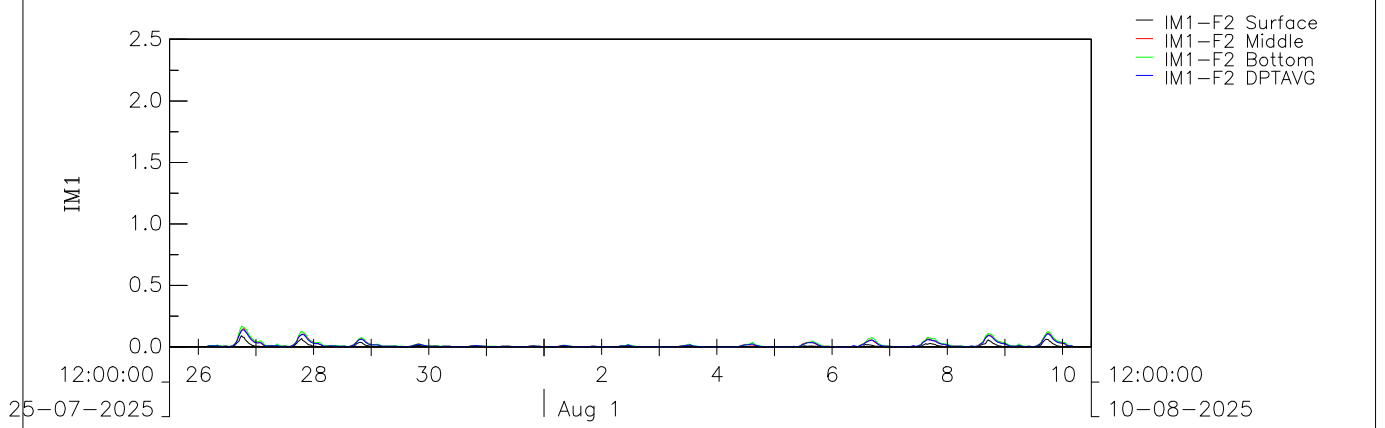
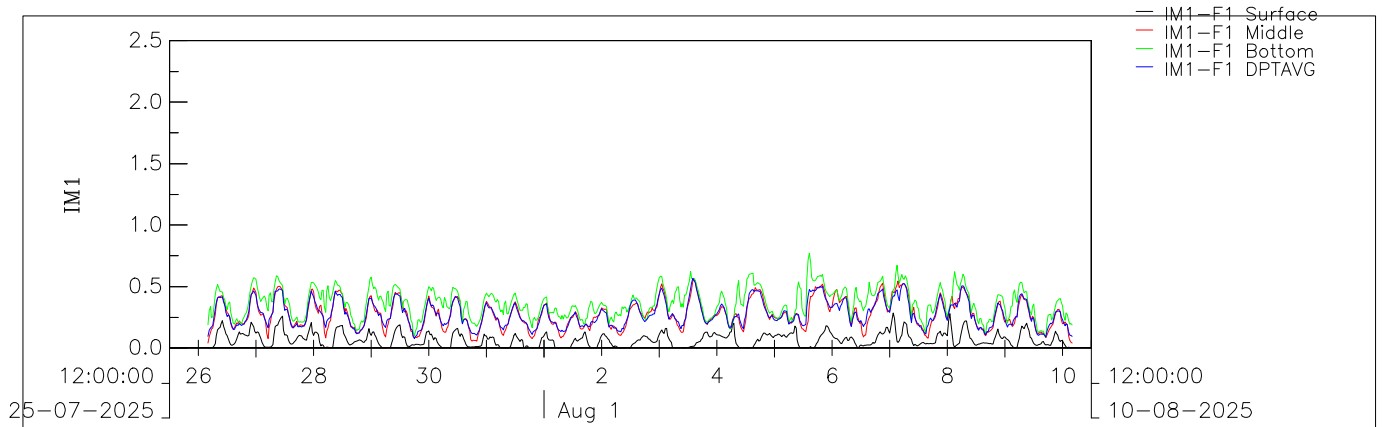


SS Elevations (mg/L) at Stations CR15, CR16, CR17, CR18

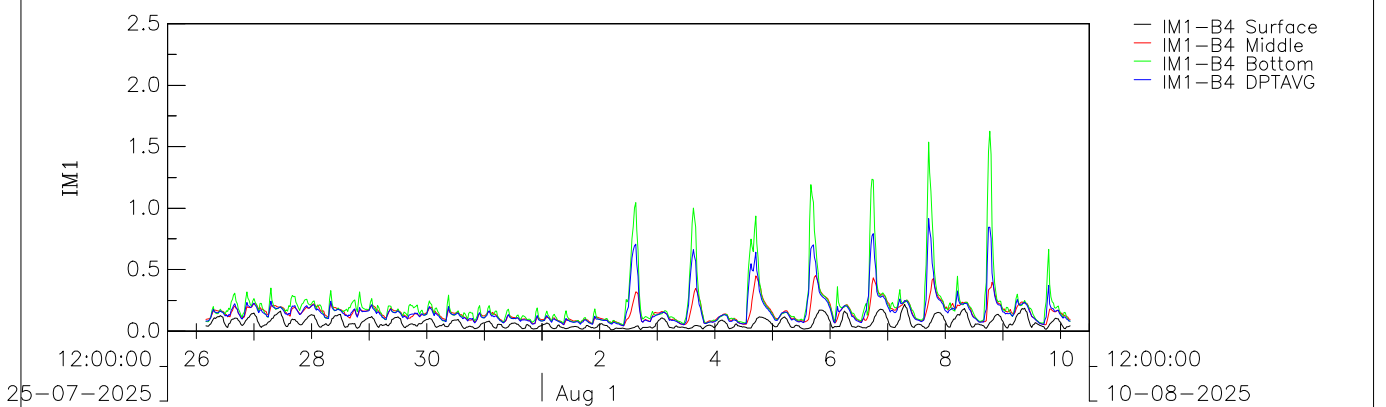
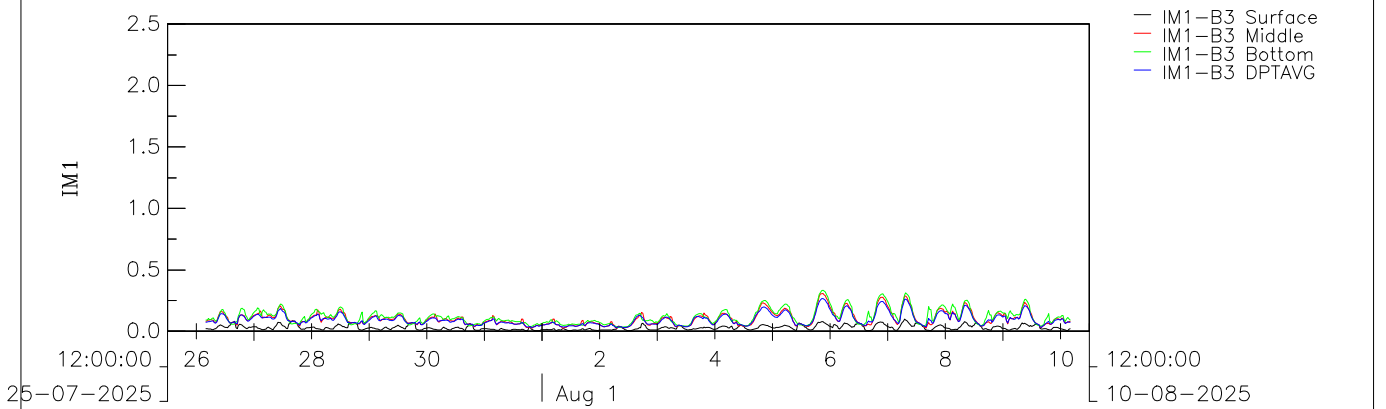
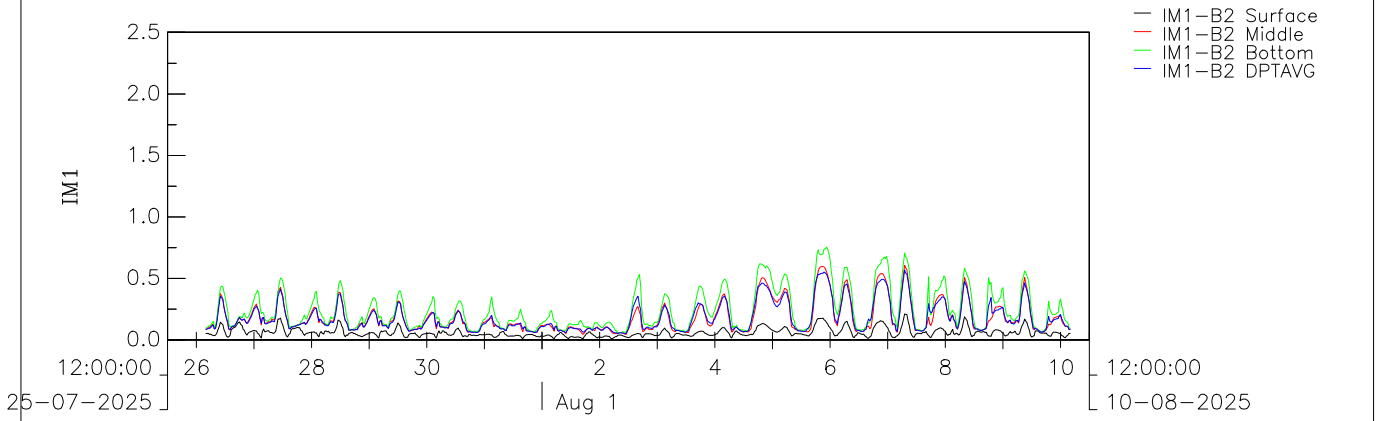
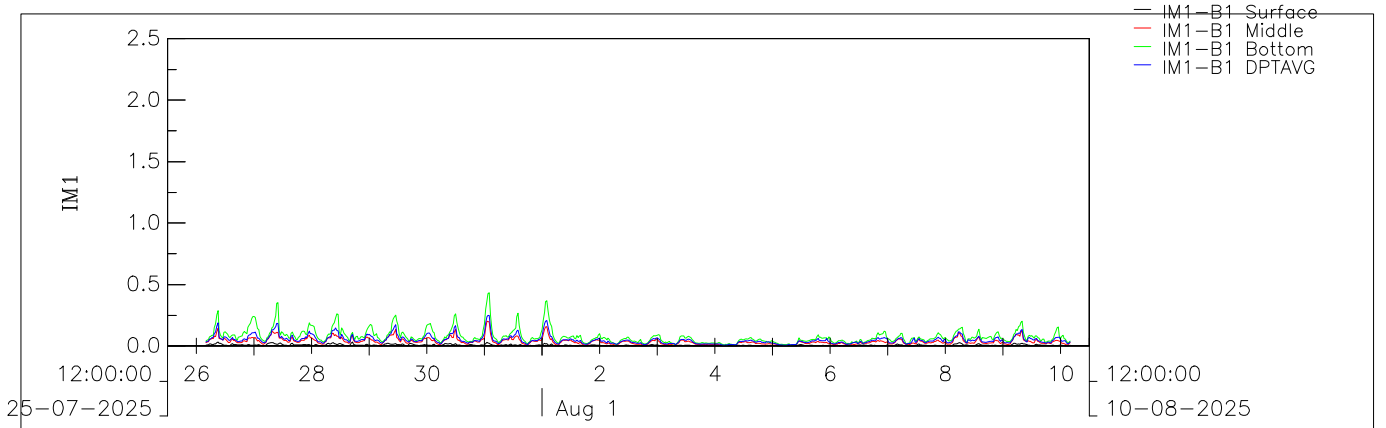
Wet Season

1st Plot: CR15; 2nd Plot: CR16; 3rd Plot: CR17; 4th Plot: CR18

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SS Elevations (mg/L) at Stations F1, F2, F3, F4	Wet Season	
1st Plot: F1; 2nd Plot: F2; 3rd Plot: F3; 4th Plot: F4		
Mott MacDonald Hong Kong Ltd		

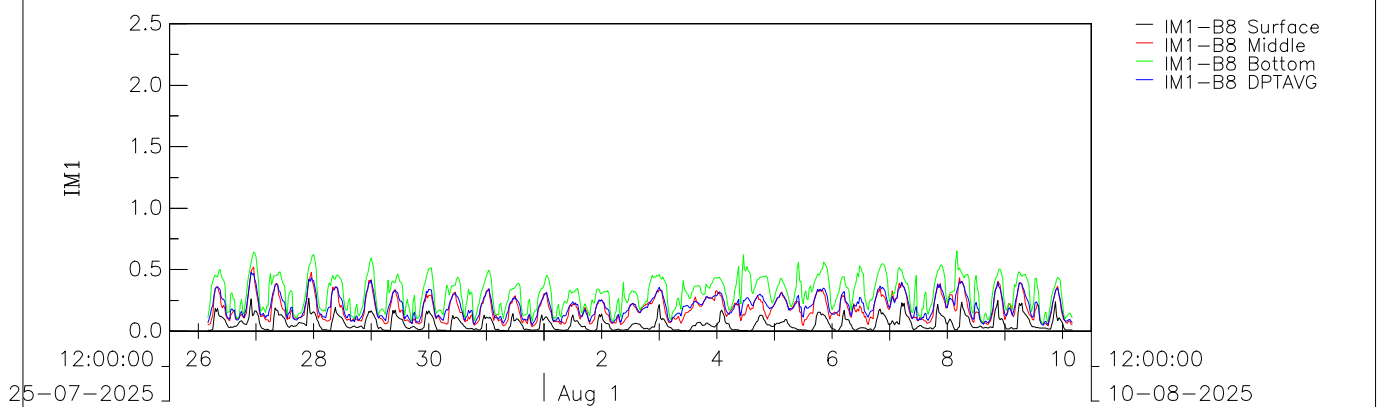
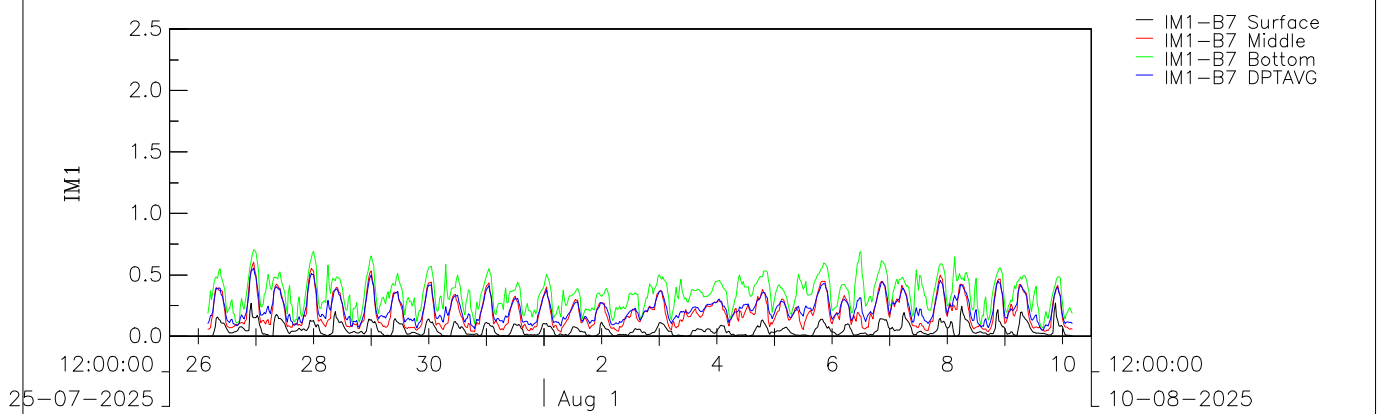
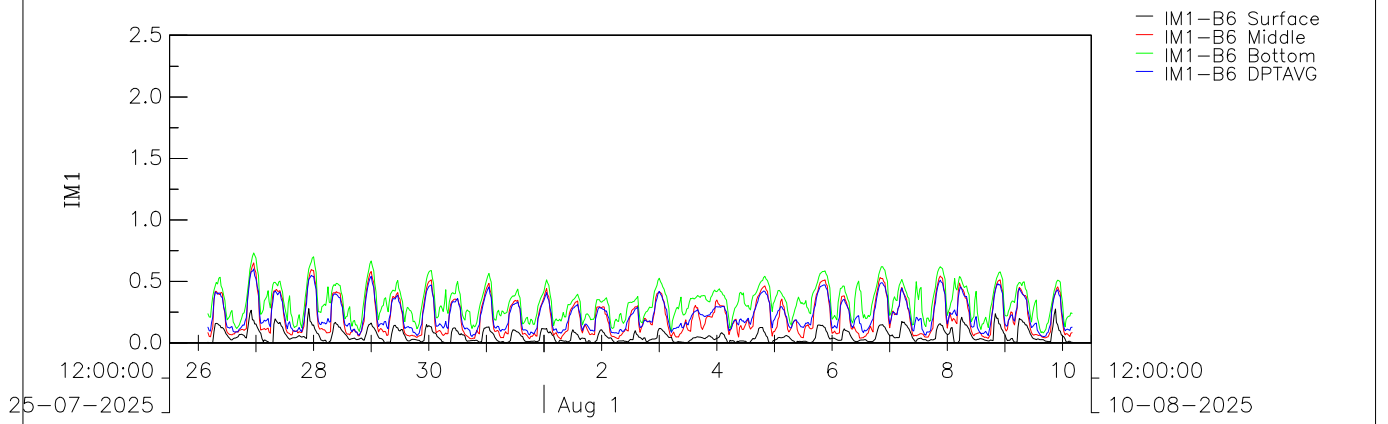
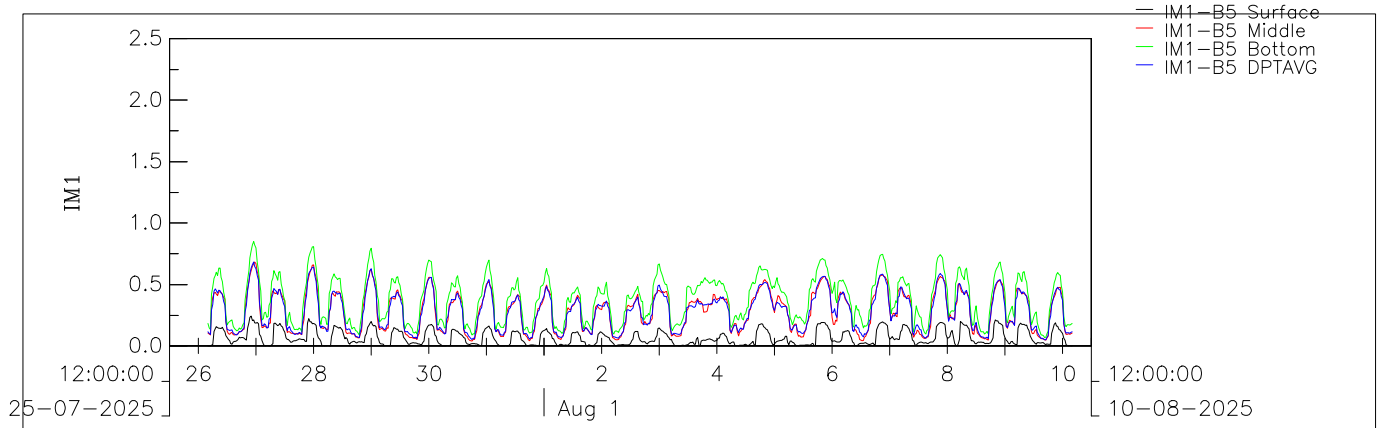


SS Elevations (mg/L) at Stations B1, B2, B3, B4

Wet Season

1st Plot: B1; 2nd Plot: B2; 3rd Plot: B3; 4th Plot: B4

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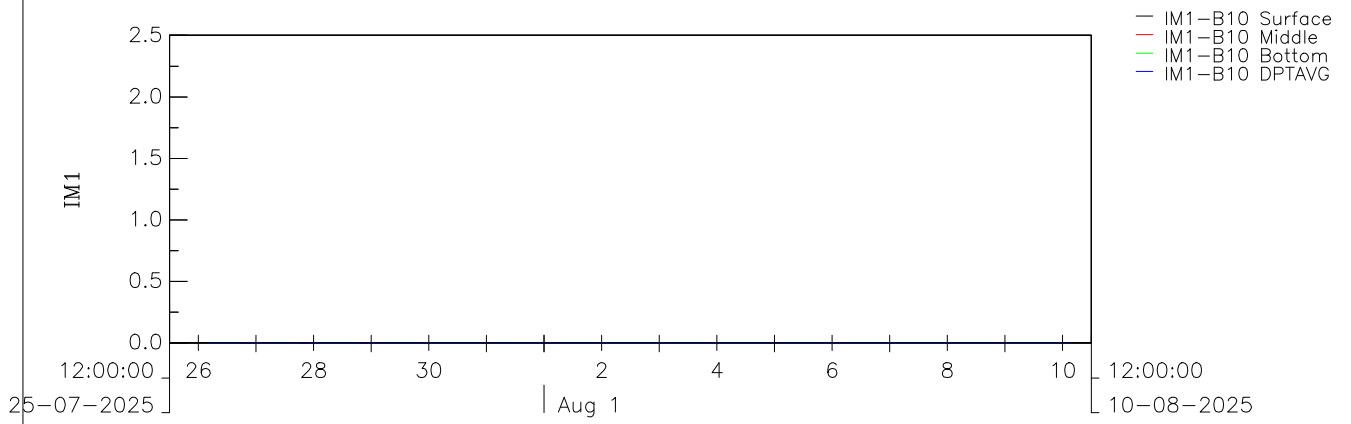
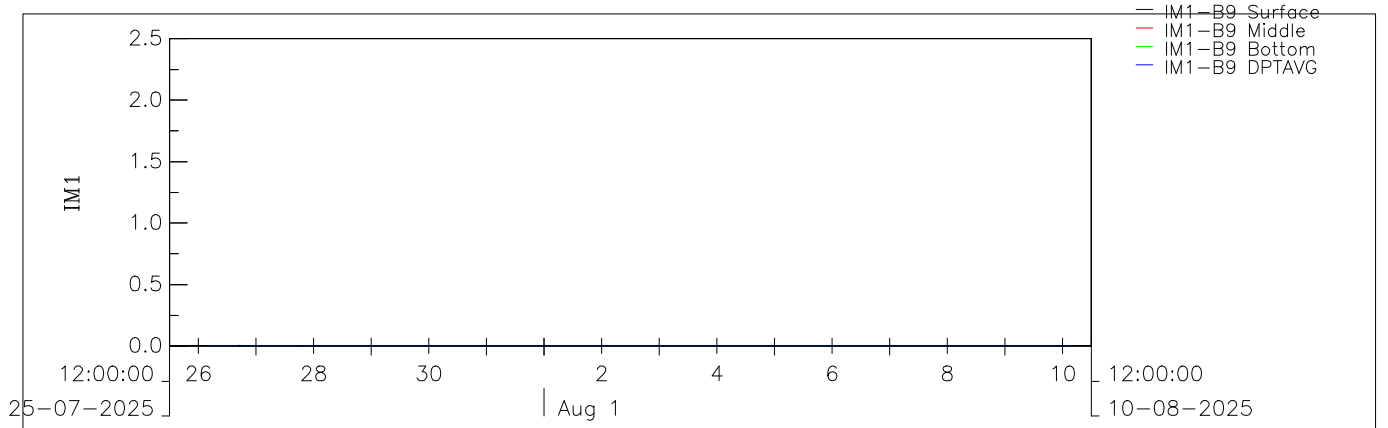


SS Elevations (mg/L) at Stations B5, B6, B7, B8

Wet Season

1st Plot: B5; 2nd Plot: B6; 3rd Plot: B7; 4th Plot: B8

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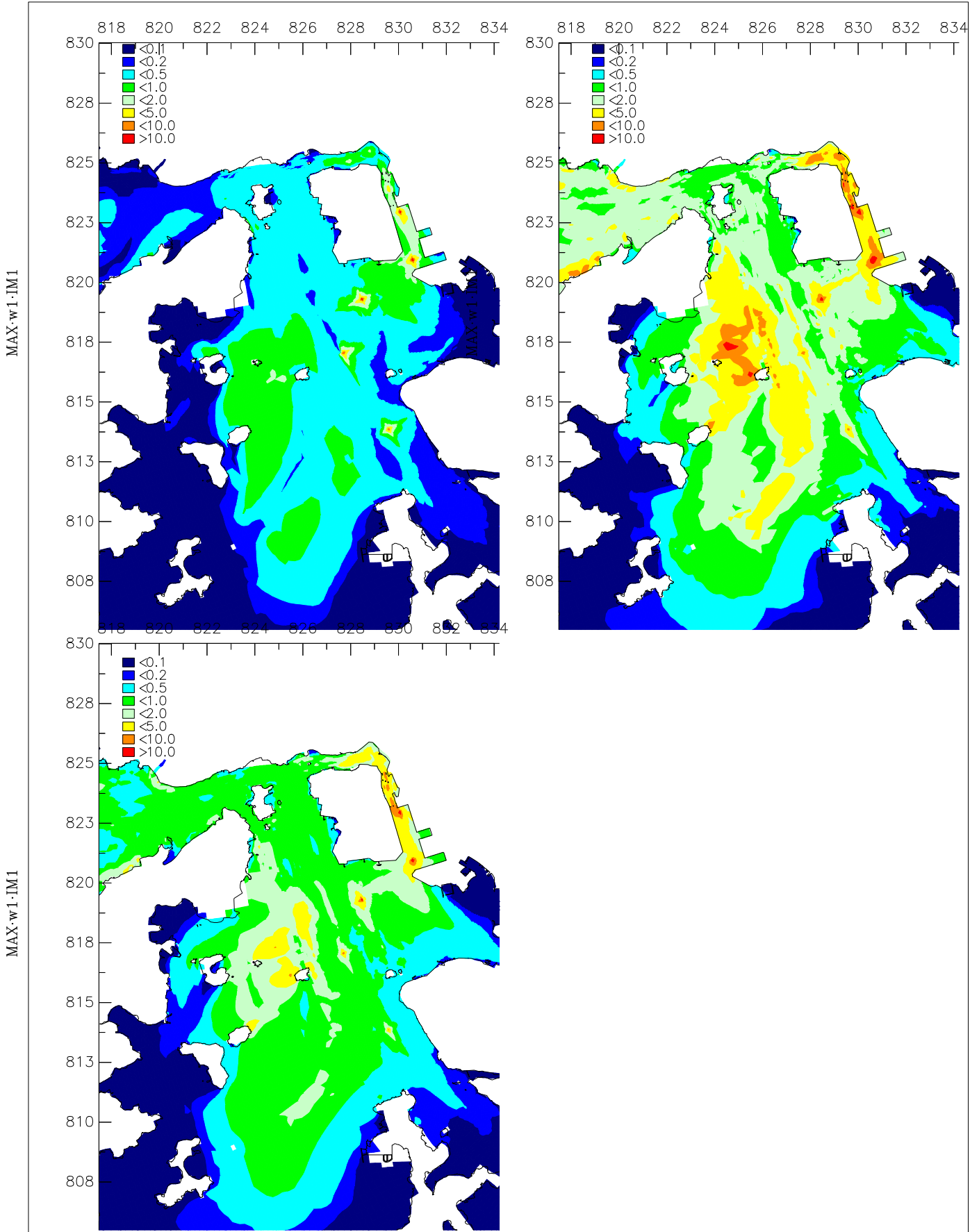


SS Elevations (mg/L) at Stations B9, B10

Wet Season

1st Plot: B9; 2nd Plot: B10

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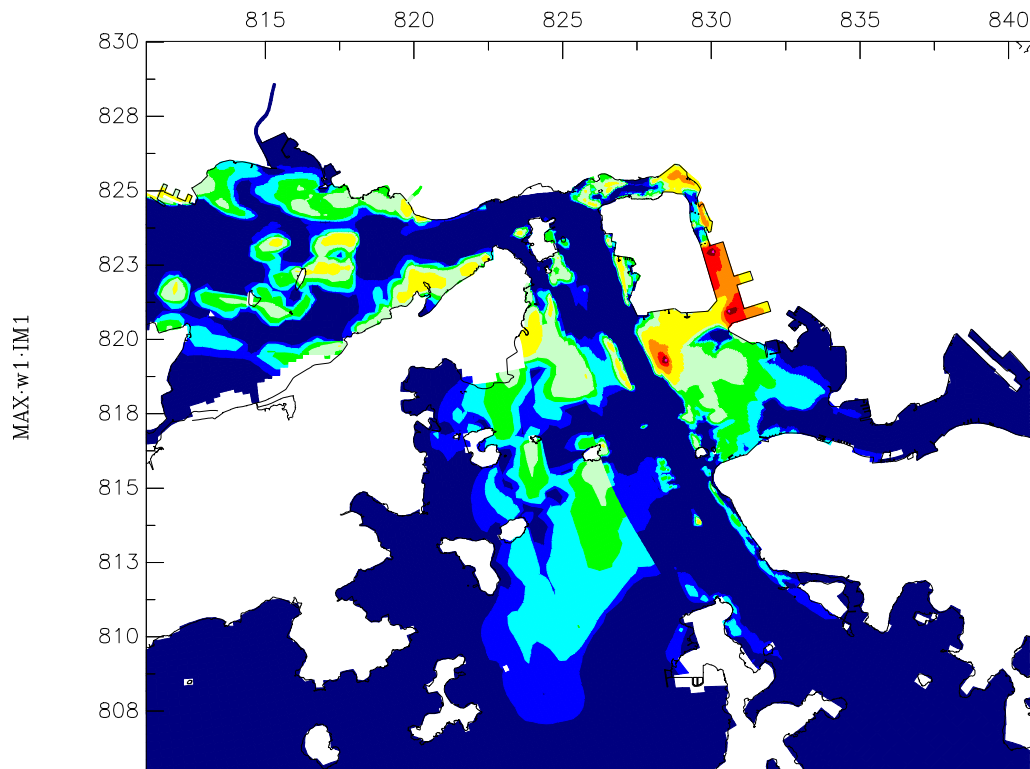
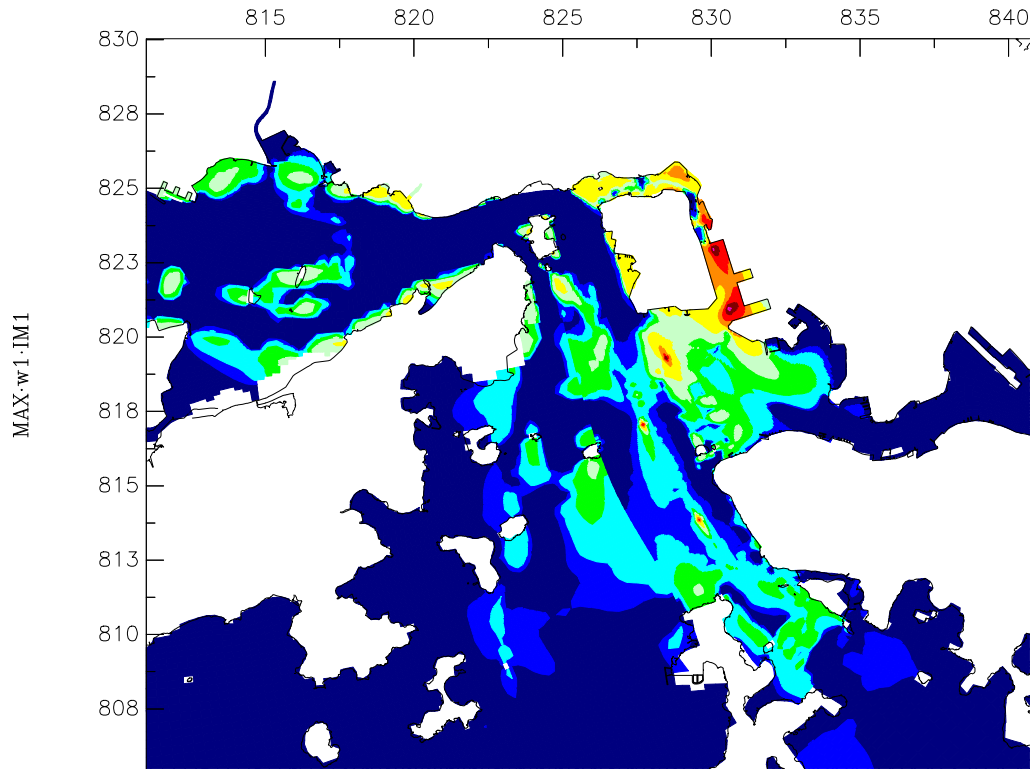


Max. SS Elevation (mg/L)
 Upper left: surface; Upper right: bottom
 Lower left: depth averaged

Wet season

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Appendix A3.3



Daily Average Deposition Rate (kg/m²/day)

Upper Plot: Dry season

Lower Plot: Wet season

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