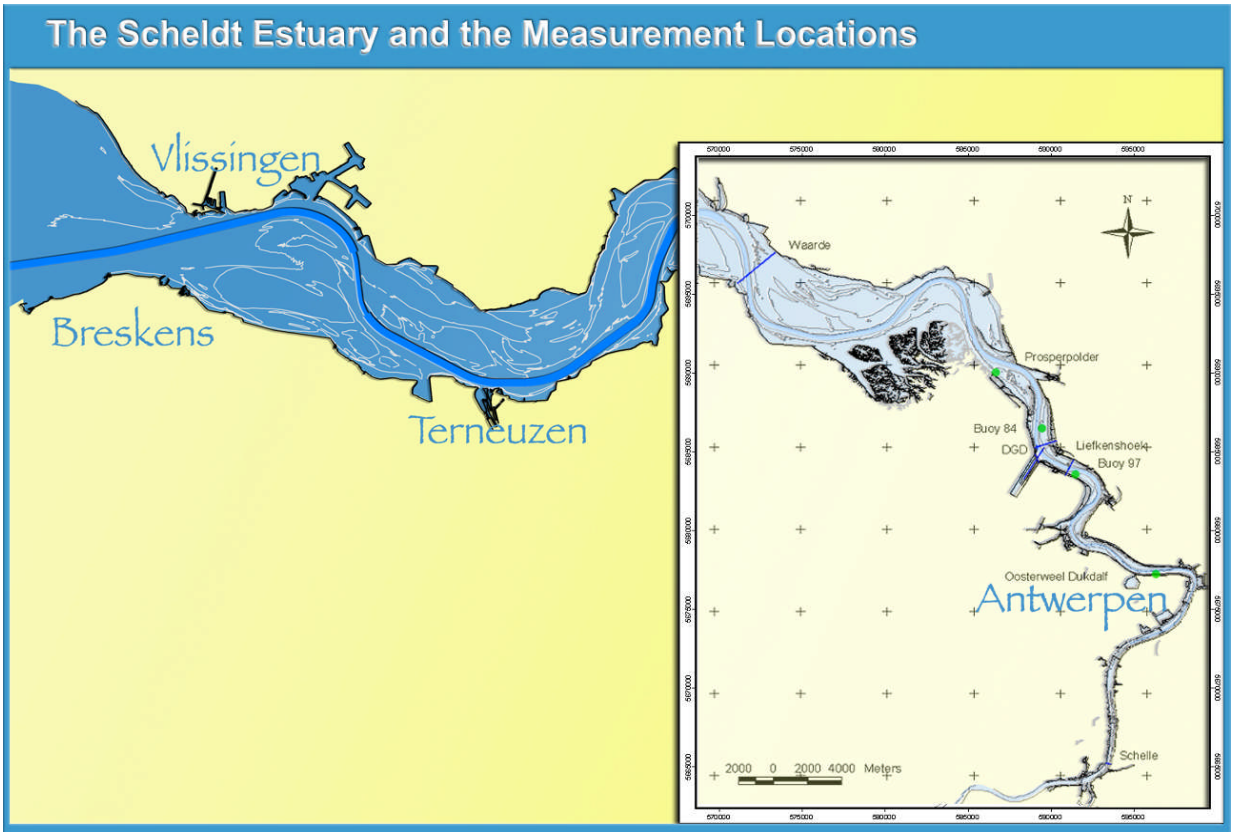
VLAAMSE OVERHEID
DEPARTEMENT MOBILITEIT EN OPENBARE WERKEN

WATERBOUWKUNDIG LABORATORIUM

Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing

Bestek 16EB/05/04



Deelrapport 3.10 :

Omgevingscondities in de rivier de Schelde april – juni 2007

Report 3.10 :

Overview of boundary conditions in the river Scheldt April – June 2007

31 oktober 2007

I/RA/11283/07.097/MSA

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Approval

Version	Date	Author	Project manager	Commissioner
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1. INTRODUCTION

1.1. The assignment

This report is part of the set of reports describing the results of the long-term measurements conducted in Deurganckdok aiming at the monitoring and analysis of silt accretion. This measurement campaign is an extension of the study "Extension of the study about density currents in the Beneden Zeeschelde" as part of the Long Term Vision for the Scheldt estuary. It is complementary to the study 'Field measurements high-concentration benthic suspensions (HCBS 2)'.

The terms of reference for this study were prepared by the 'Departement Mobiliteit en Openbare Werken van de Vlaamse Overheid, Afdeling Waterbouwkundig Laboratorium' (16EB/05/04). The repetition of this study was awarded to International Marine and Dredging Consultants NV in association with WL|Delft Hydraulics and Gems International on 10/01/2006. The project term was prolonged with an extra year from April 2007 till March 2008.

Waterbouwkundig Laboratorium– Cel Hydrometrie Schelde provided data on discharge, tide, salinity and turbidity along the river Scheldt and provided survey vessels for the long term and through tide measurements. Afdeling Maritieme Toegang provided maintenance dredging data. Agentschap voor Maritieme Dienstverlening en Kust – Afdeling Kust and Port of Antwerp provided depth sounding measurements.

The execution of the study involves a twofold assignment:

- Part 1: Setting up a sediment balance of Deurganckdok covering a period of one year, i.e. 04/2007 – 03/2008
- Part 2: An analysis of the parameters contributing to siltation in Deurganckdok

1.2. Purpose of the study

The Lower Sea Scheldt (Beneden Zeeschelde) is the stretch of the Scheldt estuary between the Belgium-Dutch border and Rupelmonde, where the entrance channels to the Antwerp sea locks are located. The navigation channel has a sandy bed, whereas the shallower areas (intertidal areas, mud flats, salt marshes) consist of sandy clay or even pure mud sometimes. This part of the Scheldt is characterized by large horizontal salinity gradients and the presence of a turbidity maximum with depth-averaged concentrations ranging from 50 to 500 mg/l at grain sizes of 60 - 100 μm. The salinity gradients generate significant density currents between the river and the entrance channels to the locks, causing large siltation rates. It is to be expected that in the near future also the Deurganckdok will suffer from such large siltation rates, which may double the amount of dredging material to be dumped in the Lower Sea Scheldt.

Results from the study may be interpreted by comparison with results from the HCBS and HCBS2 studies covering the whole Lower Sea Scheldt. These studies included through-tide measurement campaigns in the vicinity of Deurganckdok and long term measurements of turbidity and salinity in and near Deurganckdok.

The first part of the study focuses on obtaining a sediment balance of Deurganckdok. Aside from natural sedimentation, the sediment balance is influenced by the maintenance and capital dredging works. This involves sediment influx from capital dredging works in the Deurganckdok, and internal relocation and removal of sediment by maintenance dredging works. To compute a sediment balance an inventory of bathymetric data (depth soundings), density measurements of the

deposited material and detailed information of capital and maintenance dredging works will be made up.

The second part of the study is to gain insight in the mechanisms causing siltation in Deurganckdok, it is important to follow the evolution of the parameters involved, and this on a long and short term basis (long term & through-tide measurements). Previous research has shown the importance of water exchange at the entrance of Deurganckdok is essential for understanding sediment transport between the dock and the Scheldt river.

1.3. Overview of the study

1.3.1. Reports

Reports of the project 'Opvolging aanslibbing Deurganckdok' between April 2007 till March 2008 are summarized in Table 1-1.

This report, report 3.10, is one of set of reports for understanding the sediment transport between Deurganckdok and the river Scheldt, which belongs to the second part of this project.

The report is also a continuation of the set of ambient conditions reports of HCBS2 (IMDC, 2005k; IMDC, 2005l; IMDC, 2006l; IMDC, 2006p) and 'Opvolging aanslibbing Deurganckdok' (IMDC, 2007b). This new ambient conditions report gives an overview of the ambient conditions from April till June 2007 in the river Scheldt. An overview of the HCBS2 and 'Opvolging aanslibbing Deurganckdok' (between April 2006 till March 2007) reports are given in APPENDIX A.

Table 1-1: Overview of Deurganckdok Reports

Report	Description
Sediment Balance: Bathymetry surveys, Density measurements, Maintenance and construction dredging activities	
1.10	Sediment Balance: Three monthly report 1/4/2007 - 30/06/2007 (I/RA/11283/07.081/MSA)
1.11	Sediment Balance: Three monthly report 1/7/2007 – 30/09/2007 (I/RA/11283/07.082/MSA)
1.12	Sediment Balance: Three monthly report 1/10/2007 – 31/12/2007 (I/RA/11283/07.083/MSA)
1.13	Sediment Balance: Three monthly report 1/1/2007 – 31/03/2007 (I/RA/11283/07.084/MSA)
1.14	Annual Sediment Balance (I/RA/11283/07.085/MSA)
Factors contributing to salt and sediment distribution in Deurganckdok: Salt-Silt (OBS3A) & Frame measurements, Through tide measurements (SiltProfiling & ADCP) & Calibrations	
2.10	Through tide measurement Siltprofiler winter (I/RA/11283/07.086/MSA)
2.11	Through tide measurement Salinity Profiling winter (I/RA/11283/07.087/MSA)
2.12	Through tide measurement Sediview winter (I/RA/11283/07.088/MSA)
2.13	Through tide measurement Sediview winter (I/RA/11283/07.089/MSA)
2.14	Through tide measurement Sediview winter (I/RA/11283/07.090/MSA)
2.15	Through tide measurement Siltprofiler (to be scheduled) (I/RA/11283/07.091/MSA)
2.16	Salt-Silt distribution Deurganckdok summer (21/6/2007 – 30/07/2007) (I/RA/11283/07.092/MSA)
2.17	Salt-Silt distribution & Frame Measurements Deurganckdok autumn (17/09/2007 - 10/12/2007) (I/RA/11283/07.093/MSA)

Report	Description
2.18	Salt-Silt distribution & Frame Measurements Deurganckdok winter (18/02/2008 - 31/3/2008) (I/RA/11283/07.094/MSA)
2.19	Calibration stationary equipment autumn (I/RA/11283/07.095/MSA)
2.20	Calibration stationary & mobile equipment winter (I/RA/11283/07.096/MSA)
Boundary Conditions: Upriver Discharge, Salt concentration Scheldt, Bathymetric evolution in access channels, dredging activities in Lower Sea Scheldt and access channels	
3.10	Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007 (I/RA/11283/07.097/MSA)
3.11	Boundary conditions: Three monthly report 1/7/2007 – 30/09/2007 (I/RA/11283/07.098/MSA)
3.12	Boundary conditions: Three monthly report 1/10/2007 – 31/12/2007 (I/RA/11283/07.099/MSA)
3.13	Boundary conditions: Three monthly report 1/1/2008 – 31/03/2008 (I/RA/11283/07.100/MSA)
3.14	Boundary conditions: Annual report (I/RA/11283/07.101/MSA)
Analysis	
4.2	Analysis of Siltation Processes and Factors (I/RA/11283/07.102/MSA)

1.3.2. Measurement actions

Following measurements have been carried out during the course of this project:

1. Monitoring upstream discharge in the river Scheldt.
2. Monitoring Salt and sediment concentration in the Lower Sea Scheldt taken from on permanent data acquisition sites at Oosterweel, Prosperpolder and up- and downstream of the Deurganckdok.
3. Long term measurement of salt distribution in Deurganckdok.
4. Long term measurement of sediment concentration in Deurganckdok
5. Monitoring near-bed processes in the central trench in the dock, near the entrance as well as near the landward end: near-bed turbidity, near-bed current velocity and bed elevation variations are measured from a fixed frame placed on the dock's bed.
6. Measurement of current, salt and sediment transport at the entrance of Deurganckdok for which ADCP backscatter intensity over a full cross section are calibrated with the Sediview procedure and vertical sediment and salt profiles are recorded with the SiltProfiler equipment
7. Through tide measurements of vertical sediment concentration profiles -including near bed highly concentrated suspensions- with the SiltProfiler equipment. Executed over a grid of points near the entrance of Deurganckdok.
8. Monitoring dredging activities at entrance channels towards the Kallo, Zandvliet and Berendrecht locks
9. Monitoring dredging and dumping activities in the Lower Sea Scheldt

In situ calibrations were conducted on several dates to calibrate all turbidity and conductivity sensors (IMDC, 2006a & IMDC, 2007a).

1.4. Structure of this report

This report is the factual data report for two measurement actions during the period between April and June 2007:

- Monitoring salinity and sediment concentration in the Lower Sea Scheldt taken from on permanent data acquisition sites at Oosterweel, Prosperpolder and up- (buoy 97) and downstream (buoy 84) of the Deurganckdok.
- Monitoring dredging and dumping activities in the Lower Sea Scheldt.

Beside these actions, navigation and meteorological conditions are also reported.

The first chapter comprises an introduction. The second chapter describes the project. Chapter 3 summarizes the measurement campaign, while the ambient conditions are discussed in Chapter 4.

2. SEDIMENTATION IN DEURGANCKDOK

2.1. Project Area: Deurganckdok

Deurganckdok is a tidal dock situated at the left bank in the Lower Sea Scheldt, between Liefkenshoek and Doel. Deurganckdok has the following characteristics:

1. the dock has a total length of 2750 m and is 450 m wide at the Scheldt end and 400 m wide at the inward end of the dock
2. The bottom of Deurganckdok is provided at a depth of –17m TAW in the transition zones between the quay walls and the central trench and of –19m TAW in the central trench.
3. the quay walls reach up to +9m TAW

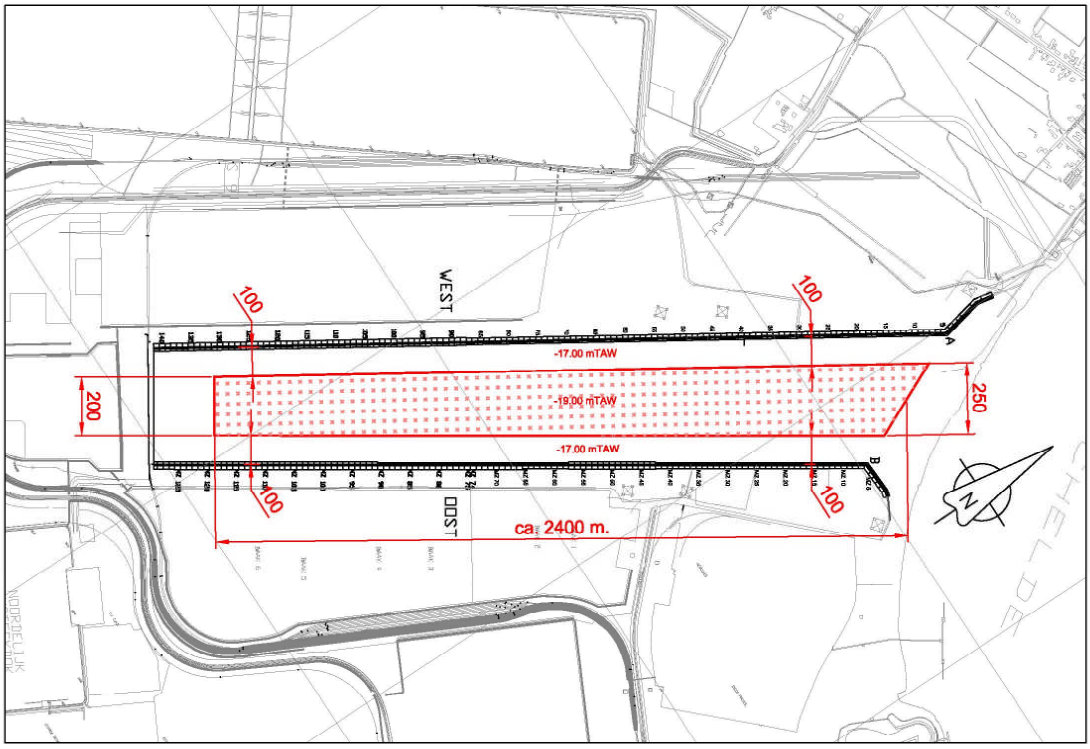

Figure 2-1: Overview of Deurganckdok

The dredging of the dock is performed in 3 phases. On 18 February 2005 the dike between the Scheldt and the Deurganckdok was breached. On 6 July 2005 Deurganckdok was officially opened. The second dredging phase was finalized a few weeks later. The first terminal operations have started since.

2.2. Overview of the studied parameters

The first part of the study aims at determining a sediment balance of Deurganckdok and the net influx of sediment. The sediment balance comprises a number of sediment transport modes: deposition, influx from capital dredging works, internal replacement and removal of sediments due to maintenance dredging (Figure 2-2).

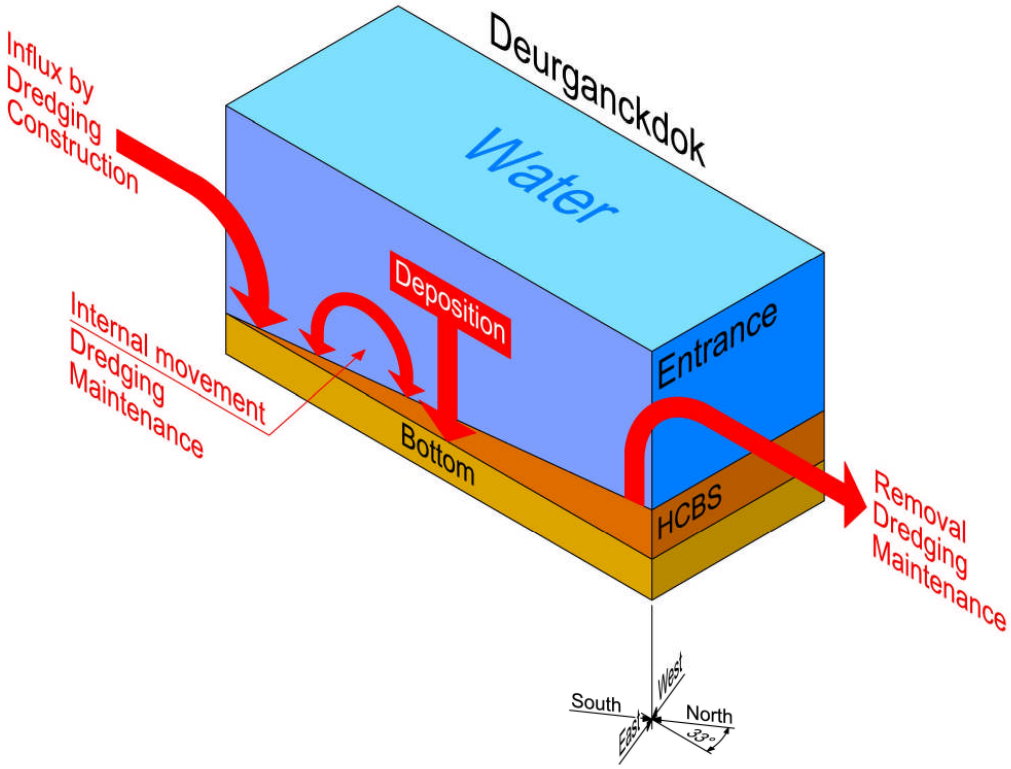

Figure 2-2: Elements of the sediment balance

A net deposition can be calculated from a comparison with a chosen initial condition t_0 (Figure 2-3). The mass of deposited sediment is determined from the integration of bed density profiles recorded at grid points covering the dock. Subtracting bed sediment mass at t_0 leads to the change in mass of sediments present in the dock (mass growth). Adding cumulated dry matter mass of dredged material removed since t_0 and subtracting any sediment influx due to capital dredging works leads to the total cumulated mass entered from the Scheldt river since t_0.

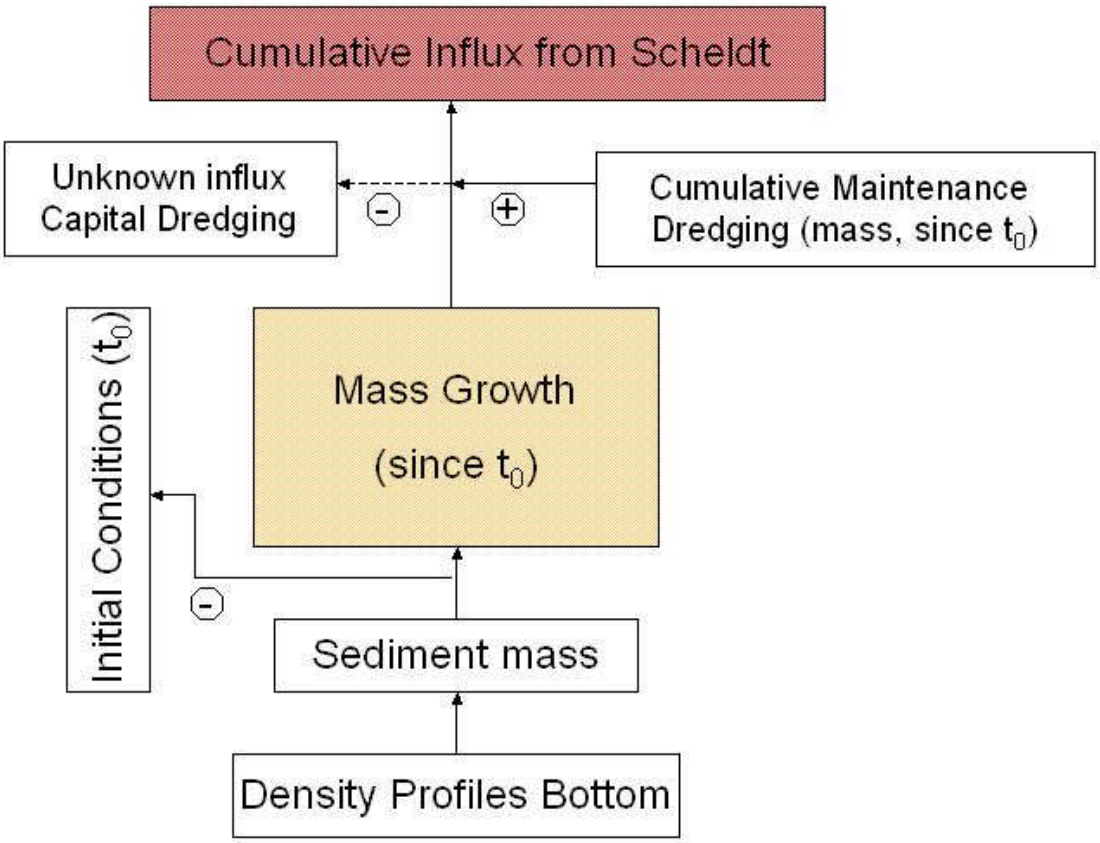

Figure 2-3: Determining a sediment balance

The main purpose of the second part of the study is to gain insight in the mechanisms causing siltation in Deurganckdok. The following mechanisms will be aimed at in this part of the study:

- Tidal prism, i.e. the extra volume in a water body due to high tide
- Vortex patterns due to passing tidal current
- Density currents due to salt gradient between the Scheldt river and the dock
- Density currents due to highly concentrated benthic suspensions

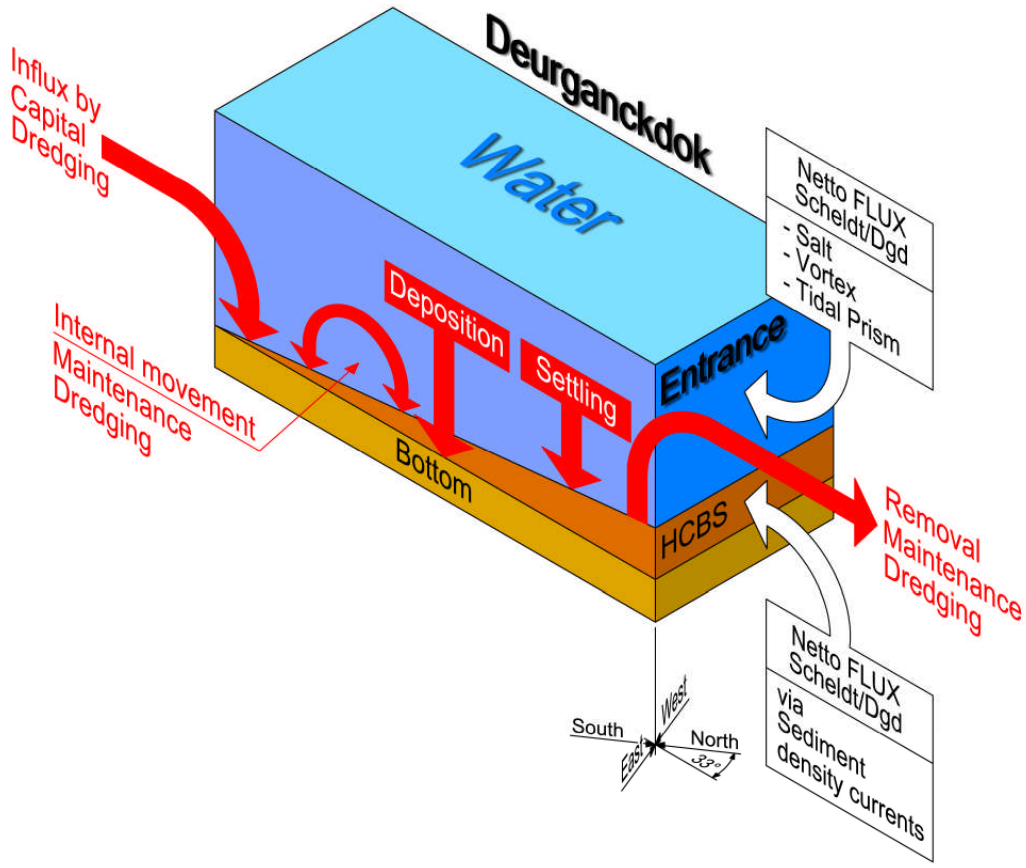

Figure 2-4: Transport mechanisms

These aspects of hydrodynamics and sediment transport have been landmark in determining the parameters to be measured during the project. Measurements will be focused on three types of timescales: one tidal cycle, one neap-spring cycle and seasonal variation within one year.

Following data are being collected to understand these mechanisms:

- Monitoring upstream discharge in the river Scheldt.
- Monitoring Salt and sediment concentration in the Lower Sea Scheldt at permanent measurement locations at Oosterweel, up- and downstream of the Deurganckdok.
- Long term measurement of salt and suspended sediment distribution in Deurganckdok.
- Monitoring near-bed processes (current velocity, turbidity, and bed elevation variations) in the central trench in the dock, near the entrance as well as near the current deflecting wall location.
- Dynamic measurements of current, salt and sediment transport at the entrance of Deurganckdok.
- Through tide measurements of vertical sediment concentration profiles -including near bed high concentrated benthic suspensions.
- Monitoring dredging activities at entrance channels towards the Kallo, Zandvliet and Berendrecht locks as well as dredging and dumping activities in the Lower Sea Scheldt.
- In situ calibrations were conducted on several dates to calibrate all turbidity and conductivity sensors.

2.3. Specific objectives of this report

The natural ambient conditions in the Scheldt estuary change from the mouth near Vlissingen to the upstream boundaries near Gent and the tributaries. Furthermore navigation and dredging activities are important human activities in the Lower Sea Scheldt.

These natural and human conditions can help to gain insight in the mechanisms causing siltation in Deurganckdok. For this reason this report summarises the following data for the period between April and June 2007:

- Ambient characteristics in the Lower Sea Scheldt:
    - Tide
    - Current
    - Salinity
    - Temperature
    - Turbidity/Suspended sediment concentration
    - Salinity downstream

- Fresh water inflow from the tributaries
- Meteorological conditions
- Human activities
    - Dredging/dumping
    - Navigation

3. THE MEASUREMENT CAMPAIGN

3.1. Overview of the measurement campaigns

Several measurement campaigns took place between the 1st of April and the 30th of June 2007. Near bed continuous monitoring took place at the entrance of Deurganckdok and finally further long term measurements were executed near buoy 84 and buoy 97. Through tide and long term salinity measurements were not executed during this reporting period. The long term measurements at buoys 84 and 97 started the 21st, respectively the 20th of September 2005 and will be continued at least until the 31st of March 2008. Table 3-1 gives an overview of the coordinates of the measurement locations and the periods when data was gathered. Considering the through tide measurements coordinates are given for the sailed transects (i.e. left bank and right bank position). Figure 3-1 shows the Lower Sea Scheldt with the measurement locations. A sketch of each measurement campaign can be found from Figure 3-2 to Figure 3-14.

A detailed description of the near bed continuous monitoring during this reporting period can be found in IMDC (2007p). The factual data of the long term measurements near buoy 84 and buoy 97 from April till June 2007 are given in this report.

Table 3-1:Measurement locations and periods for the HCBS2 and Deurganckdok measurements (01/01/2006 – 30/06/2007)

Through tide measurements: Transects					
Location	***Easting (UTM ED 50)***		***Northing (UTM ED 50)***		***Period***
Deurganckdok (in dock)	Left Bank	Right Bank	Left Bank	Right Bank	21/03/2006 & 26/09/2006
(transect Y)	589059	591298	5684948	5683077	
Liefkenshoek	Left Bank	Right Bank	Left Bank	Right Bank	22/03/2006 & 27/09/2006
(transect I)	590318	590771	5684257	5683302	
Deurganckdok (downstream)	Left Bank	Right Bank	Left Bank	Right Bank	22 & 23/03/2006 & 27 & 28/09/2006
(transect K)	588484	589775	5684924	5685384	
Deurganckdok (in dock)	Left Bank	Right Bank	Left Bank	Right Bank	22/03/2006 & 27/09/2006
(transect DGD)	588765	588541	5684056	5684527	
Schelle	Left Bank	Right Bank	Left Bank	Right Bank	23/03/2006 & 28/09/2006
(transect S)	592645	592953	5665794	5665682	

Through tide measurements: Transects					
Waarde	Left Bank	Right Bank	Left Bank	Right Bank	23/03/2006 & 28/09/2006
(transect W)	573541	571318	5696848	5694933	
Through tide measurements: Siltprofiler gauging points					
Location	***Easting (UTM ED 50)***		***Northing (UTM ED 50)***		***Period***
Location 1: Xa	588549		5684335		21/03/2006 & 26/09/2006
Location 2: Xb	588596		5684411		
Location 3: Xc	588643		5684486		
Location 4: Xd	588690		5684562		
Location 5: Xe	588737		5684638		
Location 6: Ya	588606		5684217		
Location 7: Yb	588653		5684293		
Location 8: Yc	588700		5684368		
Through tide measurements: Siltprofiler gauging points					
Location	***Easting (UTM ED 50)***		***Northing (UTM ED 50)***		***Period***
Location 9: Yd	588747		5684444		21/03/2006 & 26/09/2006
Location 10: Ye	588793		5684520		
Location 11: Za	588662		5684099		
Location 12: Zb	588709		5684174		
Location 13: Zc	588756		5684250		
Location 14: Zd	588803		5684326		
Location 15: Ze	588850		5684402		
Near bed continuous monitoring					
Location	***Easting (UTM ED 50)***		***Northing (UTM ED 50)***		***Period***
Deurganckdok CDW	588653		5684906		14/03/2006 – 05/04/2006
Deurganckdok CDW	588685		5684880		19/04/2006 – 23/05/2006
Deurganckdok Sill	588805		5684170		19/04/2006 – 23/05/2006
Deurganckdok CDW	588685		5684880		18/07/2006 – 11/10/2006
Deurganckdok Sill	588805		5684170		19/07/2006 – 11/10/2006
Deurganckdok CDW	588685		5684880		15/03/2007 – 12/04/2007

Near bed continuous monitoring			
Deurganckdok Sill	588805	5684170	09/02/2007 – 18/04/2007
Salt Silt measurements Deurganckdok			
Location	***Easting (UTM ED 50)***	***Northing (UTM ED 50)***	***Period***
P&O 1	588074	5682942	17/03/2006 – 28/04/2006
P&O 2	588767	5684045	17/03/2006 – 28/04/2006
PSA	588536	5684523	17/03/2006 – 28/04/2006
P&O 1	588074	5682942	20/07/2006 – 12/10/2006
P&O 2	588767	5684045	20/07/2006 – 12/10/2006
PSA	588536	5684523	20/07/2006 – 12/10/2006
P&O 1	588074	5682942	12/02/2007 – 27/03/2007
P&O 2	588767	5684045	12/02/2007 – 27/03/2007
PSA	588536	5684523	12/02/2007 – 27/03/2007
Settling velocity – INSSEV			
Location	***Easting (UTM ED 50)***	***Northing (UTM ED 50)***	***Period***
Deurganckdok CDW	588717	5684898	05/09/2006
Deurganckdok SILL	588800	5684250	06/09/2006
Deurganckdok Western quay wall	588452	5684355	07/09/2006

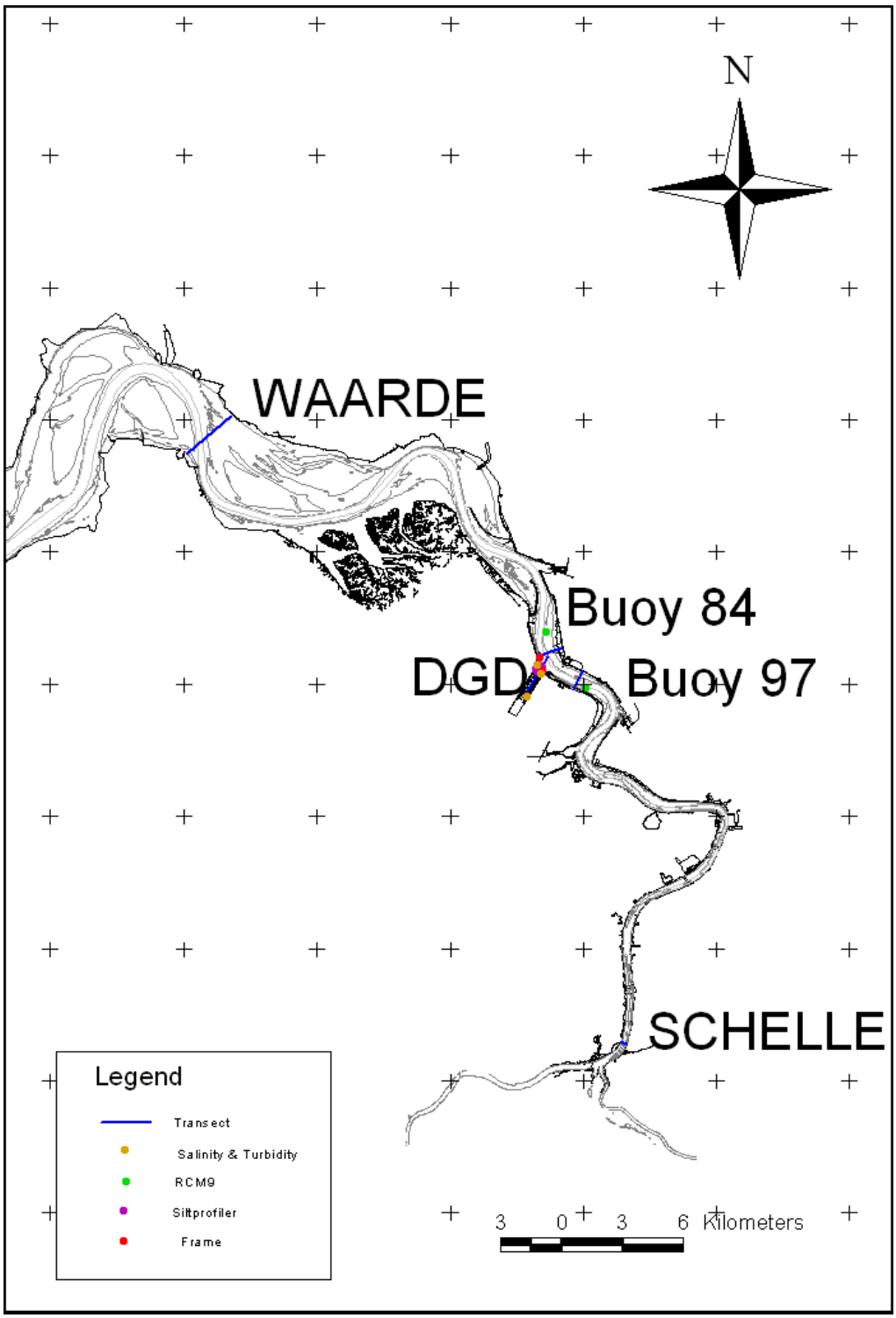

Figure 3-1: The measurement locations in the Lower Sea Scheldt and Deurganckdok (01/01/2006 – 30/06/2007)

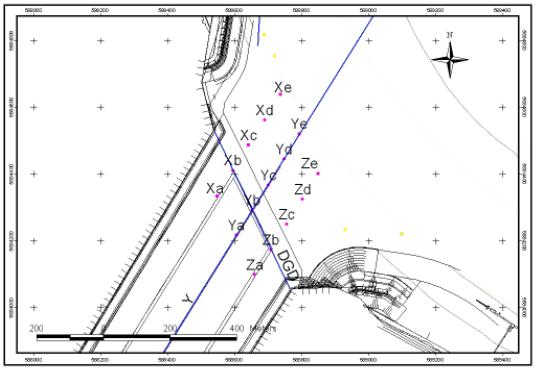

Figure 3-2: Through tide measurements - Deurganckdok 21/03/2006 & 26/09/2006 (Siltprofiler)

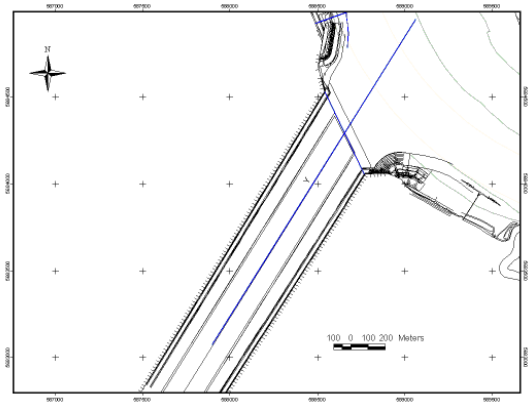

Figure 3-3: Through tide measurements – Deurganckdok 21/03/2006 & 26/09/2006 (salinity)

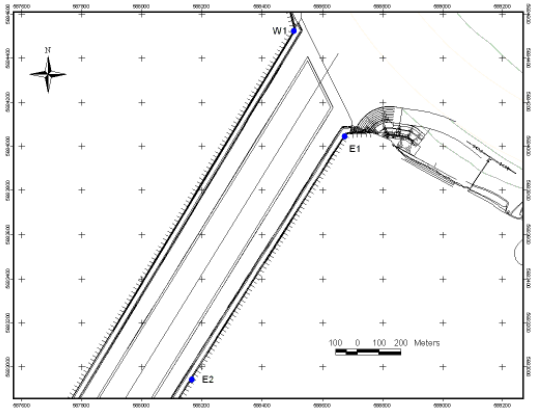

Figure 3-4: Long term salinity measurements Deurganckdok 17/03/2006 – 28/04/2006, 20/07/2006 – 12/10/2006 & 12/02/2007 – 27/03/2007

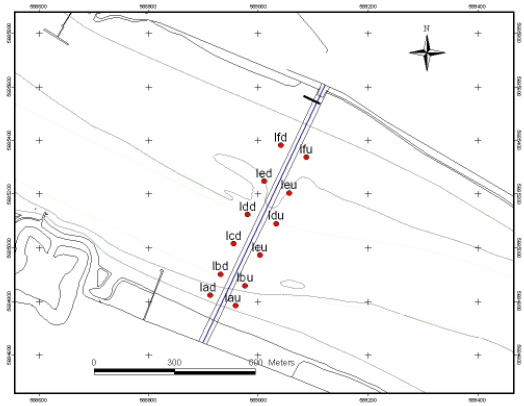

Figure 3-5:Through tide measurements - Liefkenshoek 22/03/2006 & 27/09/2006 (ADCP+SiltProfiler)

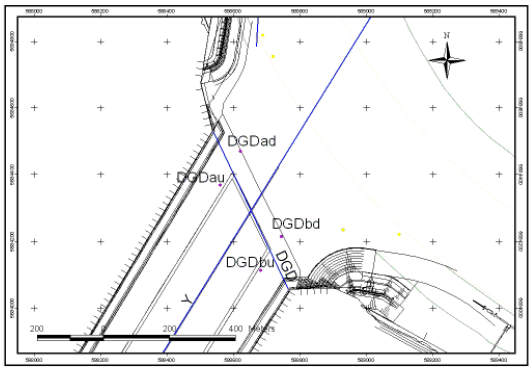

Figure 3-6: Through tide measurements - Deurganckdok 22/03/2006 & 27/09/2006 (ADCP)

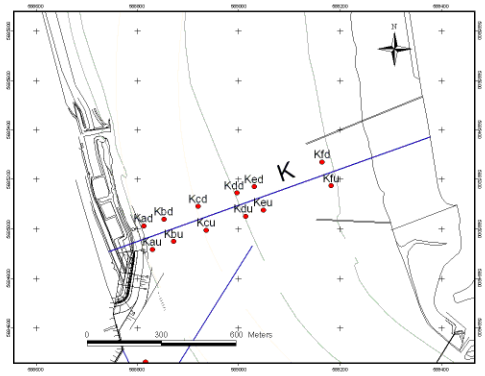

Figure 3-7: Through tide measurements - Deurganckdok 22/03/2006 & 27/09/2006 (ADCP); 23/03/2006 & 28/09/2006 (ADCP+SiltProfiler)

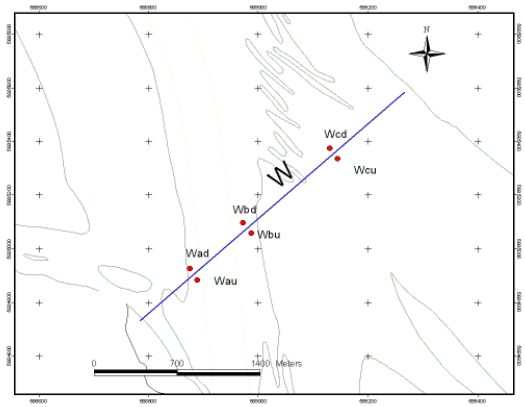

Figure 3-8: Through tide measurements - Waarde 23/03/2006 & 28/09/2006 (ADCP)

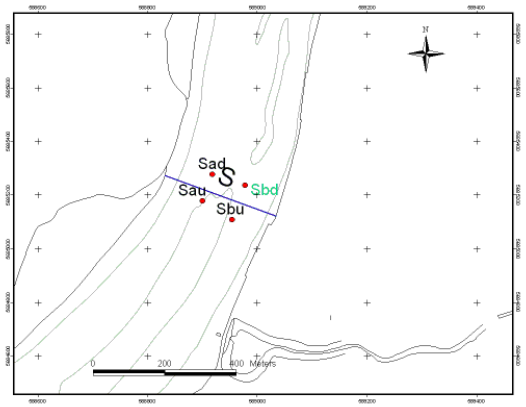

Figure 3-9: Through tide measurements - Schelle 23/03/2006 & 28/09/2006 (ADCP)

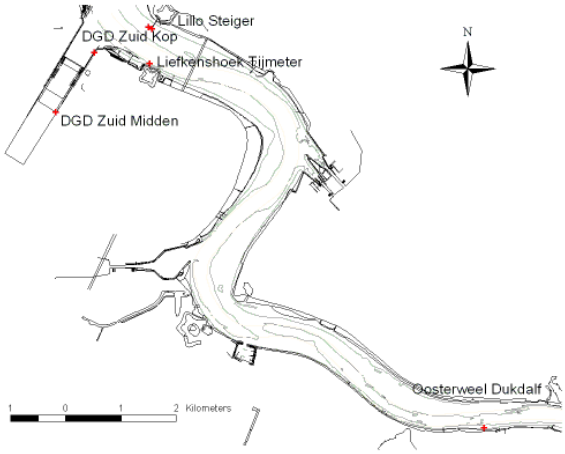

Figure 3-10: Calibration measurements - 15/03/2006 & 14/04/2006

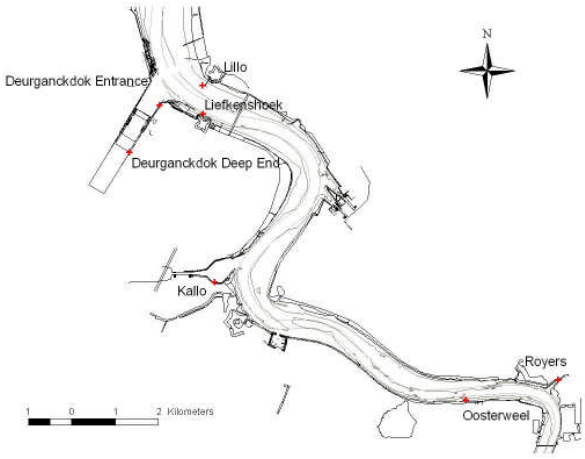

Figure 3-11: Calibration measurements – 23/06/2006 & 18/09/2006

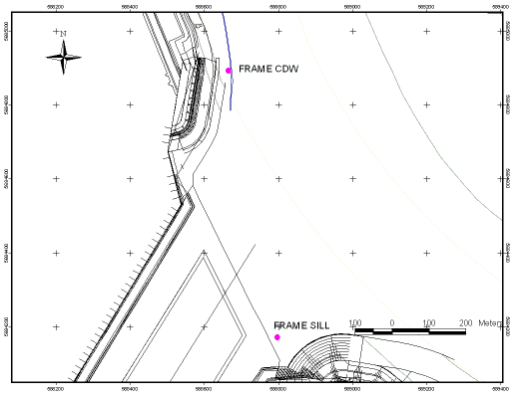

Figure 3-12:Near bed continuous monitoring
14/03/2006 – 23/05/2006
18/07/2006 – 11/10/2006
09/02/2007 – 18/04/2007

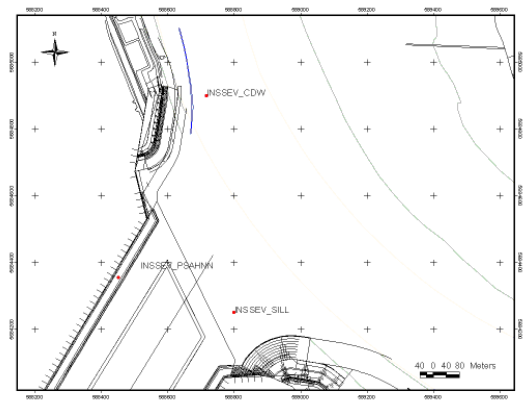

Figure 3-13: Settling velocity (INSSEV) 05/09/2006 – 07/09/2006

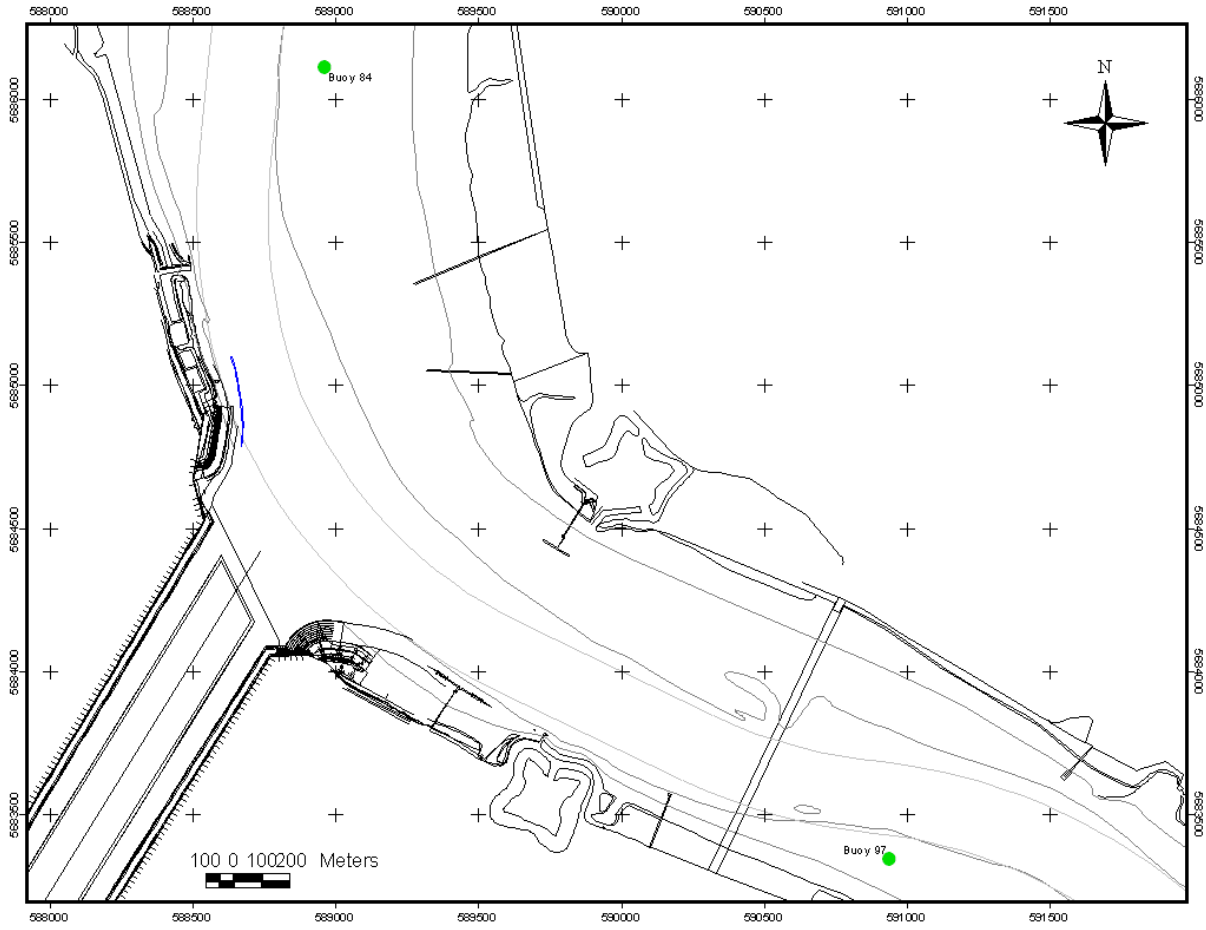

Figure 3-14: Long term measurements in the Lower Sea Scheldt

3.2. Description of the data

3.2.1. Parameters and equipment

The data gathered during the measurement campaign is current velocity, current direction, temperature, pressure and turbidity. For the through tide measurements also data about depth and position of the hard and soft bottom is collected. To report the results in most cases current velocity, current direction, temperature, salinity and suspended sediment concentration is used.

A detailed description of the data acquisition can be found in IMDC (2006b – 2006l; 2007a-2007q).

During the long term stationary measurements current, temperature, salinity and turbidity where measured using Aanderaa RCM-9's. A fixed set up was used in which a steel frame was placed on the bottom, with two RCM-9s suspended and held upright by subsurface buoys (Figure 3-15). The lower RCM-9 was placed at 0.80 m above the bottom, while the upper one was placed at a distance of 2.5 m above the lower one. To collect data, check and clean the instruments the instruments were surfaced on regular bases.

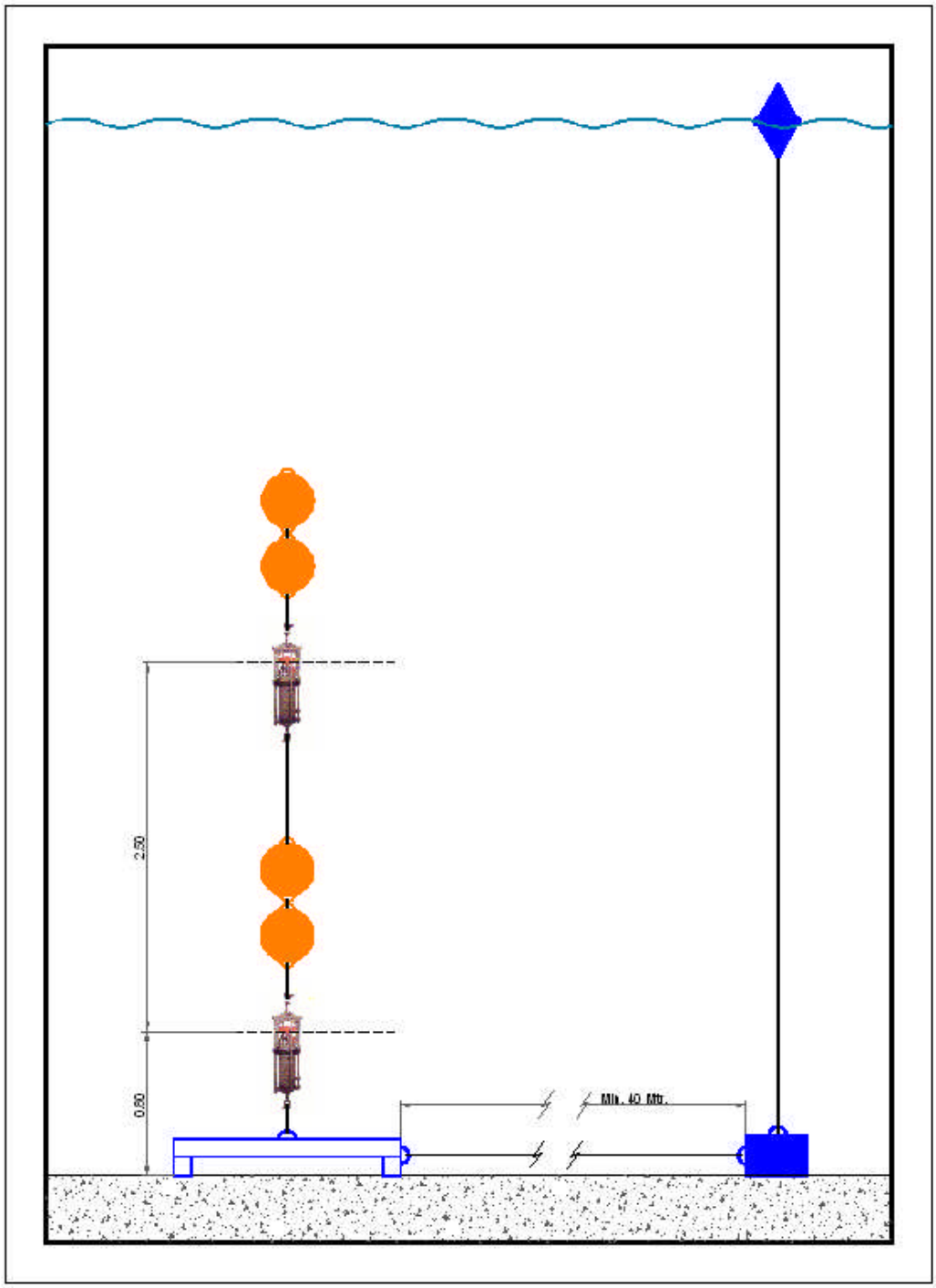

Figure 3-15: Fixed set-up for two RCM9 units with subsurface buoys (orange)

The instruments were set up to measure every 10 minutes. All sensors (temperature, pressure, conductivity, turbidity, tilting) except the Doppler Current Sensor were set to record once every 10 minutes. The Doppler Current Sensor sent 600 pings during every 10 minute-interval and calculated the average value for current speed and direction over this interval. Data storage units

in the instruments logged all the measured values. A picture of the set-up is shown in Figure 3-16. More information about the Aanderaa RCM-9 can be found in IMDC (2005l).

Figure 3-16: Set-up of two RCM-9 units

Table 3-2 gives an overview of the measured parameters during the long term measurements and the depth at which these were registered.

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Table 3-2: The equipment and measured parameters per location (01/01/2006 – 30/06/2007)

Through tide measurements									
Location	***Period***	***Instrument***	***Velocity***	***Direction***	***Temperature***	***Pressure***	***Conductivity***	***Turbidity***	***Depth***
Deurganckdok (in dock, transect Y	21/03/06 & 26/09/06	SiltProfiler			X	X	X	X	
		Echosounder							X
		Aanderaa RCM 9			X	X	X		
		CTD			X	X	X		
Liefkenshoek (transect I)	22/03/06 & 27/09/06	ADCP	X	X					
		OBS			X	X	X	X	
		CTD			X	X	X		
		Pump Sampler							
		SiltProfiler			X	X	X	X	
		Echosounder							X
Deurganckdok (transect K & in dock transect DGD)	22/03/06 & 27/09/06	ADCP	X	X					
		OBS			X	X	X	X	
		CTD			X	X	X		
		Pump Sampler							
Deurganckdok (transect K)	23/03/06 & 28/09/06	SiltProfiler			X	X	X	X	
		Echosounder							X
Schelle (transect S)	23/03/06 & 28/09/06	ADCP	X	X					
		OBS			X	X	X	X	
		CTD			X	X	X		
		Pump Sampler							
Waarde (Transect W)	23/03/06 & 28/09/06	Same as Schelle (transect S)							

Near bed continuous monitoring									
Location	***Period***	***Instrument***	***Velocity***	***Direction***	***Temperature***	***Pressure***	***Conductivity***	***Turbidity***	***Depth***
Deurganckdok CDW	14/03/2006 – 05/04/2006	Valeport MIDAS OBS3+	X	X	X	X	X	X	
		Aanderaa RCM9	X	X	X	X	X	X	
		ALTUS							X
		ARGUS			X	X	X	X	
Deurganckdok CDW	19/04/2006 – 23/05/2006	Idem	Idem						
Deurganckdok Sill	19/04/2006 – 23/05/2006	Idem	Idem						
Deurganckdok CDW	18/07/2006 – 11/10/2006	Idem	Idem						
Deurganckdok Sill	19/07/2006 – 11/10/2006	Idem	Idem						
Deurganckdok CDW	15/03/2007 – 12/04/2007	Idem	Idem						
Deurganckdok Sill	09/02/2007 – 18/04/2007	Idem	Idem						

Long-term salinity measurements								
Location	***Period***	***Instrument***	***Velocity***	***Direction***	***Temperature***	***Pressure***	***Conductivity***	***Turbidity***
Deurganck dok (Quay wall)	17/03/2006 – 28/04/2006	Aanderaa RCM9	X	X	X	X	X	X
		OBS 3A			X	X	X	X
Deurganck dok (Quay wall)	20/07/2006 – 12/10/2006	OBS 3A			X	X	X	X
Deurganck dok (Quay wall)	12/02/2007 – 27/03/2007	OBS 3A			X	X	X	X
Deurganck dok (Quay wall)	12/02/2007 – 27/03/2007	OBS 3A			X	X	X	X

Long-term measurements			
Location	***Period***	***Instrument***	***Depth sensor***
Buoy 84	01/01/2006 – 30/06/2006	Aanderaa RCM 9	-5.6m TAW
		Aanderaa RCM 9	-8.1m TAW
Buoy 97	01/01/2006 – 30/06/2006	Aanderaa RCM 9	-5.3m TAW
		Aanderaa RCM 9	-7.8m TAW
Buoy 84	01/07/2006 – 31/12/2006	Aanderaa RCM 9	-5.6m TAW
		Aanderaa RCM 9	-8.1m TAW
Buoy 97	01/07/2006 – 31/12/2006	Aanderaa RCM 9	-5.3m TAW
		Aanderaa RCM 9	-7.8m TAW
Buoy 84	01/01/2006 – 31/03/2006	Aanderaa RCM 9	-5.6m TAW
		Aanderaa RCM 9	-8.1m TAW
Buoy 97	01/01/2006 – 31/03/2006	Aanderaa RCM 9	-5.3m TAW
		Aanderaa RCM 9	-7.8m TAW

3.2.2. Overview of the data acquisition (measurements buoy 84 & buoy 97)

A chronological overview of the measurements, per location and per instrument, is given in Table 3-3 as well as an explanation for missing and faulty data. The measurement instruments on buoy 84 were replaced between 12/04/2007 and 09/05/2007, the instruments on buoy 97 were replaced between 04/04/2007 and 12/04/2007.

Table 3-3: Chronological overview of the RCM-9 measurements

Buoy 84 top – 3.3 m above bottom				
Period	***Sensor***	***No data***	***Faulty data***	***Comment***
20/09/2005				Start measurement period
01/04/2007	1225			Start reporting period
12/04/2007 – 09/05/2007		X		Replacing period
12/06/2007 – 13/06/2007	0579		X	Faulty tide data
22/06/2007	0579		X	Faulty tide data
22/06/2007 – 27/06/2007	0579		X	Growth on turbidity sensor
30/06/2007	0579			End reporting period
Buoy 84 bottom – 0.8 m above bottom				
Period	***Sensor***	***No data***	***Faulty data***	***Comment***
20/09/2005				Start measurement period
01/04/2007	1229			Start reporting period
12/04/2007 – 09/05/2007		X		Replacing period
28/05/2007 – 03/06/2007	1153			faulty salinity data / battery
12/06/07 – 13/06/2007	11153		X	Faulty tide data
16/06/2007	1153		X	No salinity
22/06/2007	1153		X	Faultty tide data
30/06/2007	1153			End reporting period
Buoy 97 top – 3.3 m above bottom				
Period	***Sensor***	***No data***	***Faulty data***	***Comment***
21/09/2005				Start measurement period
01/04/2007	1170			Start reporting period
04/04/2007 – 12/04/2007		X		
12/06/2007 – 13/06/2007	1225		X	Faulty tide data
23/06/2007 – 27/06/2007	1225		X	Faulty SS data
30/06/2007	1225			End reporting period

Buoy 97 bottom – 0.8 m above bottom				
Period	***Sensor***	***No data***	***Faulty data***	***Comment***
21/09/2005				Start measurement period
01/04/2007				Start reporting period
04/04/2007 – 12/04/2007		X		Replacing period
30/06/2007	1229			End reporting period

3.3. Processing of datasets

3.3.1. Methodology of Processing

The collected data was validated and outliers were removed. Erroneous measurements because of malfunction of sensors, growth on sensors, instrument failure were also removed from the dataset and are documented in 3.2.2.

Salinity was calculated using the temperature, conductivity and pressure in the pps-78 formula (Unesco, 1991 & IMDC, 2002).

Turbidity values were converted to suspended sediment concentration using the equation of the calibration curve. By submerging each turbidity sensor in clean water at almost every redeployment, the bias of the turbidity sensors was tested.

The calibration procedure and calibration graphs can be found in IMDC (2006a and 2007a).

3.3.2. Results (weekly)

Measurements are visualized per instrument, location and per week in APPENDIX B.

- The title shows the week number followed by the year
- The first graph shows the current velocity and the current direction. The direction is scaled from 0 to 360
- The second graph depicts the salinity and temperature
- The third and last graph shows the waterlevel at the nearest tidal gauge and the suspended sediment concentration

All times are given in MET.

3.3.3. Results (monthly)

Monthly results are reported in APPENDIX B. The minimum, maximum and average value for velocity magnitude, temperature and suspended sediment concentration is given for every month. For salinity the minimum, maximum and mean are calculated for both high water slack and low water slack.

3.3.4. Results (deployment period)

An overview of the evolution of the monthly minimum, maximum and average values for velocity magnitude, temperature and suspended sediment concentration is given in APPENDIX B. For salinity the minimum, maximum and mean are given for both high water slack and low water slack. The graphs are given for the whole deployment period (September 2005 – June 2007).

3.3.5. Total results (April 2007 – June 2007)

The results for the whole deployment period are also given in APPENDIX B. The minimum, maximum and average value for velocity magnitude, temperature and suspended sediment concentration is given for the period from April 2007 till June 2007. For salinity the minimum, maximum and mean are calculated for both high water slack and low water slack is given.

4. AMBIENT CONDITIONS

4.1. Environmental characteristics in the Lower Sea Scheldt

4.1.1. Other measurement campaigns

Beside the RCM-9 measurements at buoy 97 and 84 also other long-term measurements were executed in the Lower Sea Scheldt. At Oosterweel left bank (or Dukdalf), current, temperature, salinity and turbidity measurements were conducted using 2 Aanderaa RCM-9 units. Another RCM-9 unit was also used at Prosperpolder, where only temperature and salinity measurements were conducted. These instruments were suspended from a mooring post at fixed distances from the bottom. These measurements were set up and maintained by WL – Cel Hydrometrie Schelde. Figure 4-1 shows an overview of all the measurement locations (including locations of HCBS2 measurements).

The data of these measurements was processed by IMDC and is presented in APPENDIX C. Calibration of the turbidity sensors was executed by IMDC during the summer calibration of 2006. Further details of this calibration can be found in IMDC (2007a).

Table 4-1: Measurement locations and periods at Oosterweel (left bank) & Prosperpolder .

Location	***Depth sensor***	***Easting (UTM ED 50)***	***Northing (UTM ED 50)***	***Period***
Oosterweel (left bank)	4.5m above bottom (-2.3m TAW)	595574	5677278	01/07/2004 – 30/06/2007
Oosterweel (left bank)	1m above bottom (-5.8m TAW)	595574	5677278	01/07/2004 – 30/06/2007
Prosperpolder	2.5m above bottom (-1.5m TAW)	586307	5689501	15/06/2006 – 30/06/2007

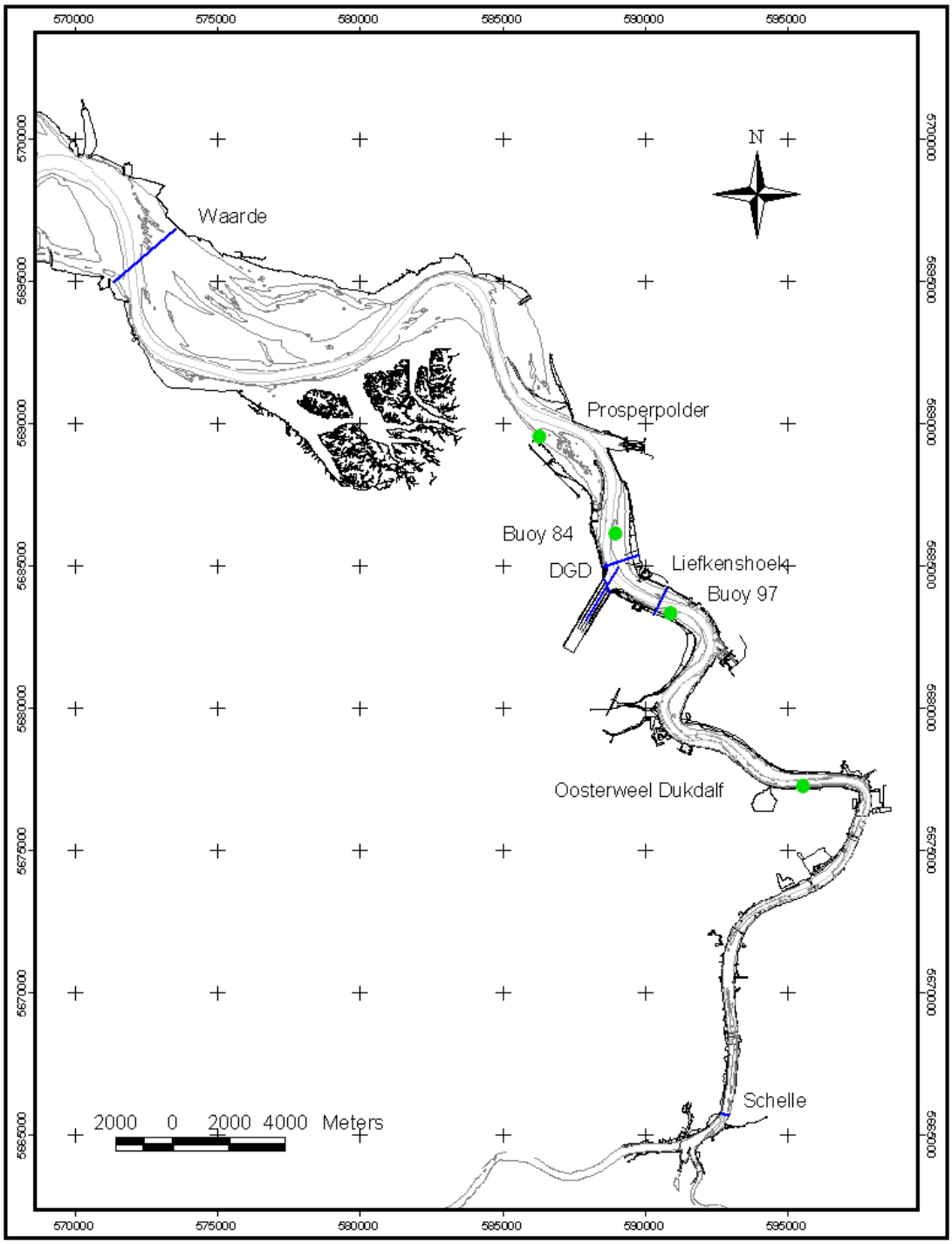

Figure 4-1: All measurement locations 01/2007 – 06/2007

The data gathered during these long-term measurements is current velocity, current direction, temperature, pressure and turbidity. In APPENDIX C the processed data is visualized per instrument, location and per week for April until June 2007.

- The title shows the week number followed by the year
- The first graph shows the current velocity and the current direction. The direction is scaled from 0 to 360.
- The second graph depicts the salinity and temperature
- The third and last graph shows the water level at the nearest tidal gauge and the suspended sediment concentration

All times are given in MET.

To convert the turbidity values to suspended sediment concentration the equation of the calibration curve was used. The calibration procedure and calibration graphs can be found in IMDC (2007a).

An overview of the measurements and an explanation of missing and faulty data for the whole period is given in Table 4-2.

Table 4-2: Chronological overview of the long term measurements at Oosterweel& Prosperpolder (01/041/2007 - 30/06/2007)

Oosterweel left bank – 4.5 m above bottom				
Period	***Sensor***	***No data***	***Faulty data***	***Comment***
01/07/2004				Start measurement period
01/04/2007	0579			Start reporting period
26/04/2007 – 03/05/2007	0152		X	Faulty temperature / salinity data
16/05/2007 – 21/06/2007		X		Data not delivered
30/06/2007	0152			End reporting period
Oosterweel left bank – 1 m above bottom				
Period	***Sensor***	***No data***	***Faulty data***	***Comment***
01/07/2004				Start measurement period
01/04/2007	1153			Start reporting period
01/04/2007 – 05/04/2007		X		Data not delivered
05/04/2007 – 23/04/2007	1153		X	Salinity sensor problems
03/05/2007 – 30/06/2007		X		Data not delivered
30/06/2007	0151			End reporting period
Prosperpolder – 2.5 m above bottom				
Period	***Sensor***	***No data***	***Faulty data***	***Comment***
15/06/2006	0117			Start measurement period
01/04/2007	0117			Start reporting period
16/05/2007 – 31/05/2007		X		Data not received
12/06/2007 – 13/06/2007			X	Faulty tide data
31/03/2007	0117			End reporting period

Monthly results (minimum, maximum and average) are shown in APPENDIX C. The minimum, maximum and average value for velocity magnitude, temperature and suspended sediment concentration is given for every month. For salinity the minimum, maximum and mean are calculated for both high water slack and low water slack. Also an overview of the evolution of the monthly minimum, maximum and average values of these parameters is given in APPENDIX C for the whole deployment period (July 2004 – June 2007). Notice that for the suspended sediment concentration the graphs are only given since 2006. In the previous reports turbidity was presented because there was no calibration available for the turbidity sensors.

The results for the whole measurement period are also given in APPENDIX C. The minimum, maximum and average value for velocity magnitude, temperature and suspended sediment concentration is given for the period from April 2007 till June 2007. For salinity the minimum, maximum and mean are calculated for both high water slack and low water slack is given.

4.1.2. Vertical tide

Tidal data was delivered for the period from 01/04/2007 till 30/06/2007 by Waterbouwkundig Laboratorium – Cel Hydrometrie Schelde. It is reported together with the processed data of the long term measurement campaigns and those at Oosterweel and Prosperpolder in APPENDIX B respectively APPENDIX C.

4.1.3. Salinity downstream

Salinity data of Baalhoek and Hoofdplaat was collected from the Hydro Meteo Centrum Zeeland (HMCZ, 2007) and processed by IMDC. Outliers were screened and removed. Monthly results (minimum, maximum and average values for salinity) are reported in APPENDIX D.

4.2. Fresh water inflow from the tributaries

The fresh water discharge of the Kleine Nete (Grobbendonk), the Grote Nete (Hulshout), the Dijle (Wijgmaal), The Demer (Wilsele), the Dender (Dendermonde), the Zenne (Eppegem) and the Bovenschelde (Melle) are provided by the Hydrologische Informatie Centrum of the Ministerie van de Vlaamse Gemeenschap – Departement Leefmilieu en Infrastructuur Afdeling Waterbouwkundig Laboratorium. The gauging stations are not influenced by the tide. The calculated discharges at the gauging stations are converted to discharges at the mouth of the tributaries and then to a total fresh water discharge at Schelle. This procedure is described in AZ (1974) and is based on the use of correction coefficients that take in account the surface of the hydrological basins.

In APPENDIX E a graph of the evolution of the fresh water discharge is given just as a table with the decade averages of the fresh water discharge. Also the monthly averages are compared to the expected discharges in a graph. Notice that the given values are only temporary since no influence of possible growth is taken in to account jet. This will be done at the end of the year by the Hydrologische Informatie Centrum of the Ministerie van Mobiliteit en Openbare Werken - Departement Mobiliteit en Openbare Werken - Afdeling Waterbouwkundig Laboratorium en Hydrologisch Onderzoek.

4.3. Meteorological data

The meteorological conditions for the measurement station Deurne for the period 01/04/2007-30/06/2007 cannot be reported. This data should have been obtained from the KMI (Royal Meteorological Institute of Belgium) but due to problems at the institute the requested data is not published yet.

4.4. Human Activities

4.4.1. Dredging activities

Afdeling Maritieme Toegang provided information about the dates, times, volumes and locations of dredging activities. In APPENDIX F an overview is given of all the dredging activities from 01/04/2007 till 30/06/2007. Weekly volumes are given per location.

4.4.2. Navigation

Weekly data of navigation was delivered by Afdeling Scheepvaartbegeleiding – Schelde Rader Keten for the period of 01/04/2007 till 31/06/2007. To order the data a splitting up of the Beneden Zeeschelde was done in 4 areas. The first area is from de Belgian border up to locks of Zandvliet – Berendrecht (sluizencomplex Zandvliet – Berendrecht), the second goes from this point forward up to Deurganckdok. The third area is from Deurganckdok up to the lock of Kallo (Kallosluis) and finally the fourth goes up to the lock of Royers (Royerssluis). A more detailed description of the areas can be found in APPENDIX G. Also a distinction is made between the draughts. In APPENDIX G a total number is given which refers to the total of passing ships registered by Afdeling Scheepvaartbegeleiding - Schelde Radar Keten. In addition a difference was made between inland navigation and seagoing ships, just as between arrival and departure. Notice that for a certain area and certain draught, the total may deviate from the sum of inland navigation and seagoing. This can be explained by the presence of ships like dredgers, which were only counted in the column ‘total’. Also a difference may occur between the total number and the sum of the arrival and departure number. This is due to vessels that have the same entry and exit point.

Finally it should be mentioned that not all inland shipping is observed by the system, which means that the actual number of inland shipping will be higher.

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IMDC (2006c) Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 7.2 22 March 2006 Parel 2 – Deurganckdok (downstream), I/RA/11291/06.095/MSA.

IMDC (2006d) Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 7.3 22 March 2006 Laure Marie – Liefkenshoek, I/RA/11291/06.096/MSA.

IMDC (2006e) Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 7.4 23 March 2006 Parel 2 – Schelle, I/RA/11291/06.097/MSA.

IMDC (2006f) Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 7.5 23 March 2006 Laure Marie – Deurganckdok (downstream), I/RA/11291/06.098/MSA.

IMDC (2006g) Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 7.6 23 March 2006 Veremans – Waarde, I/RA/11291/06.099/MSA.

IMDC(2006h) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.1 Opmeting stroming en zout- en sedimentbeweging aan de ingang van het Deurganckdok (SiltProfiler), I/RA/11283/06.087/WGO.

IMDC(2006i) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.3. Opmeting stroming en zout-en sedimentbeweging aan de ingang van het Deurganckdok (ADCP), I/RA/11283/06.110/BDC

IMDC (2006j). Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 8.1: Vaste meetopstelling in zake bodemgedrag, I/RA/11291/06.100/MSA.

IMDC (2006k) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.6 Zout en slibverdeling Deurganckdok 17/03/2006 – 23/05/2006, I/RA/11283/06.121/MSA.

IMDC (2006l) Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 5.3 Overview of ambient conditions in the river Scheldt – Januari-June 2006 (I/RA/11291/06.089/MSA), in opdracht van AWZ.

IMDC(2006m): Studie van de stromingsvelden en sedimentuitwisseling aan de ingang van Deurganckdok. Current and Sediment flux measurements November 17th 2005 (I/RA/15030/06.021/BDC).

IMDC (2006n). Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 9: Valsnelheid slib – INSSEV, I/RA/11291/06.102/MSA, in opdracht van AWZ.

IMDC (2006o). Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 2.7: Silt distribution and frame measurements 15/07/2006 – 31/10/2006. (I/RA/11291/06.122/MSA).

IMDC (2006p) Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 5.3 Overview of ambient conditions in the river Scheldt – Januari-June 2006 (I/RA/11291/06.089/MSA), in opdracht van AWZ.

IMDC (2007a) Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 6.2 Summer calibration and Final report, I/RA/11291/06.093/MSA.

IMDC (2007b). Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 5.4 Overview of ambient conditions in the river Scheldt – July-December 2006 (I/RA/11291/06.089/MSA), in opdracht van AWZ.

IMDC (2007c). Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 11.1 Through tide Measurement Sediview & Siltprofiler 27/9 Stream - Liefkenshoek (I/RA/11291/06.104/MSA), in opdracht van AWZ.

IMDC (2007d). Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 11.2 Through tide Measurement Sediview 27/9 Veremans - Raai K (I/RA/11291/06.105/MSA), in opdracht van AWZ.

IMDC (2007e). Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 11.3 Through tide Measurement Sediview & Siltprofiler 28/9 Stream - Raai K (I/RA/11291/06.106/MSA), in opdracht van AWZ.

IMDC (2007f). Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 11.4 Through tide Measurement Sediview 28/9 Veremans - Waarde(I/RA/11291/06.107/MSA), in opdracht van AWZ.

IMDC (2007g). Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 11.5 Through tide Measurement Sediview 28/9 Parel 2 - Schelle (I/RA/11291/06.108/MSA), in opdracht van AWZ.

IMDC (2007h). Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 11.6 Through tide Measurement Salinity Distribution 26/9 Scheldewacht – Deurganckdok in opdracht van AWZ.

IMDC (2007i) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 1.1 Sediment Balance: Three monthly report 1/4/2006 – 30/06/2006 (I/RA/11283/06.113/MSA)

IMDC (2007j) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 1.2 Sediment Balance: Three monthly report 1/7/2006 – 30/09/2006 (I/RA/11283/06.114/MSA)

IMDC (2007k) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 1.3 Sediment Balance: Three monthly report 1/10/2006 – 31/12/2006 (I/RA/11283/06.115/MSA)

IMDC (2007l) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 1.4 Sediment Balance: Three monthly report 1/1/2007 – 31/03/2007 (I/RA/11283/06.116/MSA)

IMDC (2007m) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 1.5 Annual Sediment Balance (I/RA/11283/06.117/MSA)

IMDC (2007n) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.2 Through tide measurement SiltProfiler 26/09/2006 Stream (I/RA/11283/06.068/MSA)

IMDC (2007o) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.7 Salt-Silt distribution & Frame Measurements Deurganckdok 15/07/2006 – 31/10/2006 (I/RA/11283/06.122/MSA)

IMDC (2007p) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.8 Salt-Silt distribution & Frame Measurements Deurganckdok 15/01/2007 – 15/03/2007 (I/RA/11283/06.123/MSA)

IMDC (2007q) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 3.1 Boundary conditions: Three monthly report 1/1/2007 – 31/03/2007 (I/RA/11283/06.127/MSA)

IMDC (2007r) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing 2. Deelrapport 1.10: Sediment Balance: Three monthly report 1/4/2007 – 30/06/2007 (I/RA/11283/07.081/MSA)

IMDC (2007s) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing 2. Deelrapport 1.11: Sediment Balance: Three monthly report 1/7/2007 – 30/09/2007 (I/RA/11283/07.082/MSA)

IMDC (2007t) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing 2. Deelrapport 2.16: Salt-Silt distribution Deurganckdok summer (21/6/2007-30/07/2007) IMDC (2007s) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing 2. Deelrapport 1.11: Sediment Balance: Three monthly report 1/7/2007 – 30/09/2007 (I/RA/11283/07.092/MSA)

IMDC (2007u) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing 2. Deelrapport 3.10: Boundary conditions: Three monthly report 1/04/2007 – 30/06/2007 (I/RA/11283/07.097/MSA)

IMDC (2007v) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing 2. Deelrapport 3.11: Boundary conditions: Three monthly report 1/07/2007 – 30/09/2007 (I/RA/11283/07.098/MSA)

KMI (2006a). Maandbericht Klimatologische waarnemingen september 2006 Deel I & II. Koninklijk Meteorologisch Instituut van België, Brussel.

KMI (2006b). Maandbericht Klimatologische waarnemingen oktober 2006 Deel I & II. Koninklijk Meteorologisch Instituut van België, Brussel.

KMI (2006c). Maandbericht Klimatologische waarnemingen november 2006 Deel I & II. Koninklijk Meteorologisch Instituut van België, Brussel.

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KMI (2007a). Maandbericht Klimatologische waarnemingen januari 2007 Deel I & II. Koninklijk Meteorologisch Instituut van België, Brussel.

TV SAM (2006a) Langdurige stationaire ADCP stroommetingen te Oosterweel dukdalf 01/2005-06/2005. 42SR S032PIB 2A.

TV SAM (2006b) Langdurige stationaire ADCP stroommetingen te Oosterweel dukdalf 07/2005-12/2005. 42SR S033PIB 2A.

TV SAM (2006c) Langdurige stationaire ADCP stroommetingen te Oosterweel dukdalf 01/2006-06/2006. 42SR S032PIB 2A.

Unesco (1983). Algorithms for computation of fundamental properties of seawater, UNESCO Technical Papers in Marine Science, 44. UNESCO, France.

APPENDIX A.

OVERVIEW OF HCBS2 AND OPVOLGING AANSLIBBING DEURGANCKDOK REPORTS

Report	Description of HCBS2
Ambient Conditions Lower Sea Scheldt	
5.3	Overview of ambient conditions in the river Scheldt – January-June 2006 (I/RA/11291/06.088/MSA)
5.4	Overview of ambient conditions in the river Scheldt – July-December 2006 (I/RA/11291/06.089/MSA)
~~5.5~~	~~Overview of ambient conditions in the river Scheldt : RCM-9 buoy 84 & 97 (1/1/2007 -31/3/2007) (I/RA/11291/06.090/MSA)~~[1]
5.6	Analysis of ambient conditions 21/09/05 - 31/3/2007 (I/RA/11291/06.091/MSA)
Calibration	
6.1	Winter Calibration (I/RA/11291/06.092/MSA)
6.2	Summer Calibration and Final Report (I/RA/11291/06.093/MSA)
Through tide Measurements Winter 2006	
7.1	21/3 Scheldewacht – Deurganckdok – Salinity Distribution (I/RA/11291/06.094/MSA)
7.2	22/3 Parel 2 – Deurganckdok (I/RA/11291/06.095/MSA)
7.3	22/3 Laure Marie – Liefkenshoek (I/RA/11291/06.096/MSA)
7.4	23/3 Parel 2 – Schelle (I/RA/11291/06.097/MSA)
7.5	23/3 Laure Marie – Deurganckdok (I/RA/11291/06.098/MSA)
7.6	23/3 Veremans Waarde (I/RA/11291/06.099/MSA)
HCBS Near bed continuous monitoring (Frames)	
8.1	Near bed continuous monitoring winter 2006 (I/RA/11291/06.100/MSA)
INSSEV	
9	Settling Velocity - INSSEV summer 2006 (I/RA/11291/06.102/MSA)
Cohesive Sediment	
10	Cohesive sediment properties summer 2006 (I/RA/11291/06.103/MSA)
Through tide Measurements Summer 2006	
11.1	Through Tide Measurement Sediview and Siltprofiler 27/9 Stream - Liefkenshoek (I/RA/11291/06.104/MSA)
11.2	Through Tide Measurement Sediview 27/9 Veremans - Raai K (I/RA/11291/06.105/MSA)
11.3	Through Tide Measurement Sediview and Siltprofiler 28/9 Stream - Raai K (I/RA/11291/06.106/MSA)
11.4	Through Tide Measurement Sediview 28/9 Veremans – Waarde (I/RA/11291/06.107/MSA)

[1] The data, foreseen for Report 5.5 is reported in report 3.1. Boundary conditions: Three monthly report 1/1/2007 – 31/03/2007 (I/RA/11283/06.127/MSA) including HCBS 2 report 5.5 (Deurganckdok).

Report	Description of HCBS2
Ambient Conditions Lower Sea Scheldt	
11.5	Through Tide Measurements Sediview 28/9 Parel 2 - Schelle (I/RA/11291/06.108/MSA)
11.6	Through Tide measurement Longitudinal Salinity Distribution 26/9 Scheldewacht – Deurganckdok (I/RA/11291/06.161/MSA)
Analysis	
12	Report concerning the presence of HCBS layers in the Scheldt river (I/RA/11291/06.109/MSA)

Report	Description of Opvolging aanslibbing Deurganckdok between April 2006 till March 2007
Sediment Balance: Bathymetry surveys, Density measurements, Maintenance and construction dredging activities	
1.1	Sediment Balance: Three monthly report 1/4/2006 – 30/06/2006 (I/RA/11283/06.113/MSA)
1.2	Sediment Balance: Three monthly report 1/7/2006 – 30/09/2006 (I/RA/11283/06.114/MSA)
1.3	Sediment Balance: Three monthly report 1/10/2006 – 31/12/2006 (I/RA/11283/06.115/MSA)
1.4	Sediment Balance: Three monthly report 1/1/2007 – 31/03/2007 (I/RA/11283/06.116/MSA)
1.5	Annual Sediment Balance (I/RA/11283/06.117/MSA)
1.6	Sediment balance Bathymetry: 2005 – 3/2006 (I/RA/11283/06.118/MSA)
Factors contributing to salt and sediment distribution in Deurganckdok: Salt-Silt (OBS3A) & Frame measurements, Through tide measurements (SiltProfiling & ADCP)	
2.1	Through tide measurement Siltprofiler 21/03/2006 Laure Marie (I/RA/11283/06.087/WGO)
2.2	Through tide measurement Siltprofiler 26/09/2006 Stream (I/RA/11283/06.068/MSA)
2.3	Through tide measurement Sediview spring tide 22/03/2006 Veremans (I/RA/11283/06.110/BDC)
2.4	Through tide measurement Sediview spring tide 27/09/2006 Parel 2 (I/RA/11283/06.119/MSA)
~~2.5~~	~~Through tide measurement Sediview neap tide (to be scheduled) (I/RA/11283/06.120/MSA)~~[2]
2.6	Salt-Silt distribution & Frame Measurements Deurganckdok 13/3/2006 – 31/05/2006 (I/RA/11283/06.121/MSA)

[2] cancelled report

Report	Description of Opvolging aanslibbing Deurganckdok between April 2006 till March 2007
2.7	Salt-Silt distribution & Frame Measurements Deurganckdok 15/07/2006 – 31/10/2006 (I/RA/11283/06.122/MSA)
2.8	Salt-Silt distribution & Frame Measurements Deurganckdok 12/02/2007 – 18/04/2007 (I/RA/11283/06.123/MSA)
Boundary Conditions: Upriver Discharge, Salt concentration Scheldt, Bathymetric evolution in access channels, dredging activities in Lower Sea Scheldt and access channels	
3.1	Boundary conditions: Three monthly report 1/1/2007 – 31/03/2007 (I/RA/11283/06.127/MSA) including HCBS 2 report 5.5
~~3.2~~	~~Boundary condtions: Annual report (I/RA/11283/06.128/MSA)~~[3]
Analysis	
4.1	Analysis of Siltation Processes and Factors (I/RA/11283/06.129/MSA)

[3] considered in report 5.6 'Analysis of ambient conditions during 2006' (I/RA/11291/06.091/MSA) in the framework of the study 'Extension of the study about density currents in the Beneden Zeeschelde'

APPENDIX B.

LONG TERM MEASUREMENTS

HCBS2 MEASUREMENT CAMPAIGN

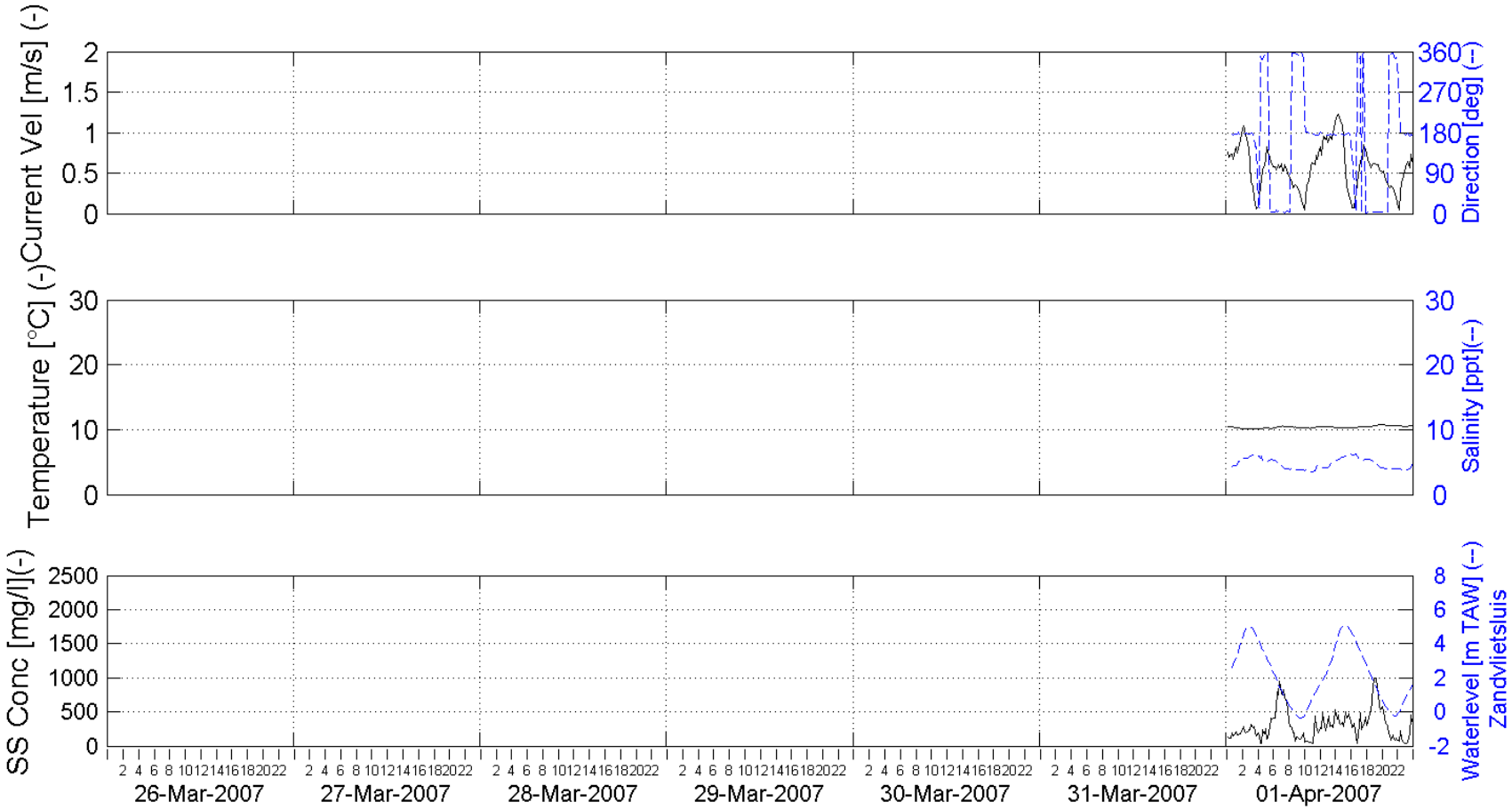
B.1 Datasheets weekseries

Datasheet order

Nr	*Location*	*Depth of Instrument*		*Sensor*	*Period*
		[m] above bottom	*[m TAW]*		
1	Buoy 84	3.3	-5.6	Aanderaa 1225	01/04/2007 – 12/04/2007
				Aanderaa 0579	09/05/2007 – 30/06/2007
2	Buoy 84	0.8	-8.1	Aanderaa 1129	01/04/2007 – 12/04/2007
				Aanderaa 1153	09/05/2007 – 30/06/2007
3	Buoy 97	3.3	-5.3	Aanderaa 1170	01/04/2007 – 12/04/2007
				Aanderaa 1225	12/04/2007 – 30/06/2007
4	Buoy 97	0.8	-7.8	Aanderaa 1220	01/04/2007 – 12/04/2007
				Aanderaa 1229	12/04/2007 – 30/06/2007

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 13 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 84 top - 3.3m above bottom (-5.6m TAW)

Processed by:

IMDC

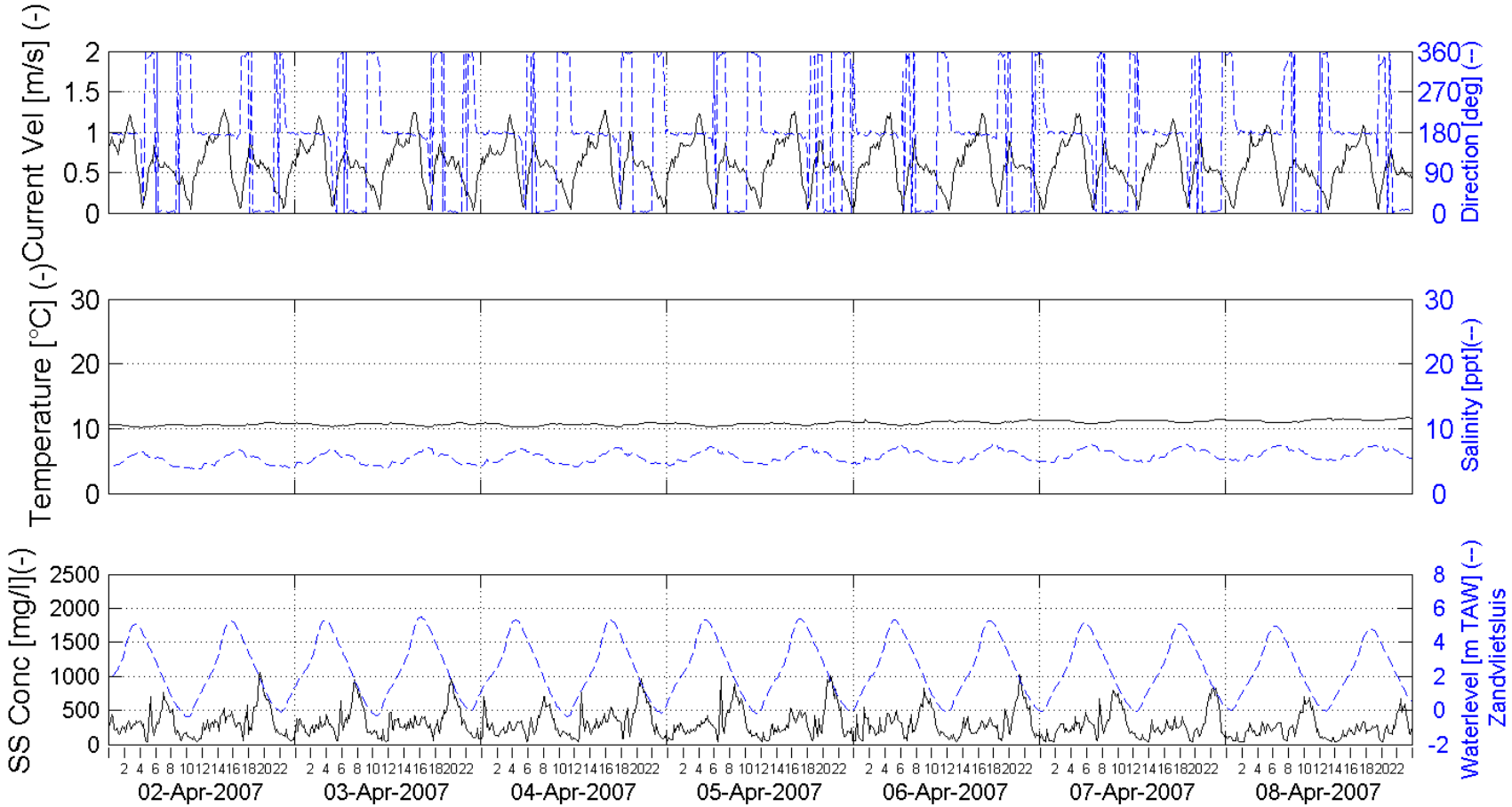
In Association with:

GEMS International

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 14 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 84 top - 3.3m above bottom (-5.6m TAW)

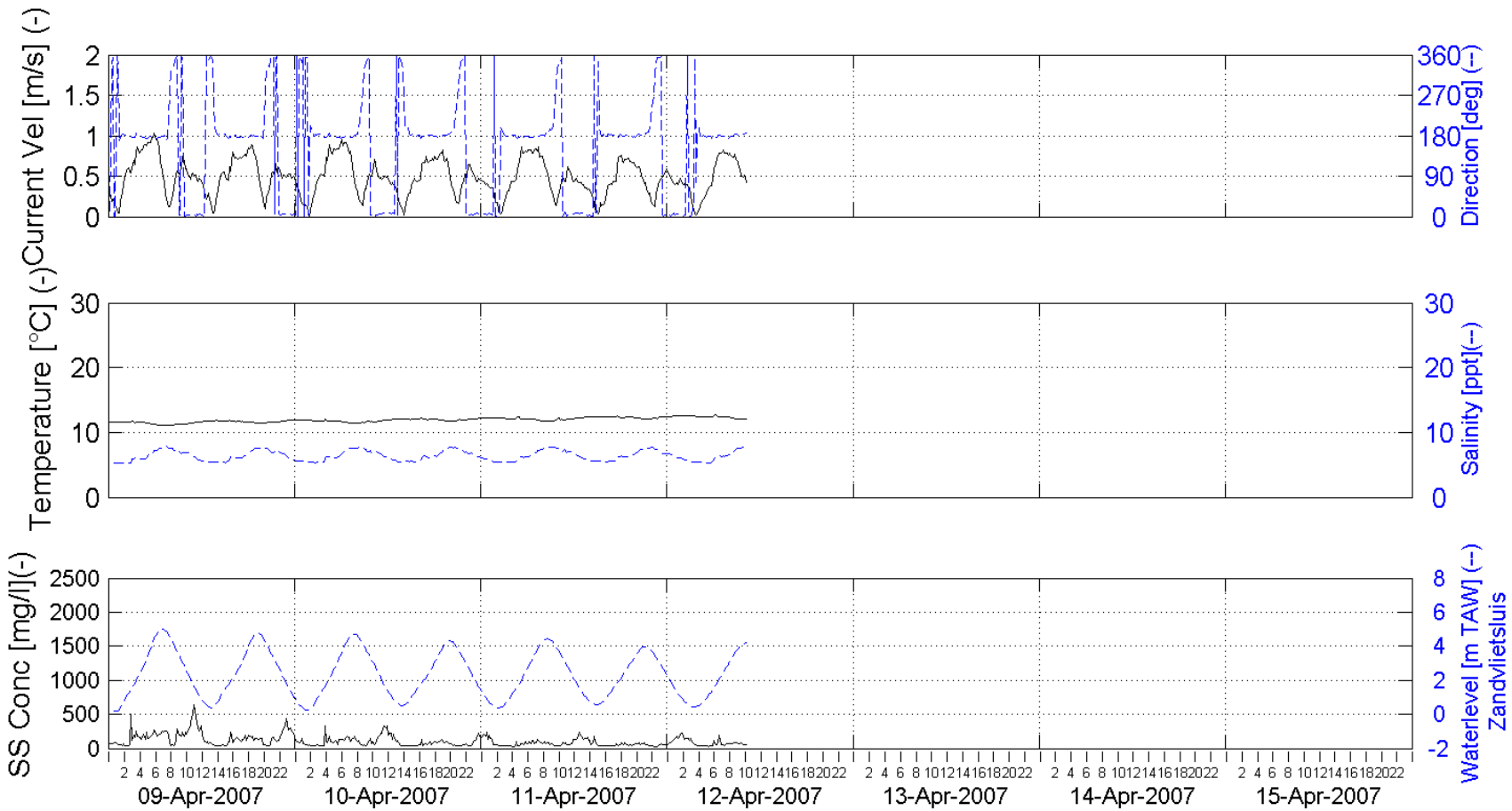
Processed by:

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 15 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 84 top - 3.3m above bottom (-5.6m TAW)

Processed by:

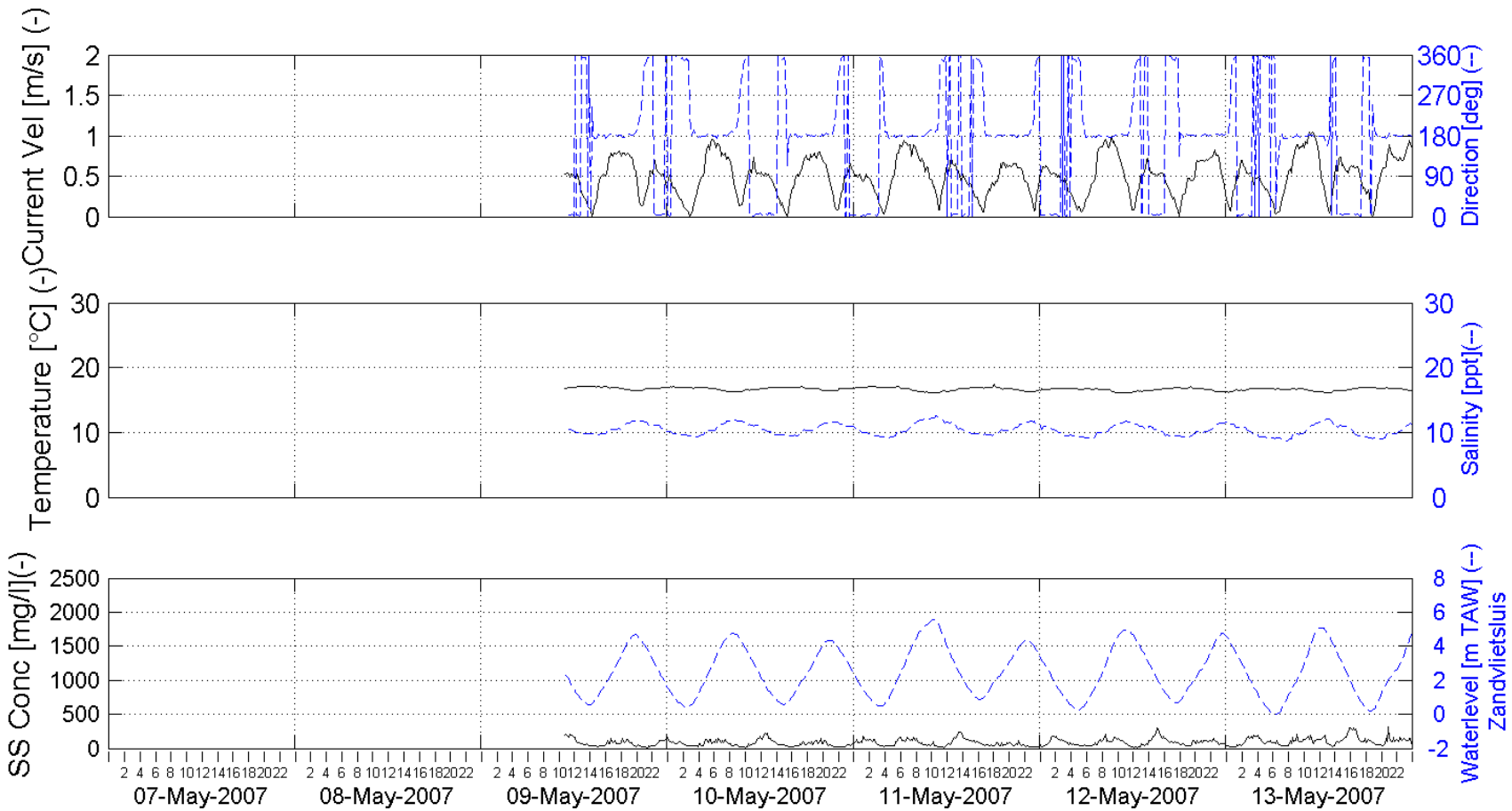
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 19 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 84 top - 3.3m above bottom (-5.6m TAW)

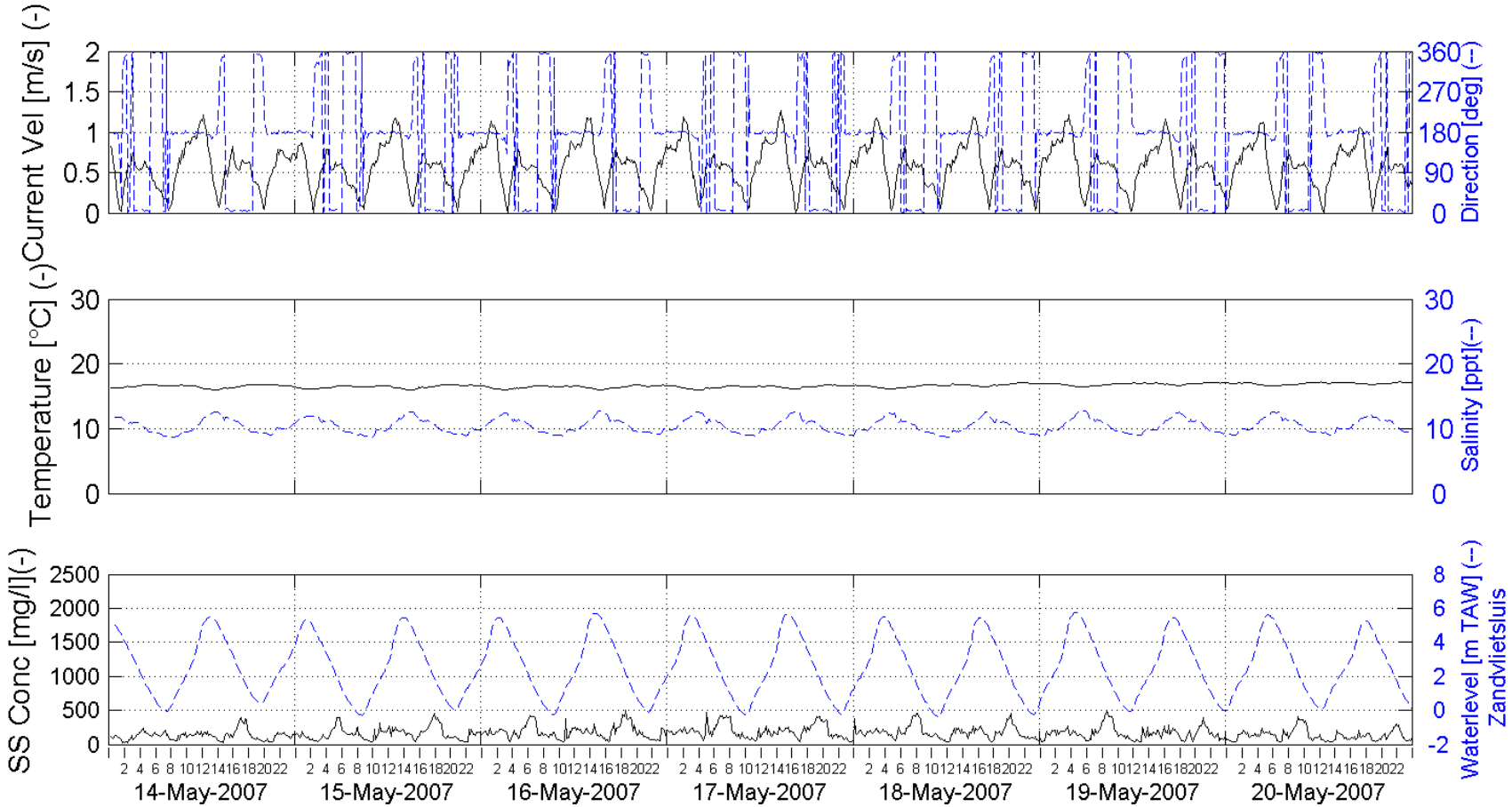
Processed by:

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 20 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 84 top - 3.3m above bottom (-5.6m TAW)

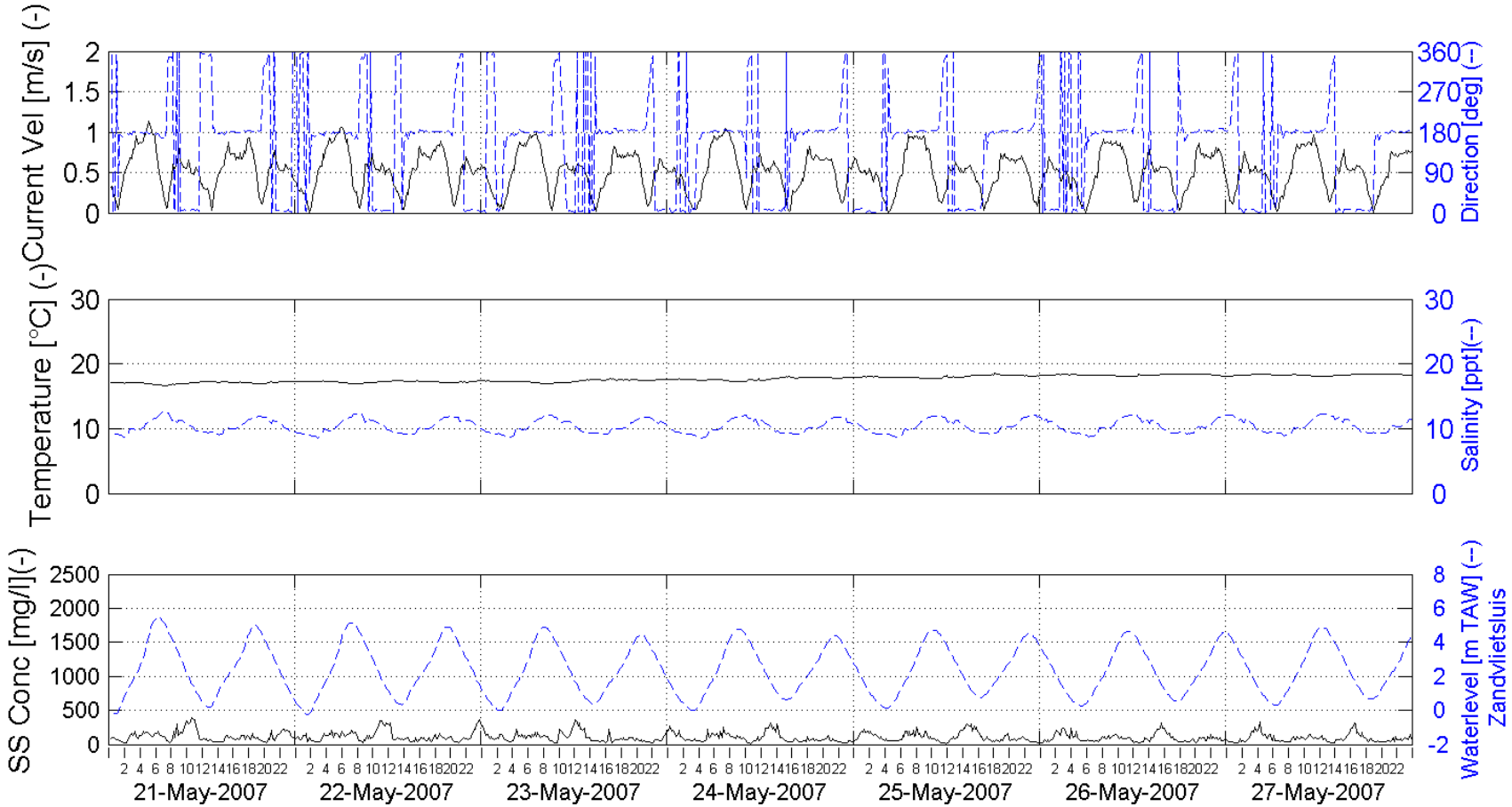
Processed by:

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 21 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 84 top - 3.3m above bottom (-5.6m TAW)

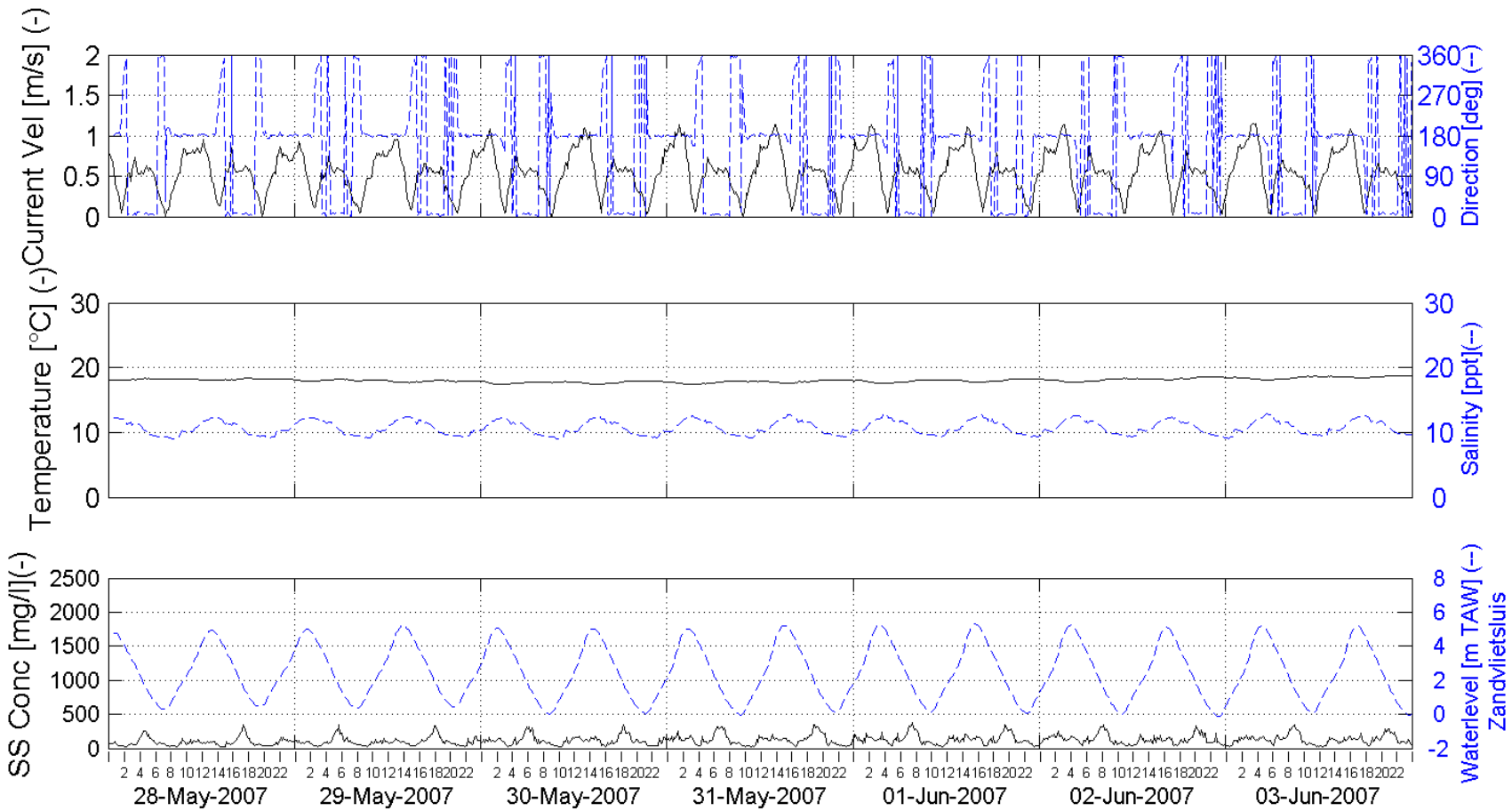
Processed by:

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 22 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 84 top - 3.3m above bottom (-5.6m TAW)

Processed by:

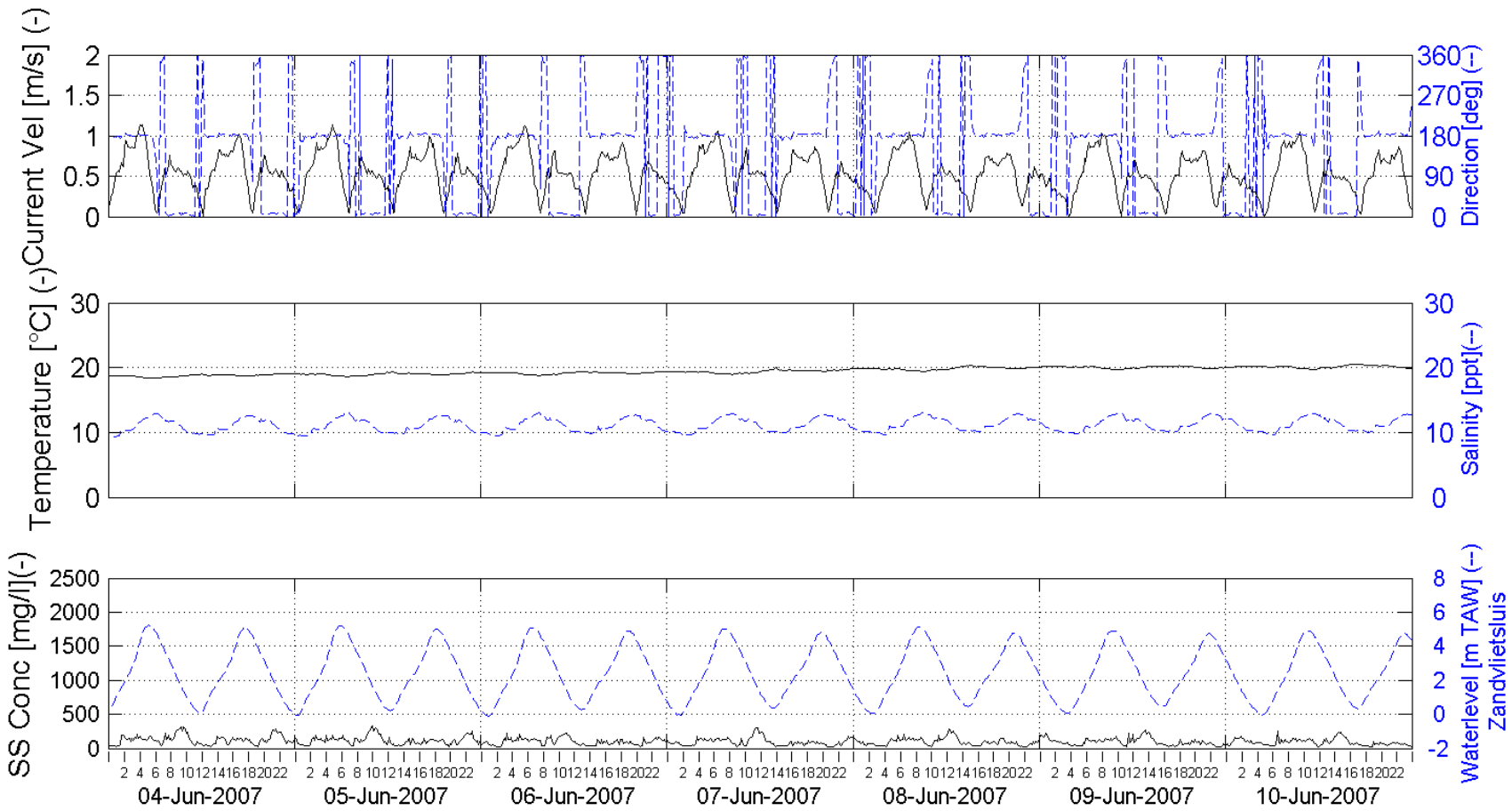
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 23 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 84 top - 3.3m above bottom (-5.6m TAW)

Processed by:

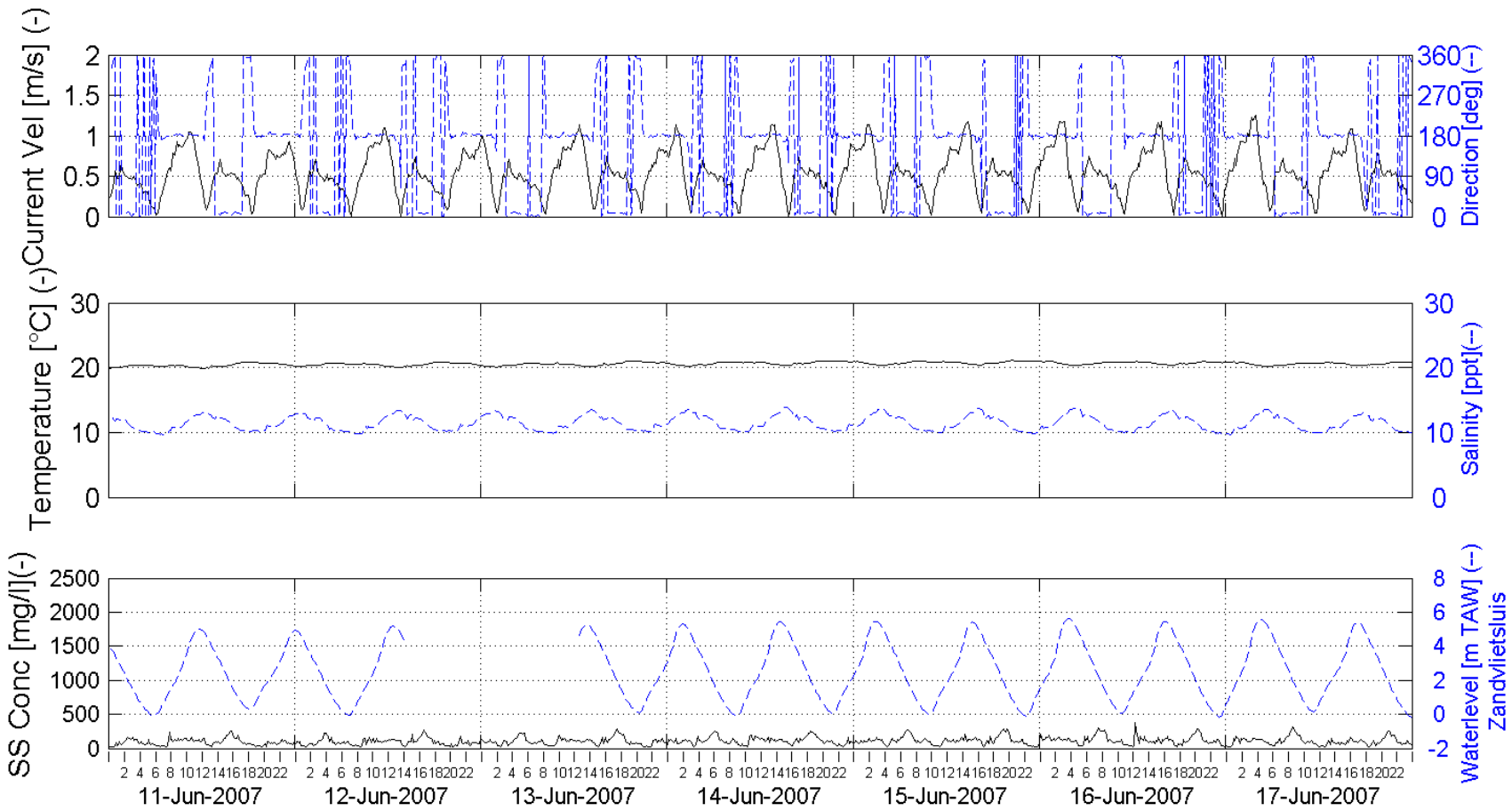
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 24 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 84 top - 3.3m above bottom (-5.6m TAW)

Processed by:

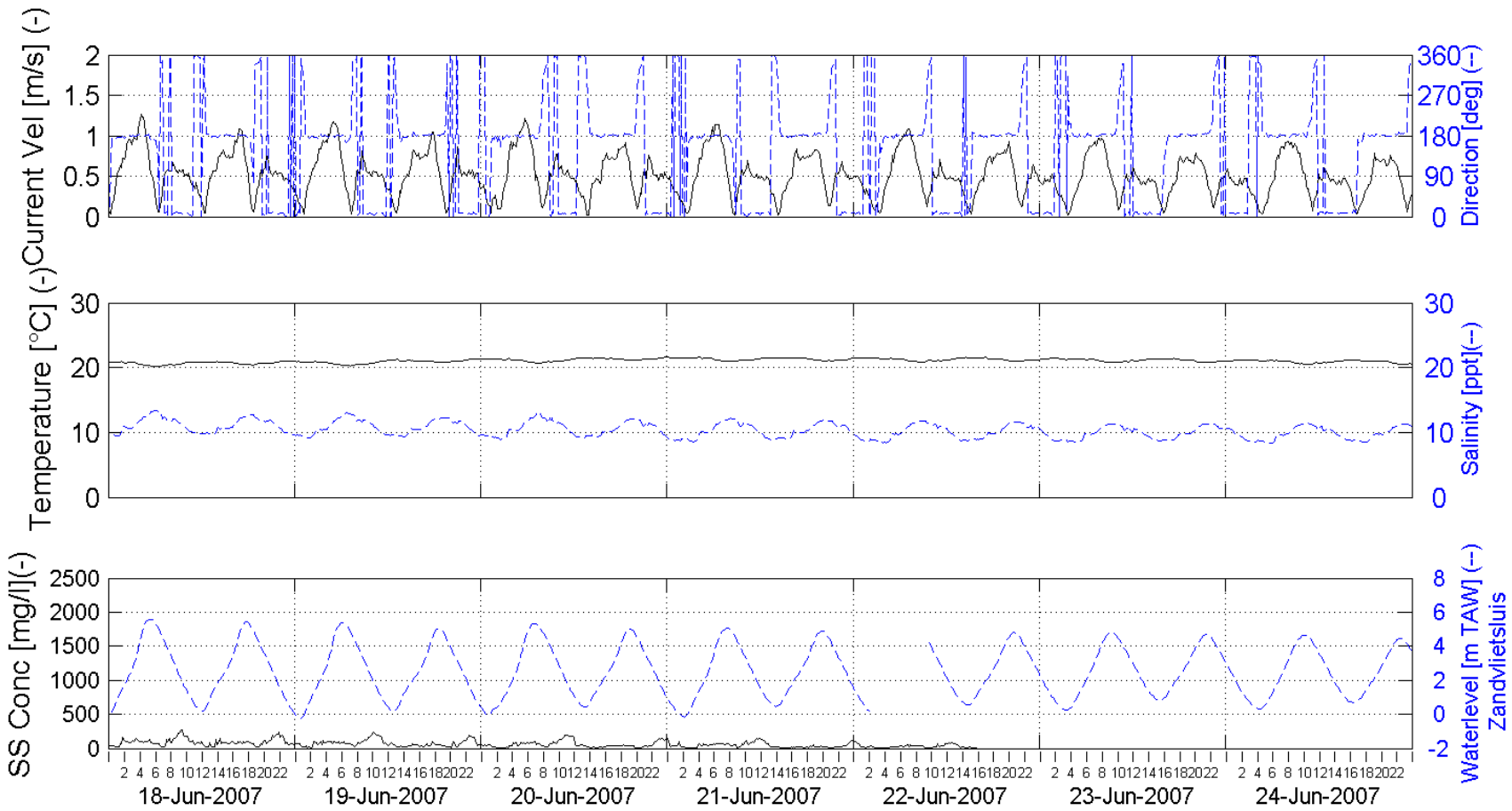
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 25 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 84 top - 3.3m above bottom (-5.6m TAW)

Processed by:

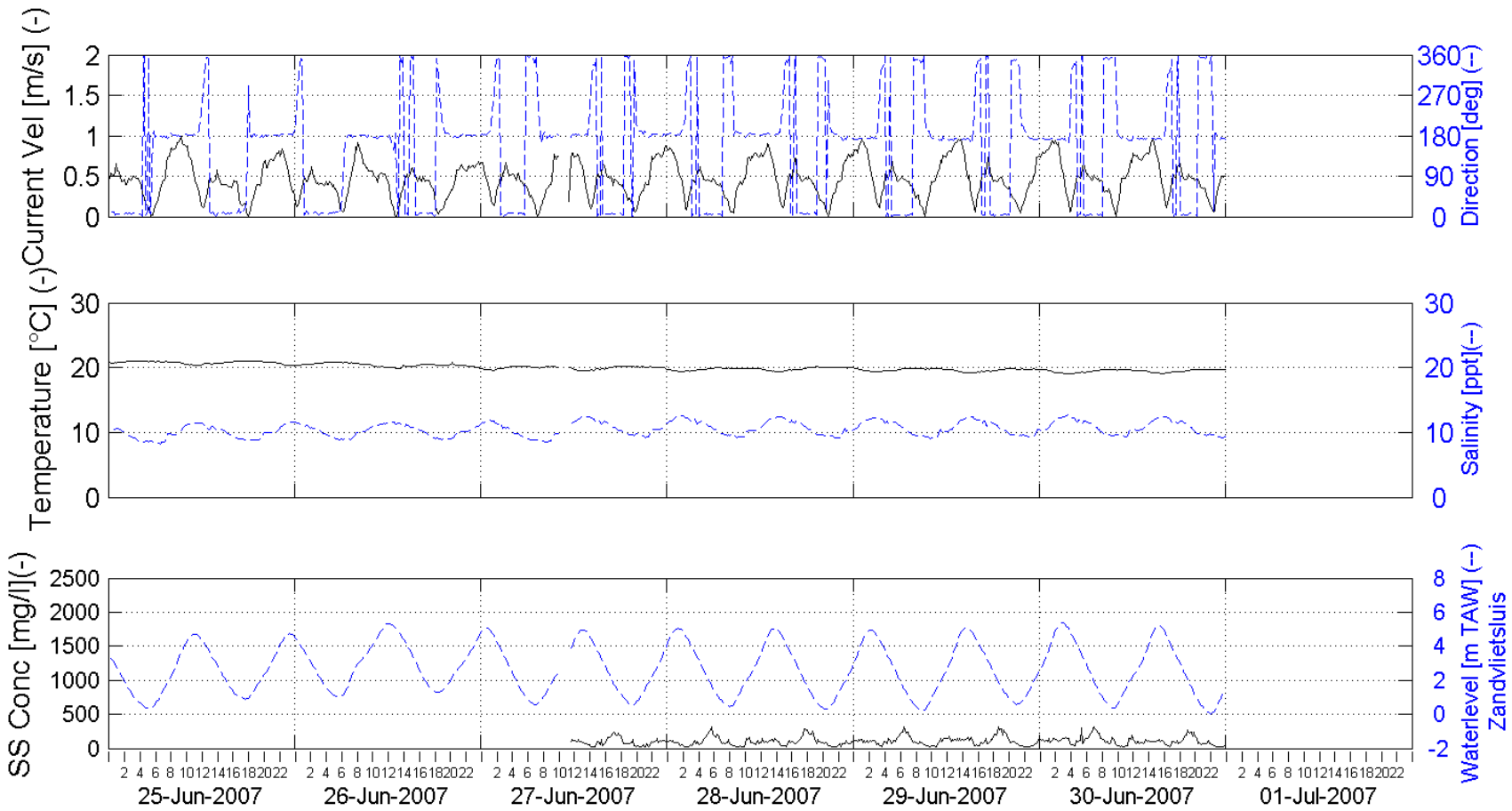
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 26 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 84 top - 3.3m above bottom (-5.6m TAW)

Processed by:

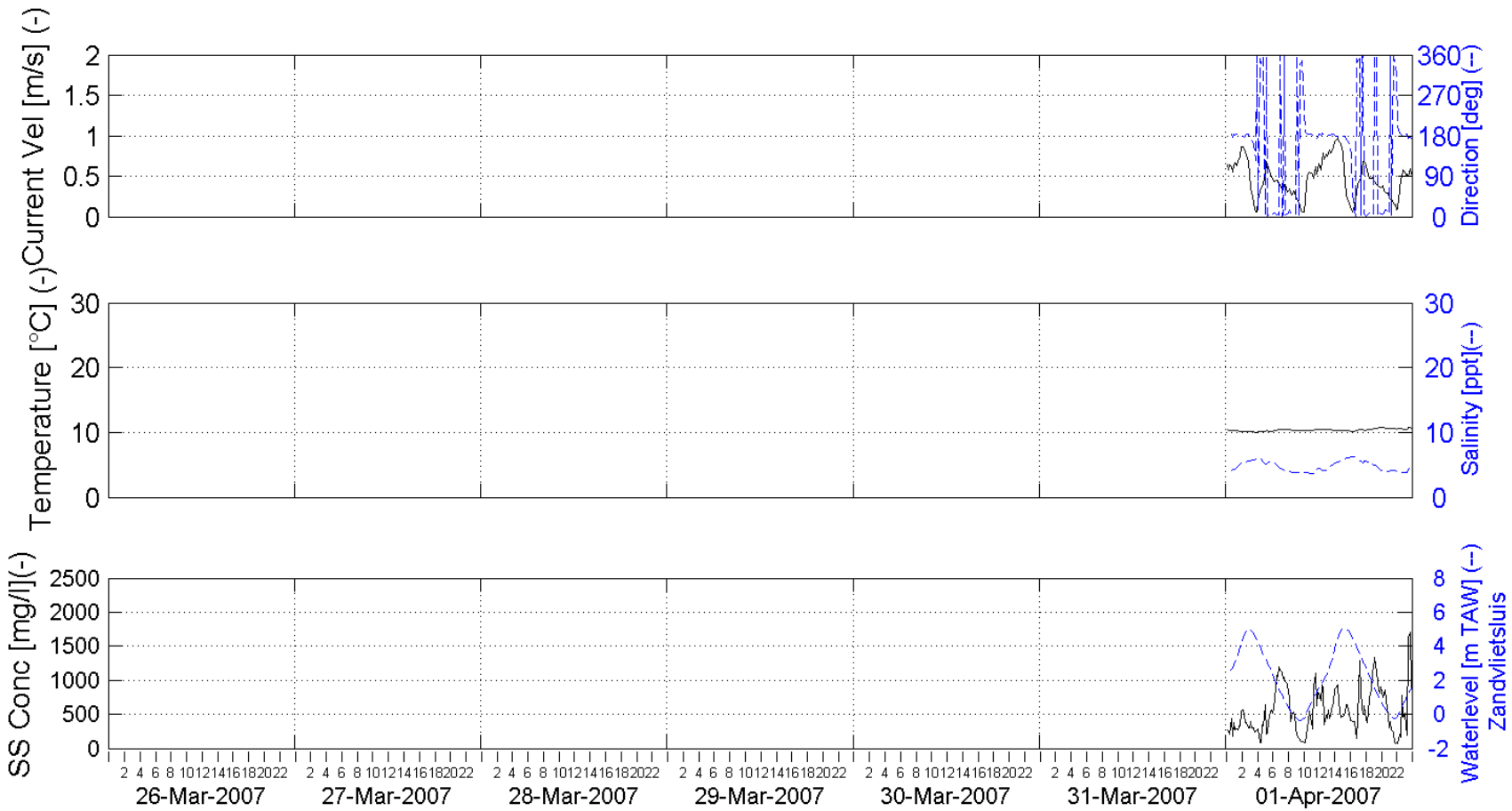
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 13 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 84 bottom - 0.8m above bottom (-8.1m TAW)

Processed by:

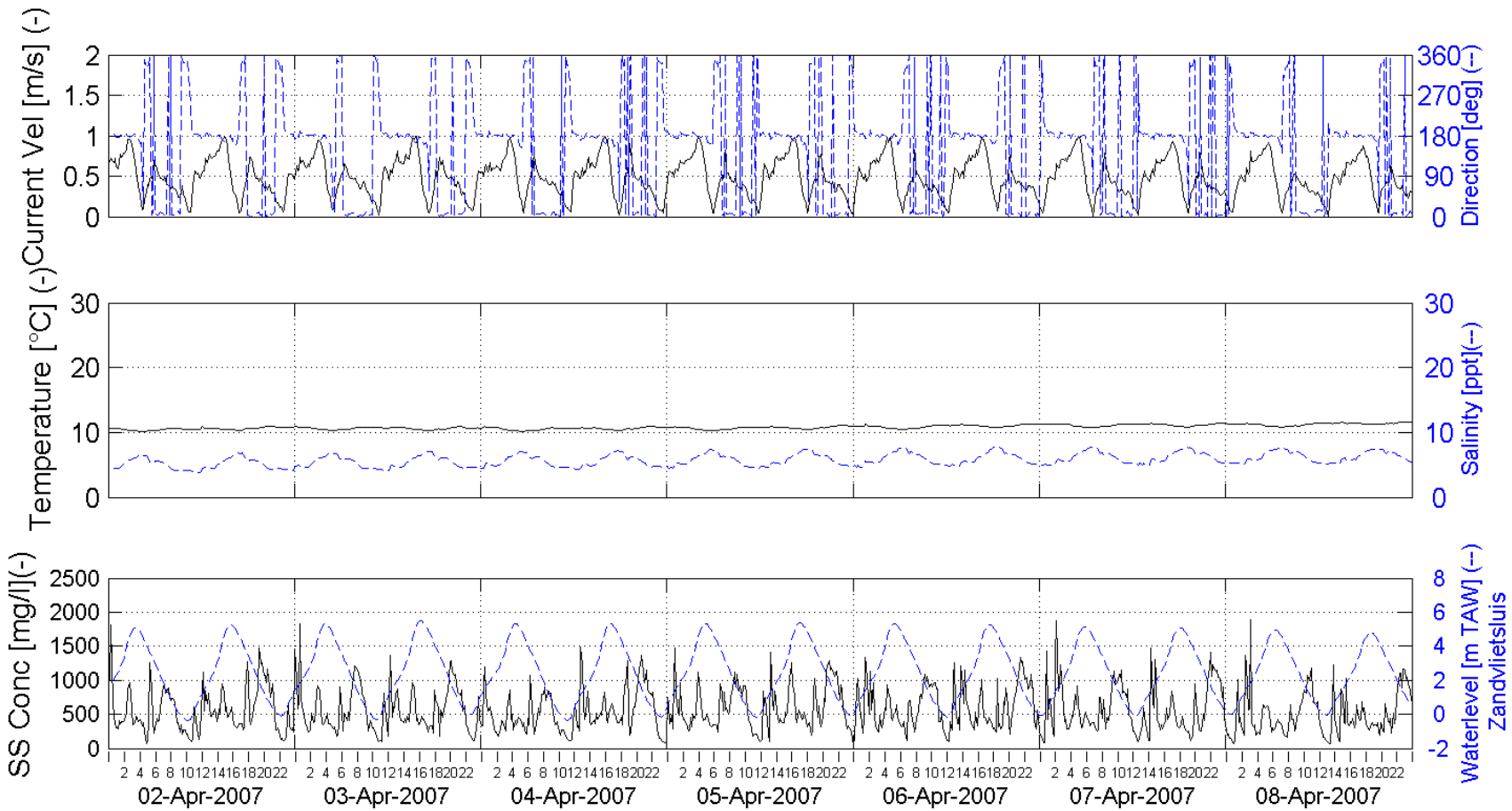
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 14 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 84 bottom - 0.8m above bottom (-8.1m TAW)

Processed by:

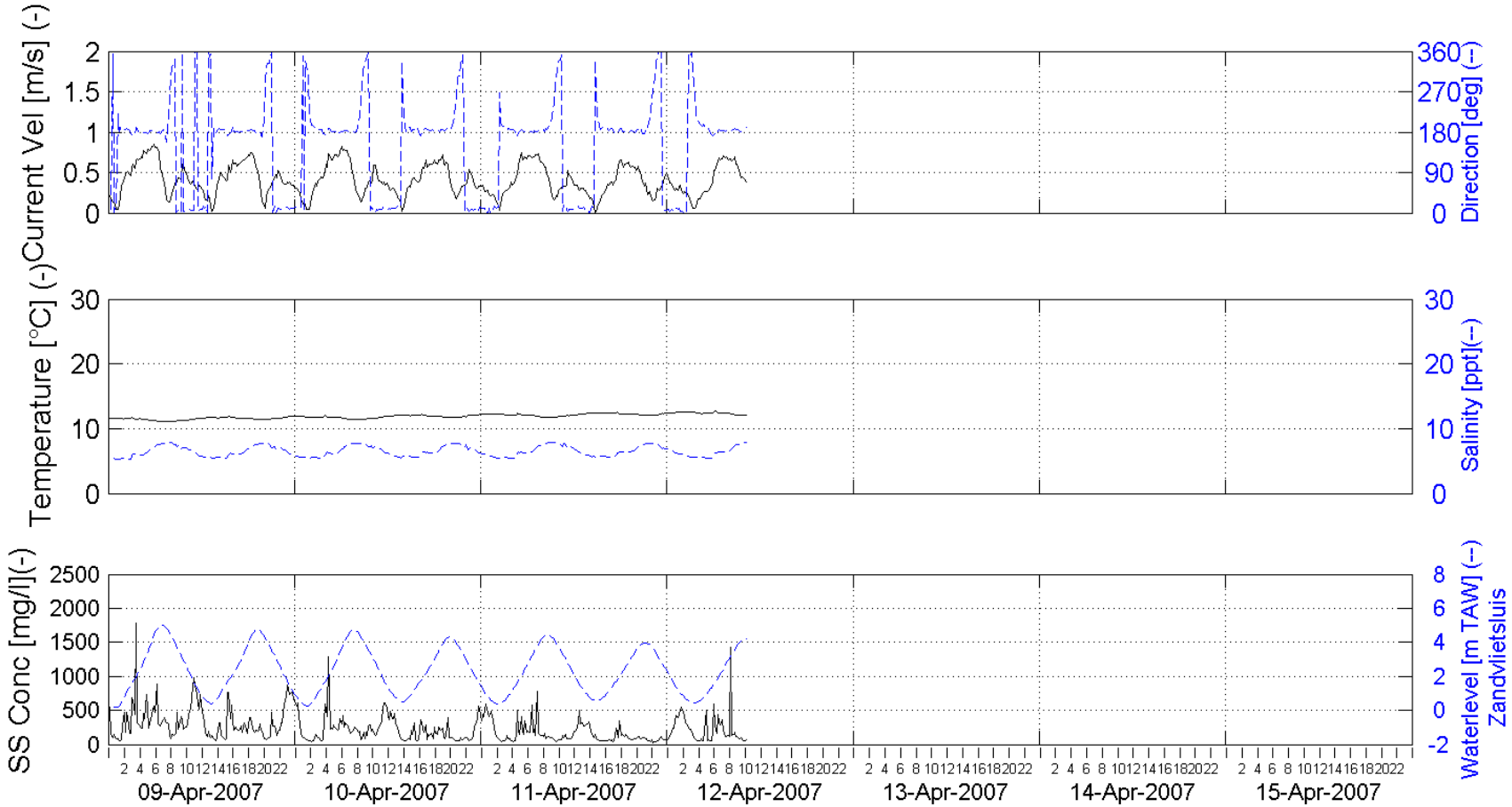
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 15 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 84 bottom - 0.8m above bottom (-8.1m TAW)

Processed by:

IMDC

In Association with:

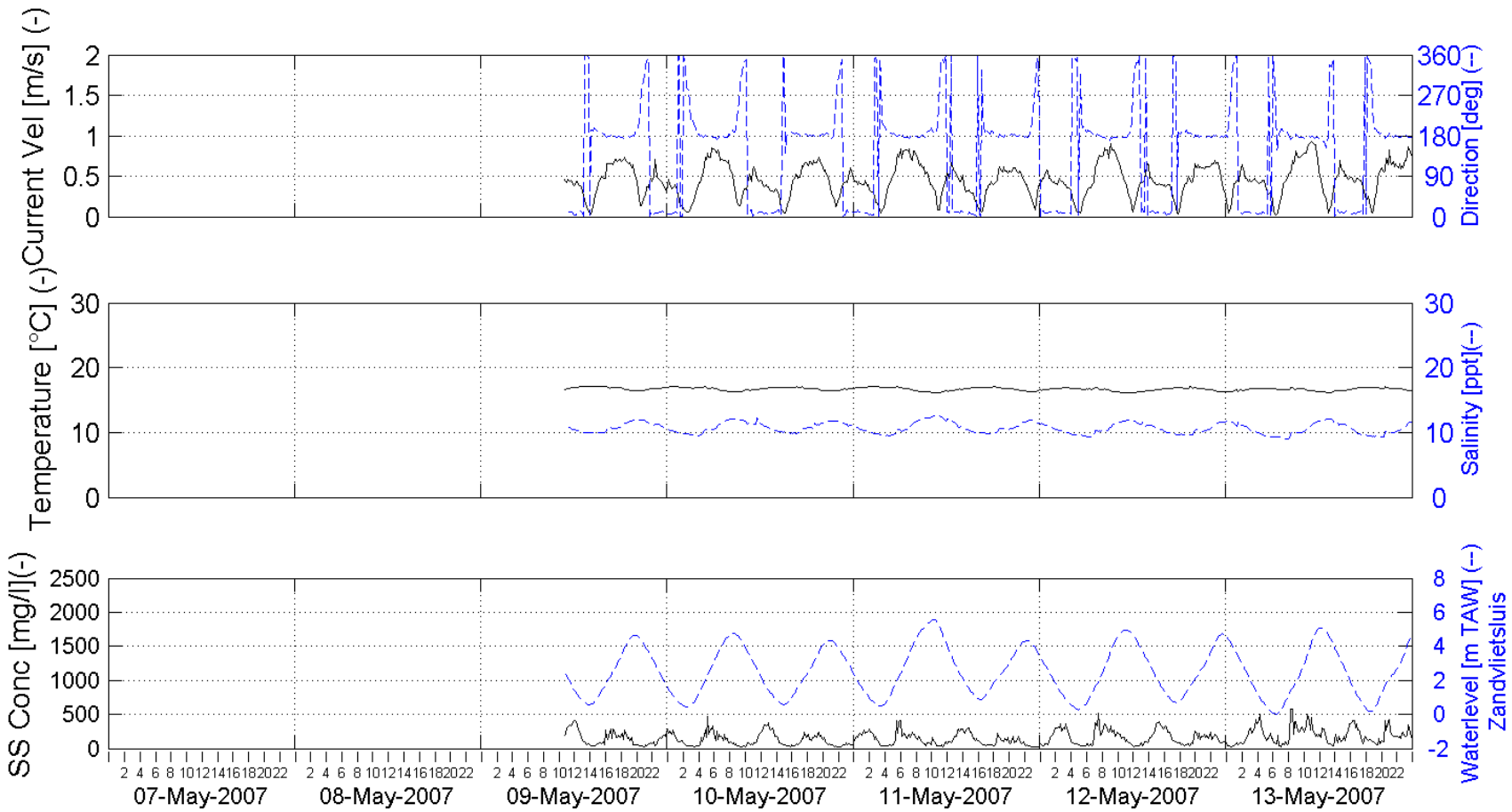
WL | delft hydraulics

GEMS International

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 19 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 84 bottom - 0.8m above bottom (-8.1m TAW)

Processed by:

IMDC

In Association with:

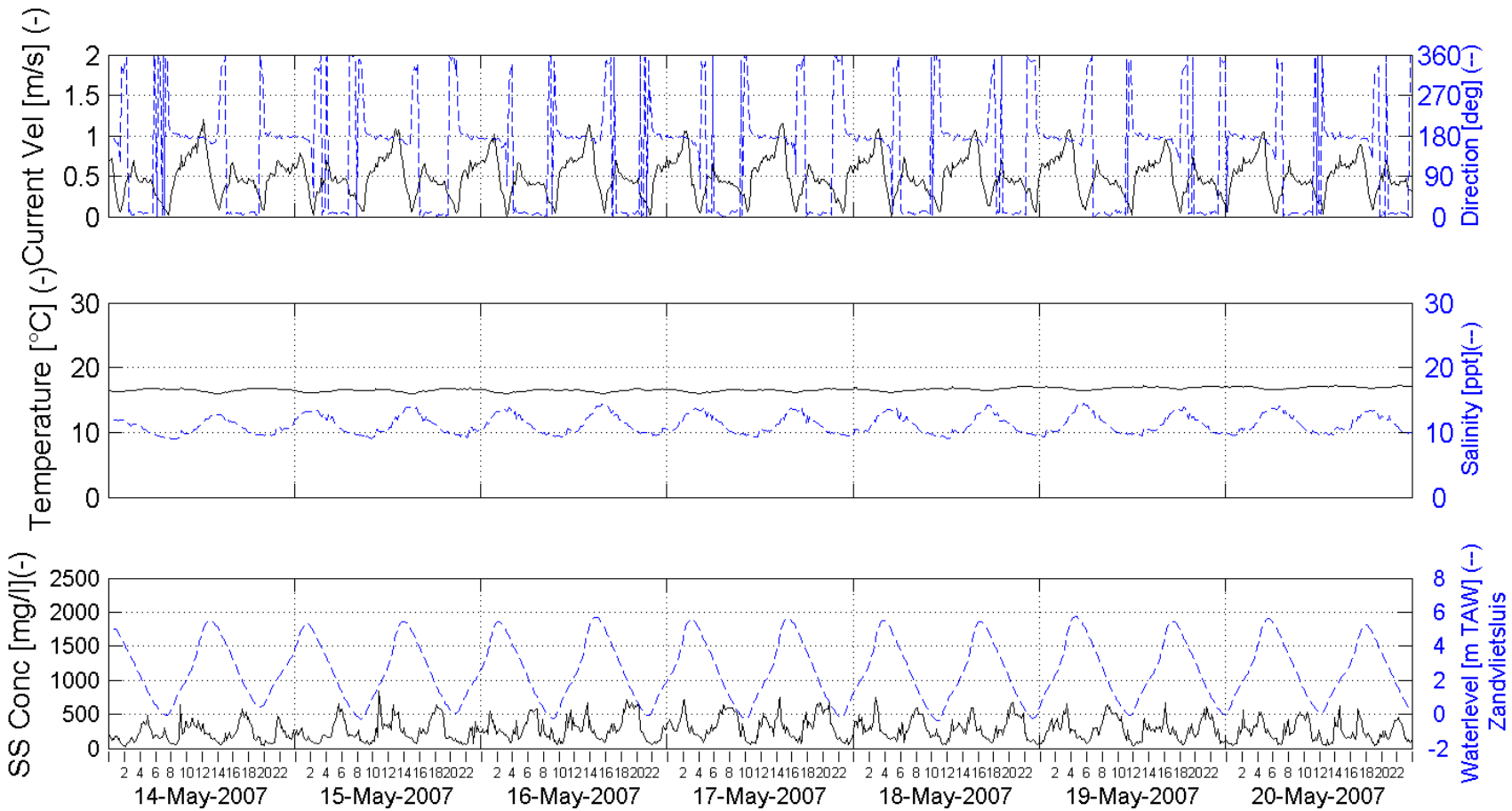
WL | delft hydraulics

GEMS International

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 20 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 84 bottom - 0.8m above bottom (-8.1m TAW)

Processed by:

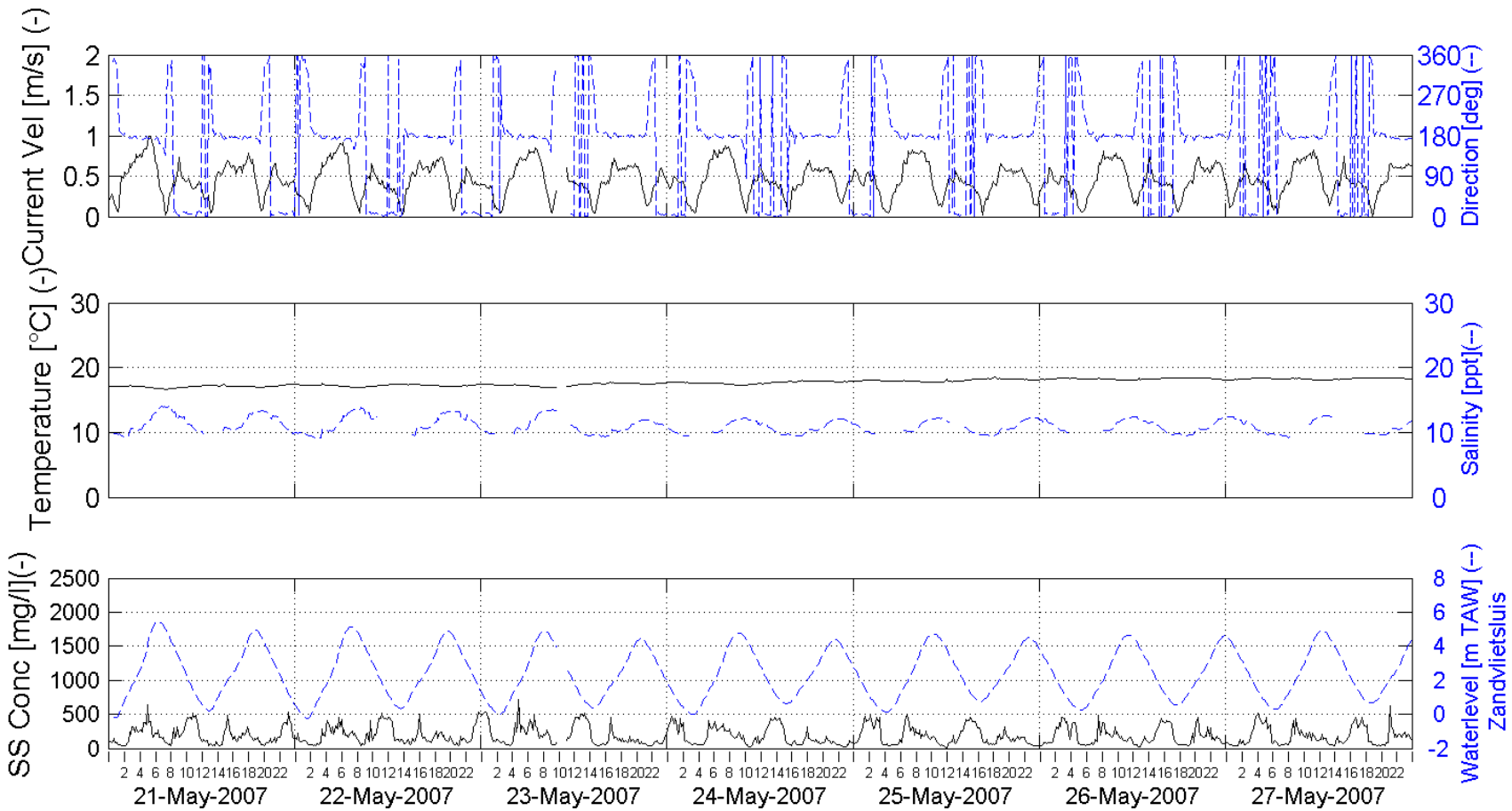
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 21 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 84 bottom - 0.8m above bottom (-8.1m TAW)

Processed by:

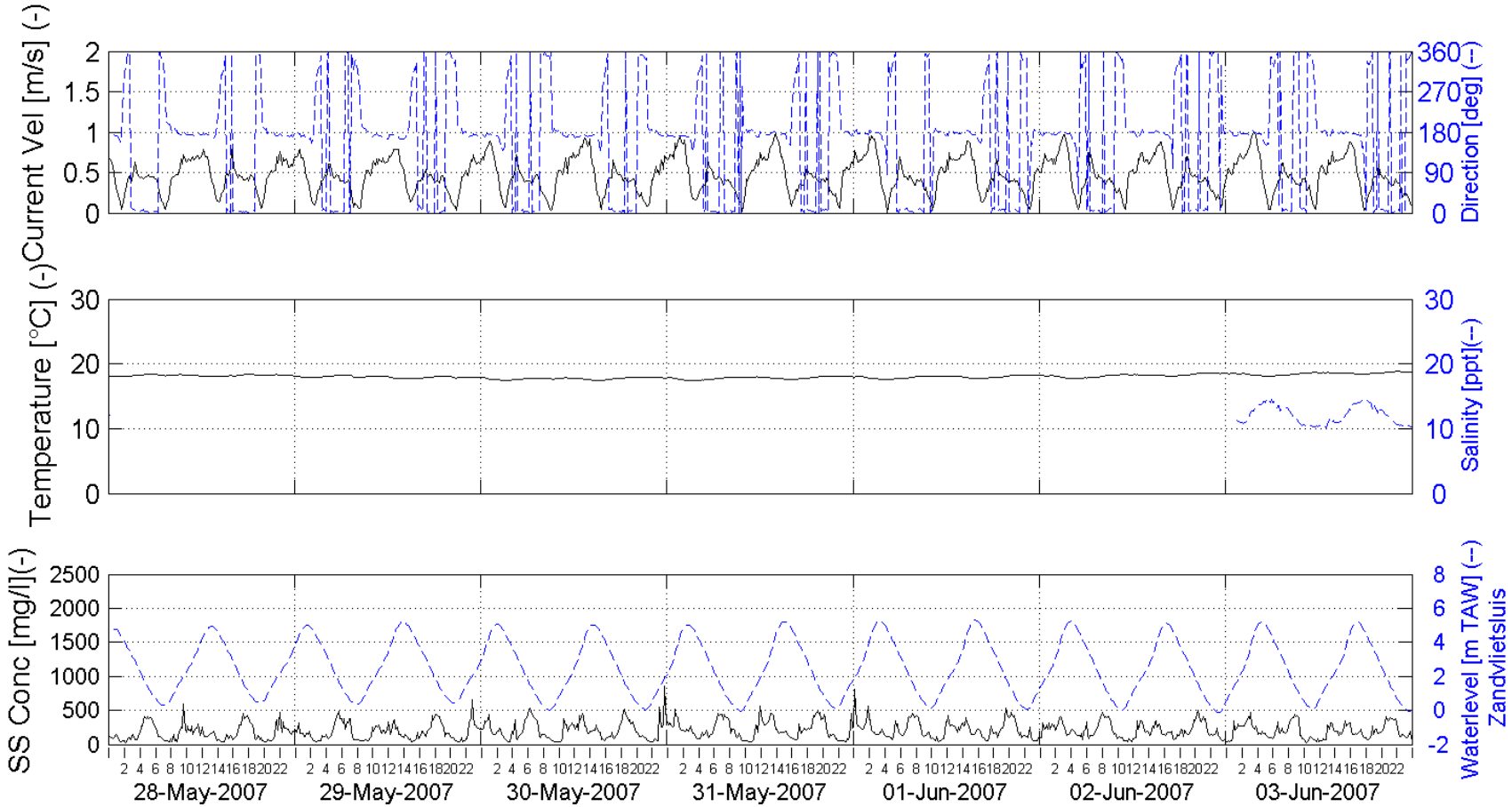
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 22 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 84 bottom - 0.8m above bottom (-8.1m TAW)

Processed by:

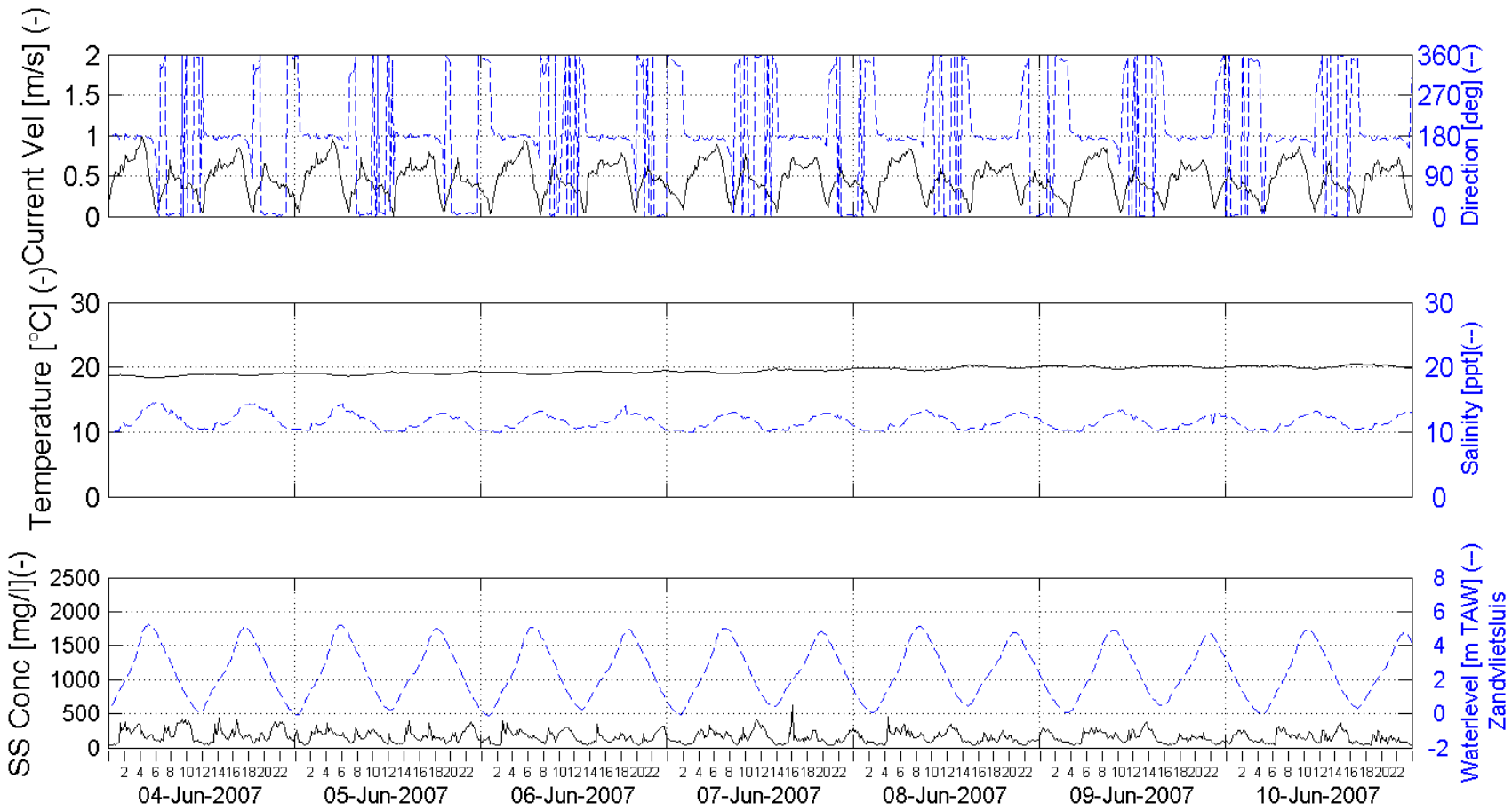
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 23 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 84 bottom - 0.8m above bottom (-8.1m TAW)

Processed by:

IMDC

In Association with:

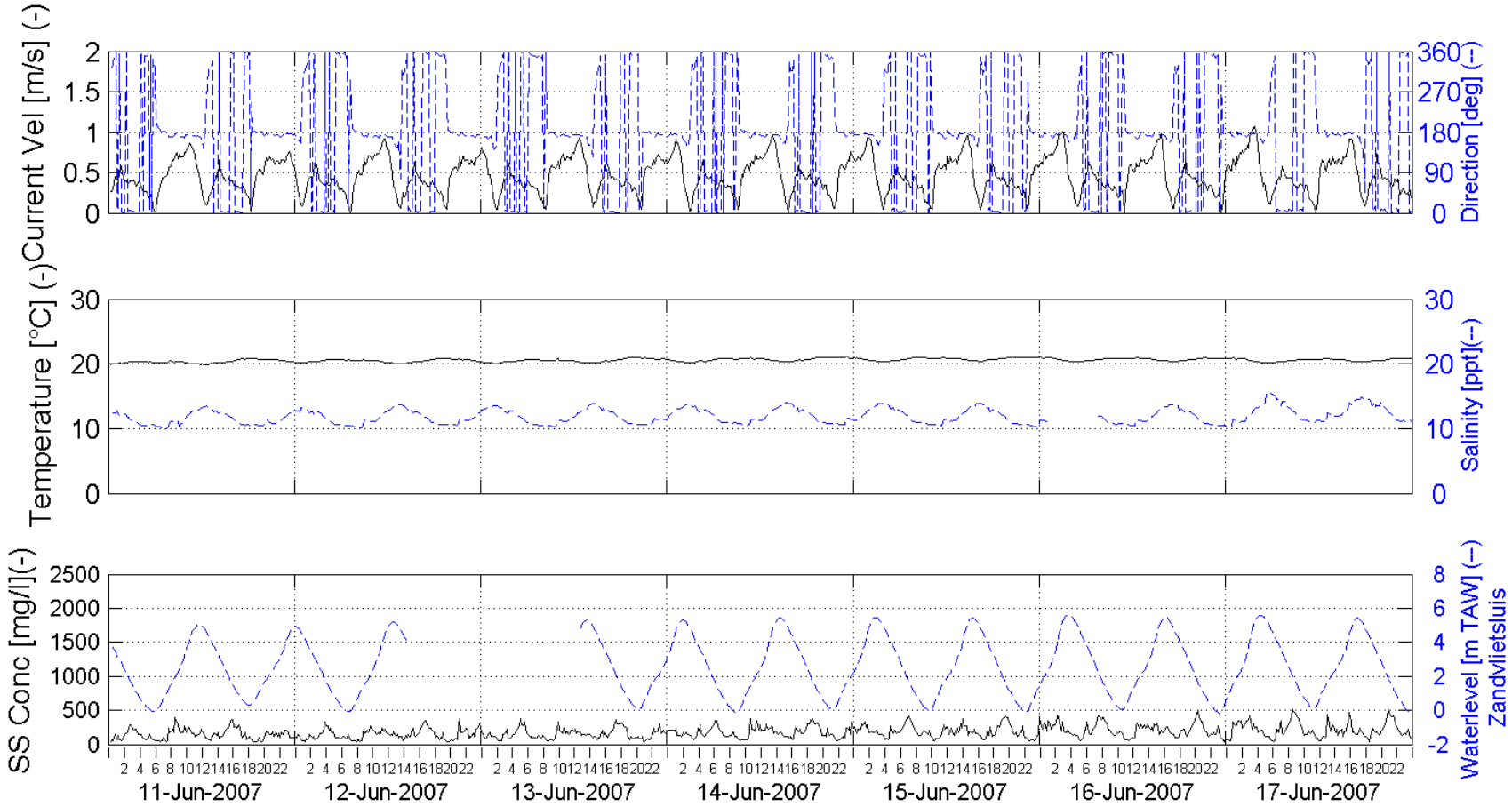
WL | delft hydraulics

GEMS International

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 24 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 84 bottom - 0.8m above bottom (-8.1m TAW)

Processed by:

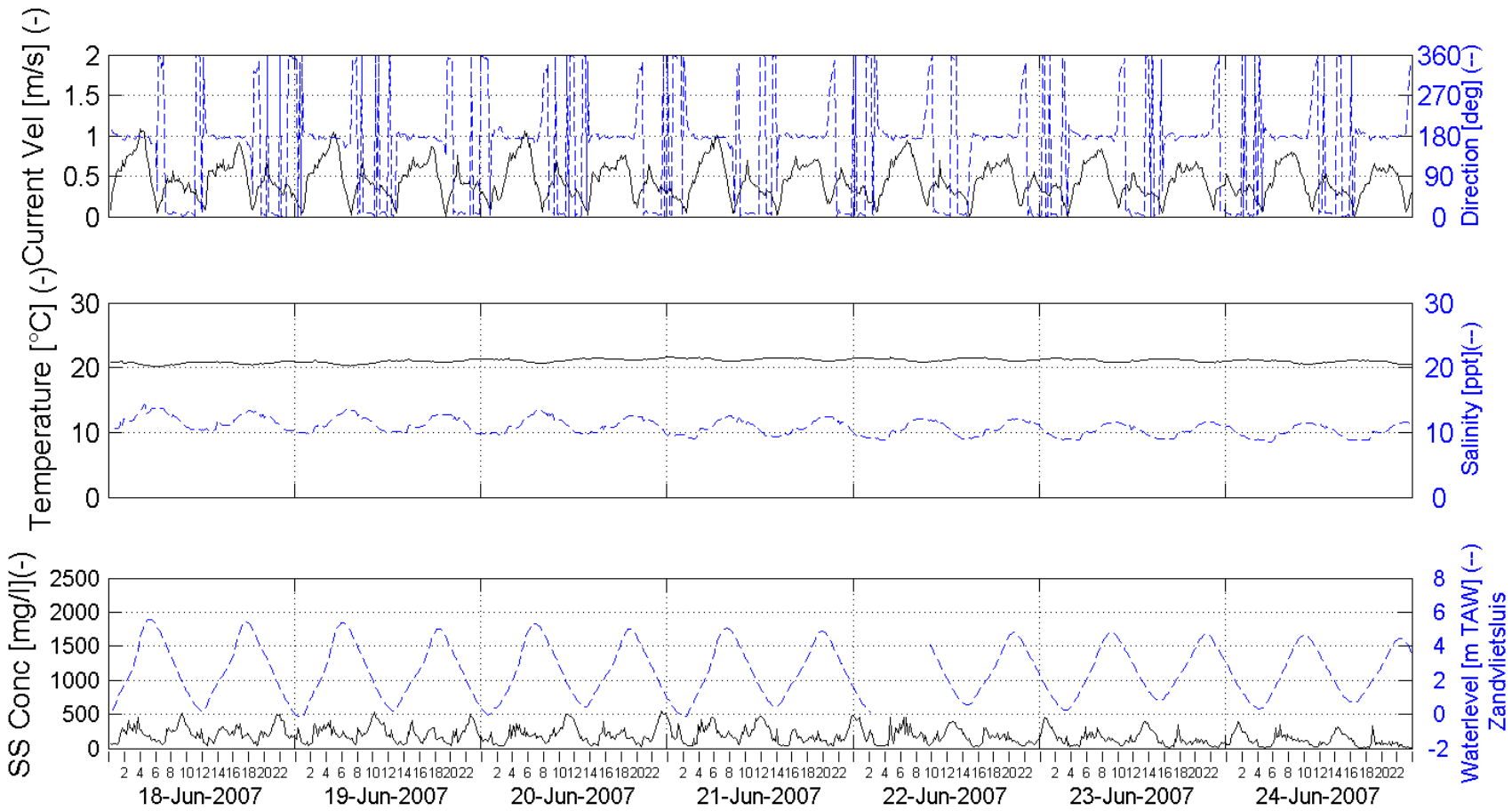
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 25 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 84 bottom - 0.8m above bottom (-8.1m TAW)

Processed by:

IMDC

In Association with:

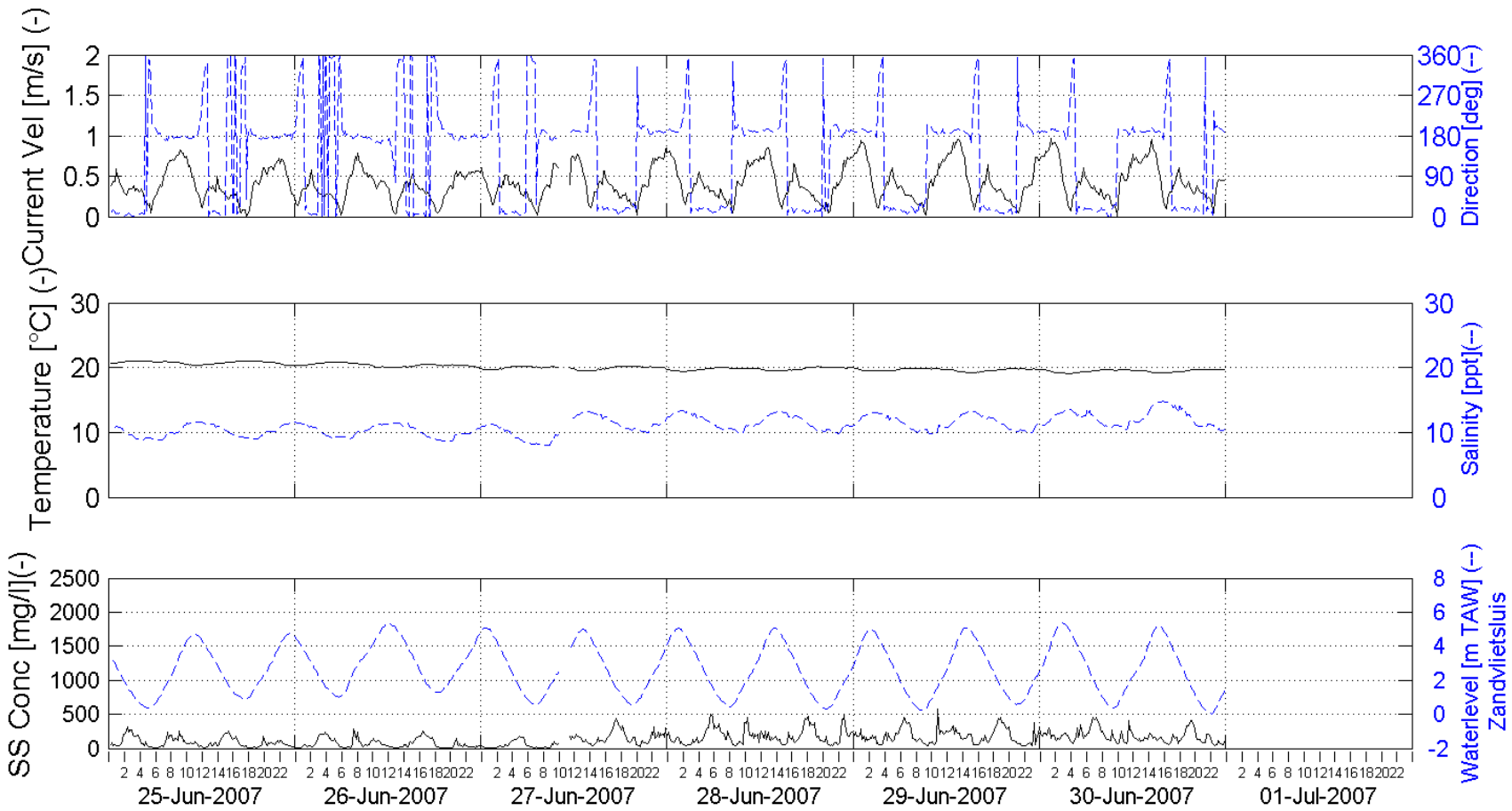
WL | delft hydraulics

GEMS International

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 26 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 84 bottom - 0.8m above bottom (-8.1m TAW)

Processed by:

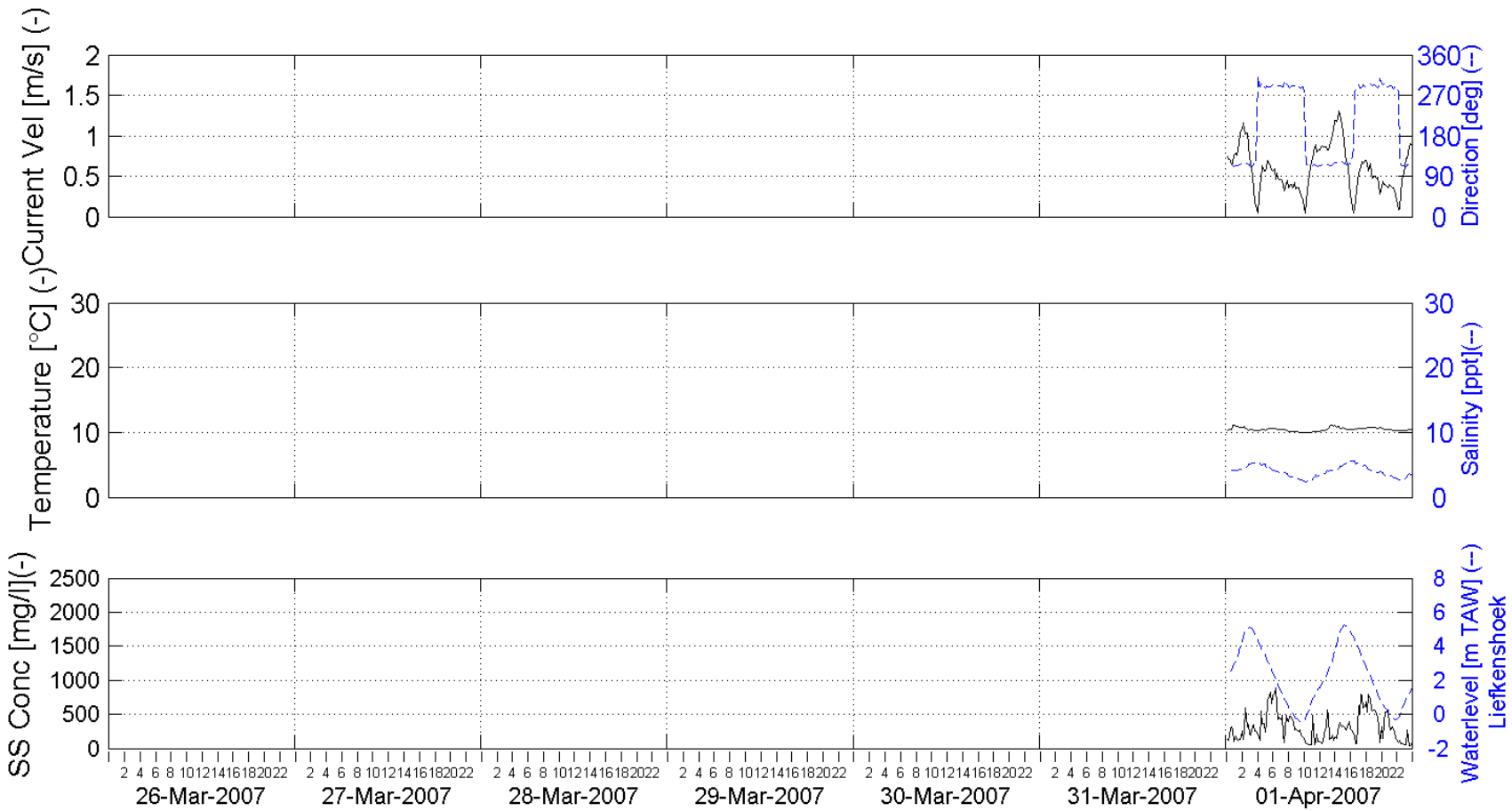
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 13 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 top - 3.3m above bottom (-5.3m TAW)

Processed by:

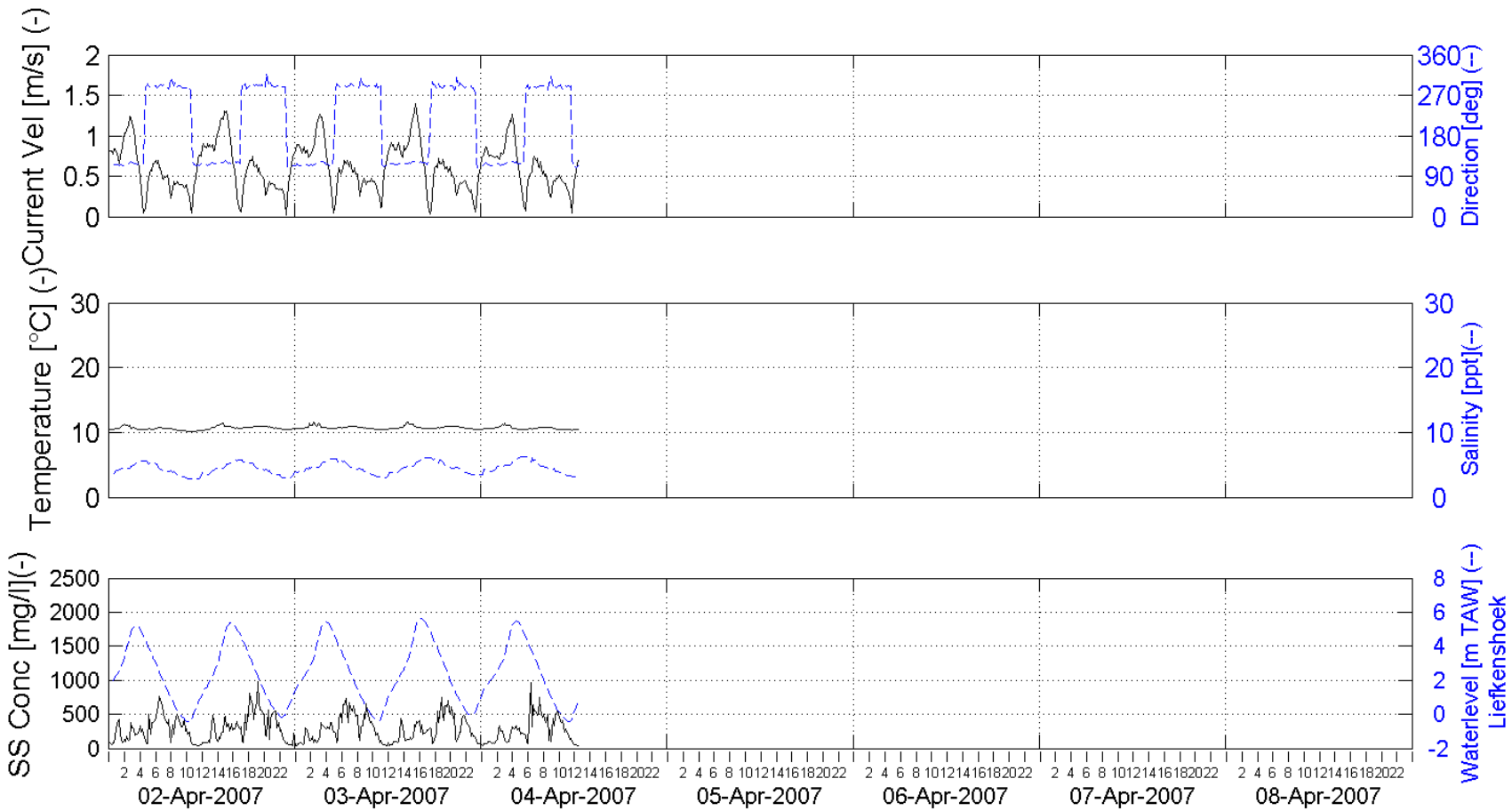
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 14 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 top - 3.3m above bottom (-5.3m TAW)

Processed by:

IMDC

In Association with:

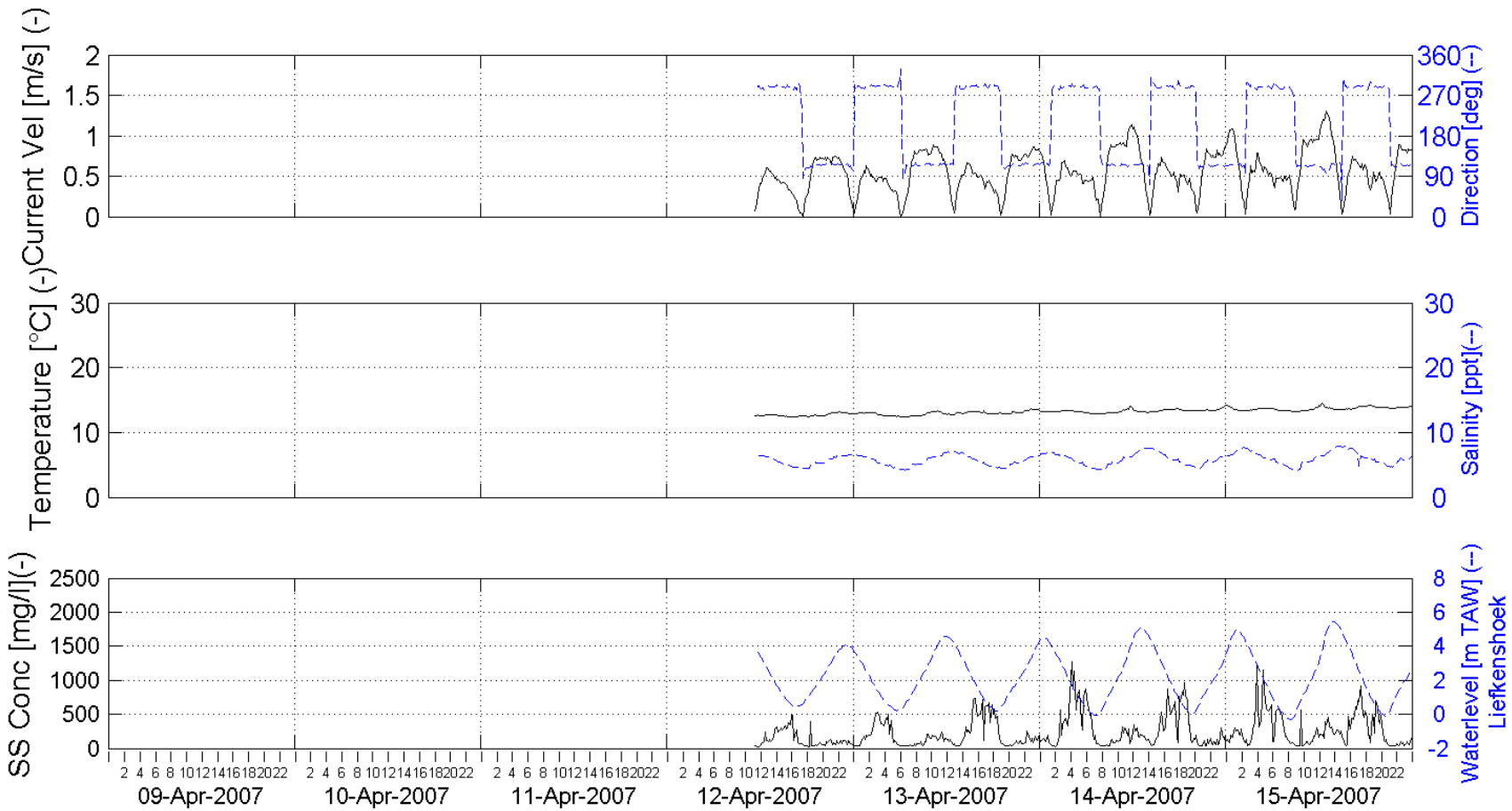
WL | delft hydraulics

GEMS International

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 15 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 top - 3.3m above bottom (-5.3m TAW)

Processed by:

IMDC

In Association with:

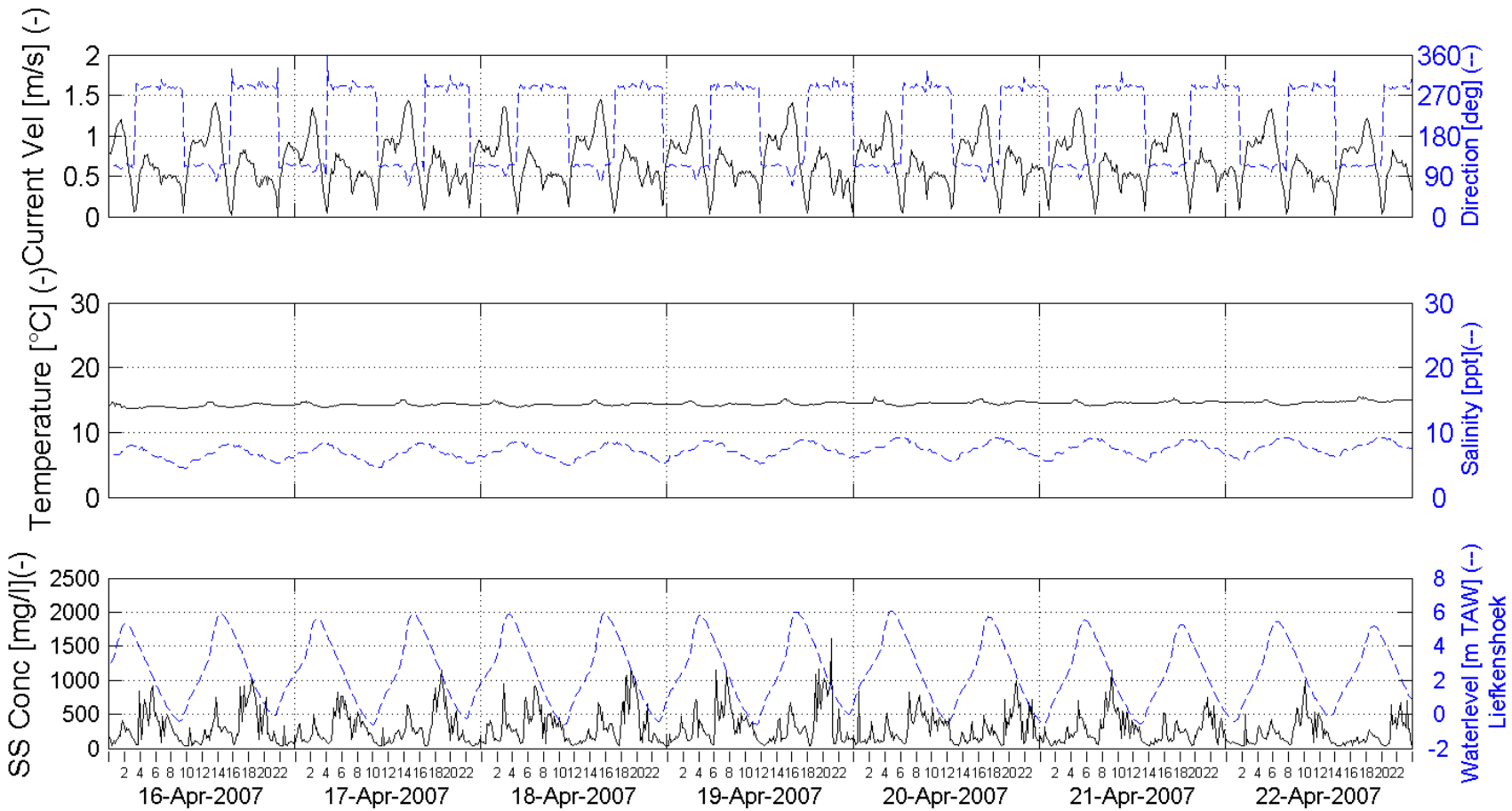
WL | delft hydraulics

GEMS International

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 16 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 top - 3.3m above bottom (-5.3m TAW)

Processed by:

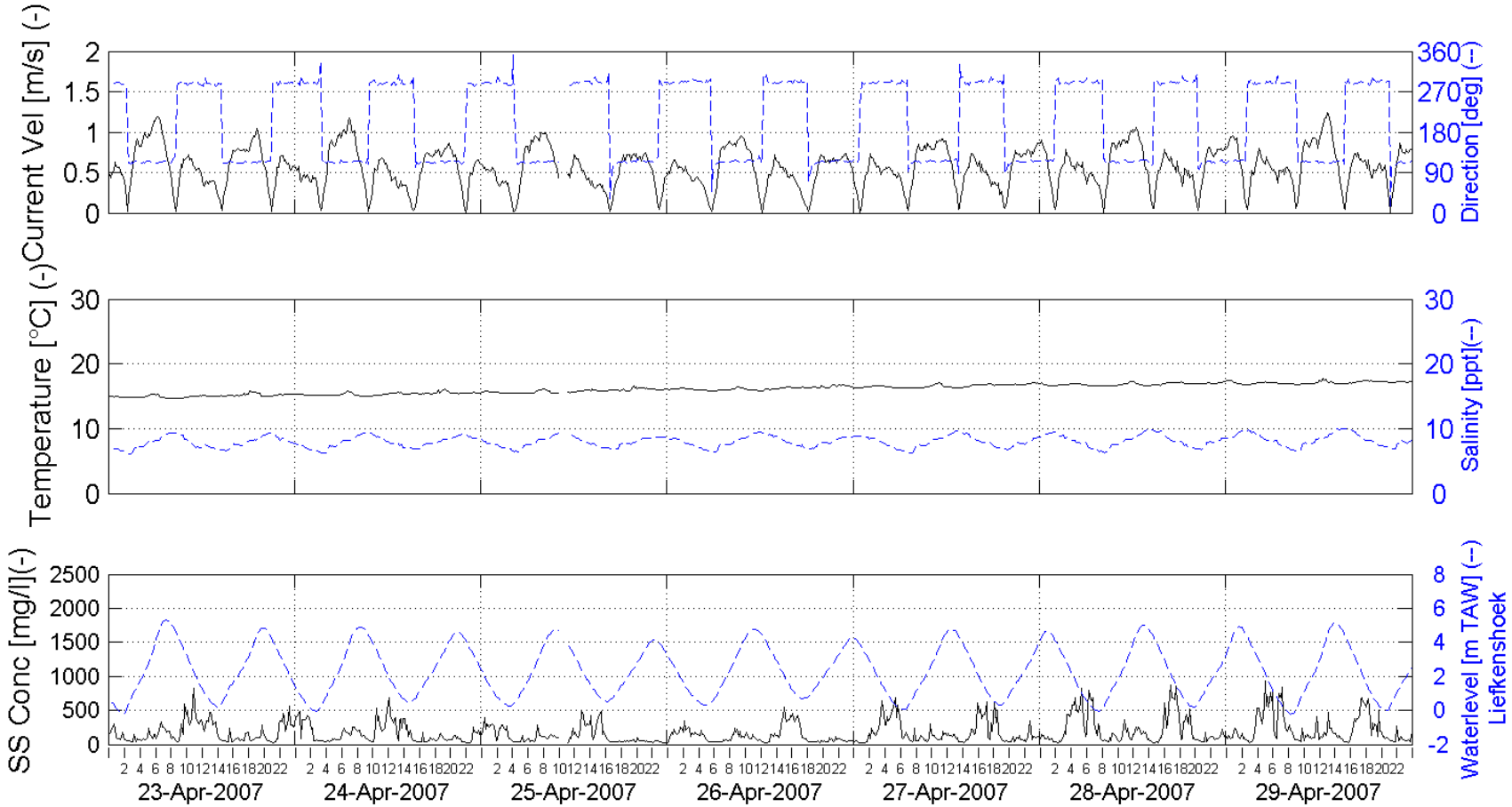
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 17 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 top - 3.3m above bottom (-5.3m TAW)

Processed by:

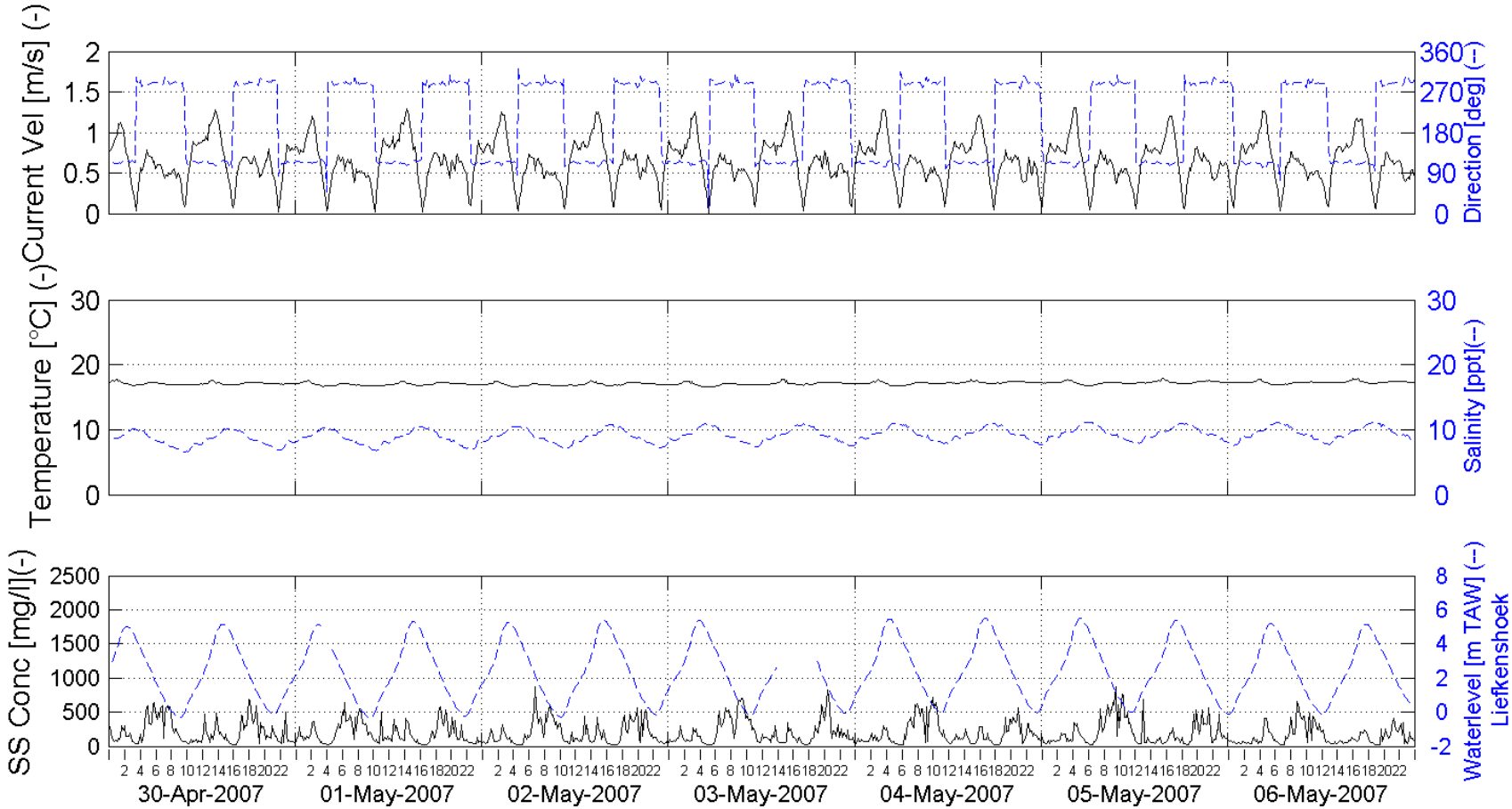
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 18 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 top - 3.3m above bottom (-5.3m TAW)

Processed by:

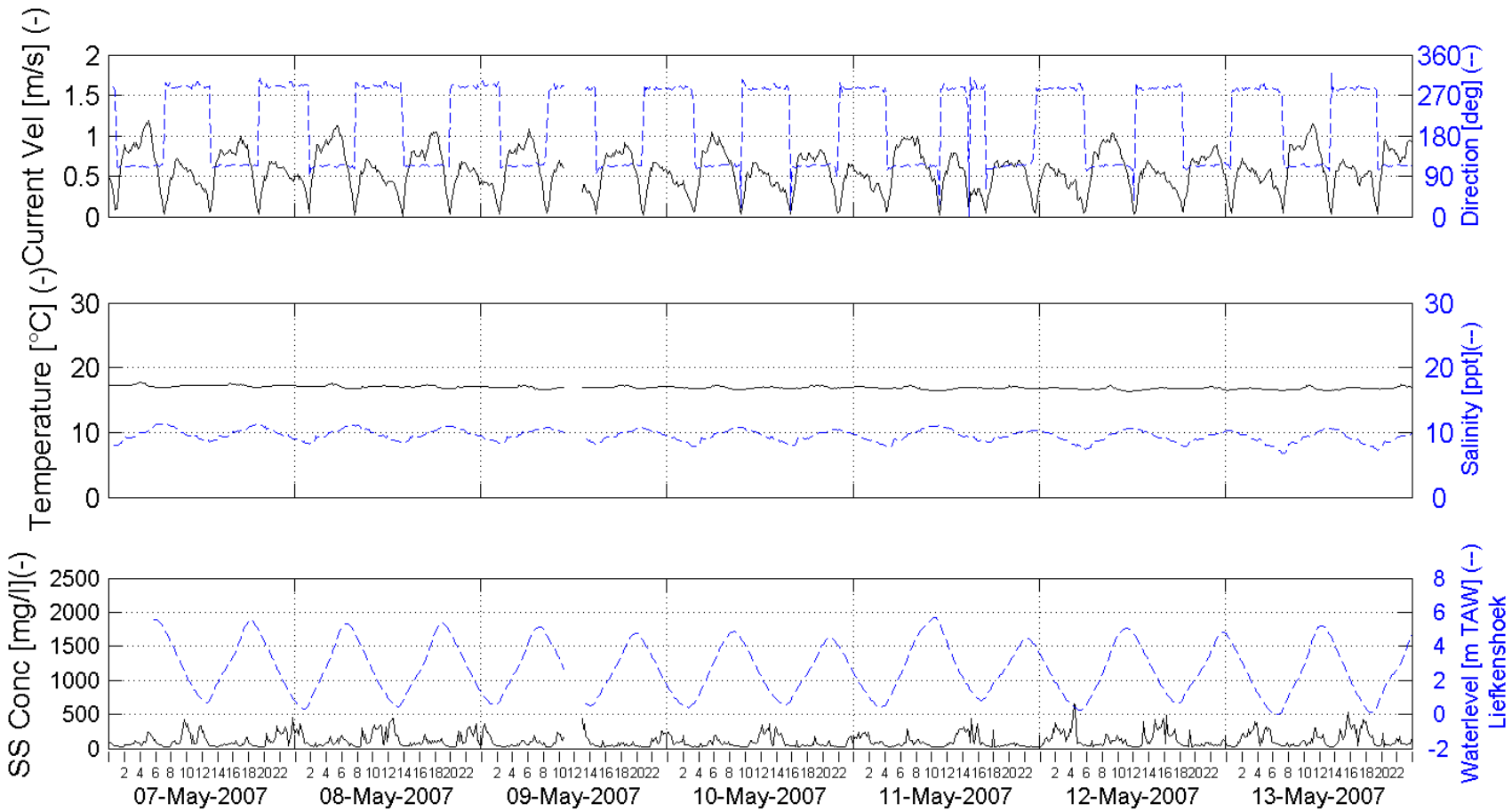
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 19 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 top - 3.3m above bottom (-5.3m TAW)

Processed by:

IMDC

In Association with:

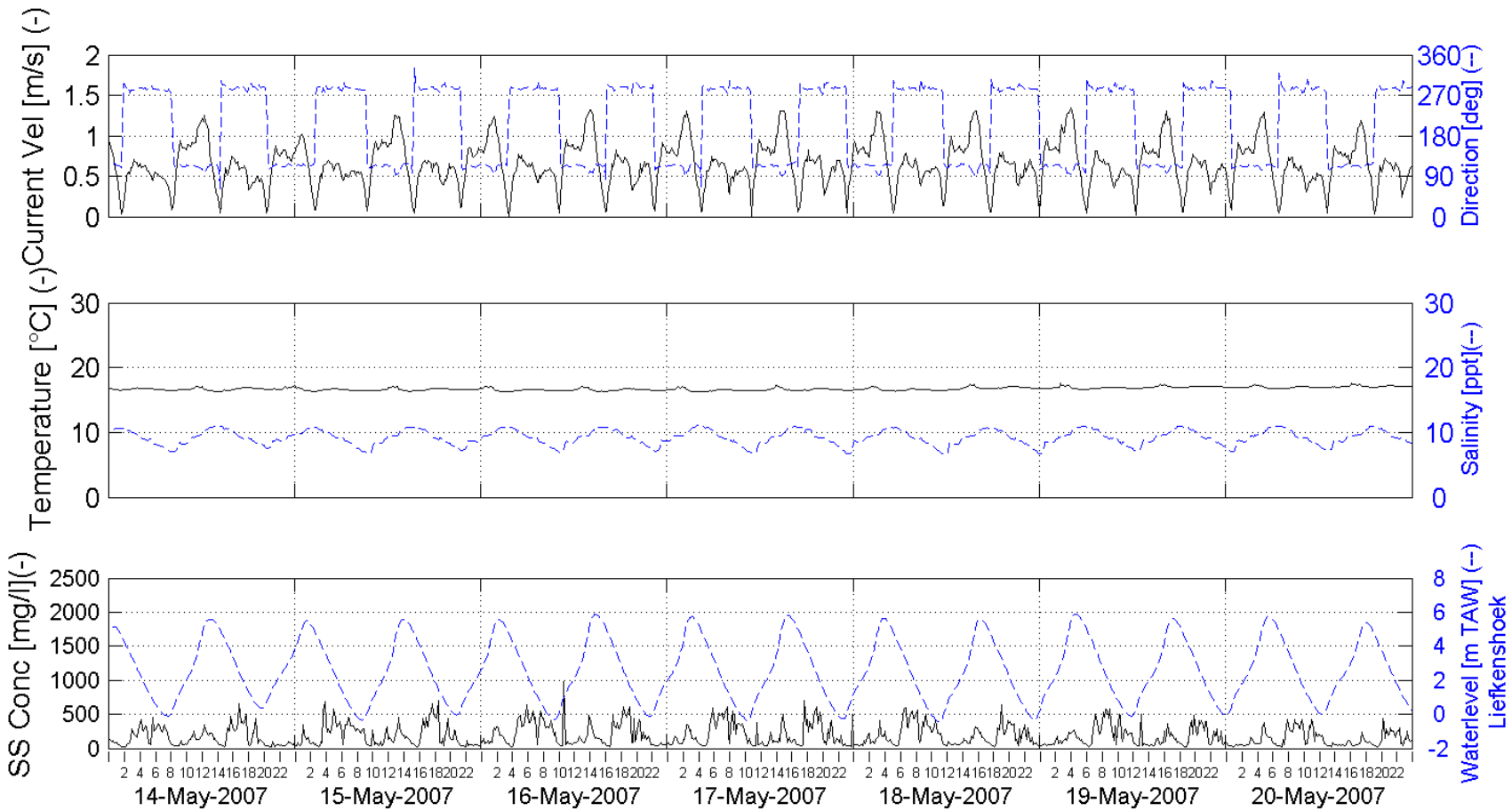
WL | delft hydraulics

GEMS International

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 20 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 top - 3.3m above bottom (-5.3m TAW)

Processed by:

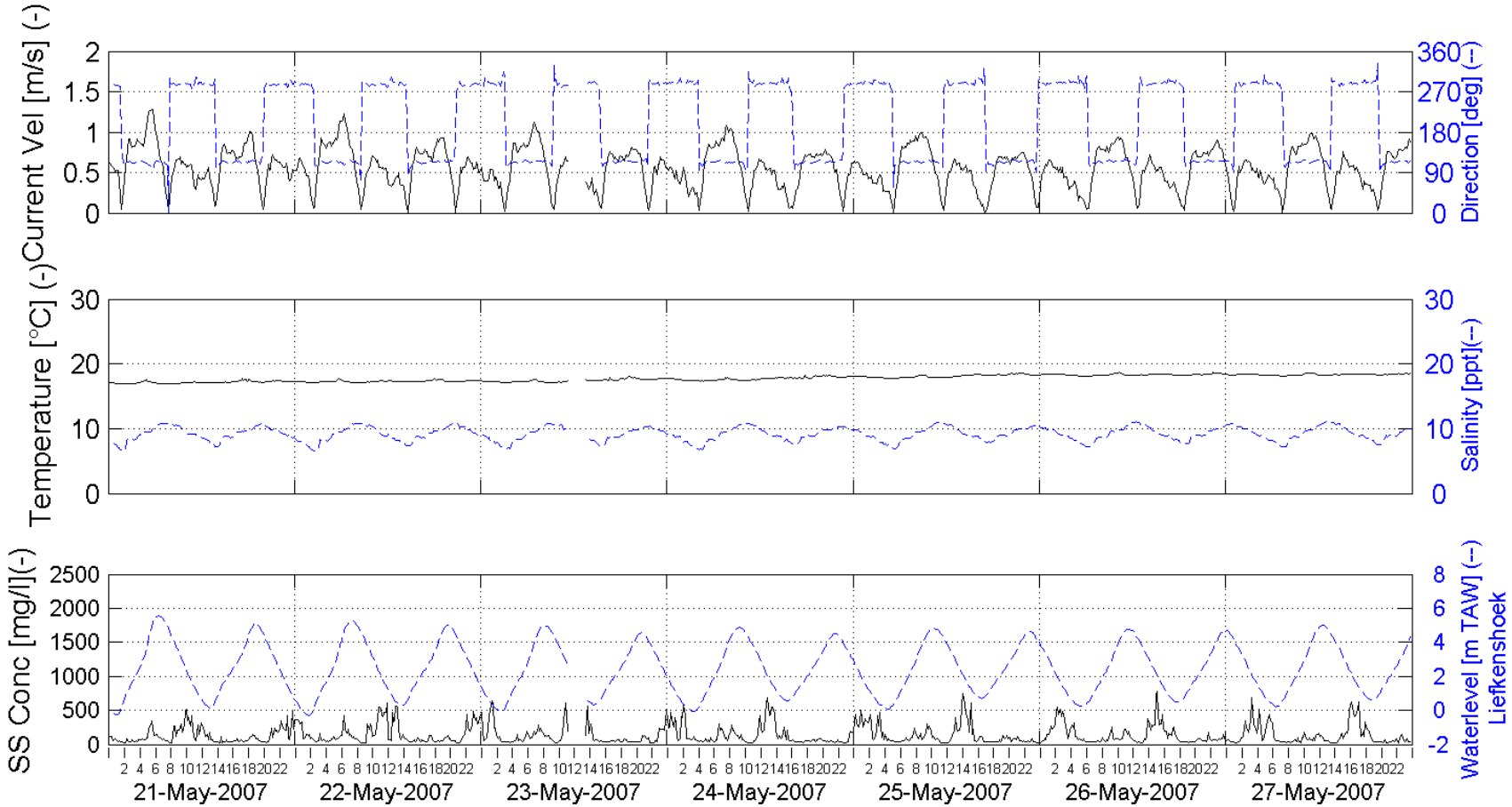
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 21 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 top - 3.3m above bottom (-5.3m TAW)

Processed by:

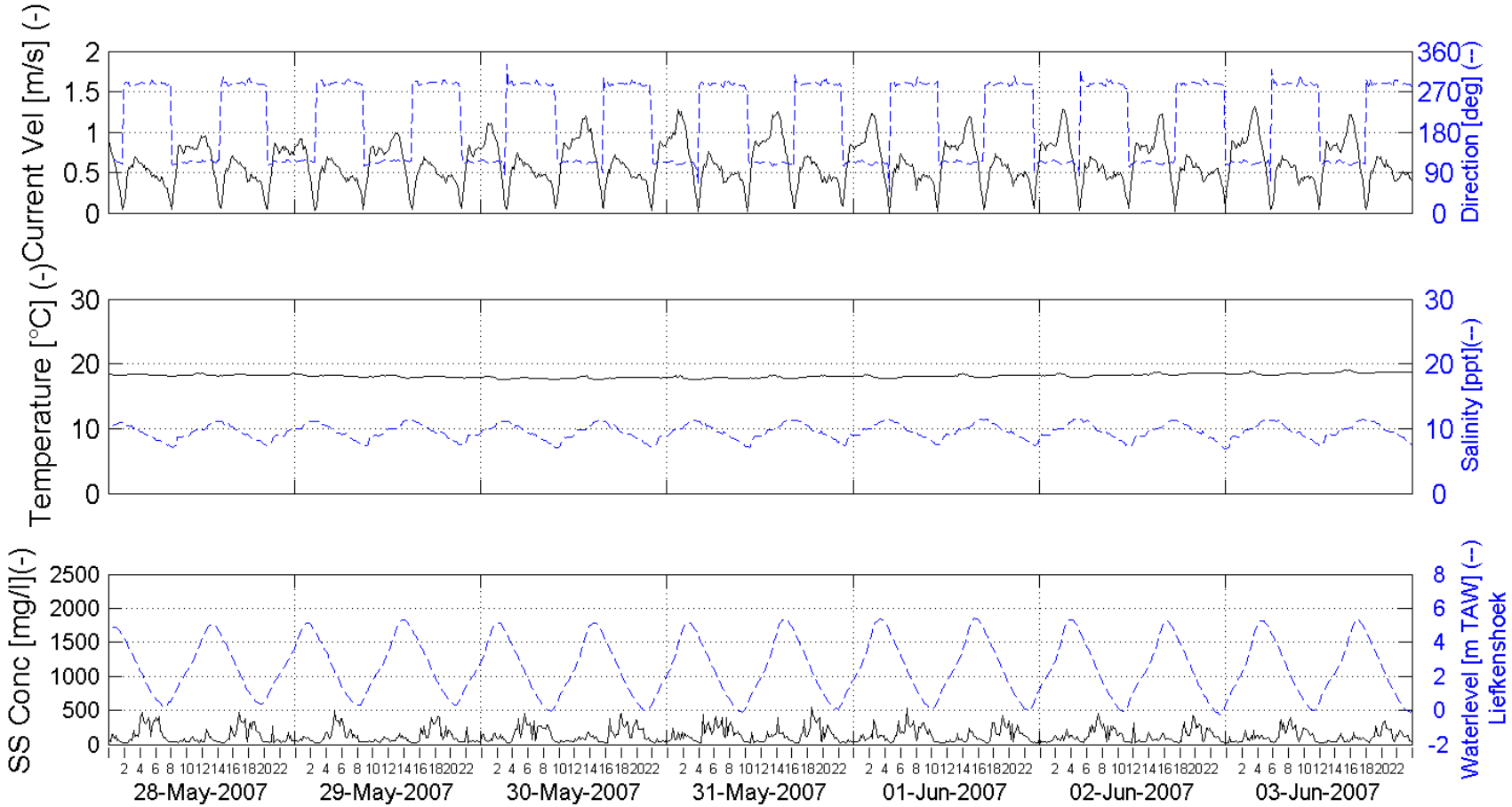
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 22 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 top - 3.3m above bottom (-5.3m TAW)

Processed by:

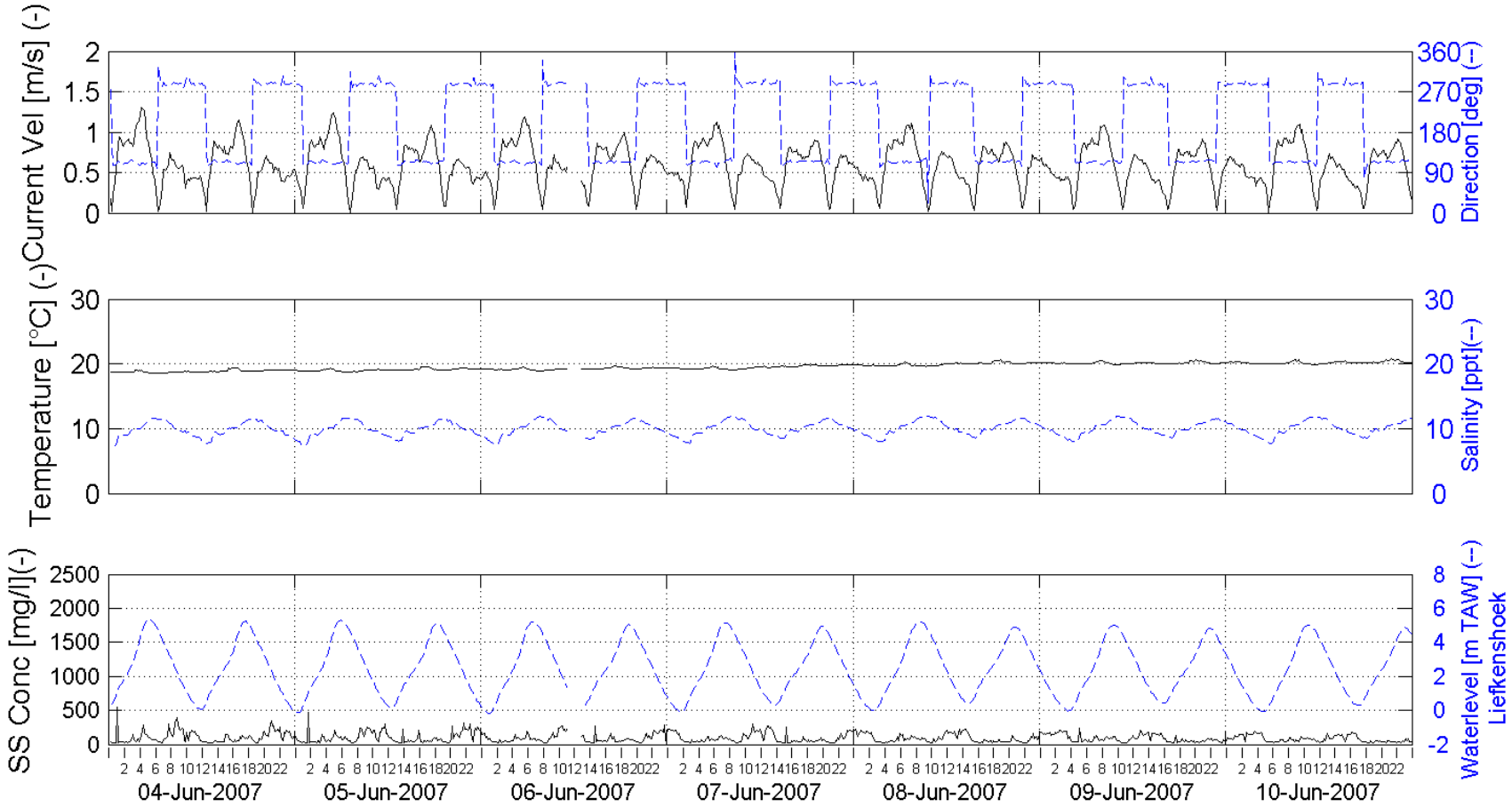
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 23 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 top - 3.3m above bottom (-5.3m TAW)

Processed by:

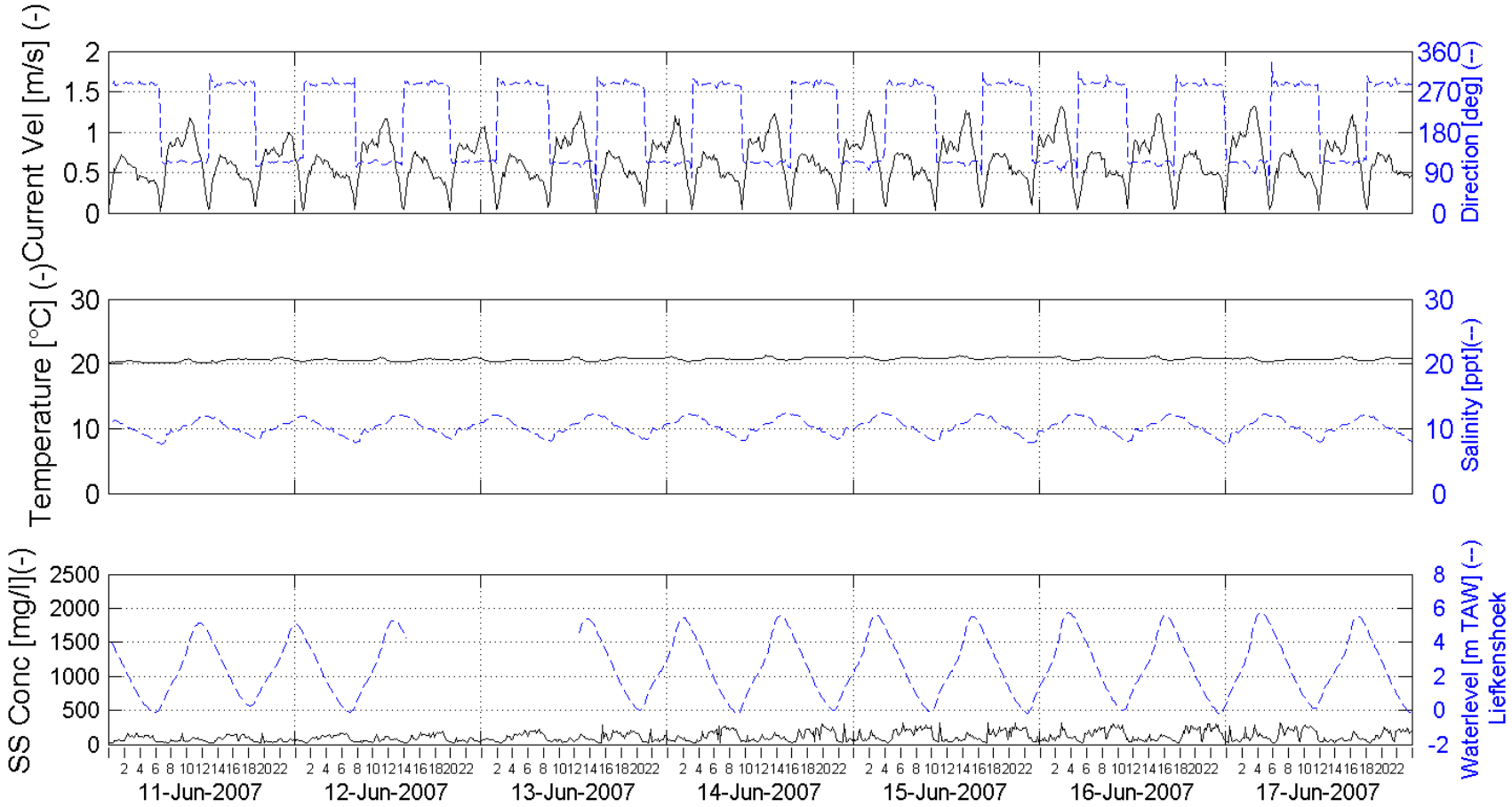
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 24 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 top - 3.3m above bottom (-5.3m TAW)

Processed by:

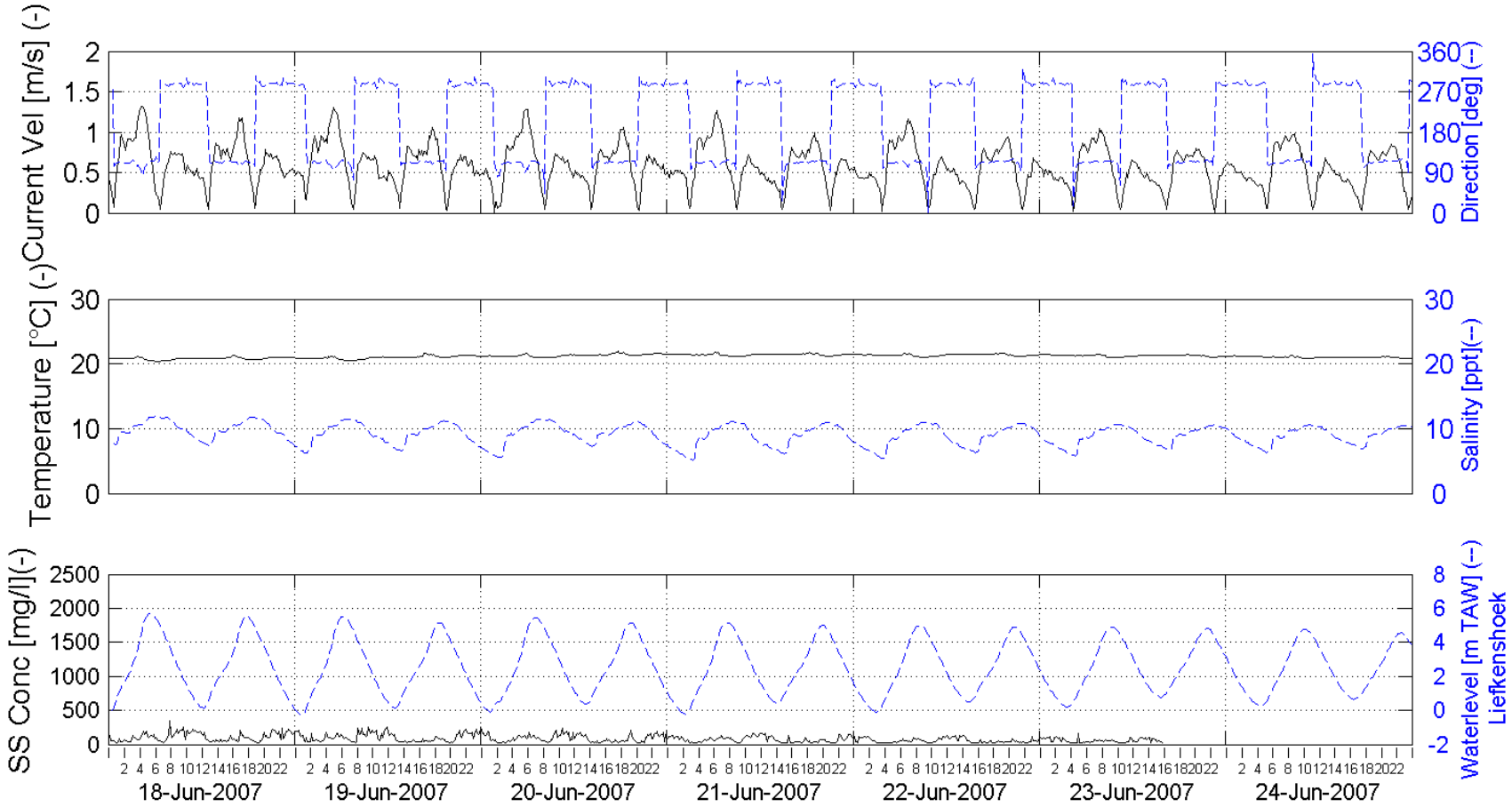
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 25 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 top - 3.3m above bottom (-5.3m TAW)

Processed by:

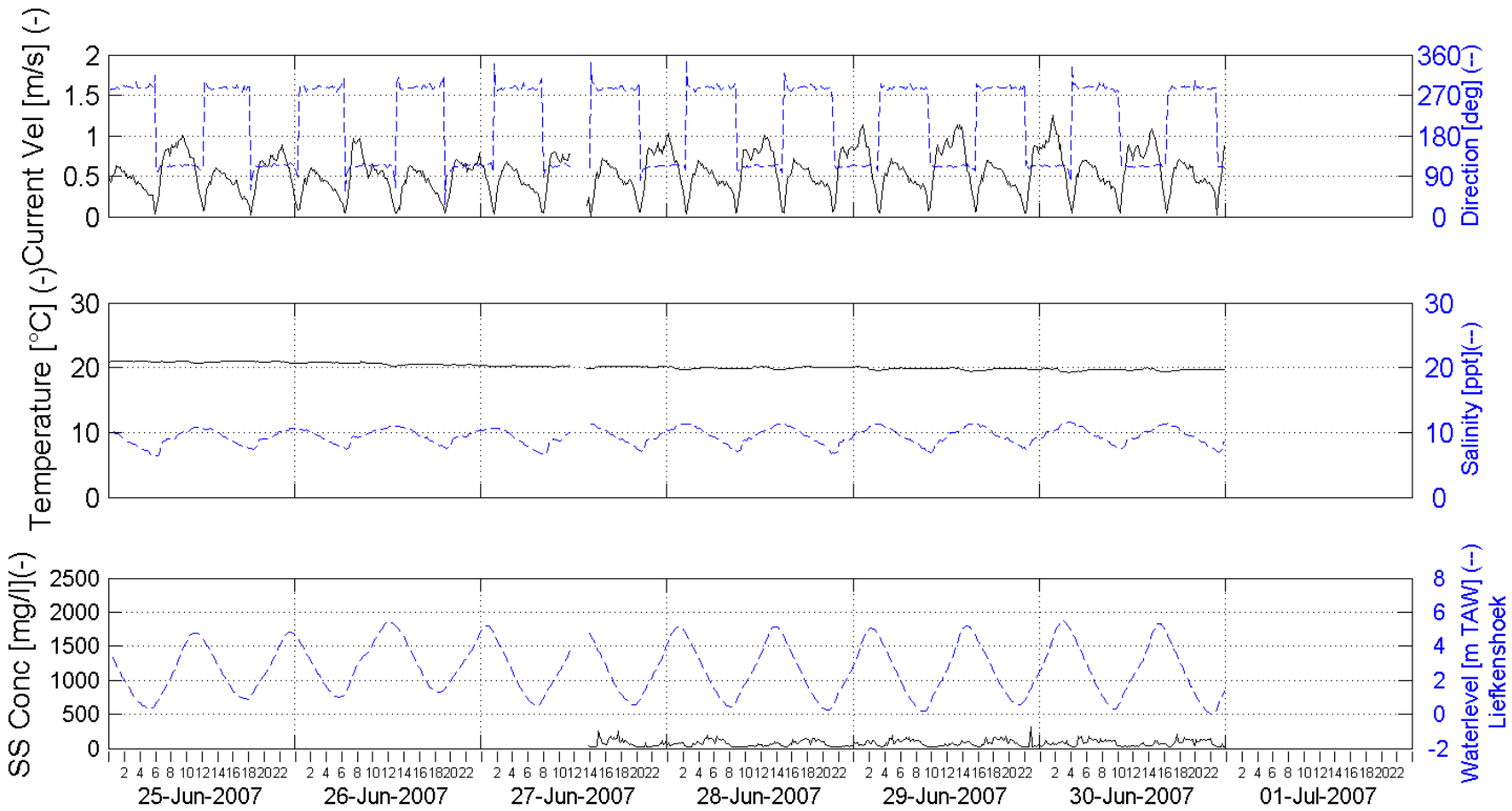
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 26 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 top - 3.3m above bottom (-5.3m TAW)

Processed by:

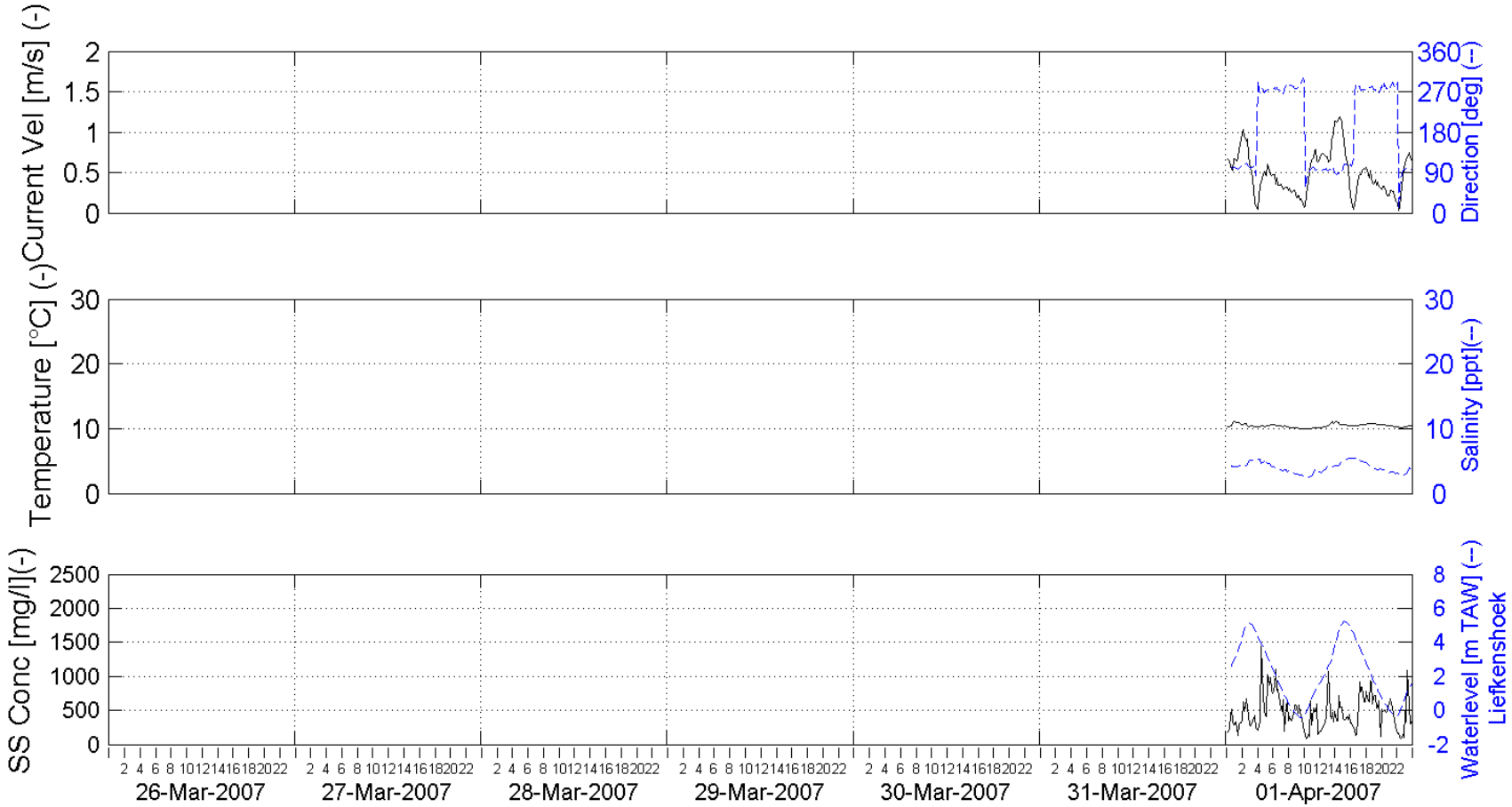
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 13 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 bottom - 0.8m above bottom (-7.8m TAW)

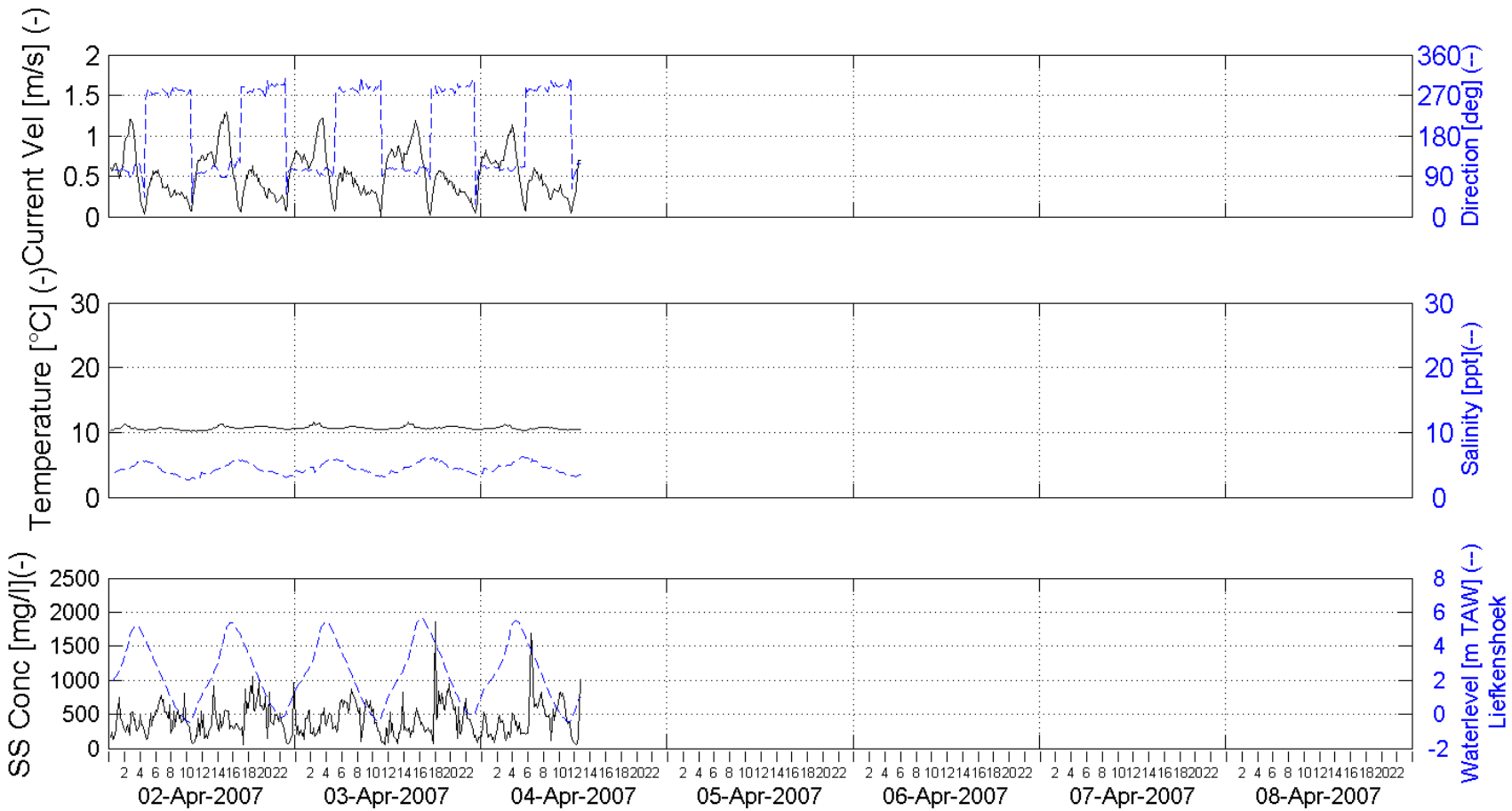
Processed by:

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 14 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 bottom - 0.8m above bottom (-7.8m TAW)

Processed by:

IMDC

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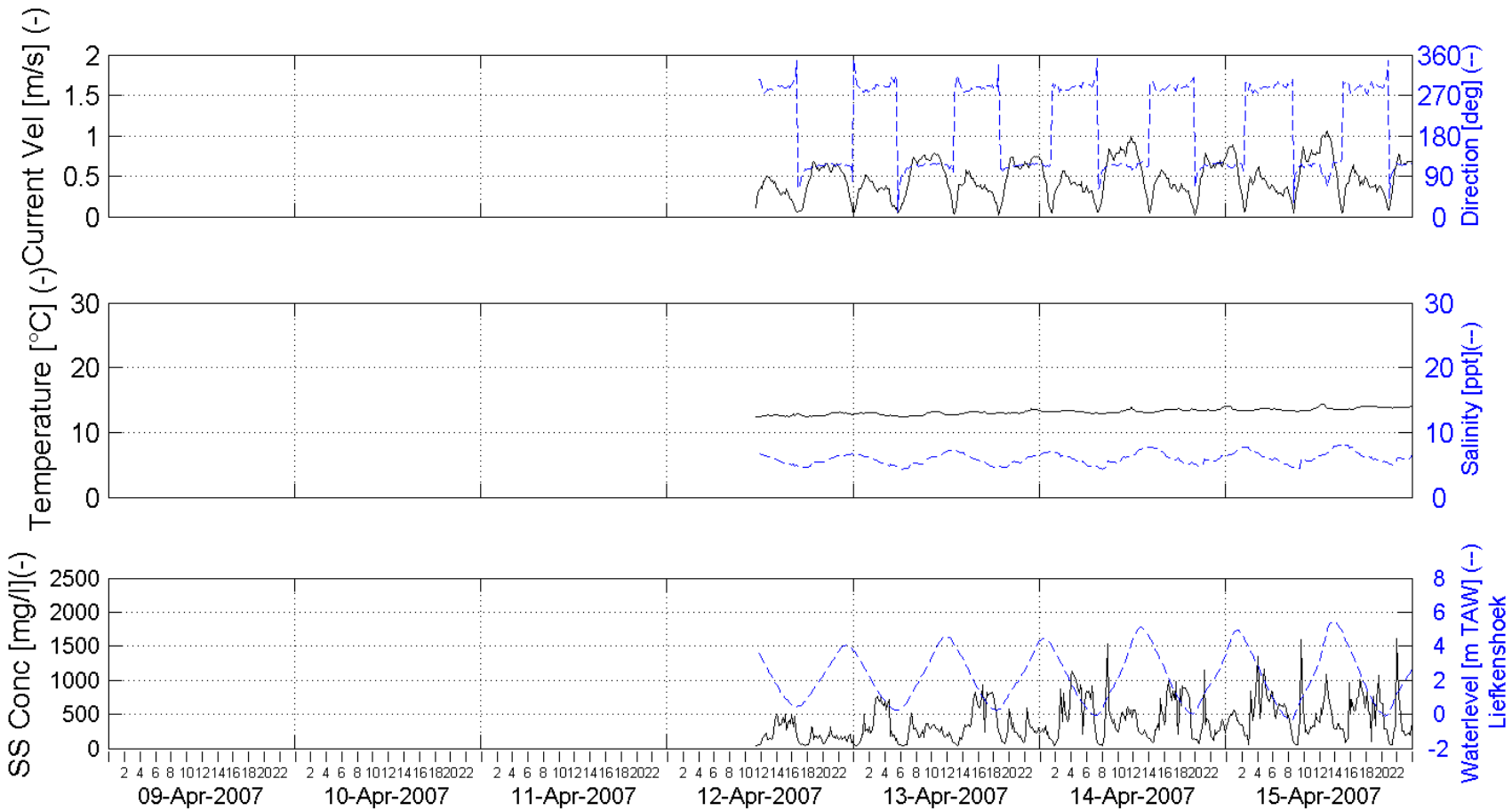
WL | delft hydraulics

GEMS International

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 15 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 bottom - 0.8m above bottom (-7.8m TAW)

Processed by:

IMDC

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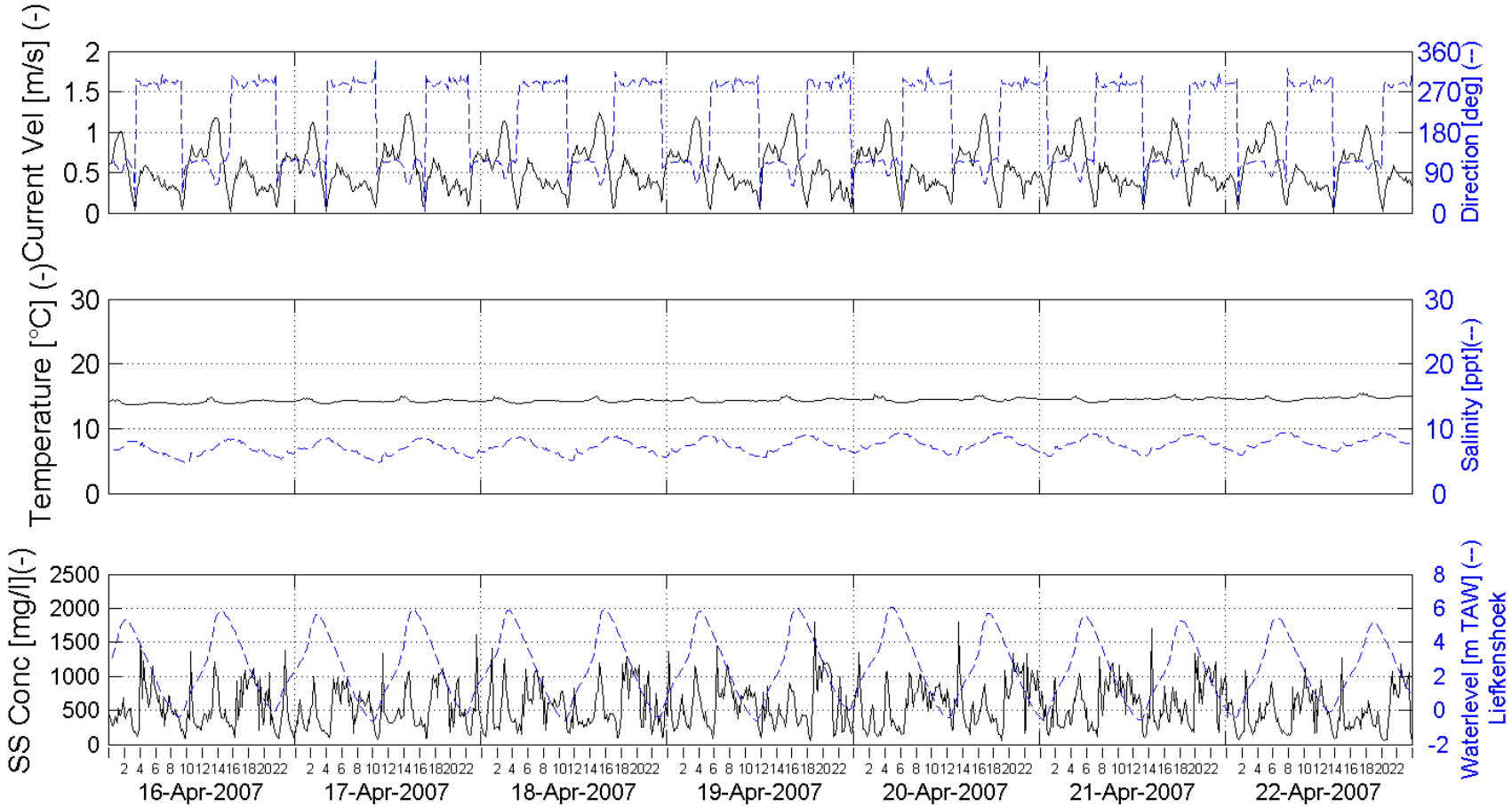
GEMS International

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 16 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 bottom - 0.8m above bottom (-7.8m TAW)

Processed by:

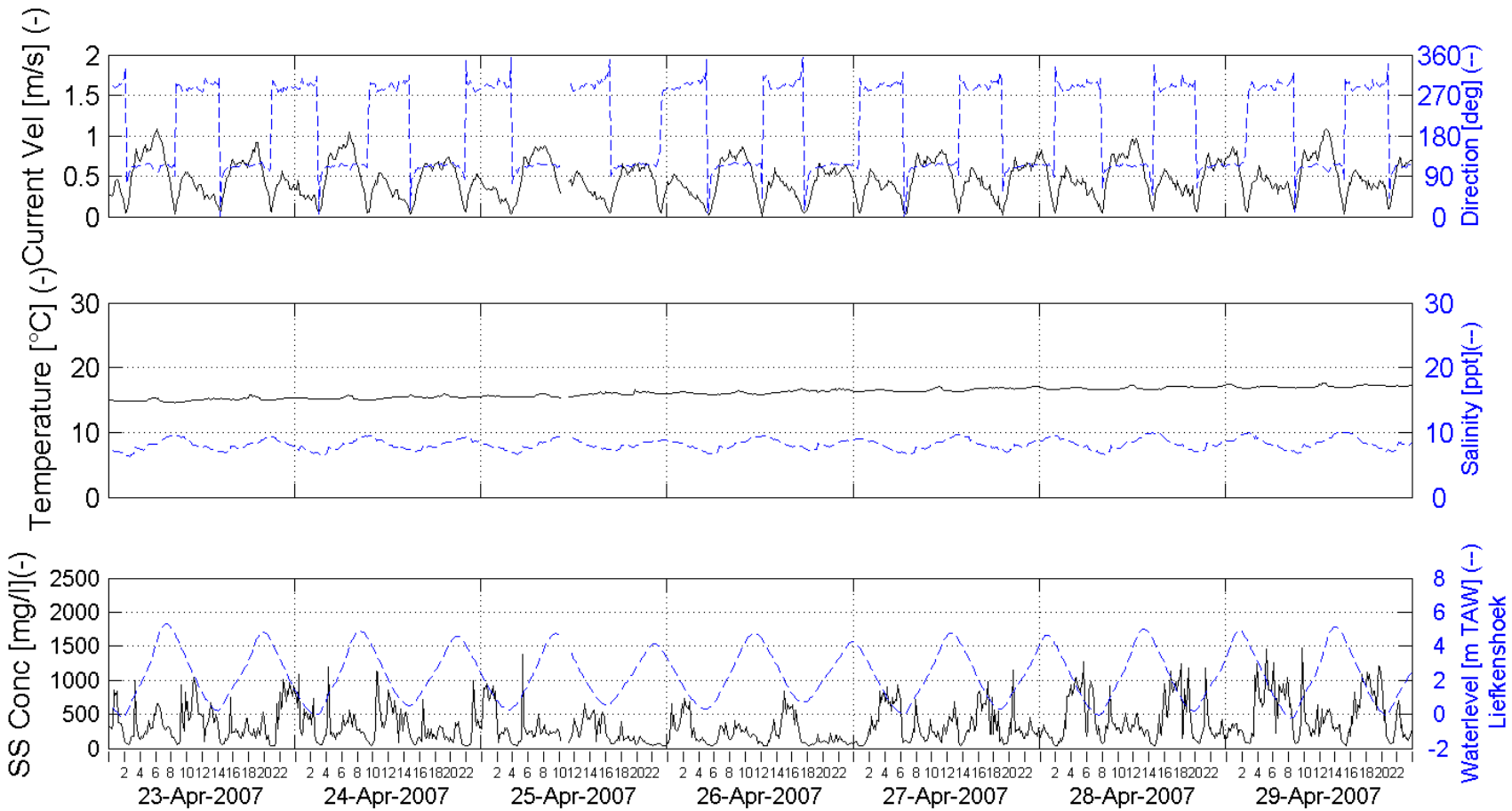
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 17 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 bottom - 0.8m above bottom (-7.8m TAW)

Processed by:

IMDC

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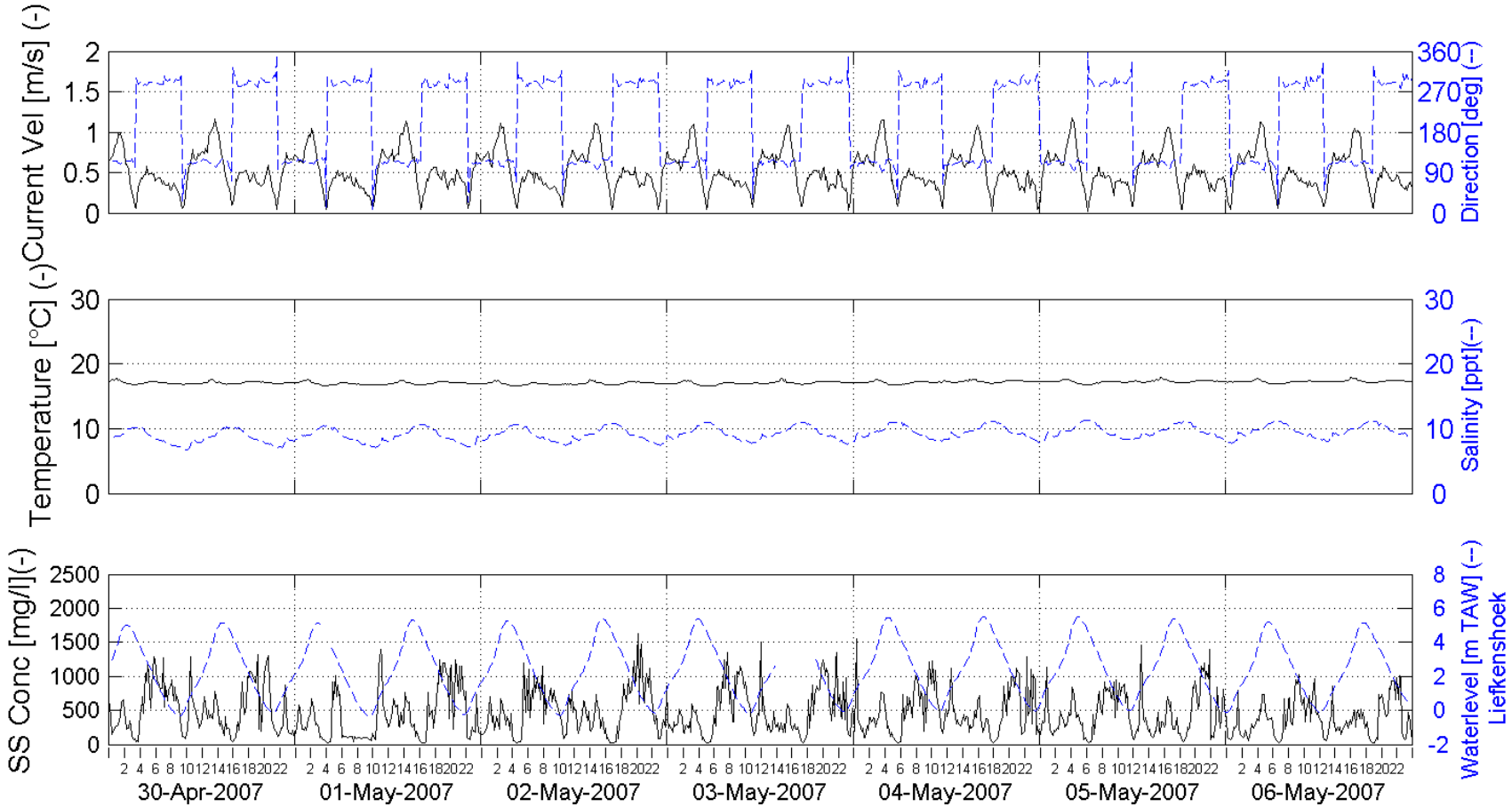
GEMS International

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 18 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 bottom - 0.8m above bottom (-7.8m TAW)

Processed by:

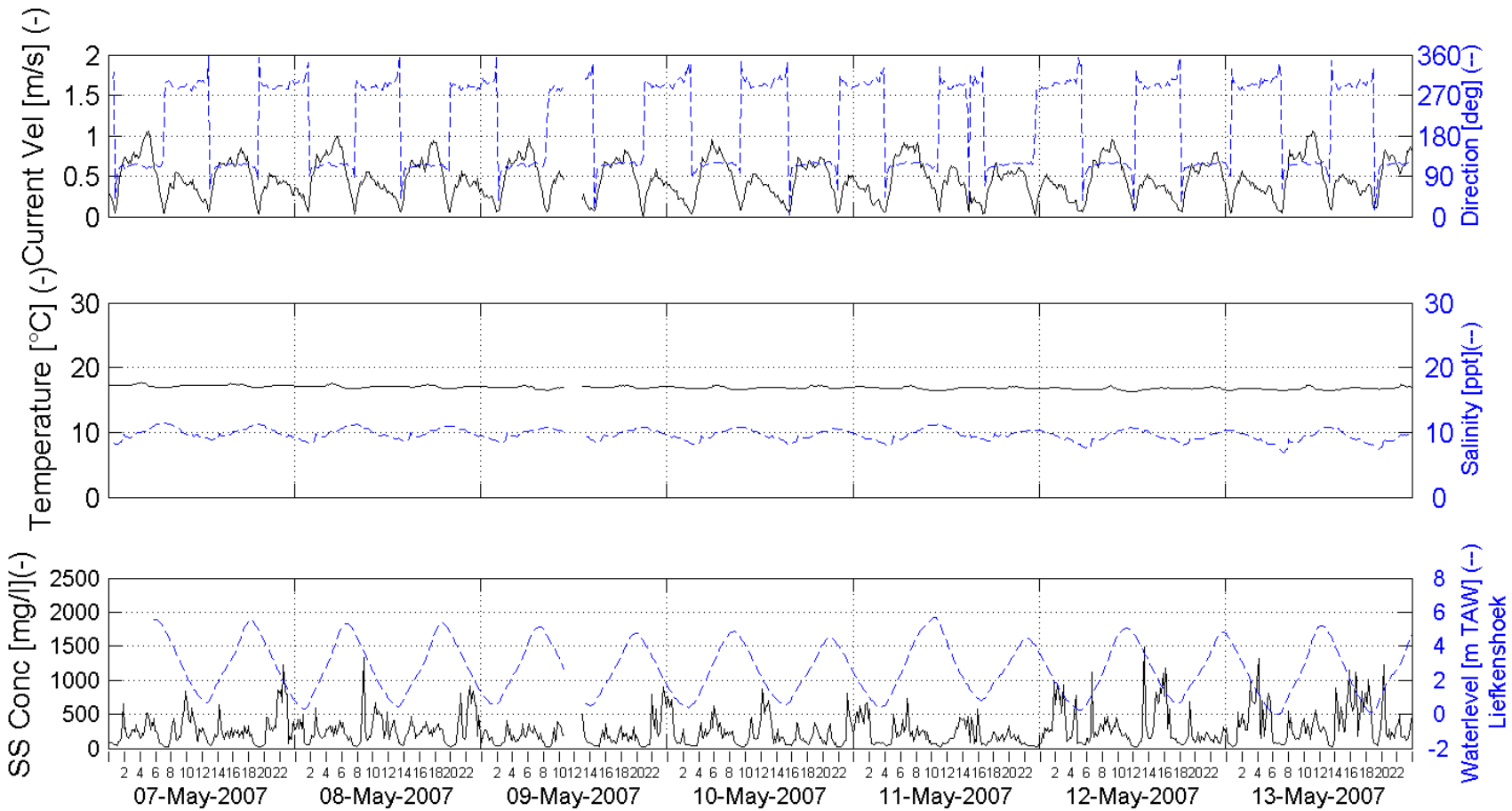
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 19 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 bottom - 0.8m above bottom (-7.8m TAW)

Processed by:

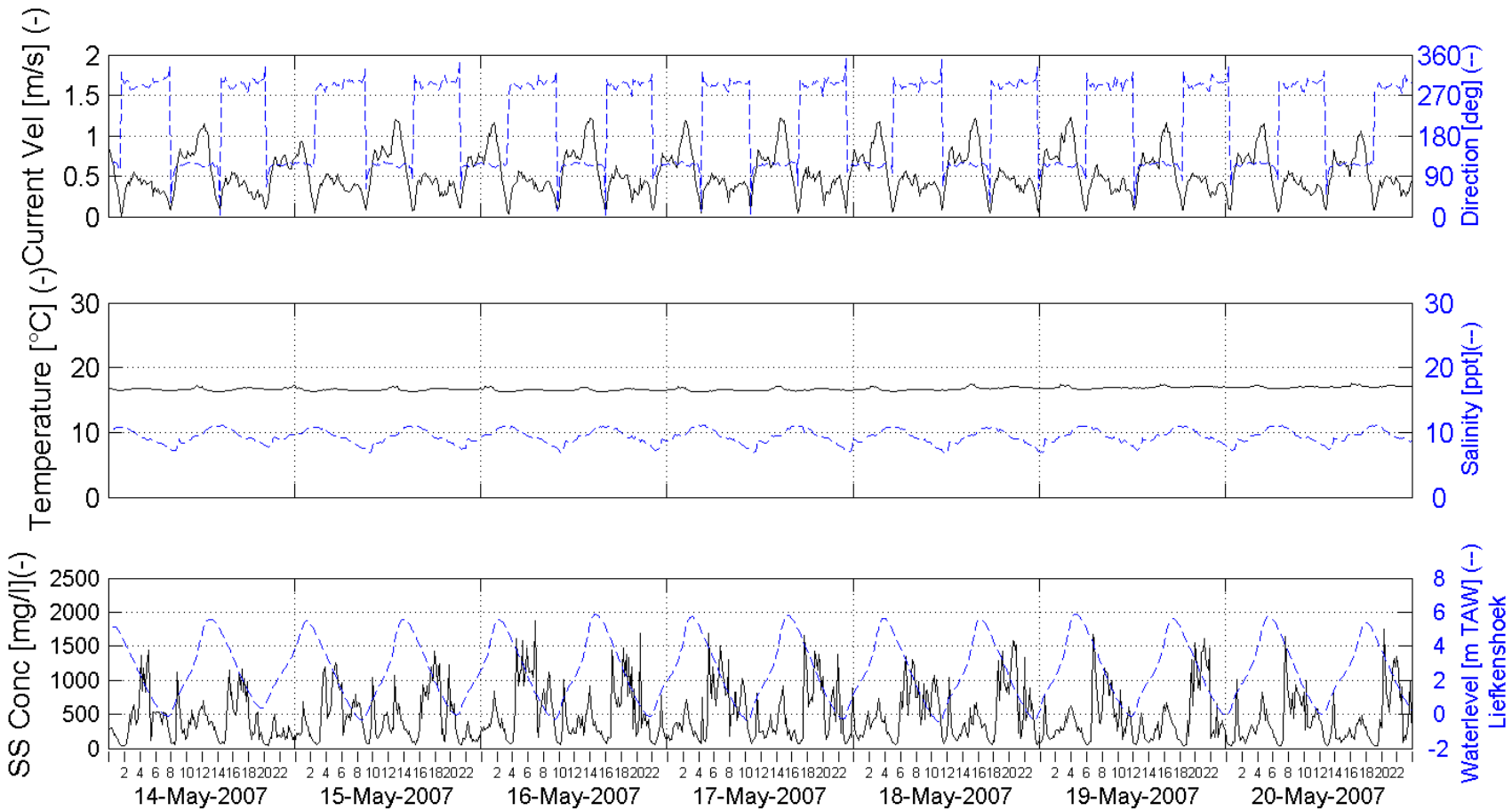
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 20 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 bottom - 0.8m above bottom (-7.8m TAW)

Processed by:

IMDC

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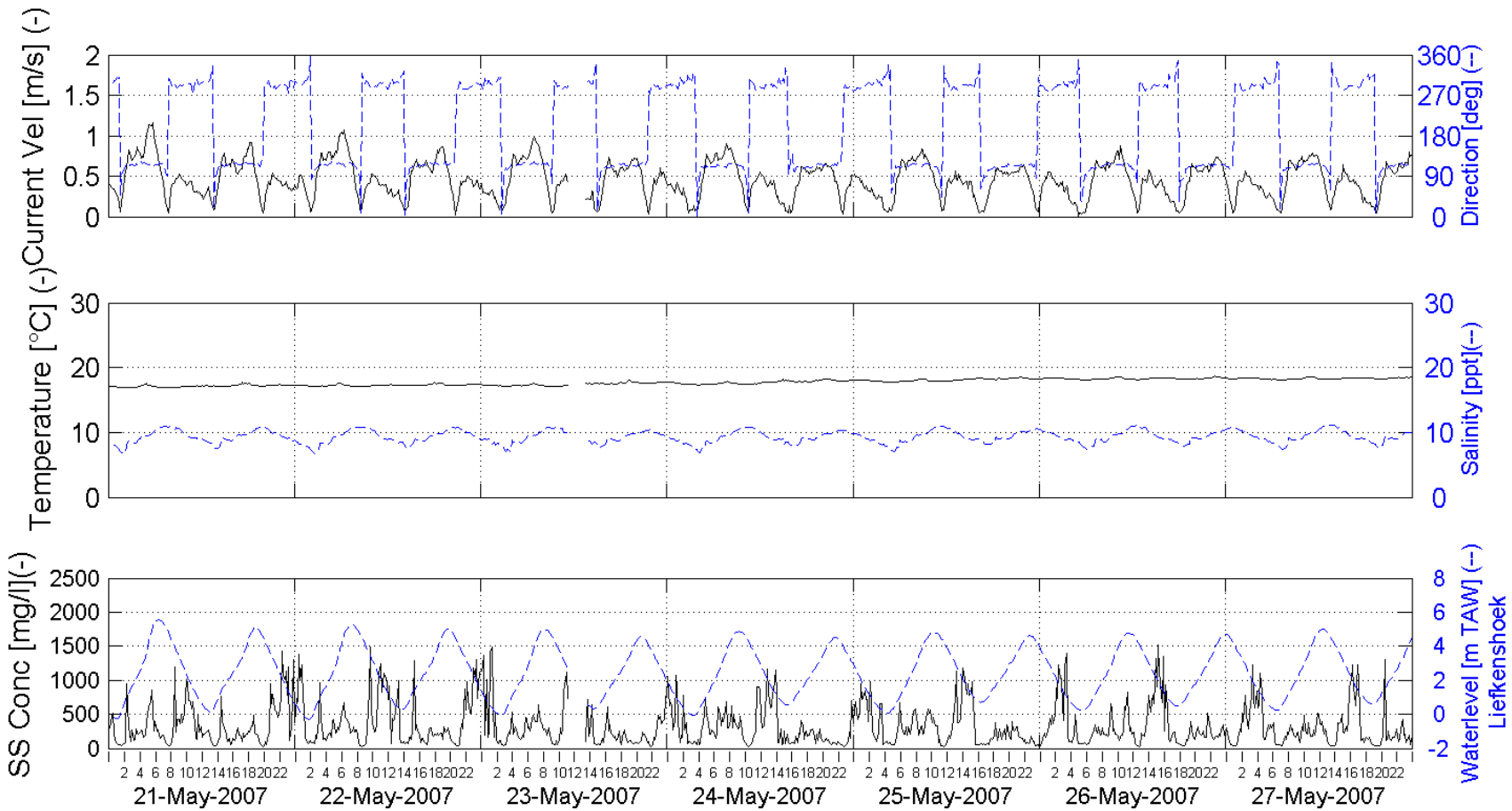
I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 21 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 bottom - 0.8m above bottom (-7.8m TAW)

Processed by:

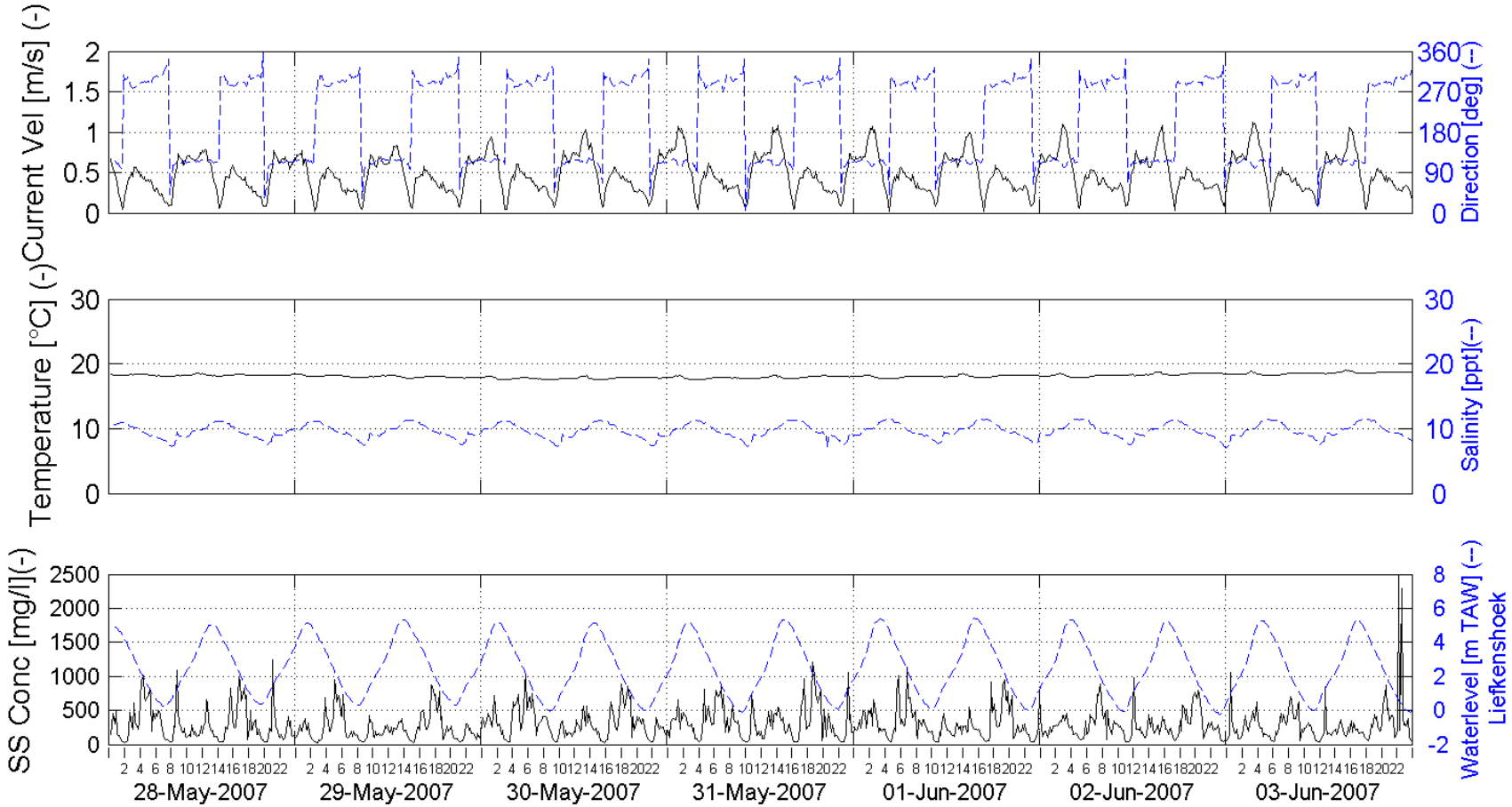
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 22 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 bottom - 0.8m above bottom (-7.8m TAW)

Processed by:

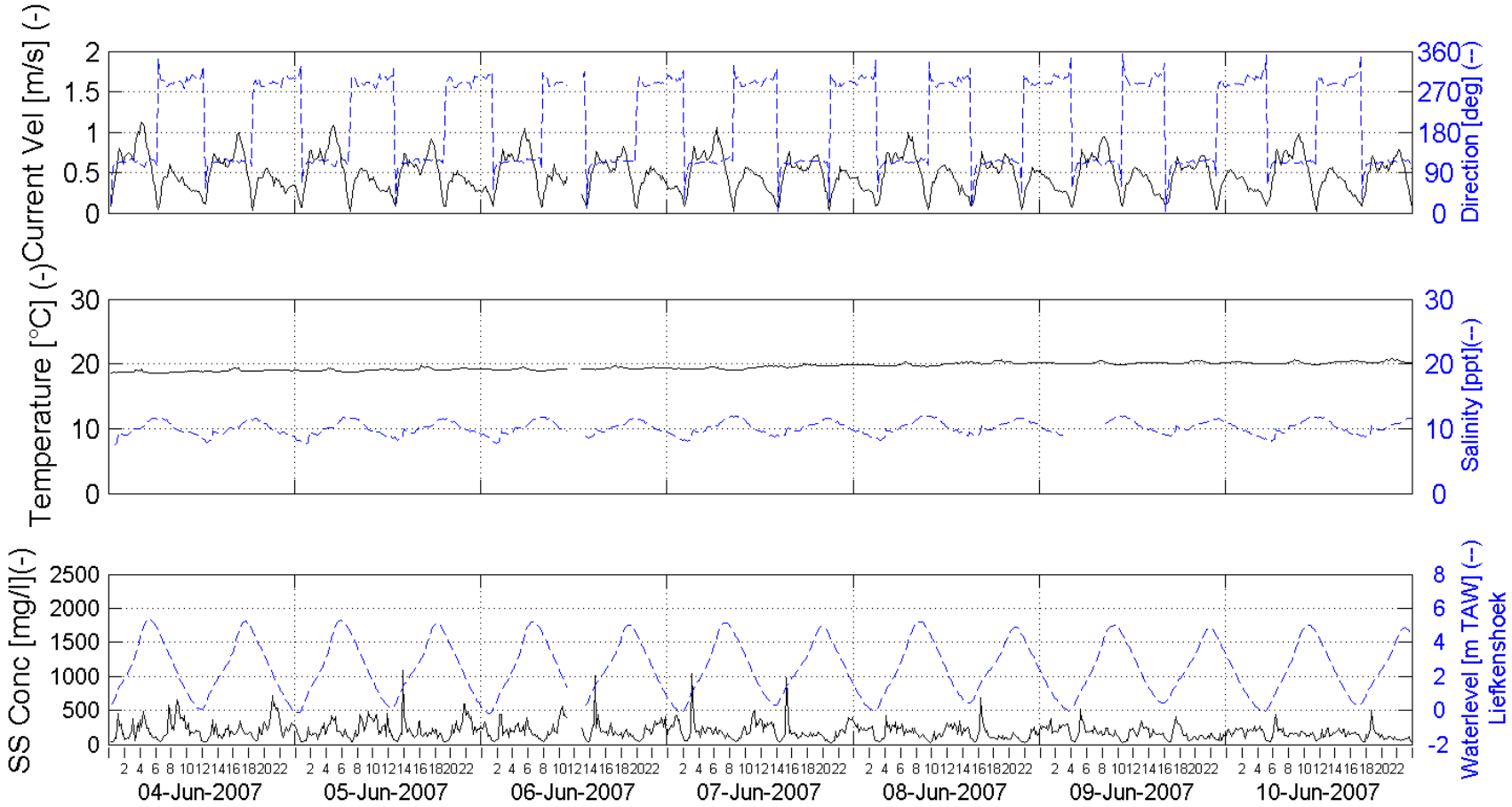
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 23 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 bottom - 0.8m above bottom (-7.8m TAW)

Processed by:

IMDC

In Association with:

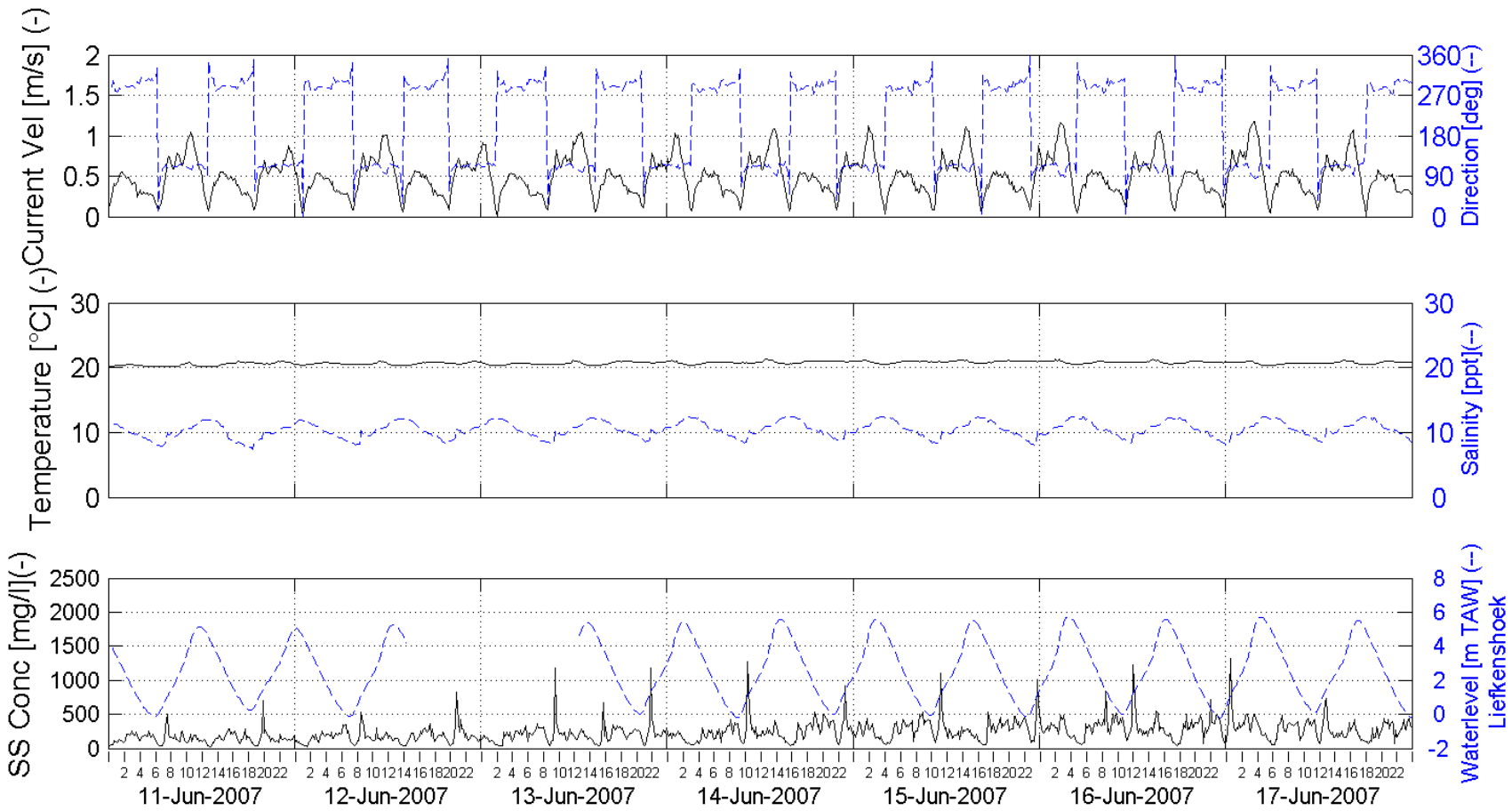
WL | delft hydraulics

GEMS International

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 24 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 bottom - 0.8m above bottom (-7.8m TAW)

Processed by:

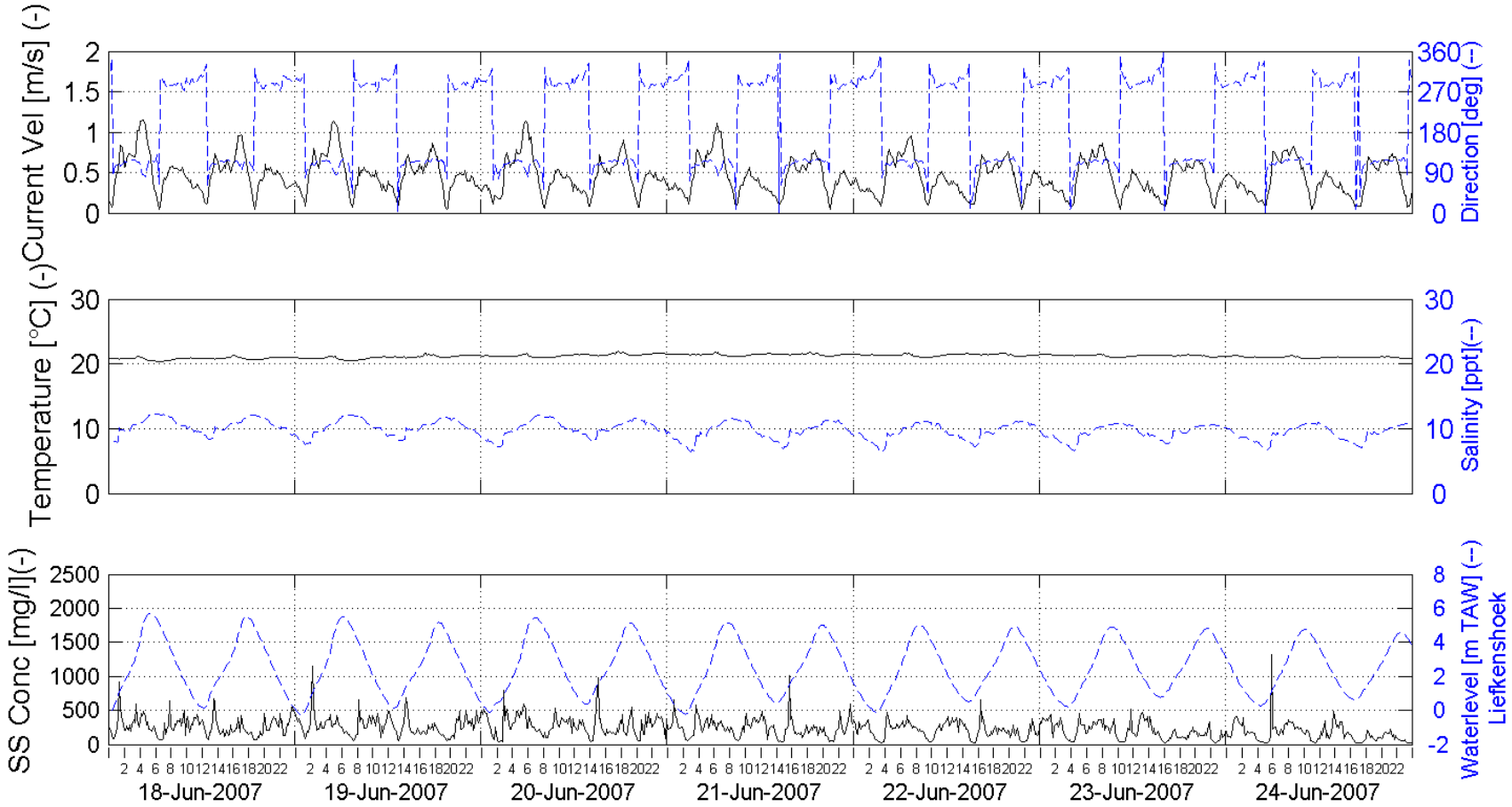
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 25 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 bottom - 0.8m above bottom (-7.8m TAW)

Processed by:

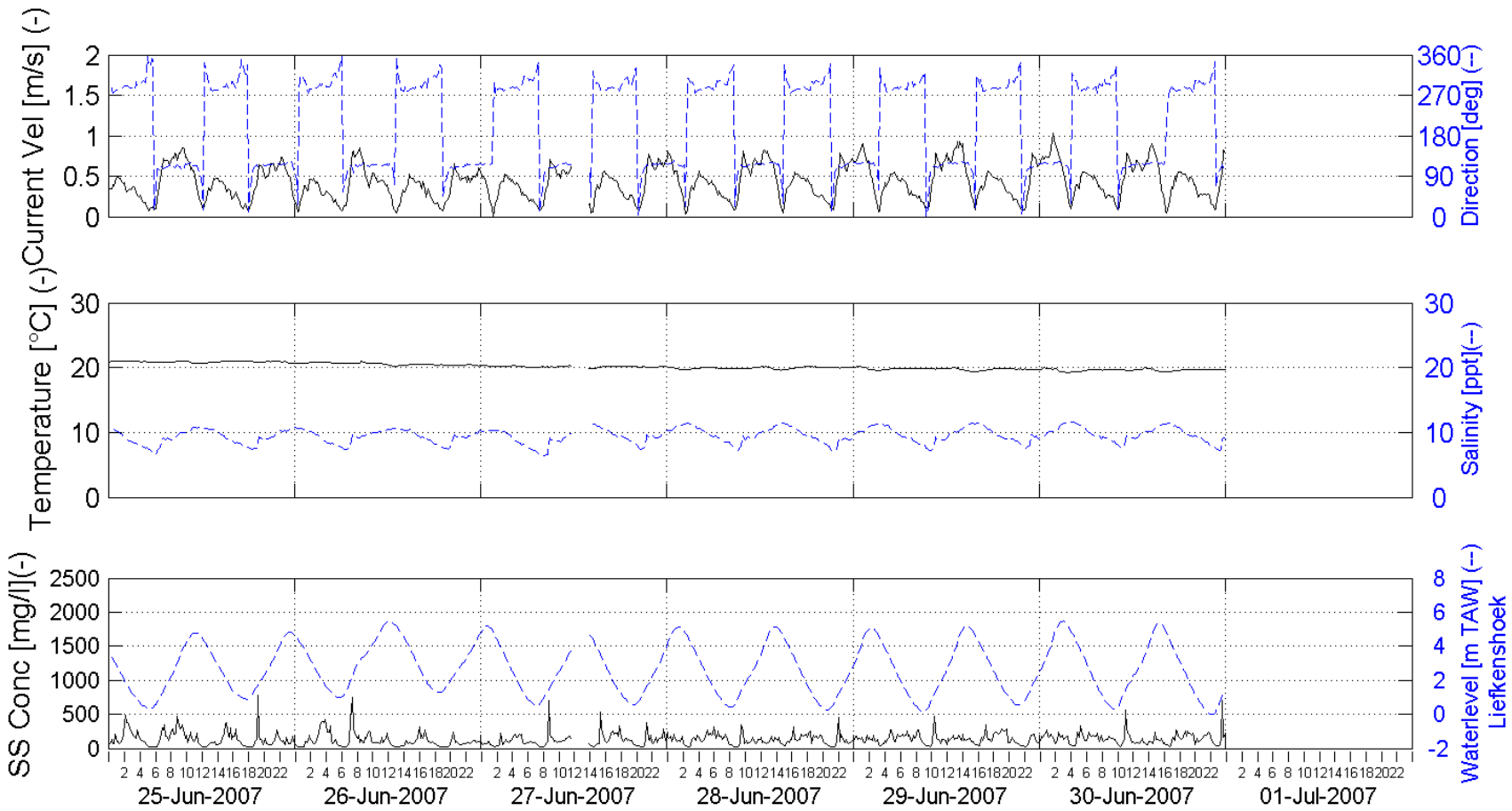
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 26 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Buoy 97 bottom - 0.8m above bottom (-7.8m TAW)

Processed by:

IMDC

In Association with:

WL | delft hydraulics

GEMS International

I/RA/11283/07.097/MSA

B.2 Monthly results minimum, maximum and average of velocity magnitude, temperature, salinity and suspended sediment concentration

Location: Buoy 84
3.3 meter above bottom [-5.6 m TAW]

Velocity magnitude [m/s]						
Month	***Minimum***		***Maximum***		***Average***	
January 2007	0.01		1.42		0.51	
February 2007	0.00		1.45		0.52	
March 2007	0.01		1.47		0.54	
April 2007	0.01*		1.28*		0.56*	
May 2007	0.00		1.26		0.53	
June 2007	0.00		1.27		0.52	
Temperature [°C]						
Month	***Minimum***		***Maximum***		***Average***	
January 2007	7.4		9.9		8.4	
February 2007	7.1		9.2		8.0	
March 2007	8.5		10.6		9.6	
April 2007	10.1*		12.8*		11.1*	
May 2007	16.0		18.6		17.2	
June 2007	17.5		21.6		20.1	
Salinity [ppt]						
Month	***Minimum***		***Maximum***		***Average***	
	HW	***LW***	***HW***	***LW***	***HW***	***LW***
January 2007	4.6	2.6	9.3	6.4	6.3	4.1
February 2007	4.8	3.0	7.2	4.8	6.1	4.0
March 2007	2.3	1.4	6.0	3.7	3.9	2.2
April 2007	6.0*	3.7*	7.6*	5.6*	7.1*	4.8*
May 2007	11.4	8.8	12.7	9.8	12.1	9.3
June 2007	11.1	8.5	13.7	10.5	12.5	9.6
Suspended sediment concentration [mg/l]						
Month	***Minimum***		***Maximum***		***Average***	
January 2007	22		2941		173	
February 2007	23		3008		334	
March 2007	25		1435		205	
April 2007	28*		1055*		243*	
May 2007	12		494		122	
June 2007	2		377		101	

-: No data or less than 30% of the monthly data available.
*: Less than 70% of the monthly data available.

Location: Buoy 84
0.8 meter above bottom [-8.1 m TAW]

Velocity magnitude [m/s]						
Month	***Minimum***		***Maximum***		***Average***	
January 2007	0.01		1.07		0.41	
February 2007	0.01		1.31		0.46	
March 2007	0.01		1.37		0.45	
April 2007	0.01*		1.00*		0.46*	
May 2007	0.01		1.20		0.46	
June 2007	0.00		1.08		0.45	
Temperature [°C]						
Month	***Minimum***		***Maximum***		***Average***	
January 2007	7.5		9.4		8.3	
February 2007	7.1		9.8		7.9	
March 2007	8.5		10.7		9.6	
April 2007	10.0*		12.8*		11.1*	
May 2007	16.0		18.6		17.2	
June 2007	17.6		21.7		20.1	
Salinity [ppt]						
Month	***Minimum***		***Maximum***		***Average***	
	HW	***LW***	***HW***	***LW***	***HW***	***LW***
January 2007	4.8	3.0	9.6	6.9	6.8	4.5
February 2007	4.6	2.6	7.4	5.0	6.0	3.9
March 2007	2.5	1.4	6.0	4.0	4.0	2.3
April 2007	5.9*	3.9*	8.0*	5.6*	7.3*	4.9*
May 2007	11.7*	9.2*	14.2*	10.0*	12.8*	9.7*
June 2007	11.3	8.3	15.4	11.2	13.1	10.1
Suspended sediment concentration [mg/l]						
Month	***Minimum***		***Maximum***		***Average***	
January 2007	25		1643		259	
February 2007	29		2311		615	
March 2007	29		2311		448	
April 2007	31*		1889*		463*	
May 2007	14		852		209	
June 2007	1		808		170	

-: No data or less than 30% of the monthly data available.
*: Less than 70% of the monthly data available.

Location: Buoy 97
3.3 meter above bottom [-5.3 m TAW]

Velocity magnitude [m/s]						
Month	***Minimum***		***Maximum***		***Average***	
January 2007	0.01		1.38		0.53	
February 2007	0.01*		1.37*		0.56*	
March 2007	0.01*		1.73*		0.56*	
April 2007	0.01		1.45		0.61	
May 2007	0.01		1.35		0.60	
June 2007	0.01		1.32		0.59	
Temperature [°C]						
Month	***Minimum***		***Maximum***		***Average***	
January 2007	7.1		10.1		8.5	
February 2007	6.7*		8.9*		7.8*	
March 2007	9.0*		11.0*		9.7*	
April 2007	10.0		17.7		14.3	
May 2007	16.3		18.7		17.3	
June 2007	17.7		21.9		20.2	
Salinity [ppt]						
Month	***Minimum***		***Maximum***		***Average***	
	HW	***LW***	***HW***	***LW***	***HW***	***LW***
January 2007	4.2	1.4	7.4	5.2	5.5	2.9
February 2007	4.7*	1.5*	6.4*	4.3*	5.7*	3.1*
March 2007	4.0*	1.4*	5.2*	3.0*	4.4*	2.2*
April 2007	5.3	2.4	10.0	7.0	8.2	5.3
May 2007	10.2	6.5	11.3	8.6	10.8	7.4
June 2007	10.5	5.3	12.3	8.7	11.4	7.5
Suspended sediment concentration [mg/l]						
Month	***Minimum***		***Maximum***		***Average***	
January 2007	24		1449		238	
February 2007	30*		1354*		356*	
March 2007	34*		1252*		305*	
April 2007	24		1616		243	
May 2007	23		980		154	
June 2007	22		540		98	

-: No data or less than 30% of the monthly data available.
*: Less than 70% of the monthly data available.

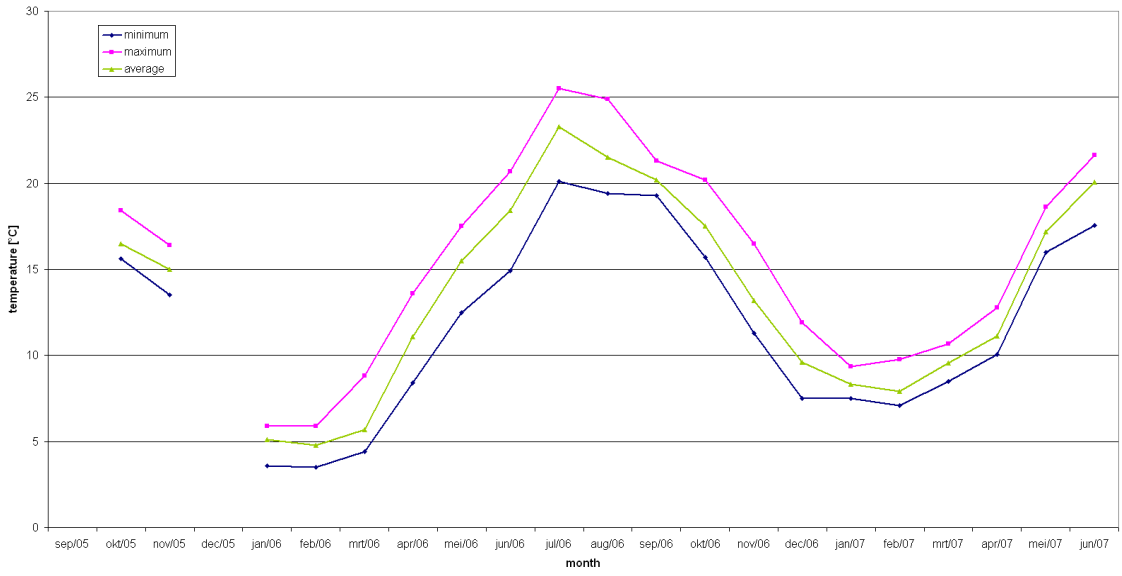
Location: Buoy 97
0.8 meter above bottom [-7.8 m TAW]

Velocity magnitude [m/s]						
Month	***Minimum***		***Maximum***		***Average***	
January 2007	-		-		-	
February 2007	0.01		1.22		0.46	
March 2007	0.00		1.61		0.46	
April 2007	0.01		1.29		0.50	
May 2007	0.00		1.23		0.49	
June 2007	0.01		1.18		0.47	
Temperature [°C]						
Month	***Minimum***		***Maximum***		***Average***	
January 2007	-		-		-	
February 2007	6.8		9.3		7.9	
March 2007	8.6		11.2		9.6	
April 2007	10.0		17.7		14.3	
May 2007	16.3		18.7		17.3	
June 2007	17.7		21.9		20.2	
Salinity [ppt]						
Month	***Minimum***		***Maximum***		***Average***	
	HW	***LW***	***HW***	***LW***	***HW***	***LW***
January 2007	-	-	-	-	-	-
February 2007	3.8	1.2	5.5	4.1	4.8	2.7
March 2007	1.9	0.7	5.2	3.1	3.3	1.7
April 2007	5.2	2.8	10.2	7.5	8.3	5.7
May 2007	10.3	7.0	11.4	9.1	10.9	8.0
June 2007	10.4	6.8	12.4	9.3	11.5	8.2
Suspended sediment concentration [mg/l]						
Month	***Minimum***		***Maximum***		***Average***	
January 2007	-		-		-	
February 2007	29		2076		565	
March 2007	31		1843		398	
April 2007	31		1852		444	
May 2007	22		1880		368	
June 2007	22		2502		211	

-: No data or less than 30% of the monthly data available.
*: Less than 70% of the monthly data available.

B.3 Graphs monthly results for the whole deployment period

Velocity magnitude & temperature



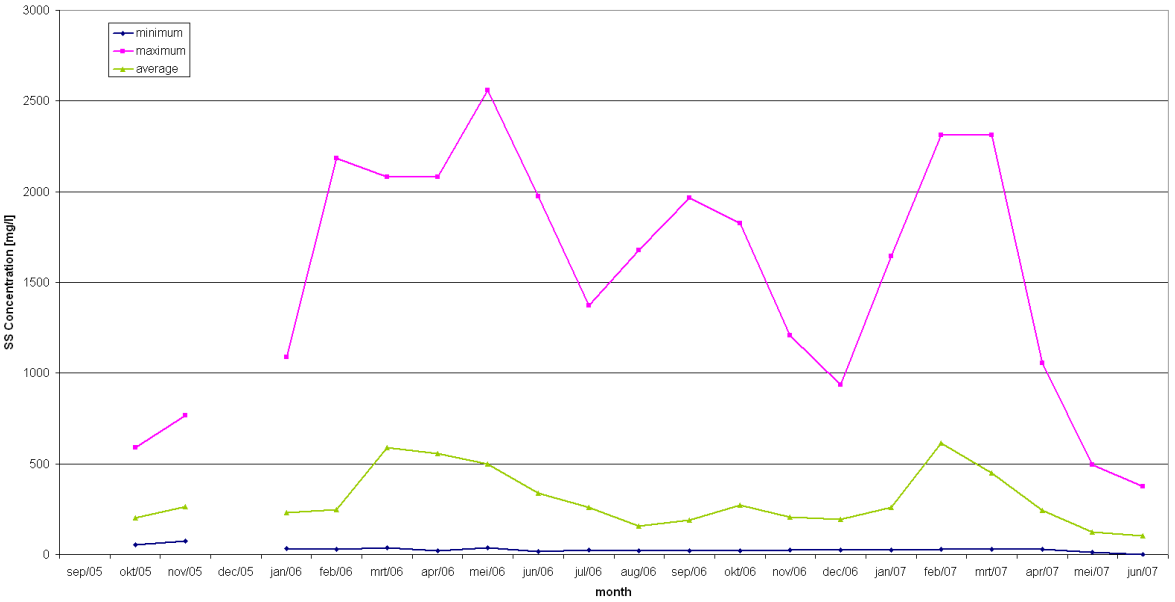
Buoy 84
3.3 m above bottom (-5.6 m TAW)

Data processed by:

In association with:

I/RA/11283/07.097/MSA

Salinity & SS Concentration



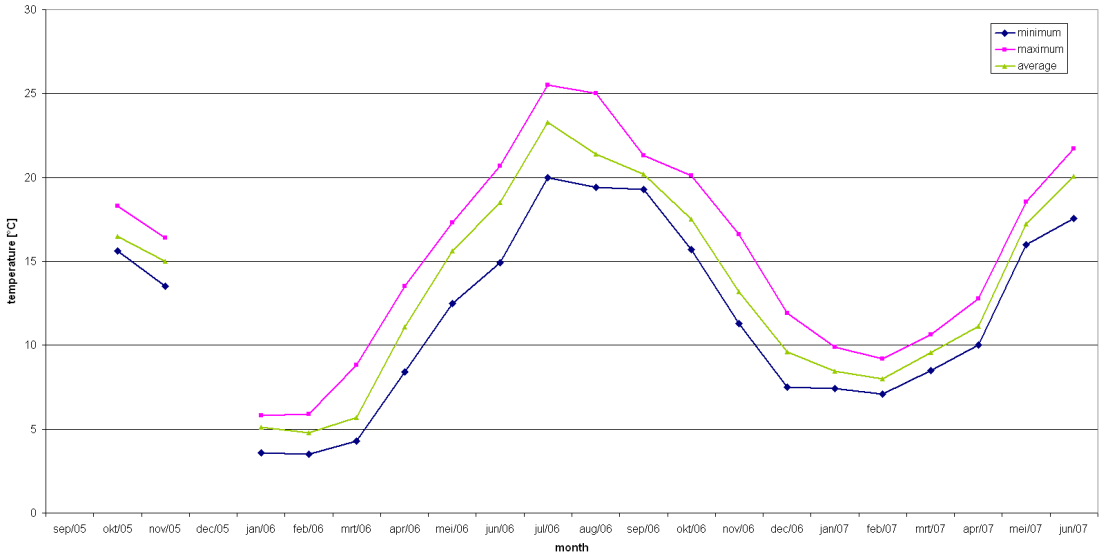
Buoy 84
3.3m above bottom (-5.6m TAW)

Data processed by:

In association with:

I/RA/11283/07.097/MSA

Velocity magnitude & temperature



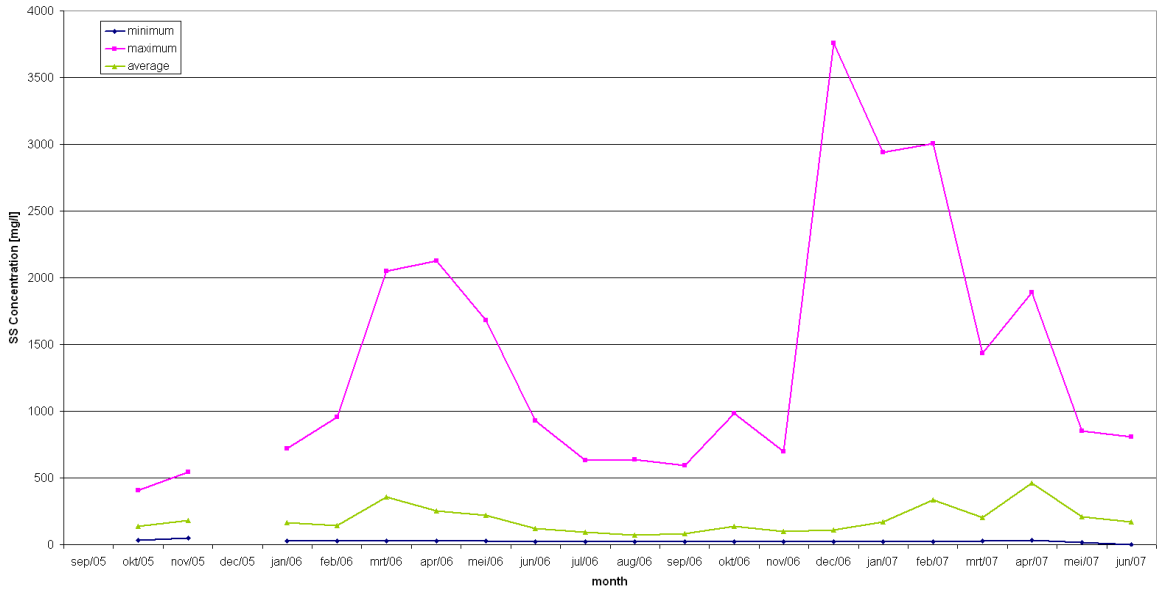
Buoy 84
0.8m above bottom (-8.1m TAW)

Data processed by:

In association with:

I/RA/11283/07.097/MSA

Salinity & SS Concentration



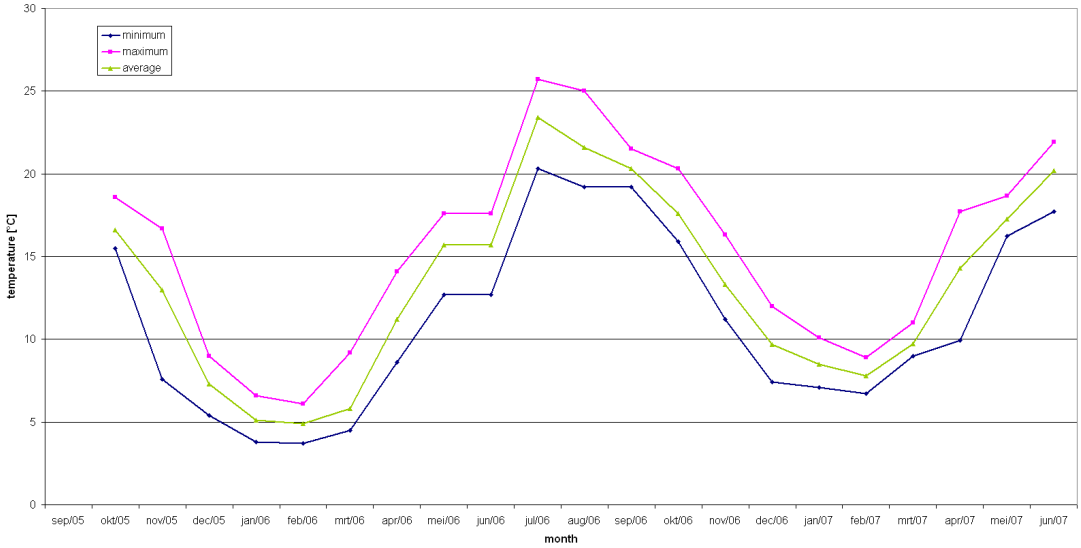
Buoy 84
0.8m above bottom (-8.1m TAW)

Data processed by:

In association with:

I/RA/11283/07.097/MSA

Velocity magnitude & temperature



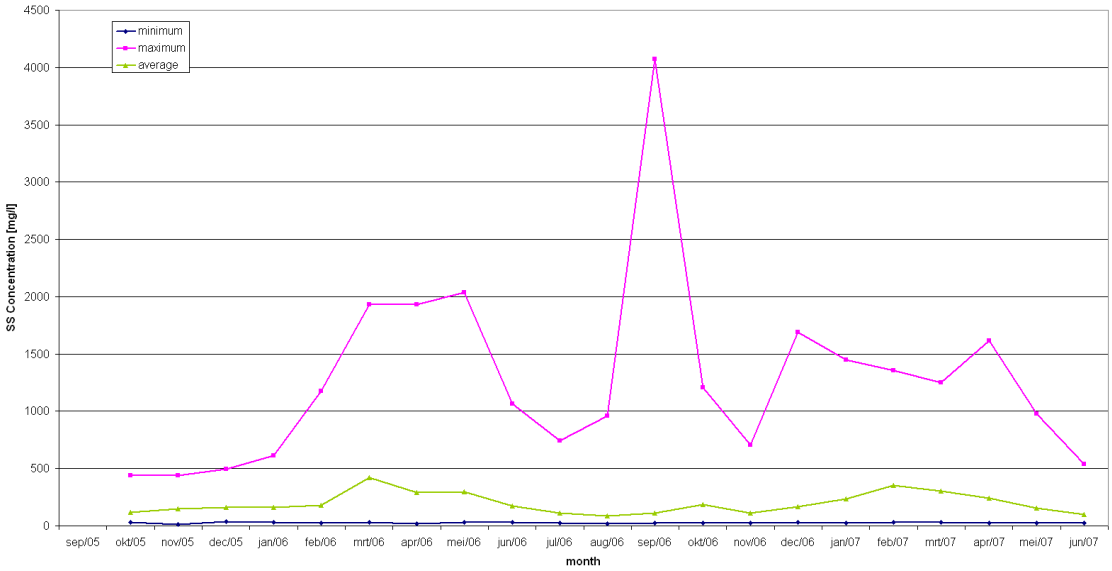
Buoy 97
3.3m above bottom (-5.3m TAW)

Data processed by:

In association with:

I/RA/11283/07.097/MSA

Salinity & SS Concentration



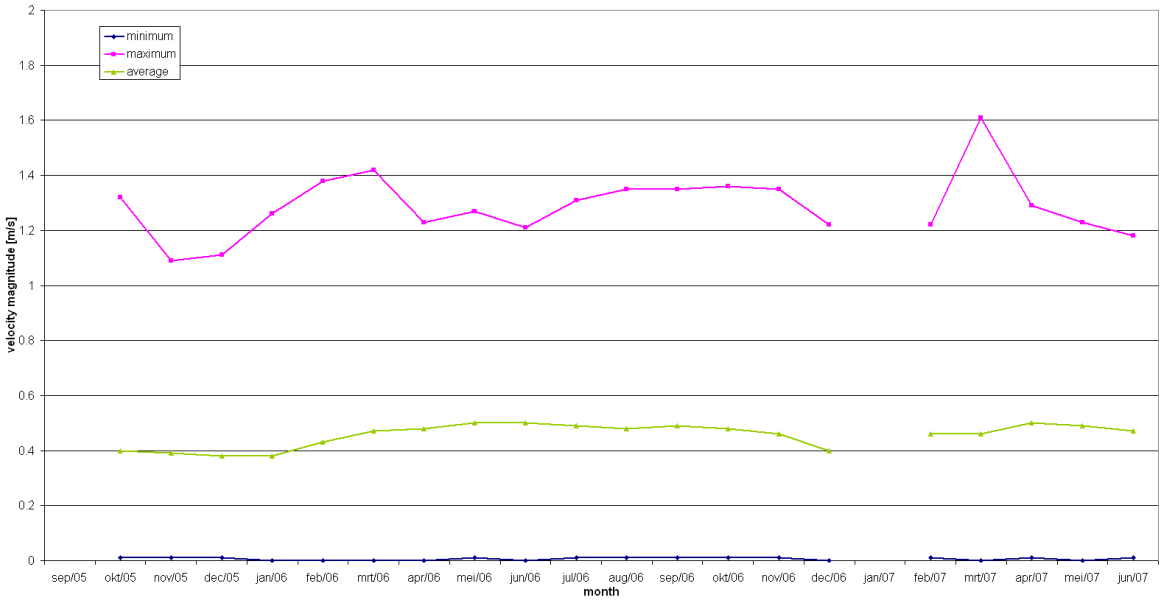
Buoy 97
3.3m above bottom (-5.3m TAW)

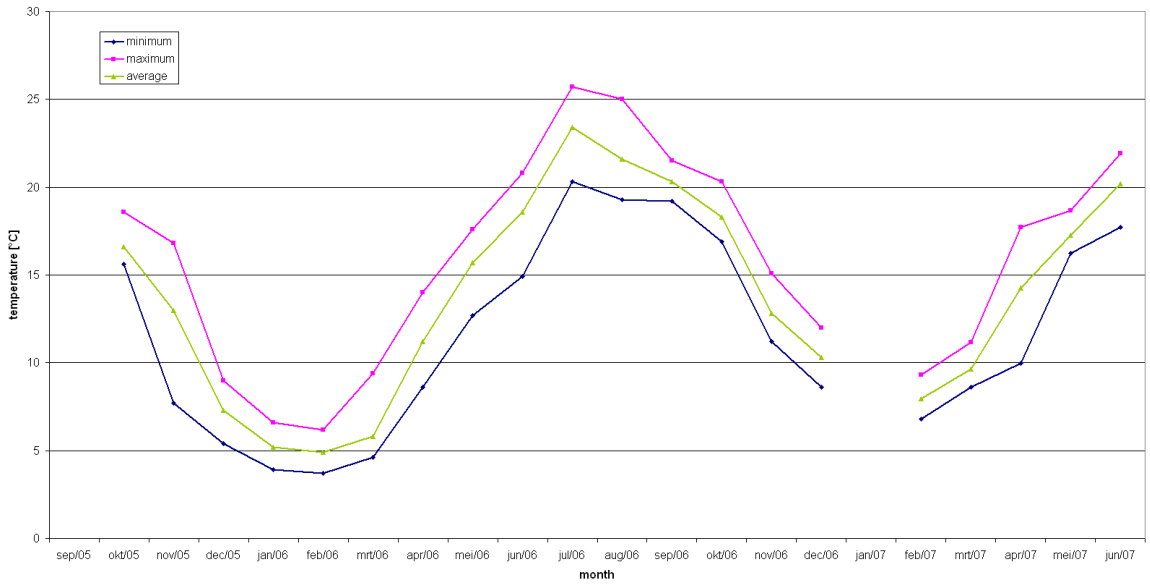
Data processed by:

In association with:

I/RA/11283/07.097/MSA

Velocity magnitude & temperature





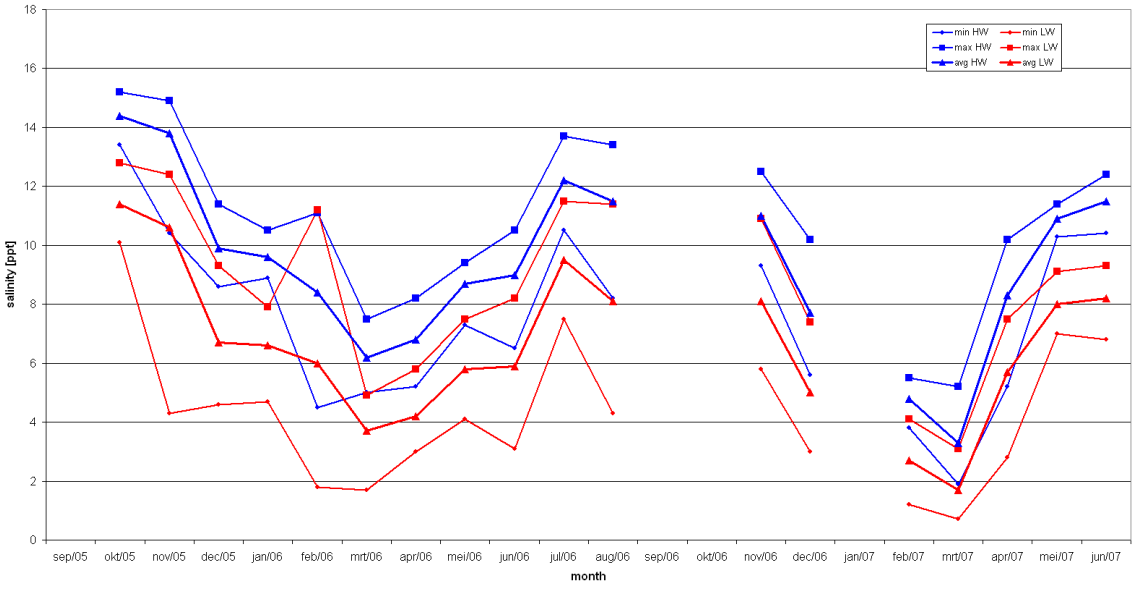
Buoy 97
0.8m above bottom (-7.8m TAW)

Data processed by:

In association with:

I/RA/11283/07.097/MSA

Salinity & SS Concentration



Buoy 97
0.8m above bottom (-7.8m TAW)

Data processed by:

In association with:

I/RA/11283/07.097/MSA

B.4 Total result from April 2007 till June 2007 of velocity magnitude, temperature, salinity and suspended sediment concentration

Averages for the whole deployment period of each instrument [April 2007 – June 2007]

Location	*Depth [m TAW]*	*Velocity [m/s]*			*Temperature [°C]*			*SS concentration [mg/l]*		
		Min	*Max*	*Avg*	*Min*	*Max*	*Avg*	*Min*	*Max*	*Avg*
Buoy 84	-5.6	0.00	1.28	0.53	10.1	21.6	17.5	2*	1055*	137*
Buoy 84	-8.1	0.00	1.20	0.45	10.0	21.7	17.5	1	1889	236
Buoy 97	-5.3	0.01	1.45	0.60	10.0	21.9	17.5	22	1616	160
Buoy 97	-7.8	0.00	1.29	0.48	10.0	21.9	17.5	22	2502	332

Salinity [ppt]

Location	*Depth [m TAW]*	*Minimum*		*Maximum*		*Average*	
		Slack HW	*Slack LW*	*Slack HW*	*Slack LW*	*Slack HW*	*Slack LW*
Buoy 84	-5.6	6.0*	3.7*	13.7*	10.5*	11.4*	8.6*
Buoy 84	-8.1	5.9*	3.9*	15.4*	11.2*	11.8*	8.9*
Buoy 97	-5.3	5.3	2.4	12.3	8.7	10.3	6.9
Buoy 97	-7.8	5.2	2.8	12.4	9.3	10.4	7.4

-: No data or less than 30% of the monthly data available.
*: Less than 70% of the monthly data available.

APPENDIX C.

LONG TERM MEASUREMENTS AT OOSTERWEEL AND PROSPERPOLDER (WL – CEL HYDROMETRIE)

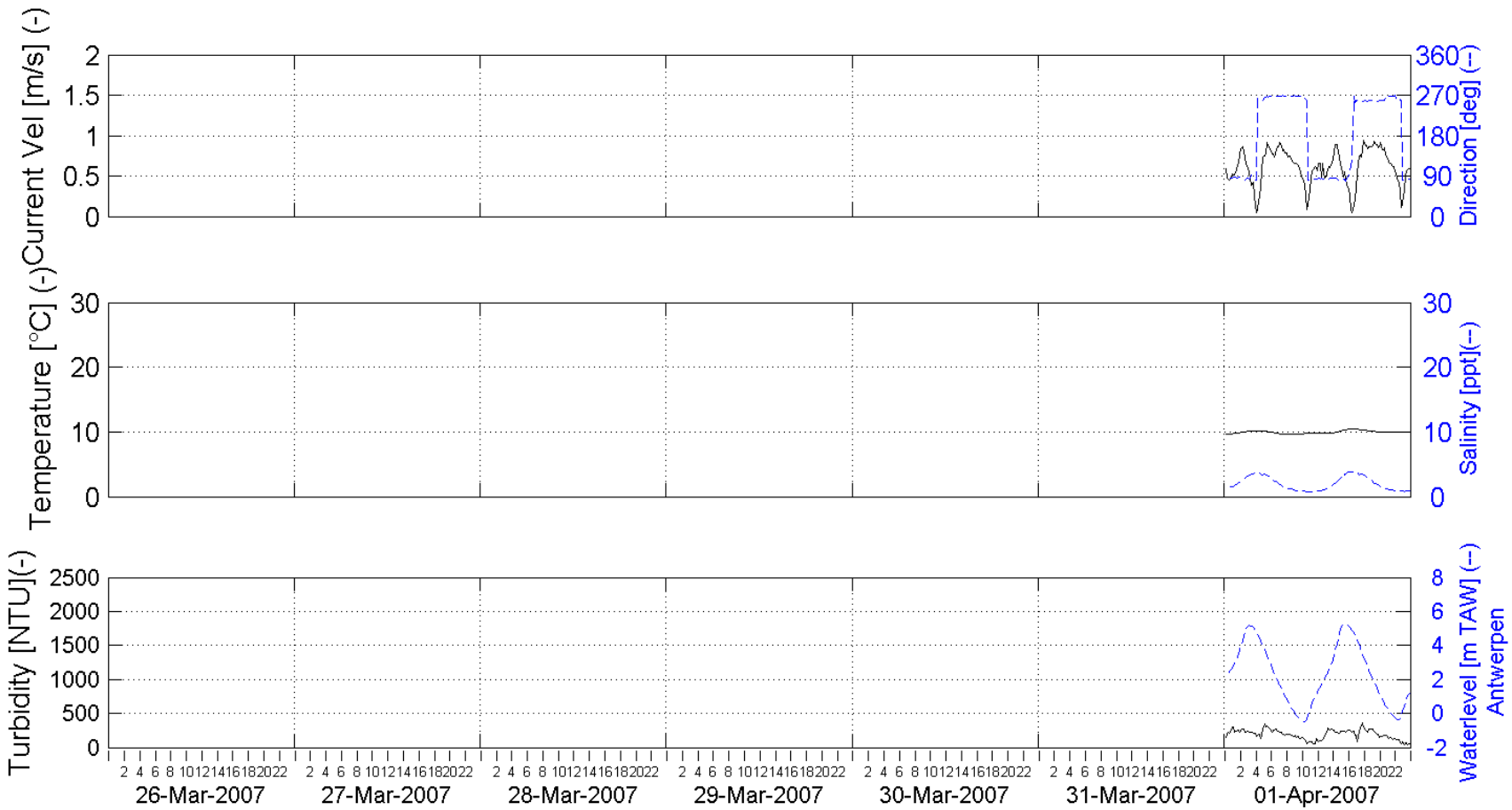
C.1 Datasheets week series

Datasheet order

Nr	*Location*	*Depth of Instrument*		*Sensor*	*Period*
		[m] above bottom	*[m TAW]*		
1	Oosterweel left bank	4.5	-2.3	Aanderaa 0579	01/04/2007 – 26/04/2007
				Aanderaa 0152	26/04/2007 – 30/06/2007
2	Oosterweel left bank	1.0	-5.8	Aanderaa 1153	05/04/2007 – 26/04/2007
				Aanderaa 0151	26/04/2007 – 03/05/2007
3	Prosperpolder	2.5	-1.5	Aanderaa 0117	01/04/2007 – 30/06/2007

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 13 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Oosterweel top - 4.5m above bottom (-2.3m TAW)

Processed by:

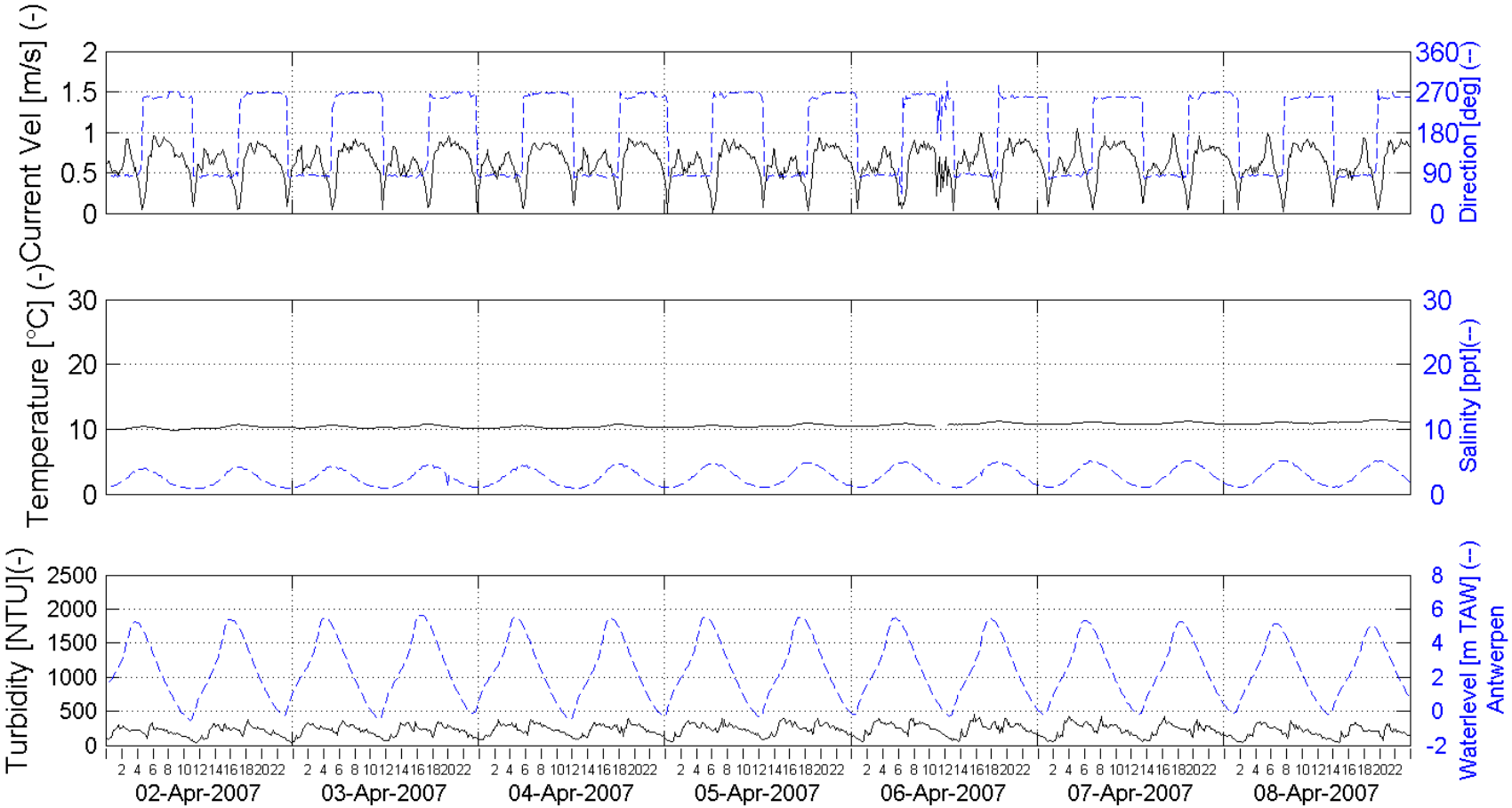
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 14 - 2007



Week series Current Velocity, Current Direction,
Temperature, Salinity, SS Concentration and Tide

Location:

Oosterweel top - 4.5m above bottom (-2.3m TAW)

Processed by:

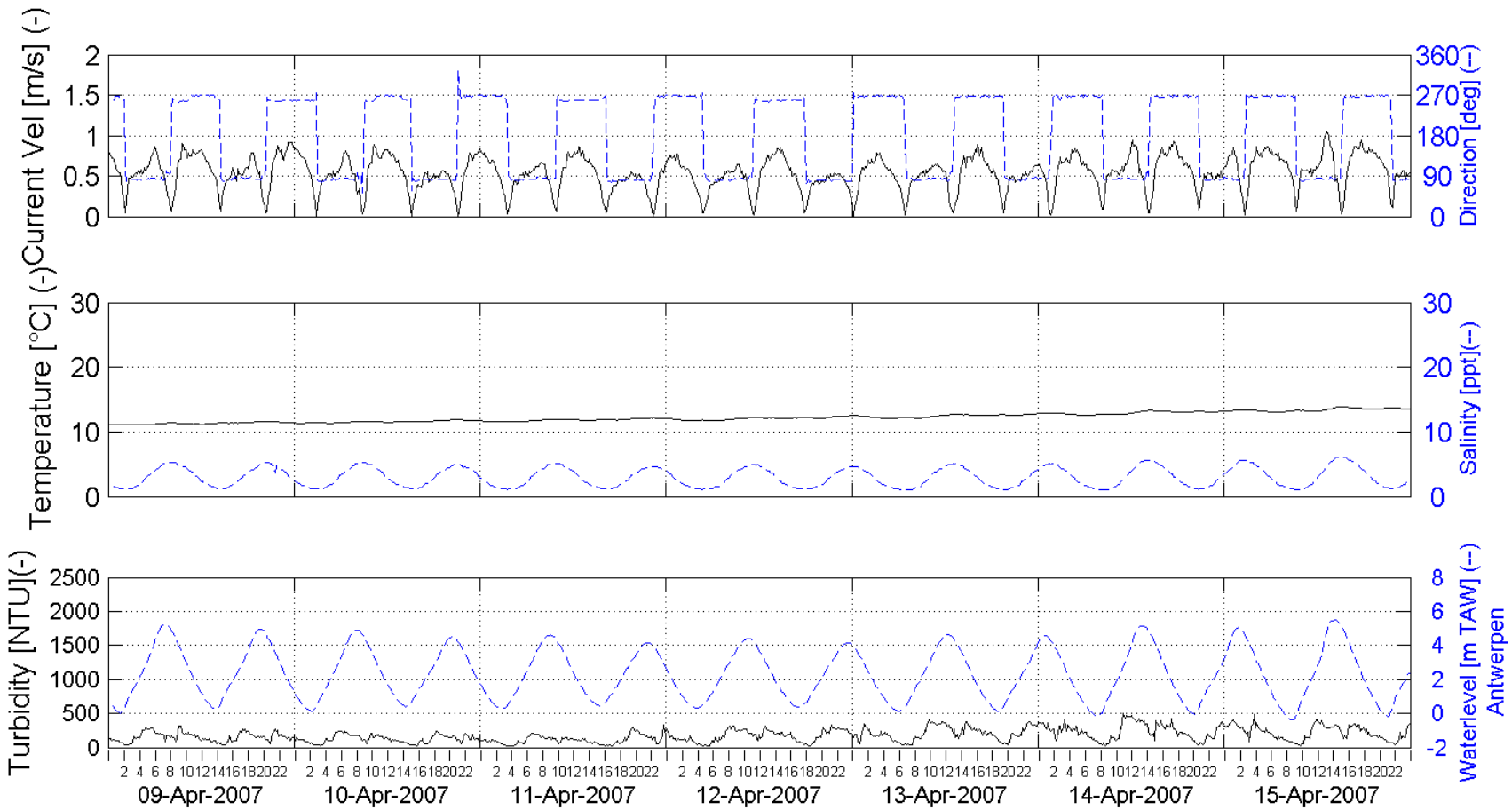
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 15 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Oosterweel top - 4.5m above bottom (-2.3m TAW)

Processed by:

IMDC

In Association with:

WL | delft hydraulics

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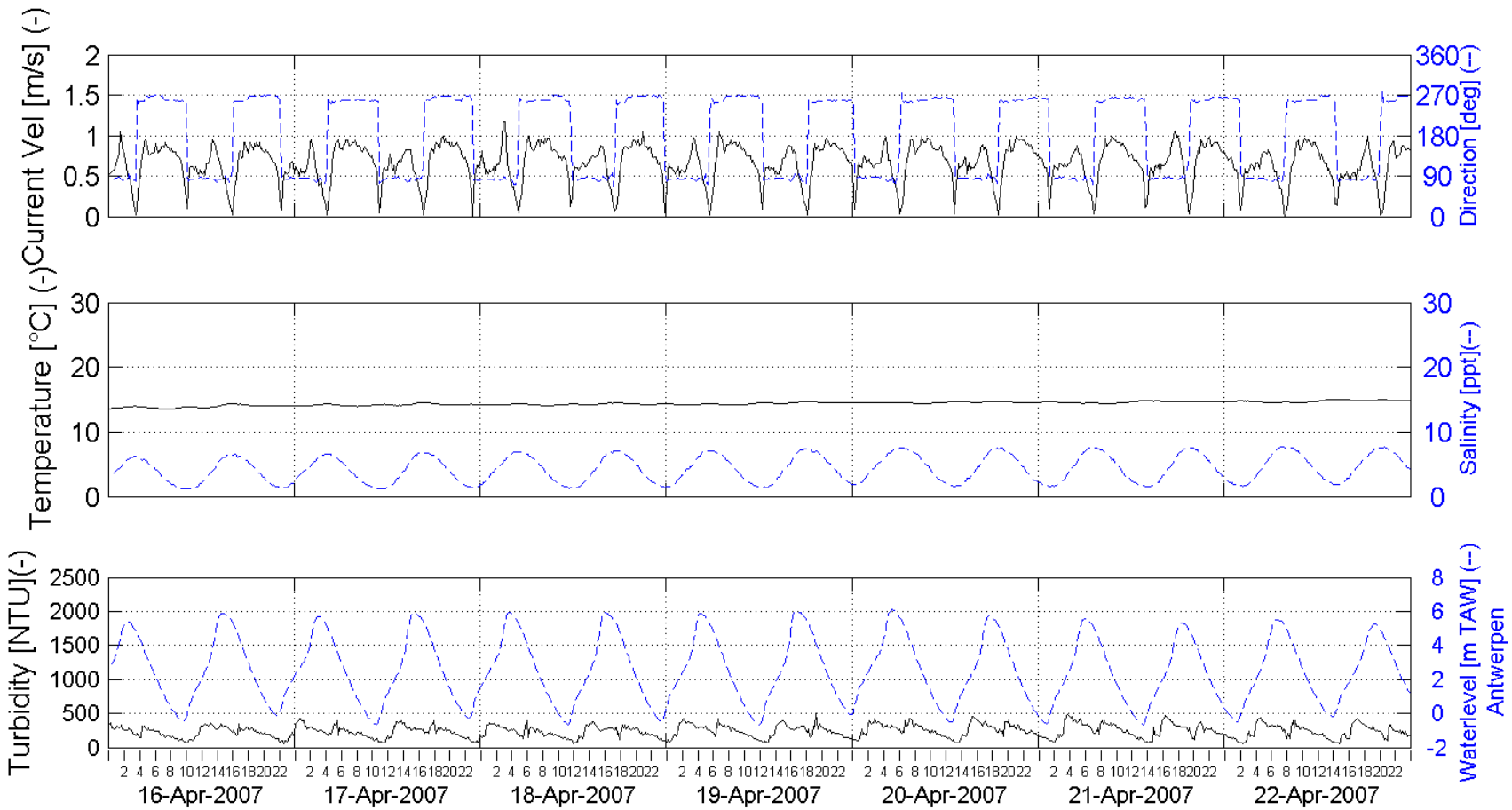
I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 16 - 2007



Week series Current Velocity, Current Direction,
Temperature, Salinity, SS Concentration and Tide

Location:

Oosterweel top - 4.5m above bottom (-2.3m TAW)

Processed by:

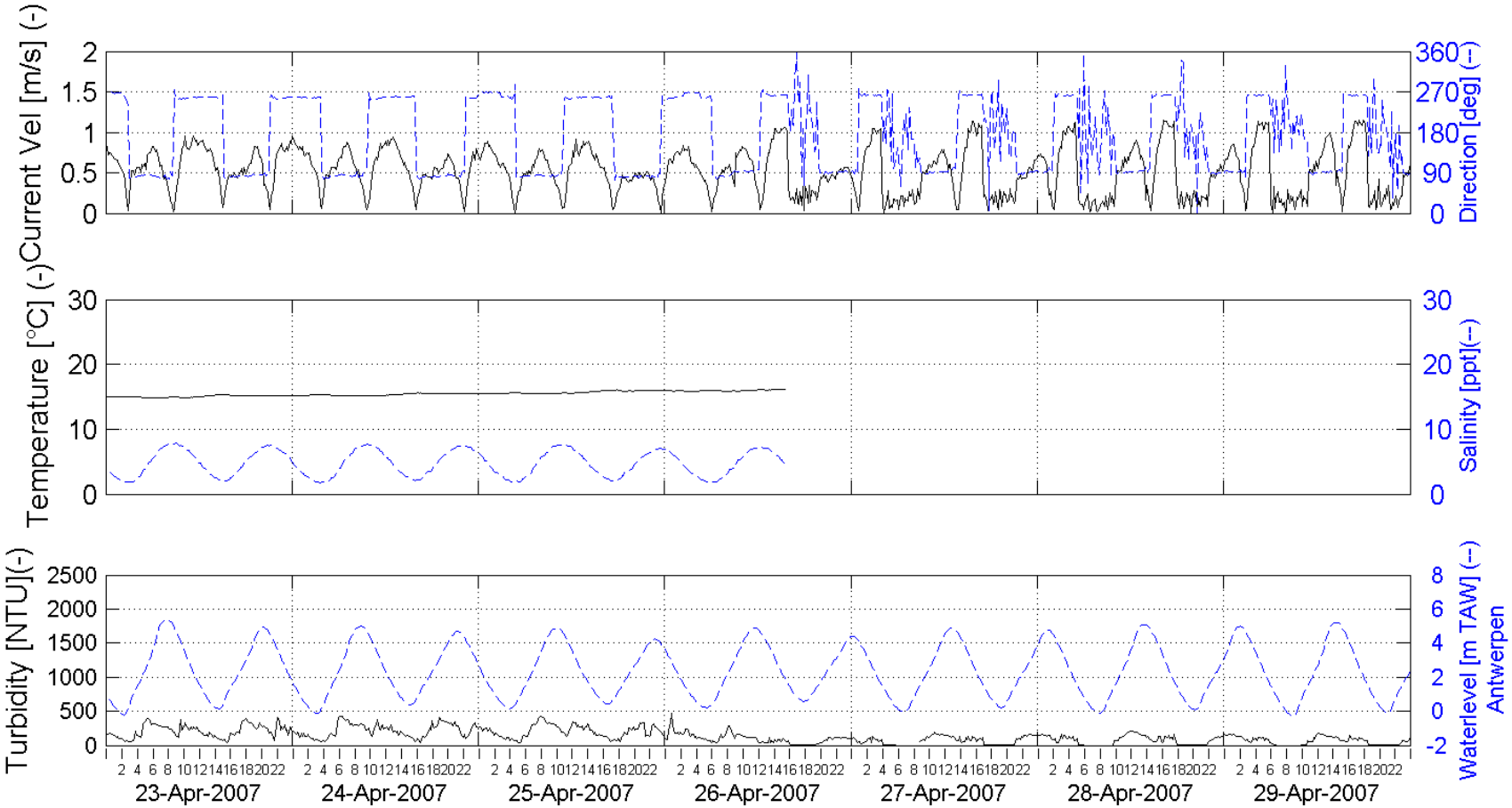
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 17 - 2007



Week series Current Velocity, Current Direction,
Temperature, Salinity, SS Concentration and Tide

Location:

Oosterweel top - 4.5m above bottom (-2.3m TAW)

Processed by:

IMDC

In Association with:

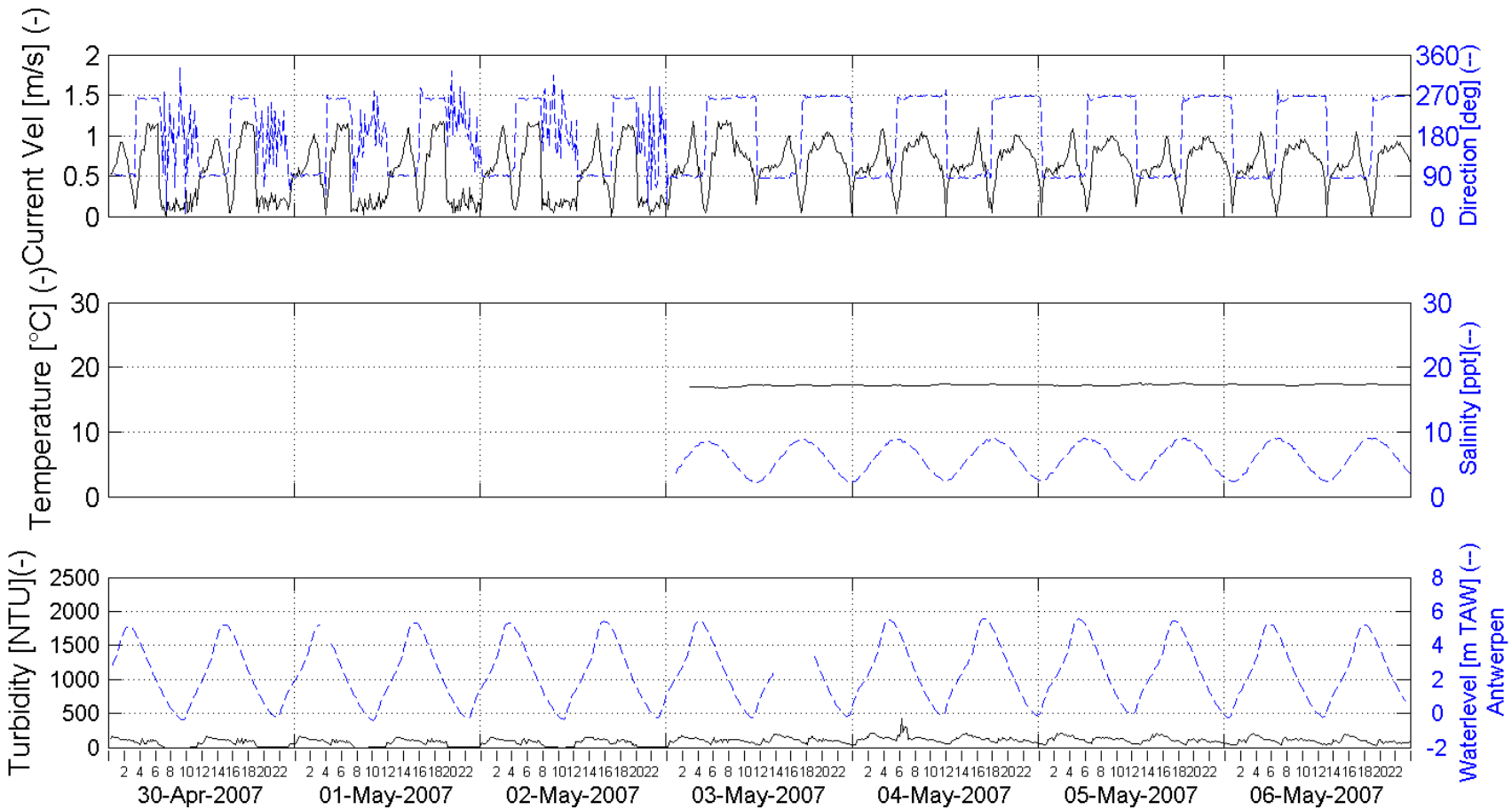
WL | delft hydraulics

GEMS International

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 18 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Oosterweel top - 4.5m above bottom (-2.3m TAW)

Processed by:

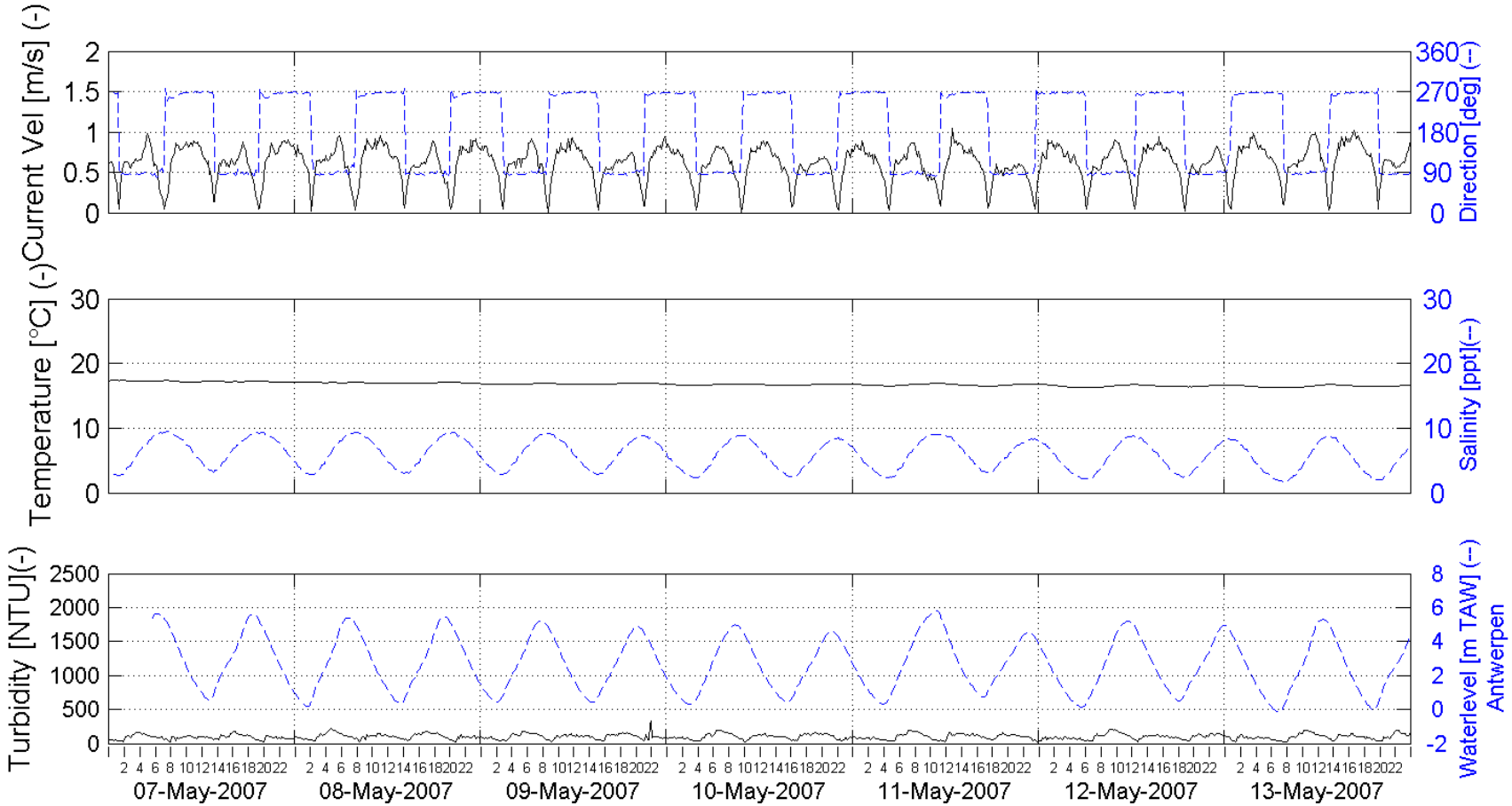
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 19 - 2007



Week series Current Velocity, Current Direction,
Temperature, Salinity, SS Concentration and Tide

Location:

Oosterweel top - 4.5m above bottom (-2.3m TAW)

Processed by:

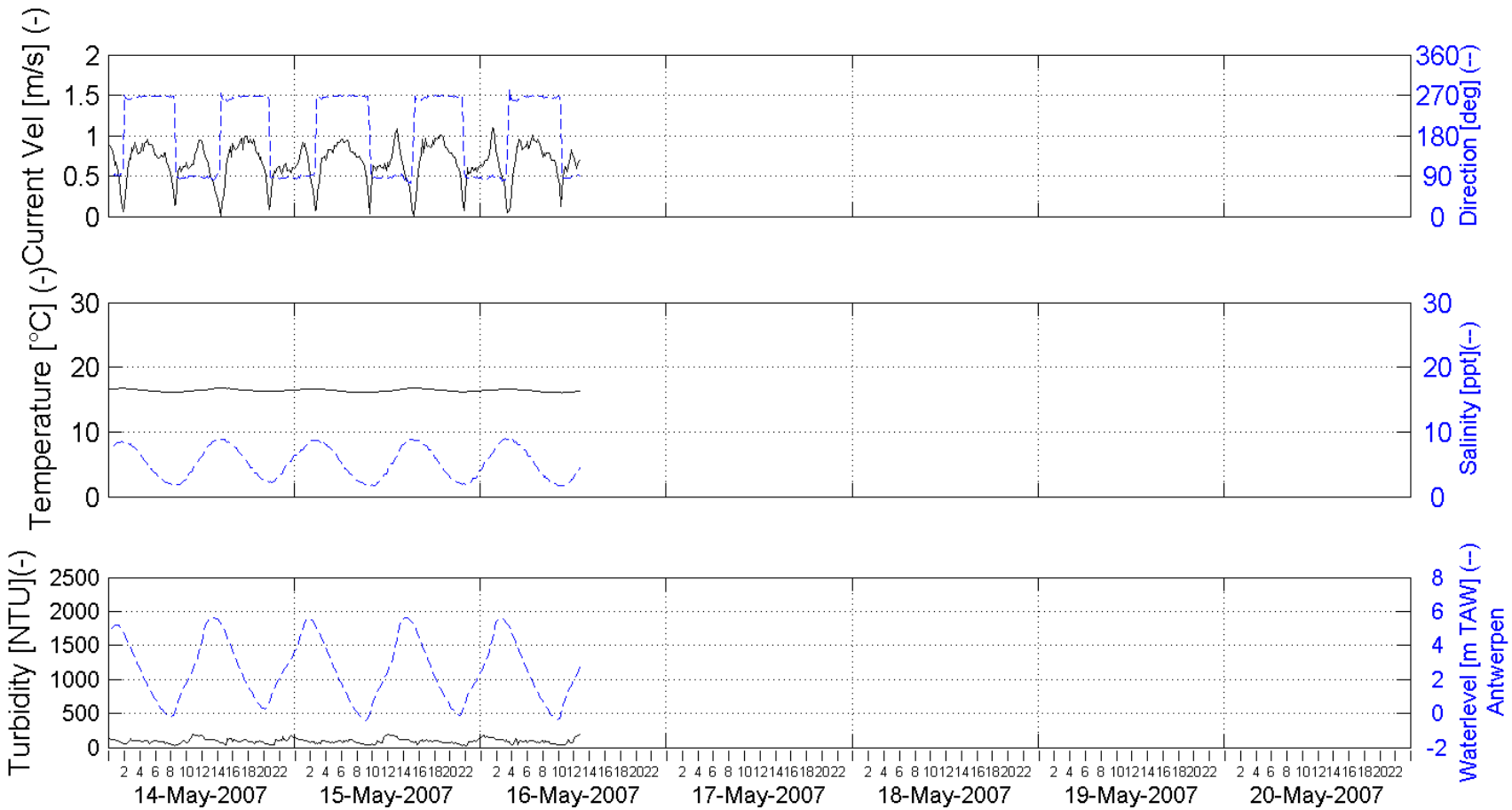
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 20 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Oosterweel top - 4.5m above bottom (-2.3m TAW)

Processed by:

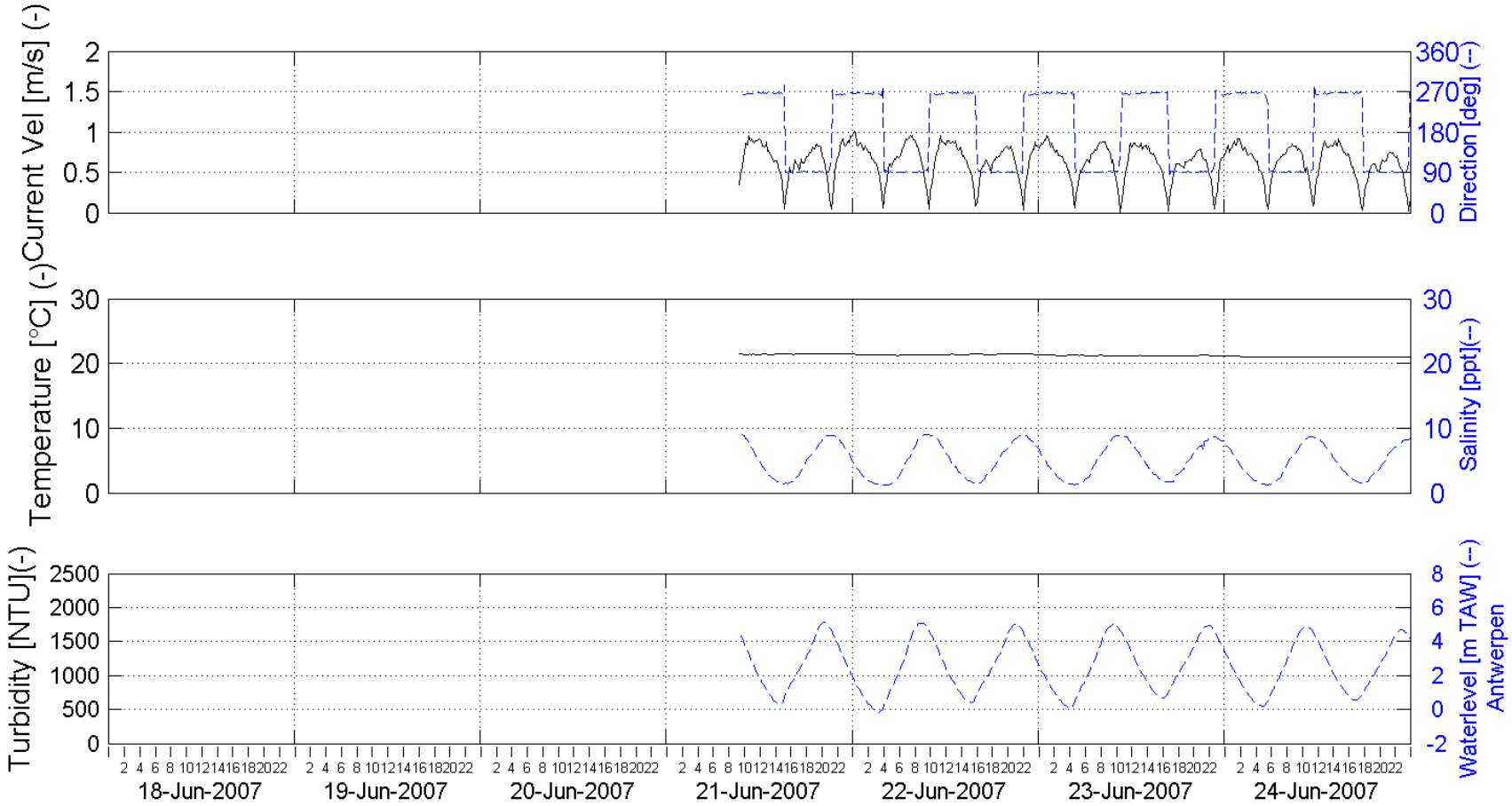
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 25 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Oosterweel top - 4.5m above bottom (-2.3m TAW)

Processed by:

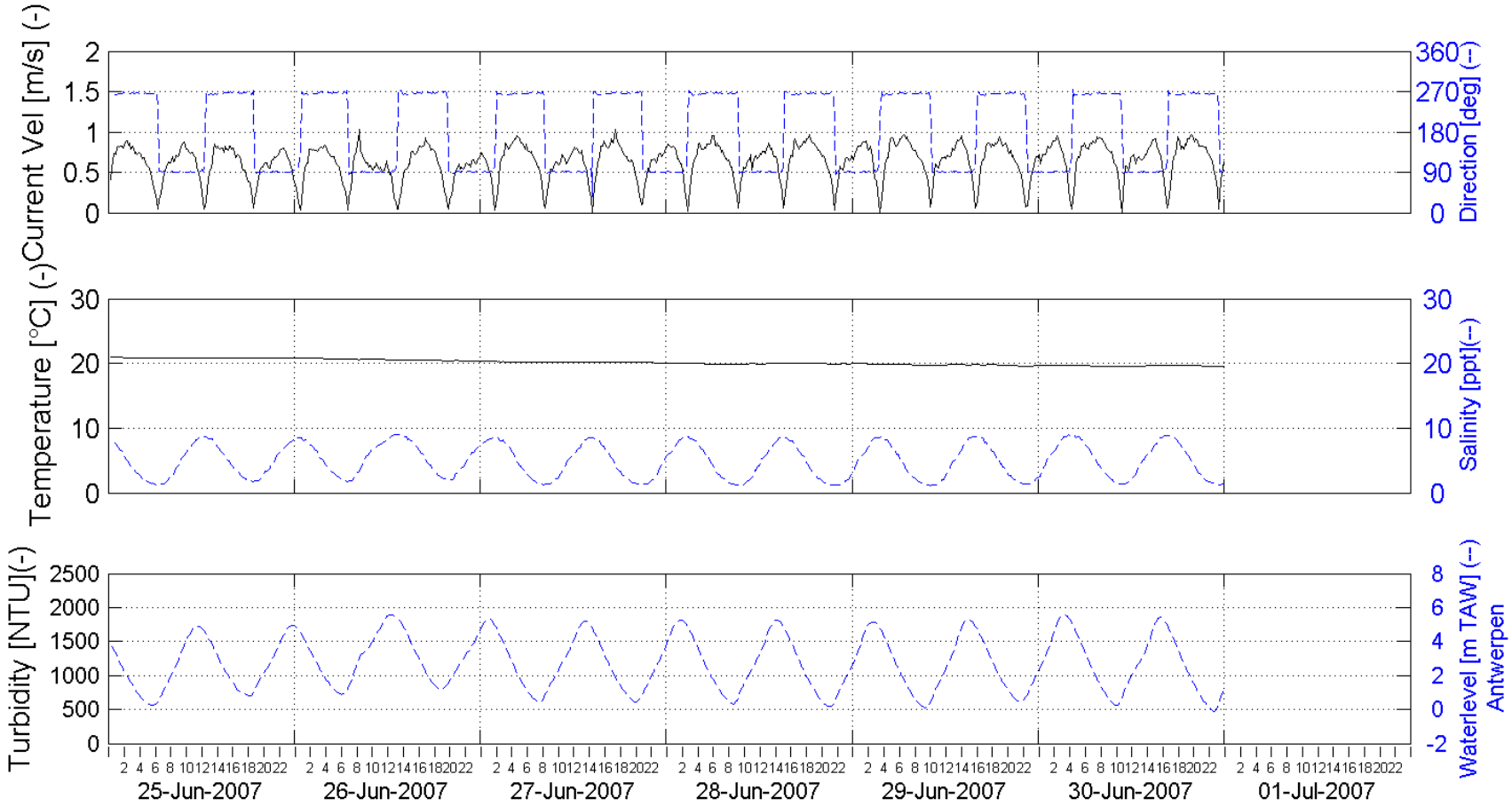
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 26 - 2007



Week series Current Velocity, Current Direction,
Temperature, Salinity, SS Concentration and Tide

Location:

Oosterweel top - 4.5m above bottom (-2.3m TAW)

Processed by:

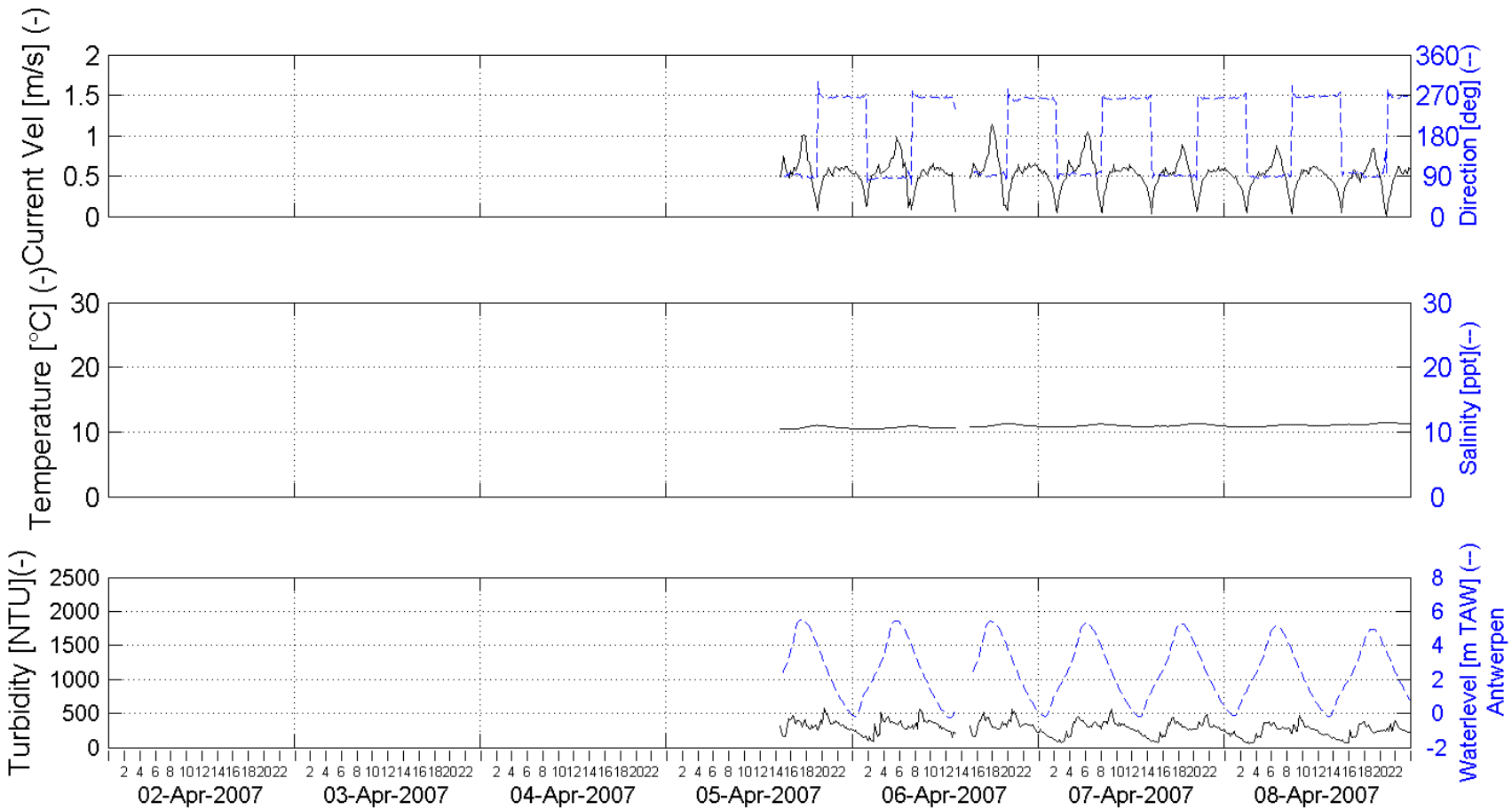
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 14 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Oosterweel bottom - 1m above bottom (-5.8m TAW)

Processed by:

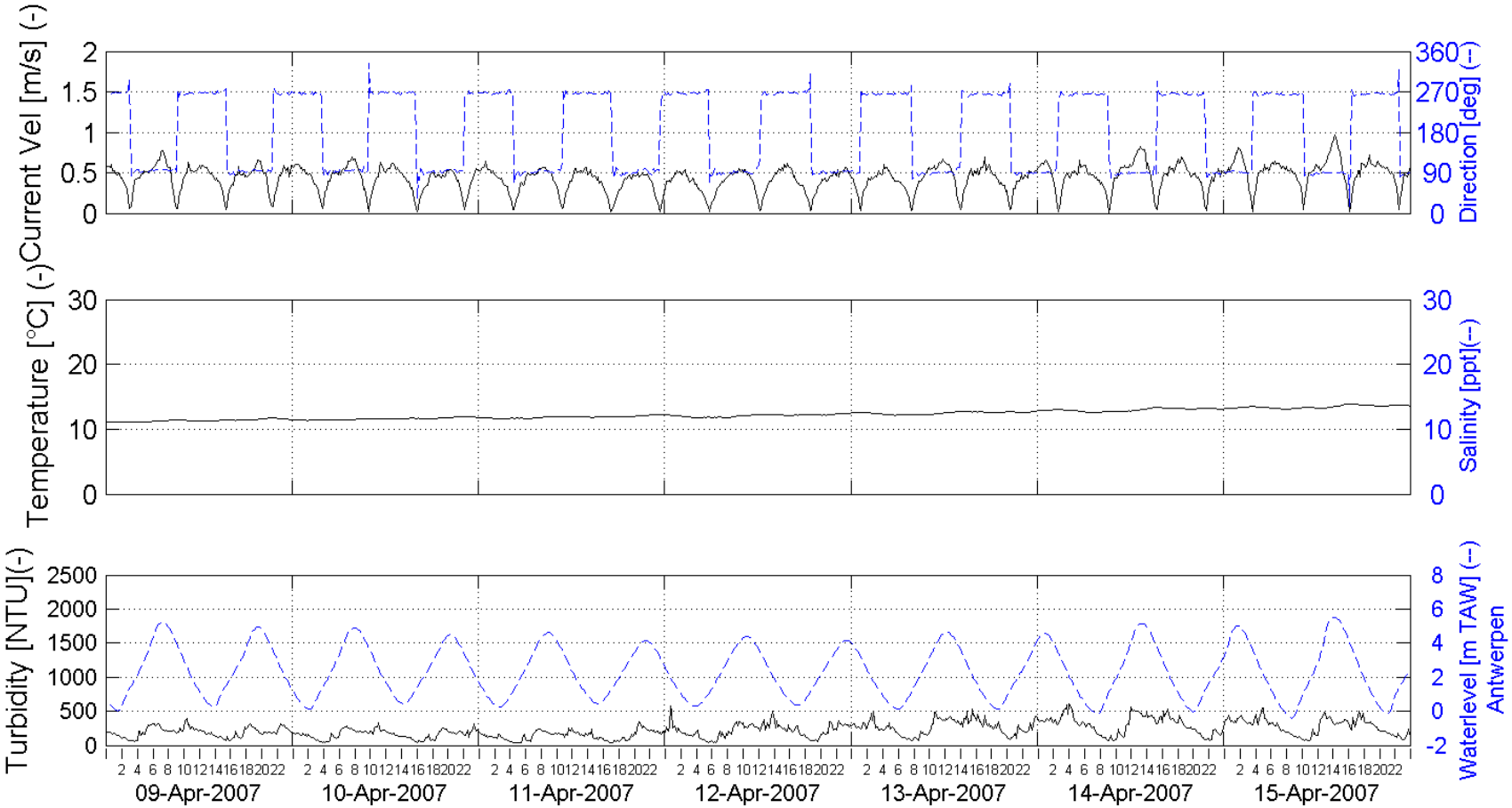
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 15 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Oosterweel bottom - 1m above bottom (-5.8m TAW)

Processed by:

IMDC

In Association with:

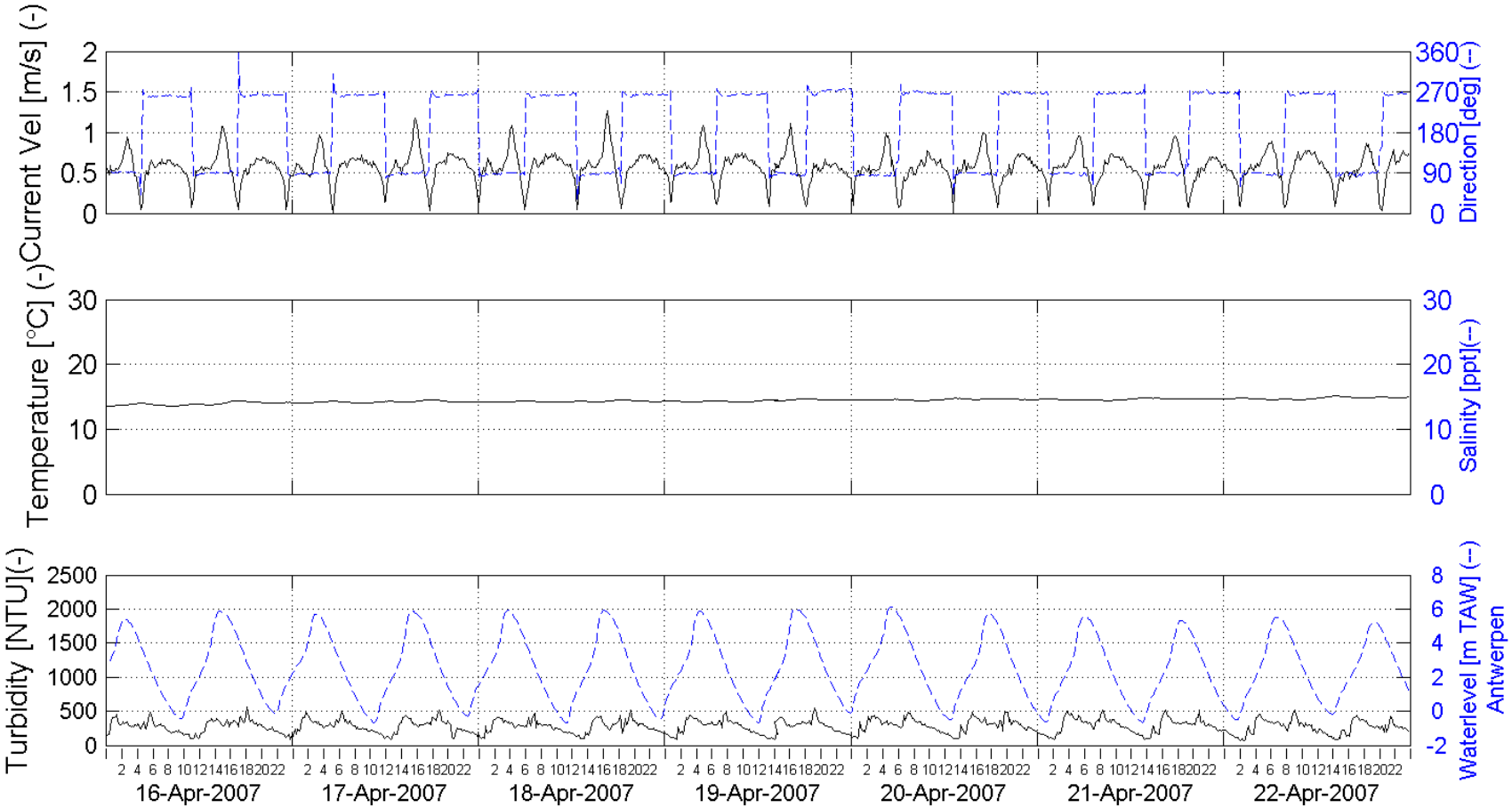
WL | delft hydraulics

GEMS International

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 16 - 2007



Week series Current Velocity, Current Direction,
Temperature, Salinity, SS Concentration and Tide

Location:

Oosterweel bottom - 1m above bottom (-5.8m TAW)

Processed by:

IMDC

In Association with:

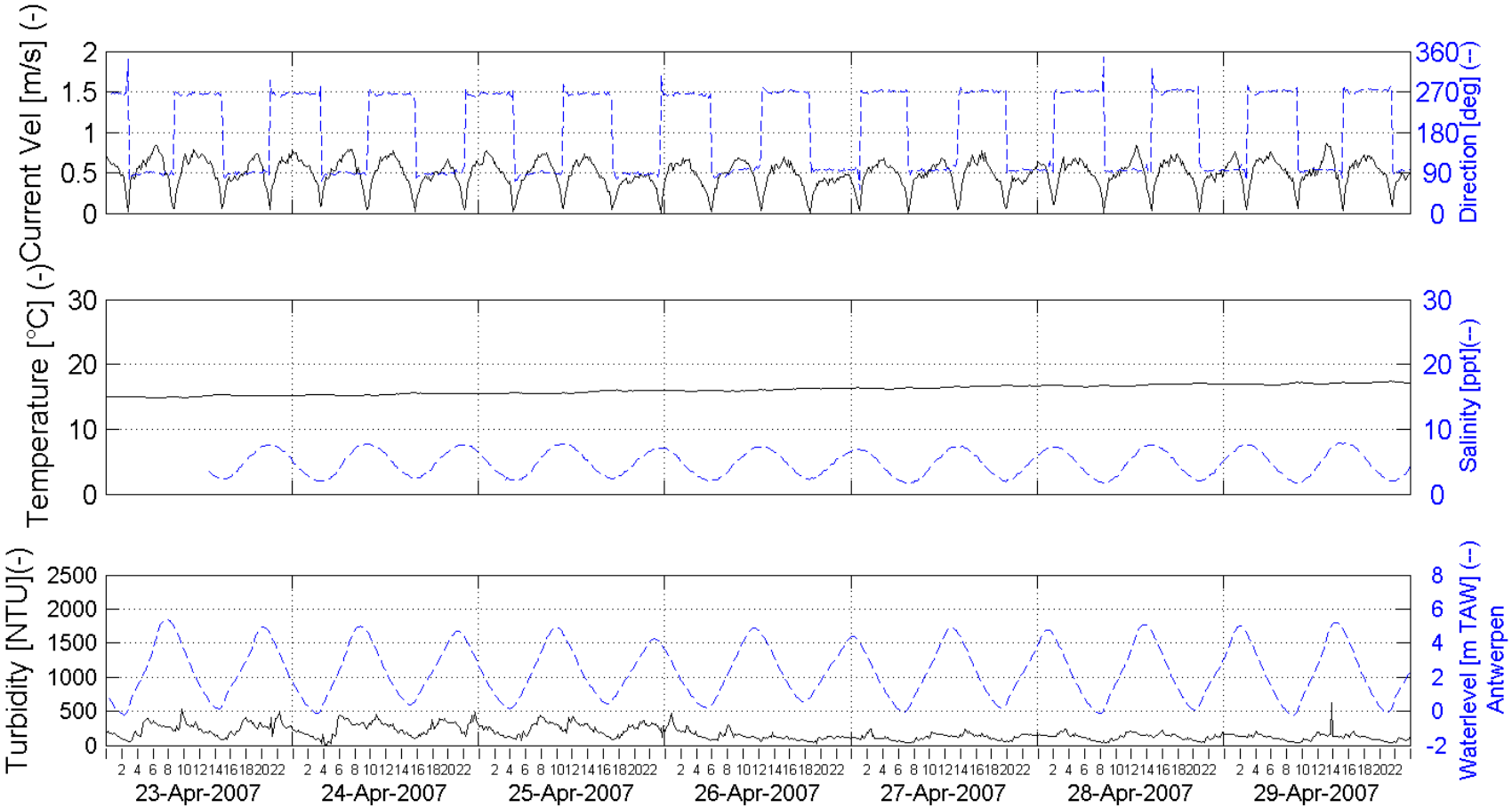
WL | delft hydraulics

GEMS International

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 17 - 2007



Week series Current Velocity, Current Direction,
Temperature, Salinity, SS Concentration and Tide

Location:

Oosterweel bottom - 1m above bottom (-5.8m TAW)

Processed by:

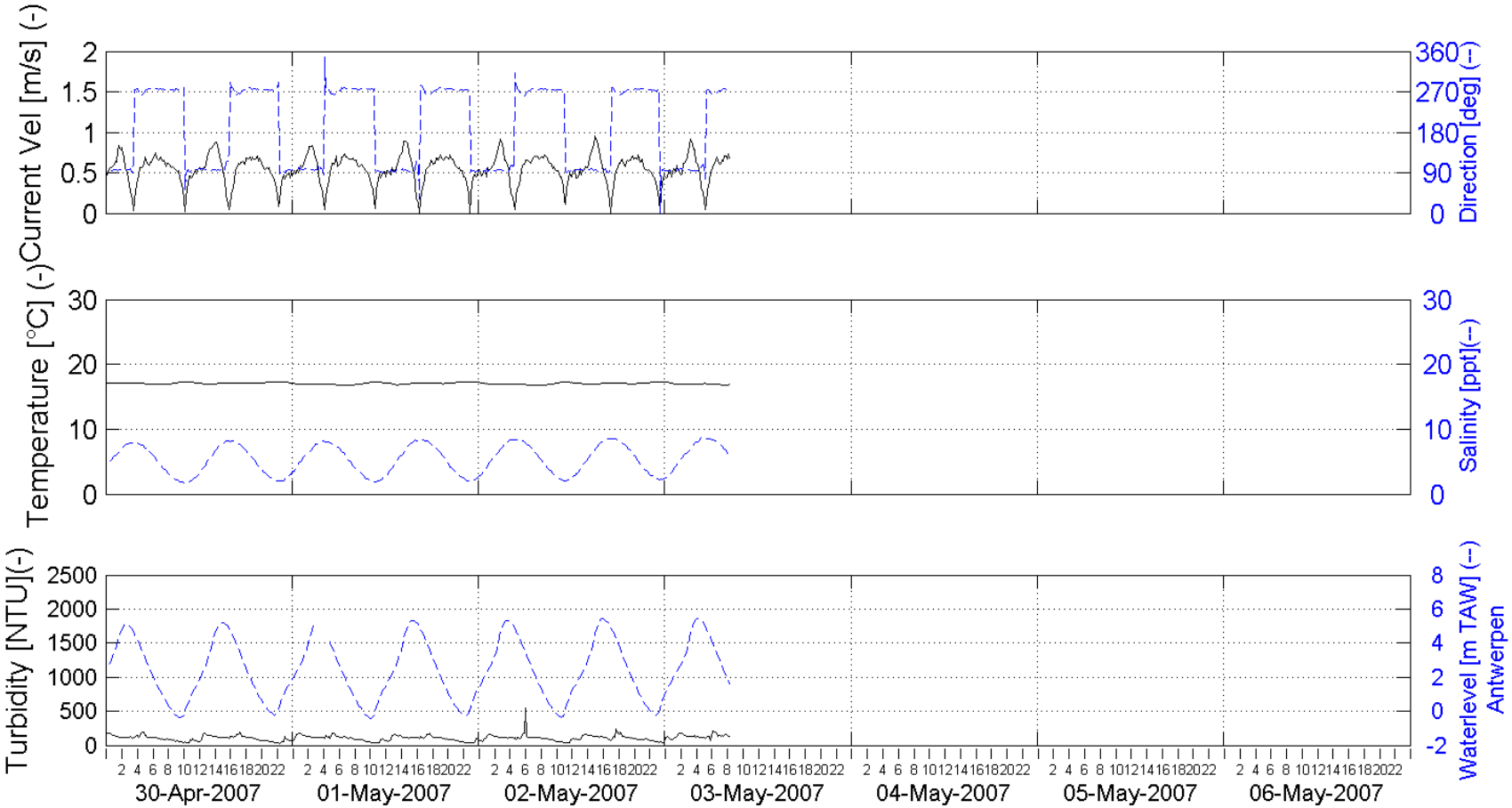
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 18 - 2007



Week series Current Velocity, Current Direction, Temperature, Salinity, SS Concentration and Tide

Location:

Oosterweel bottom - 1m above bottom (-5.8m TAW)

Processed by:

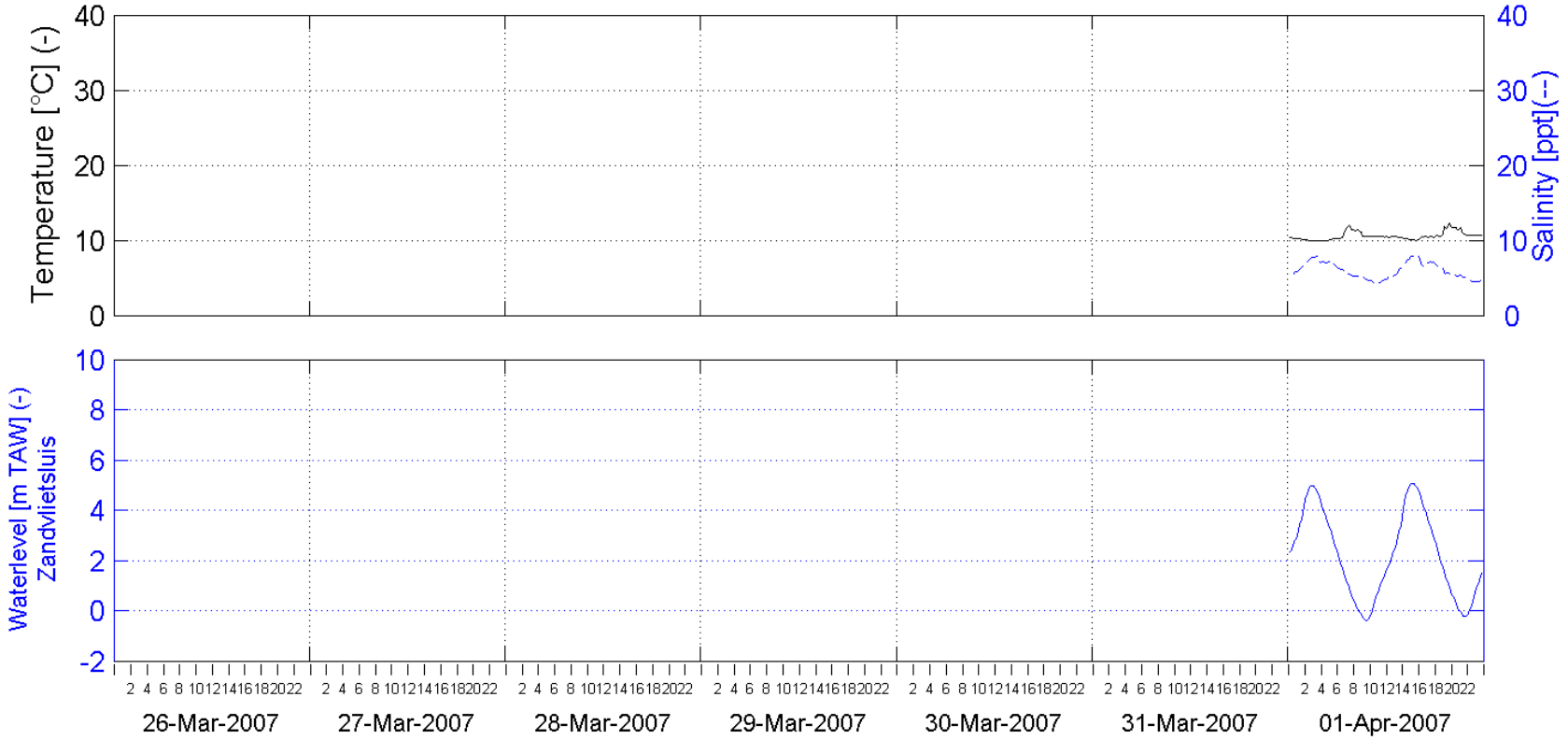
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 13 - 2007



Week series of Temperature, Salinity and Tide

Location:

Prosperpolder - 2.5m above bottom (-1.5m TAW)

Processed by:

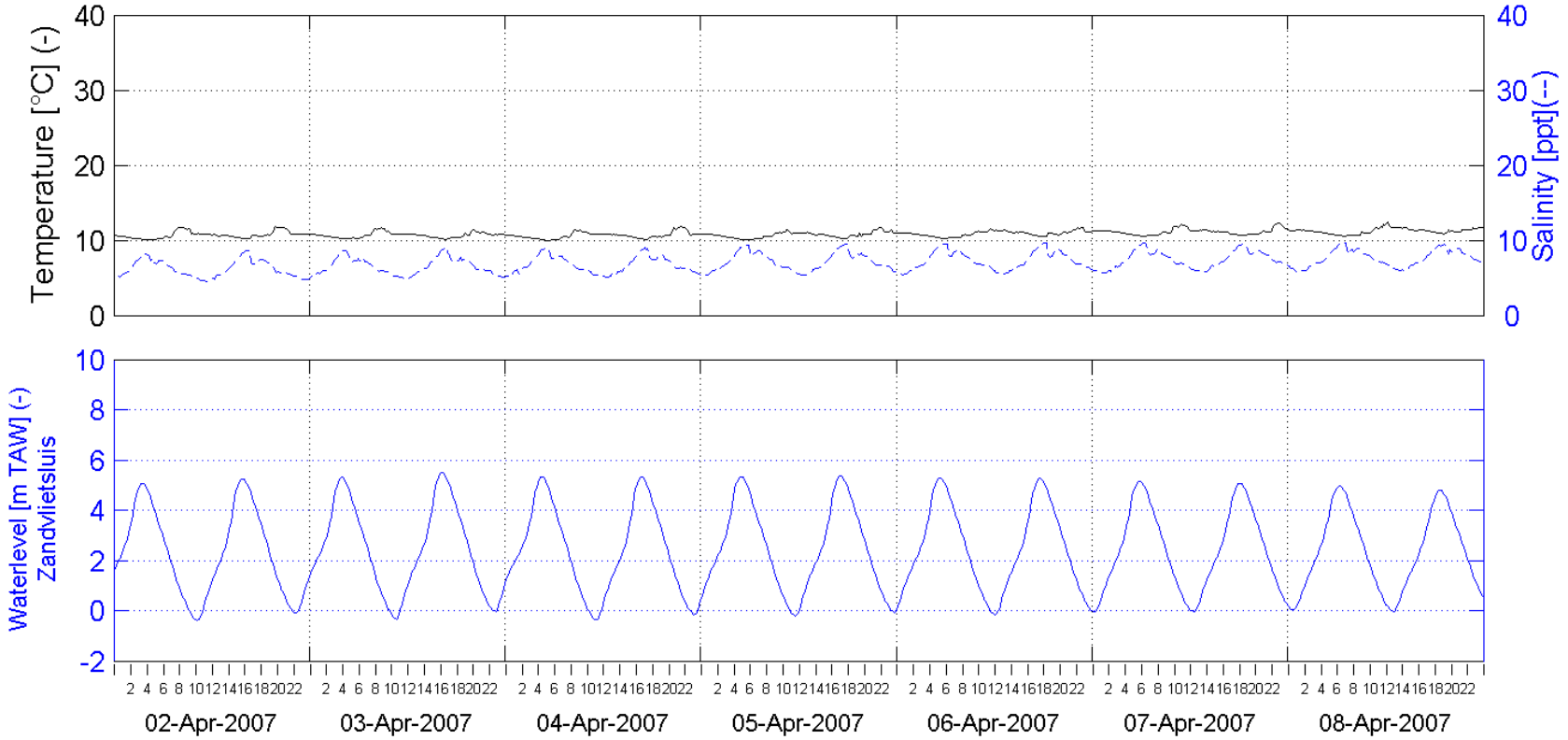
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 14 - 2007



Week series of Temperature, Salinity and Tide

Location:

Prosperpolder - 2.5m above bottom (-1.5m TAW)

Processed by:

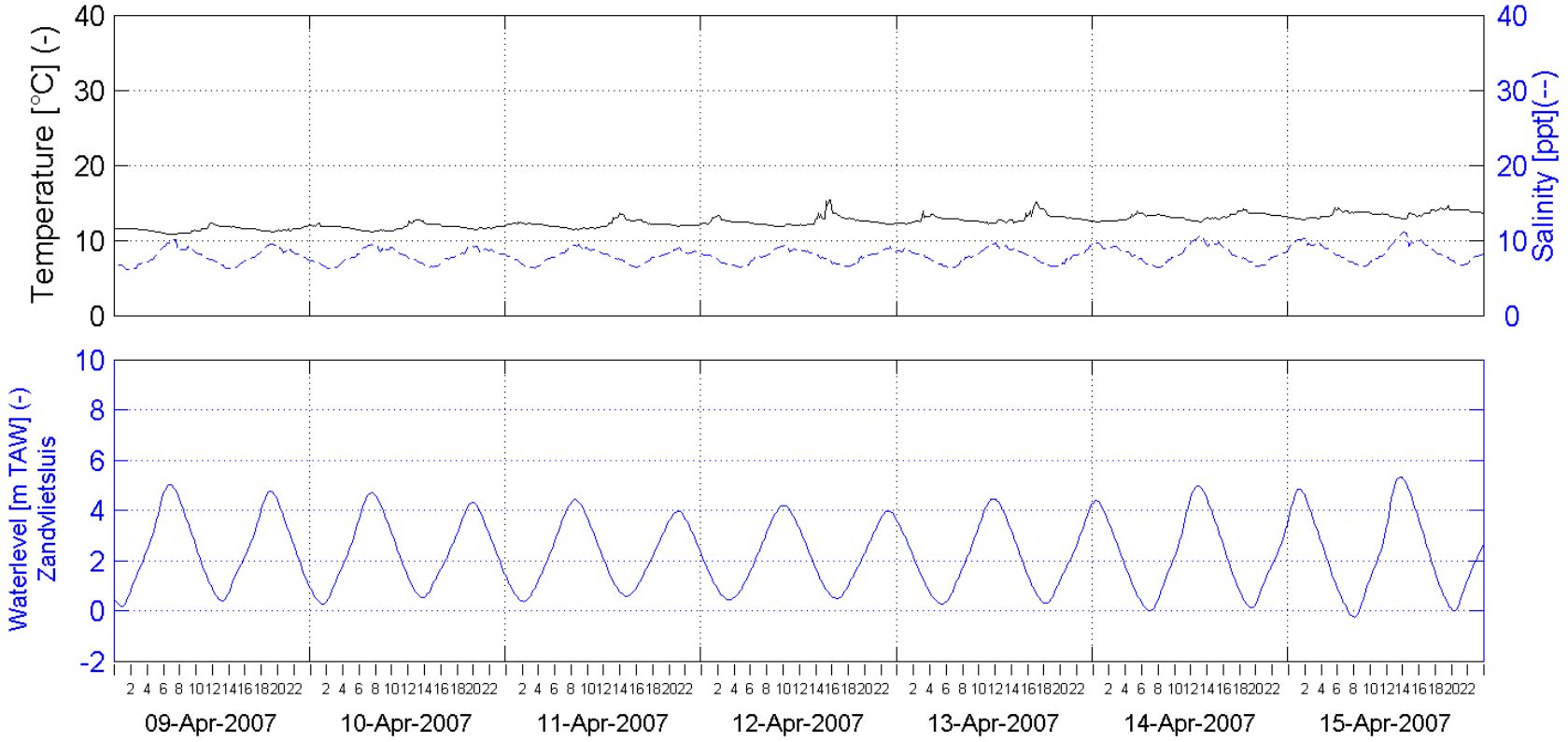
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 15 - 2007



Week series of Temperature, Salinity and Tide

Location:

Prosperpolder - 2.5m above bottom (-1.5m TAW)

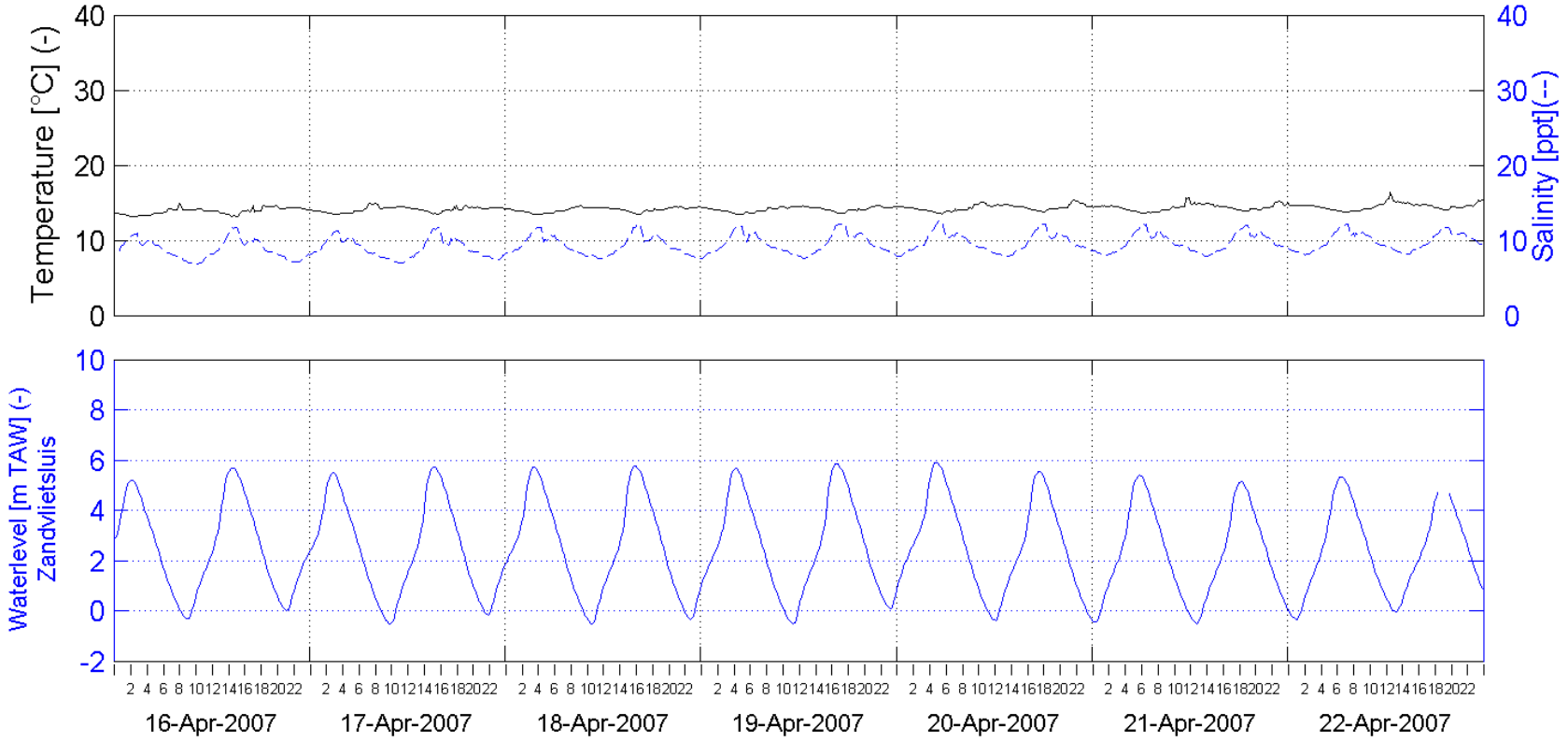
Processed by:

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 16 - 2007



Week series of Temperature, Salinity and Tide

Location:

Prosperpolder - 2.5m above bottom (-1.5m TAW)

Processed by:

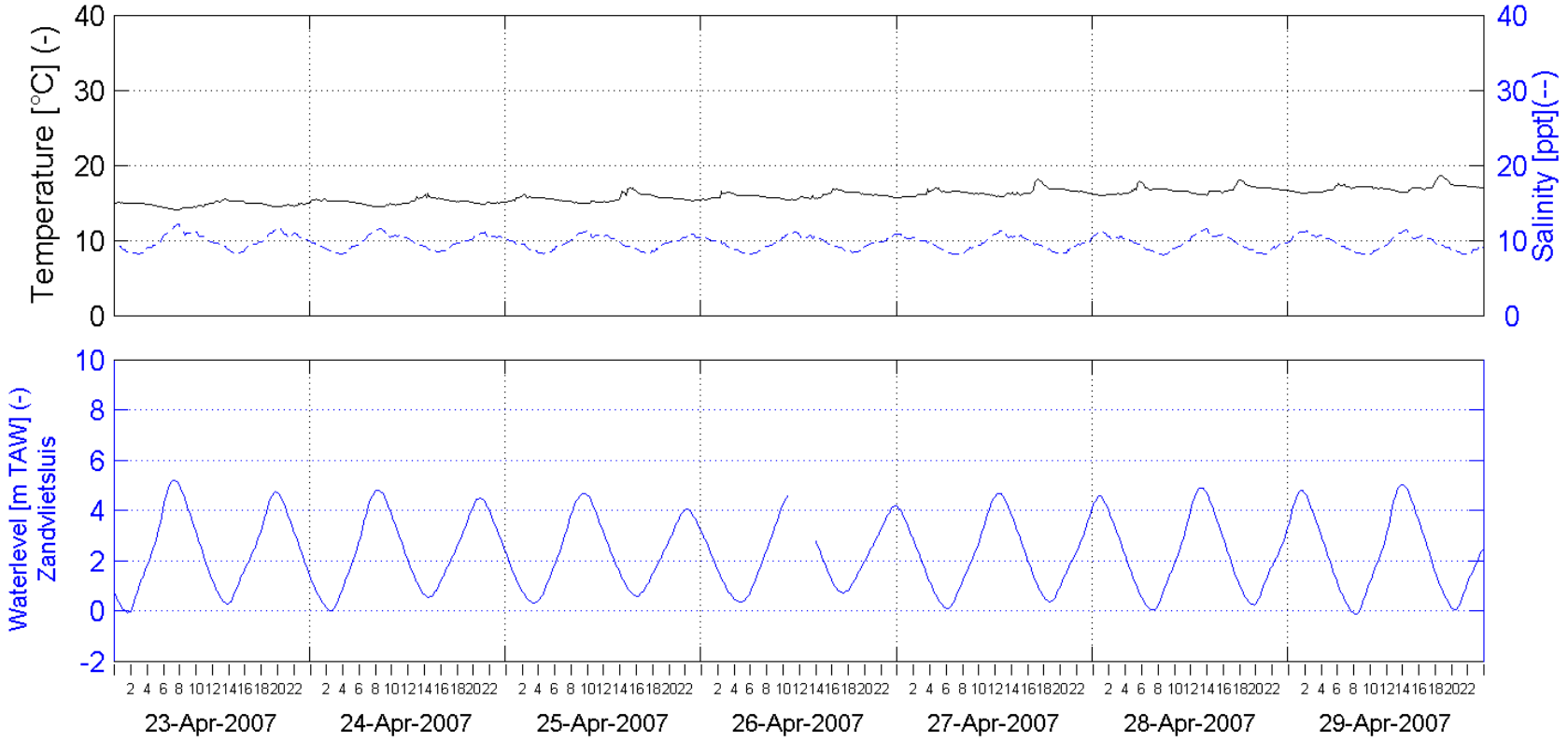
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 17 - 2007



Week series of Temperature, Salinity and Tide

Location:

Prosperpolder - 2.5m above bottom (-1.5m TAW)

Processed by:

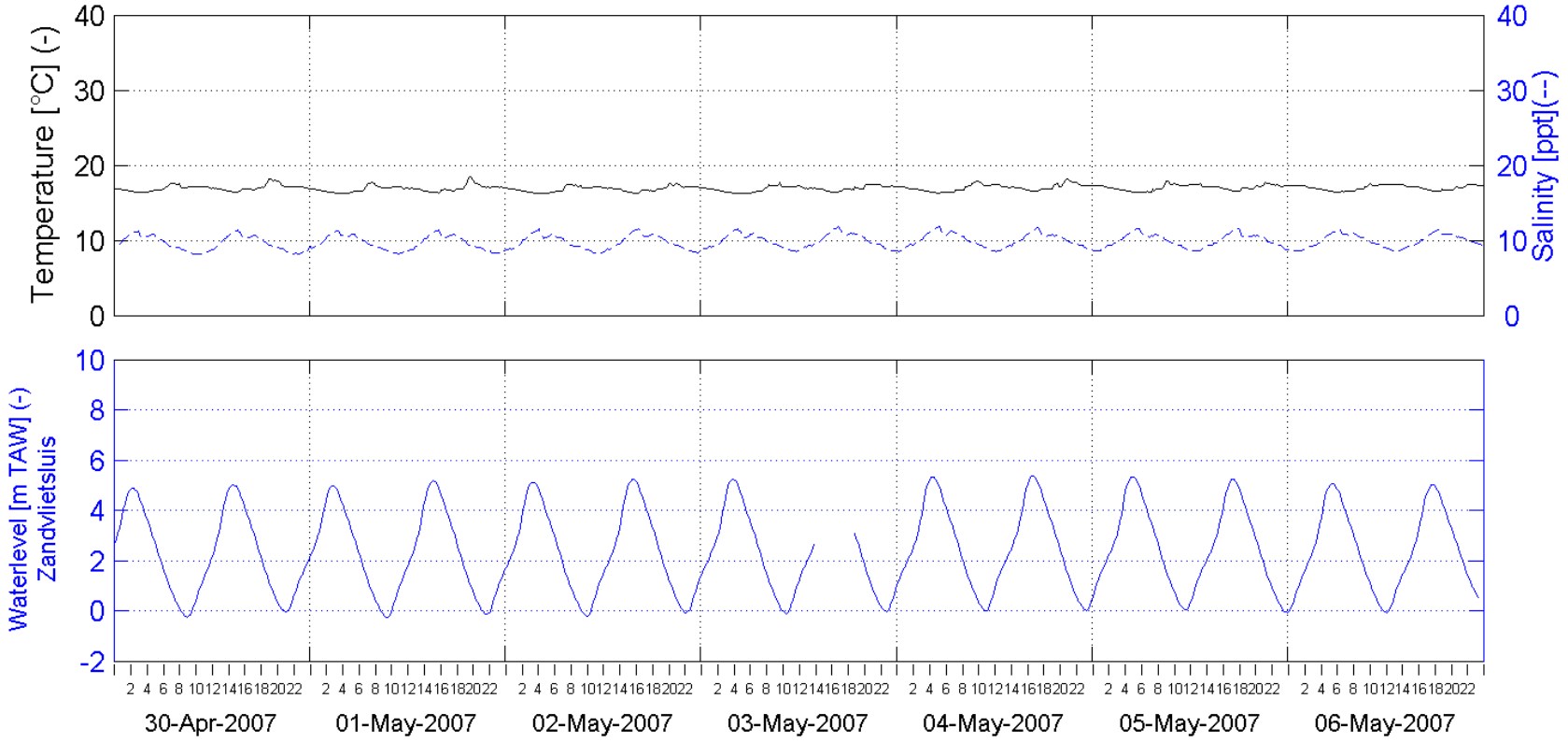
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 18 - 2007



Week series of Temperature, Salinity and Tide

Location:

Prosperpolder - 2.5m above bottom (-1.5m TAW)

Processed by:

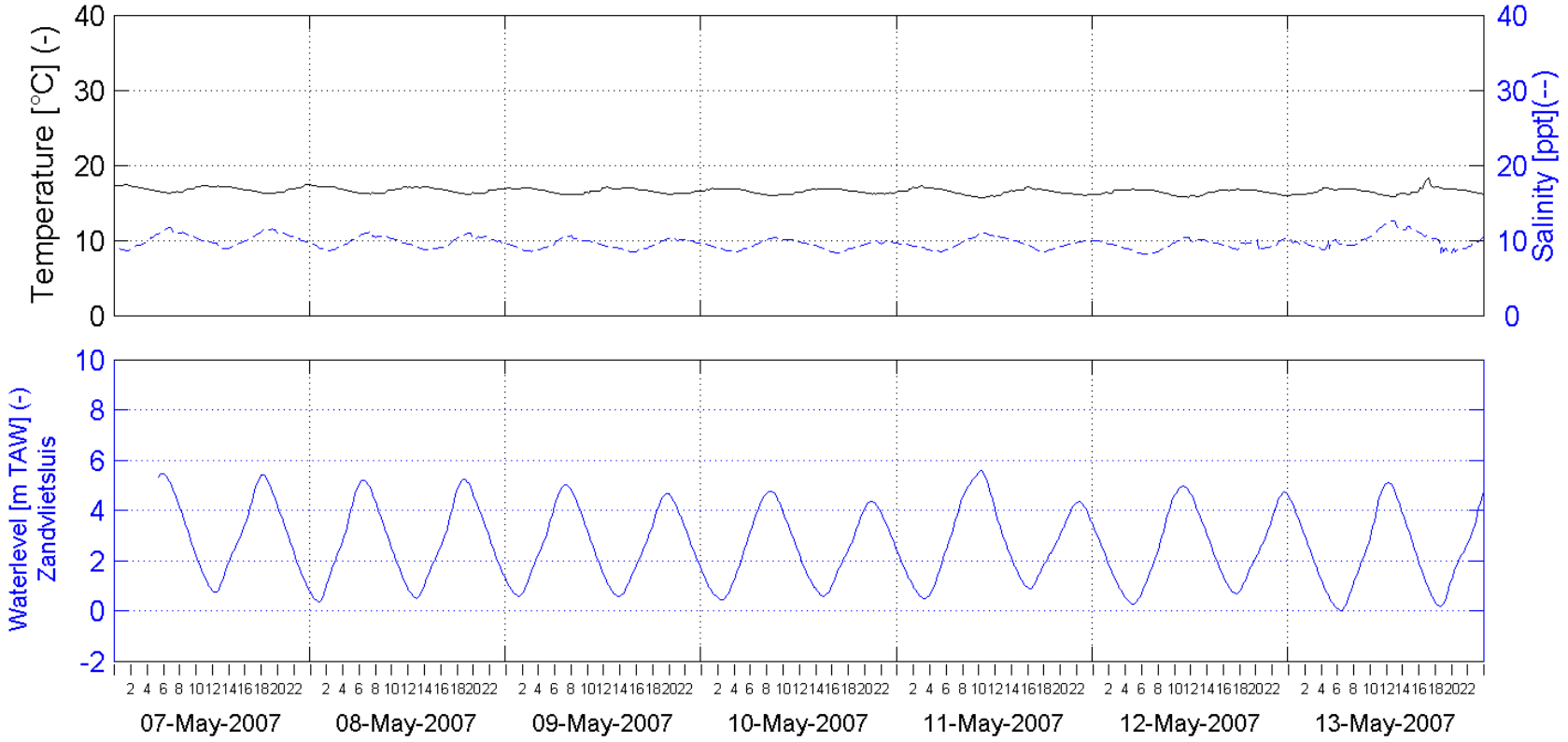
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 19 - 2007



Week series of Temperature, Salinity and Tide

Location:

Prosperpolder - 2.5m above bottom (-1.5m TAW)

Processed by:

IMDC

In Association with:

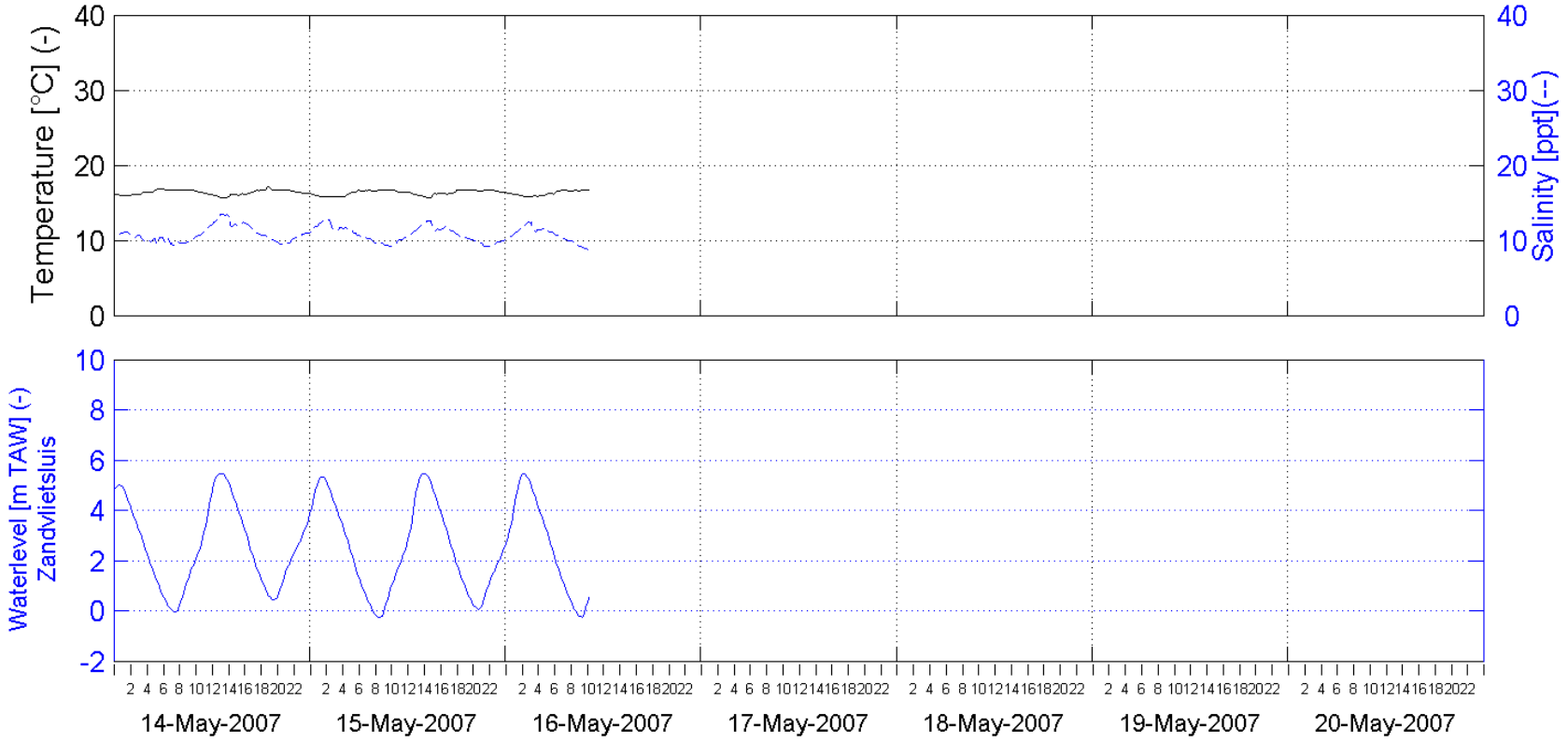
WL | delft hydraulics

GEMS International

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 20 - 2007



Week series of Temperature, Salinity and Tide

Location:

Prosperpolder - 2.5m above bottom (-1.5m TAW)

Processed by:

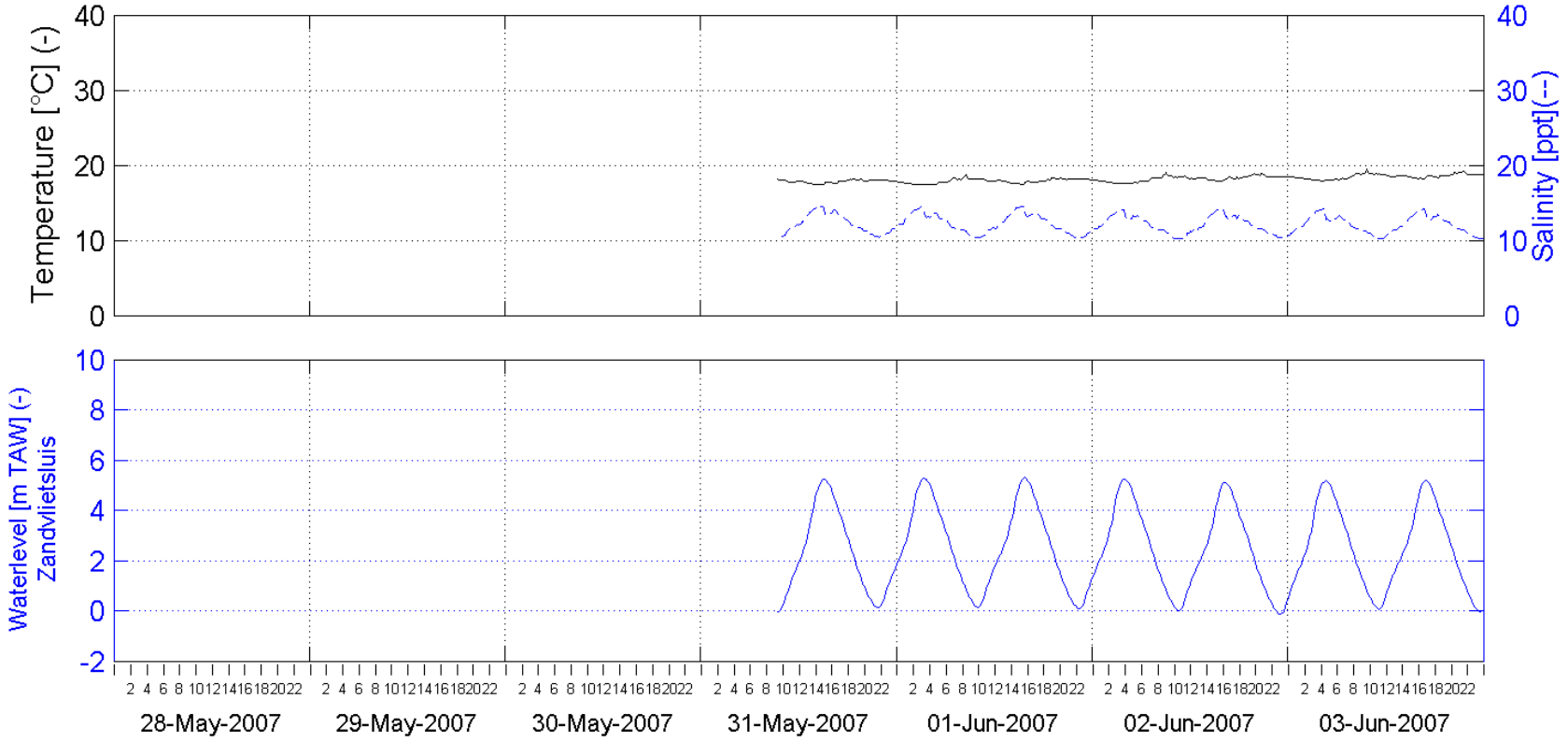
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 22 - 2007



Week series of Temperature, Salinity and Tide

Location:

Prosperpolder - 2.5m above bottom (-1.5m TAW)

Processed by:

IMDC

In Association with:

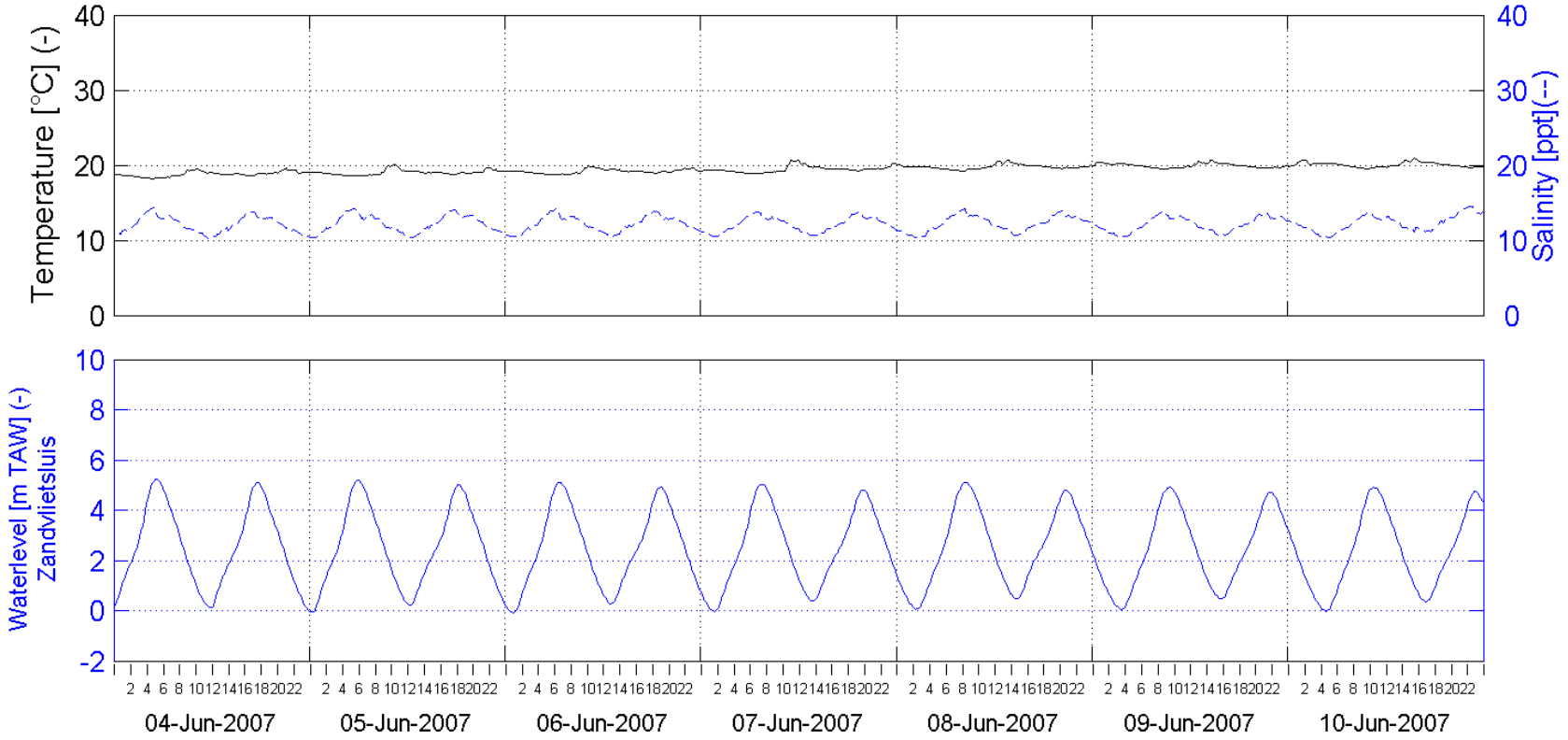
WL | delft hydraulics

GEMS International

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 23 - 2007



Week series of Temperature, Salinity and Tide

Location:

Prosperpolder - 2.5m above bottom (-1.5m TAW)

Processed by:

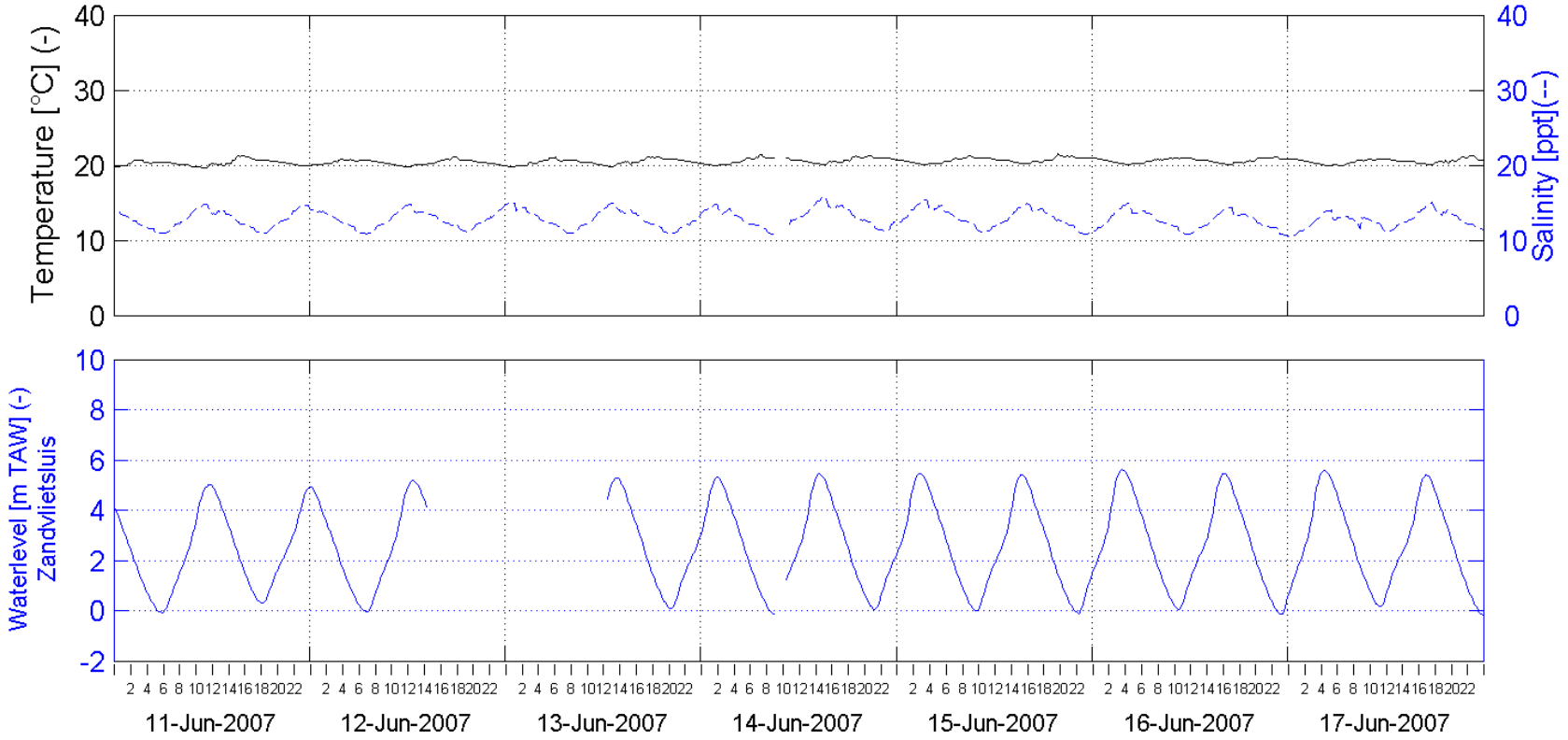
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 24 - 2007



Week series of Temperature, Salinity and Tide

Location:

Prosperpolder - 2.5m above bottom (-1.5m TAW)

Processed by:

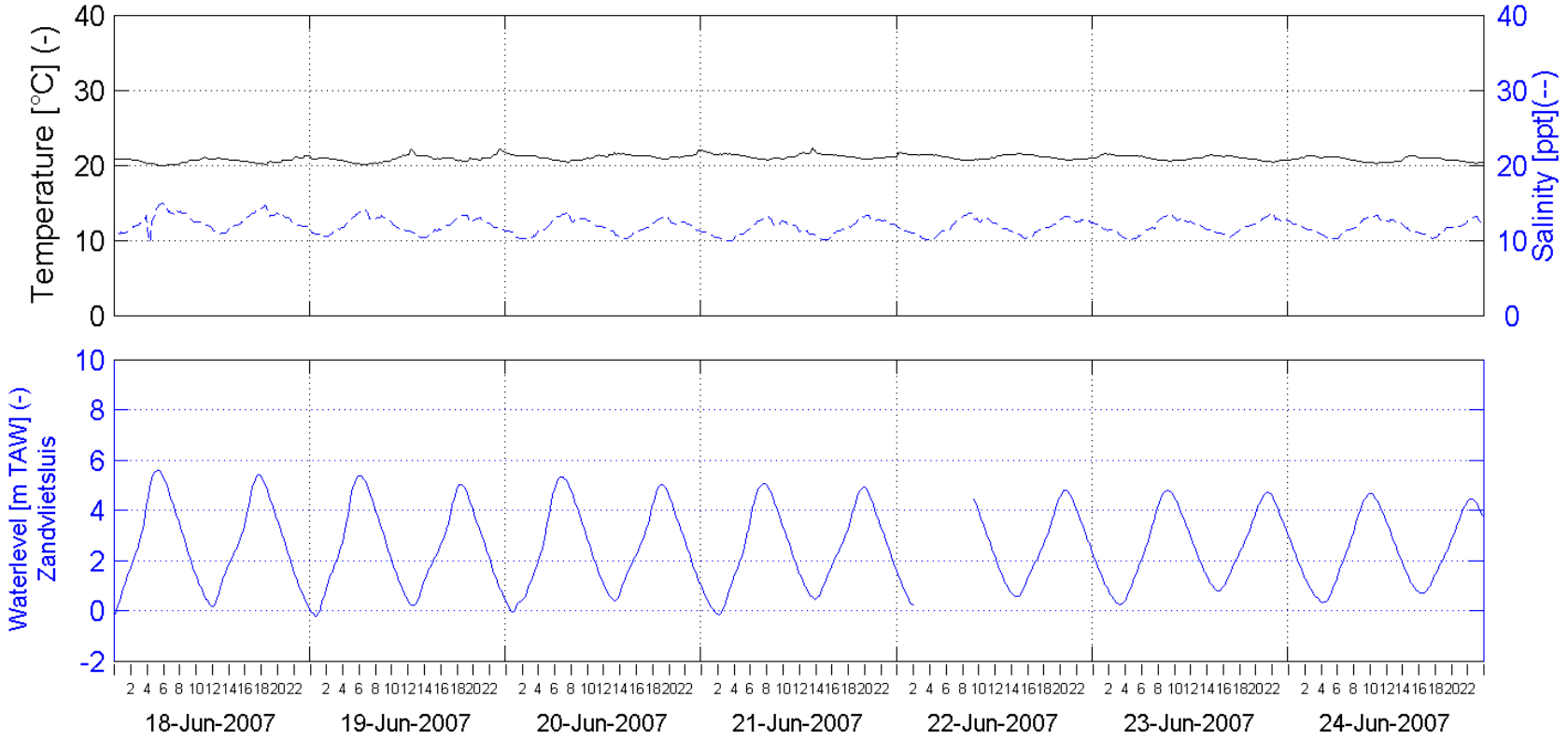
IMDC

In Association with:

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 25 - 2007



Week series of Temperature, Salinity and Tide

Location:

Prosperpolder - 2.5m above bottom (-1.5m TAW)

Processed by:

IMDC

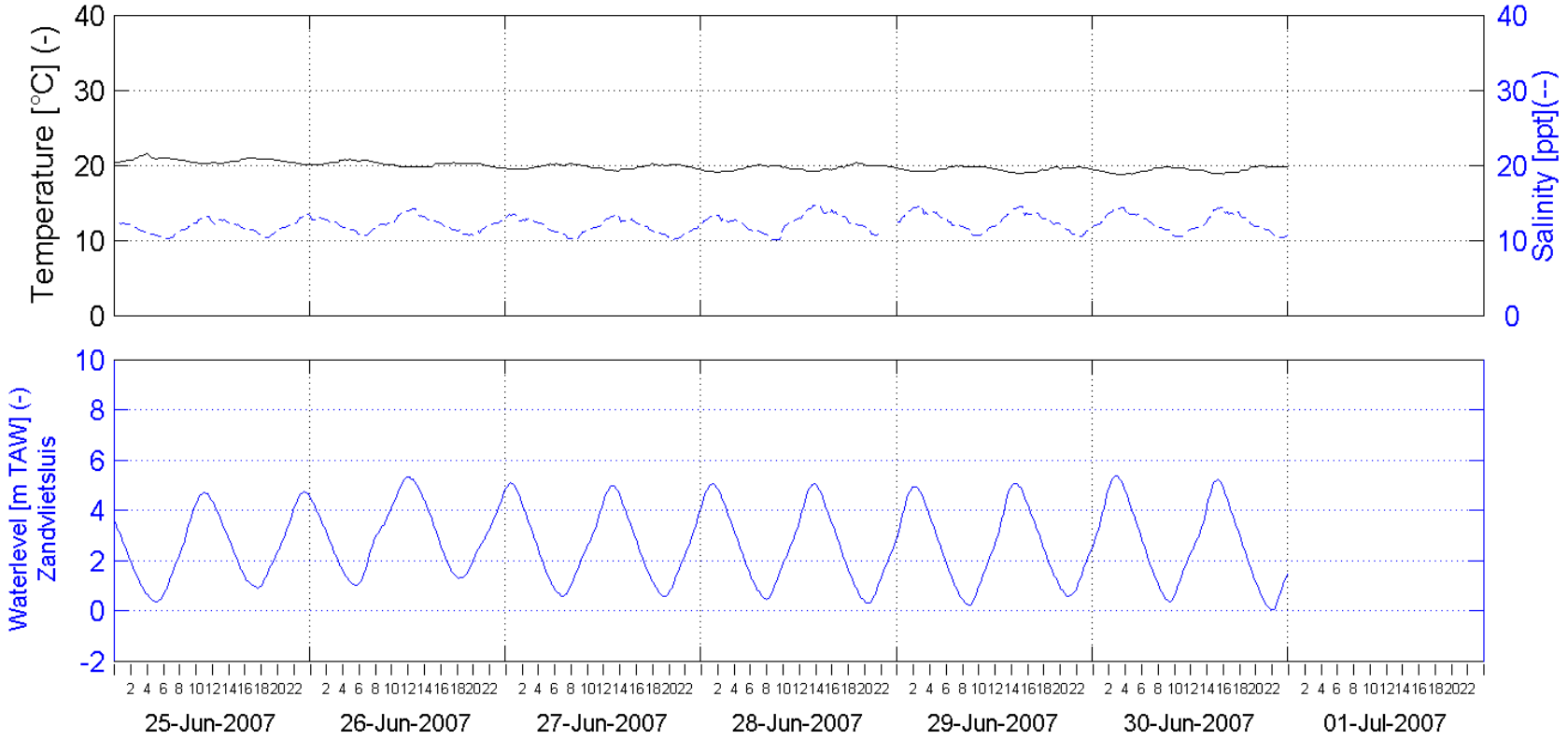
In Association with:

GEMS International

I/RA/11283/07.097/MSA

Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007

Week 26 - 2007



Week series of Temperature, Salinity and Tide

Location:

Prosperpolder - 2.5m above bottom (-1.5m TAW)

Processed by:

IMDC

In Association with:

GEMS International

I/RA/11283/07.097/MSA

C.2 Monthly results Minimum, Maximum and Average Velocity Magnitude, Temperature, Salinity & Suspended Sediment Concentration

Location: Oosterweel left bank
4.5 meter above bottom [-2.3 m TAW]

Velocity magnitude [m/s]						
Month	***Minimum***		***Maximum***		***Average***	
April 2007	0.00		1.18		0.58	
May 2007	0.01		1.19		0.62	
June 2007	0.01		1.03		0.63	
Temperature [°C]						
Month	***Minimum***		***Maximum***		***Average***	
April 2007	9.6		16.2		12.7	
May 2007	16.1		17.6		16.8	
June 2007	19.5		21.5		20.6	
Salinity [ppt]						
Month	***Minimum***		***Maximum***		***Average***	
	HW	***LW***	***HW***	***LW***	***HW***	***LW***
April 2007	-	-	-	-	-	-
May 2007	-	-	-	-	-	-
June 2007	-	-	-	-	-	-
Suspended sediment concentration [mg/l]						
Month	**Minimum**		**Maximum**		**Average**	
April 2007	0.5		508		194	
May 2007	0.5		430		99	
June 2007	-		-		-	

-: No data or less than 30% of the monthly data available.
*: Less than 70% of the monthly data available.

Location: Oosterweel left bank
1.0 meter above bottom [-5.8 m TAW]

Velocity magnitude [m/s]						
Month	***Minimum***		***Maximum***		***Average***	
April 2007	0		1.27		0.5	
May 2007	0.01*		0.95		0.55	
June 2007	-		-		-	
Temperature [°C]						
Month	***Minimum***		***Maximum***		***Average***	
April 2007	10.4		17.4		13.9	
May 2007	16.8		17.3*		17.0	
June 2007	-		-		-	
Salinity [ppt]						
Month	***Minimum***		***Maximum***		***Average***	
	HW	***LW***	***HW***	***LW***	***HW***	***LW***
April 2007	-	-	-	-	-	-
May 2007	-	-	-	-	-	-
June 2007	-	-	-	-	-	-
Suspended sediment concentration [mg/l]						
Month	***Minimum***		***Maximum***		***Average***	
April 2007	7		629		230	
May 2007	32		553		109	
June 2007	-		-		-	

-: No data or less than 30% of the monthly data available.
*: Less than 70% of the monthly data available.

Location: Prosperpolder[4]
2.5 meter above bottom [-1.5 m TAW]

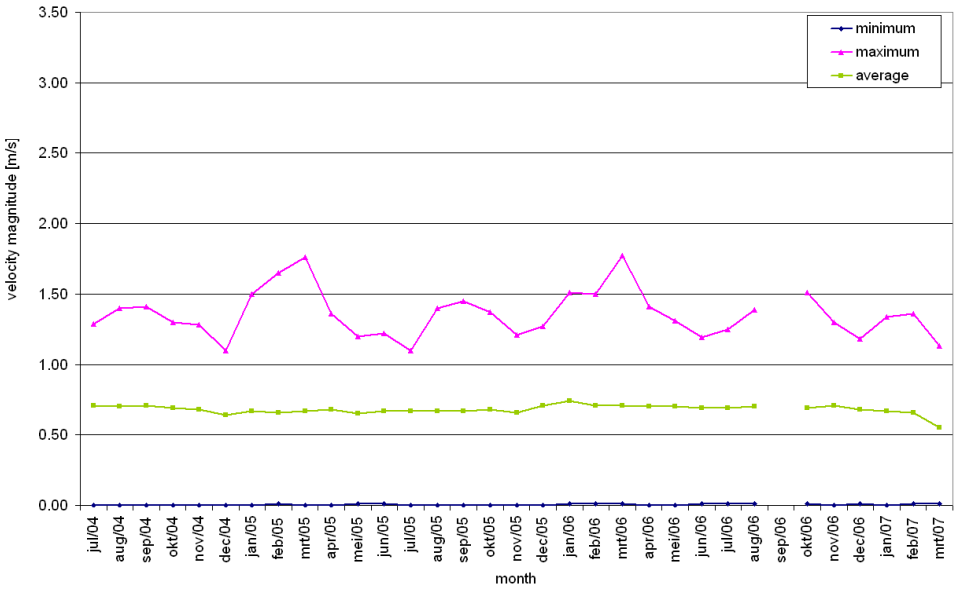
Temperature [°C]						
Month	***Minimum***		***Maximum***		***Average***	
April 2007	9.9		18.5		13.4	
May 2007	15.7*		18.4*		16.7*	
June 2007	17.4		22.3		20.0	
Salinity [ppt]						
Month	***Minimum***		***Maximum***		***Average***	
	HW	***LW***	***HW***	***LW***	***HW***	***LW***
April 2007	7.7	4.8	12.2	9	10.2	7.2
May 2007	9.7*	8.5*	14.3*	10.4*	11.2*	9.1*
June 2007	12.8	10.2	15	12.1	13.6	10.8

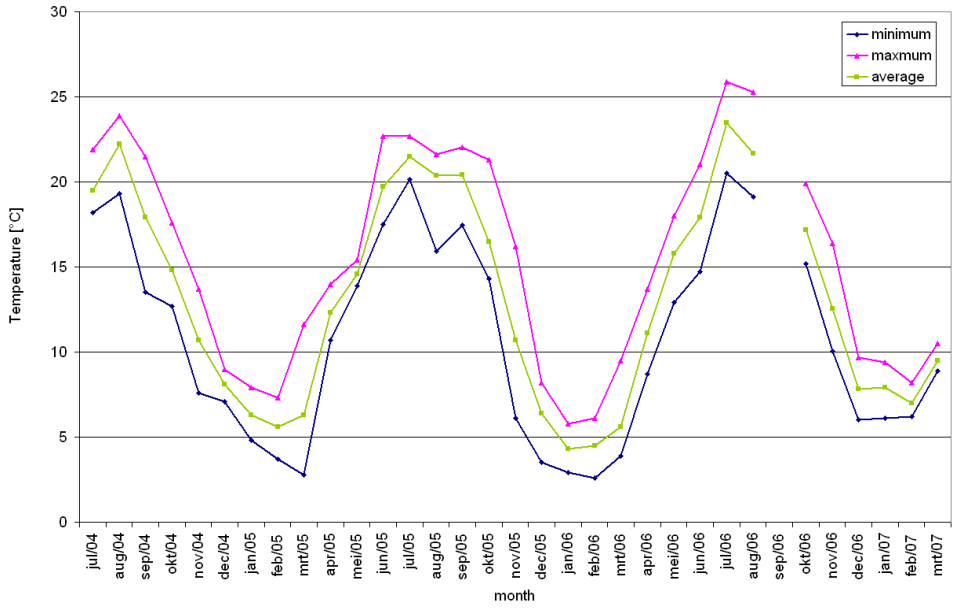
-: No data or less than 30% of the monthly data available.
*: Less than 70% of the monthly data available.

[4] Current velocity and suspended sediment were not measured at Propsperpolder.

C.3 Graphs monthly results for the whole deployment period

Velocity magnitude & temperature





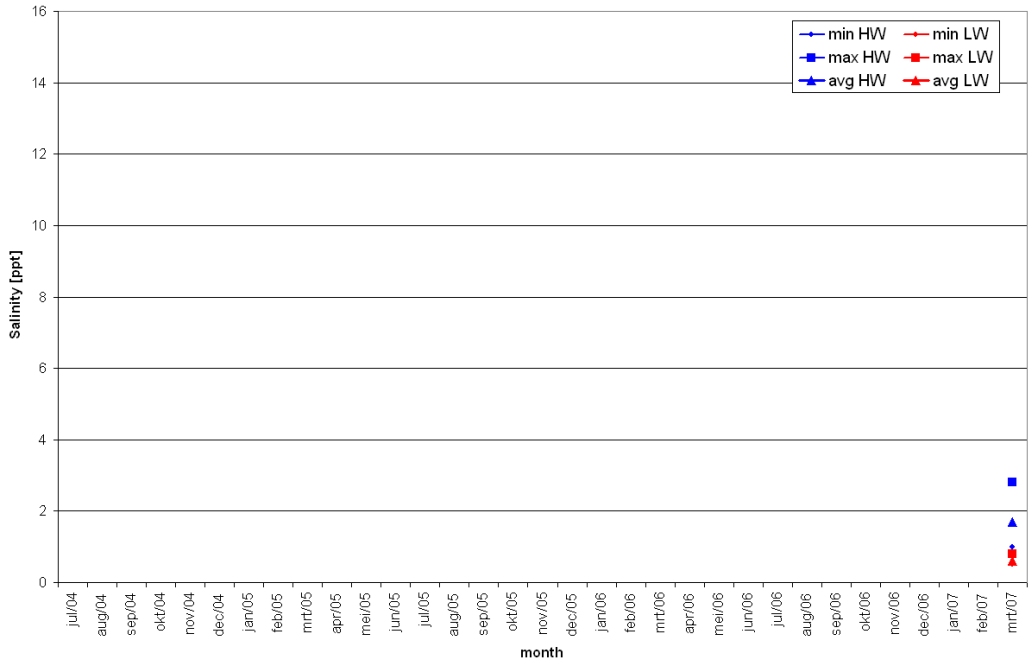
Oosterweel left bank
4.5m above bottom (-2.3m TAW)

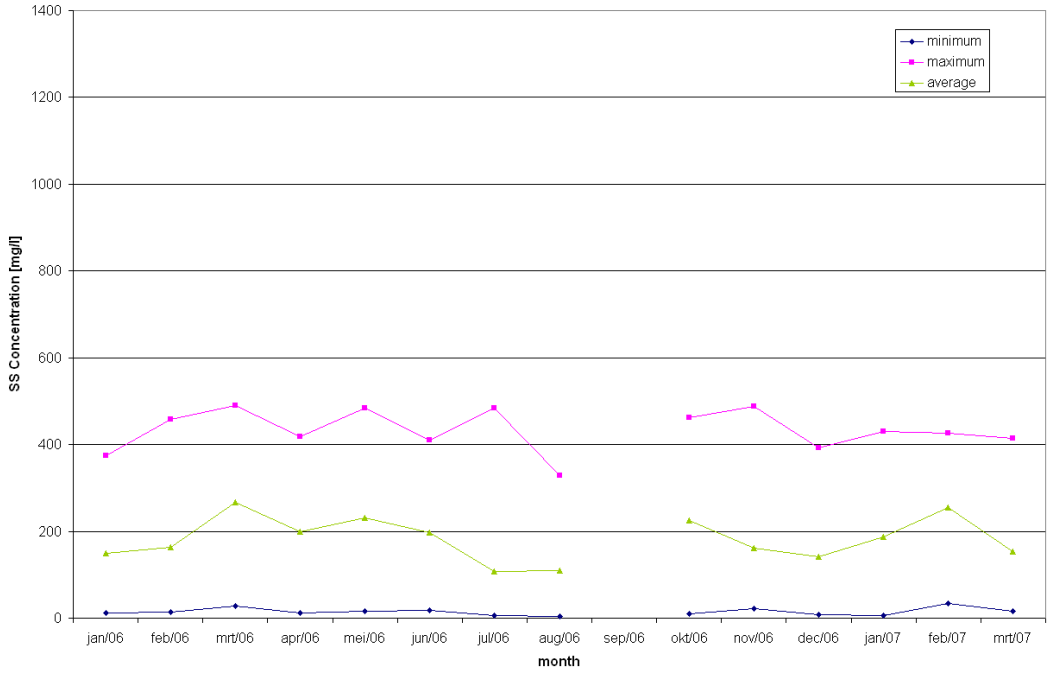
Data processed by:

In association with:

I/RA/11283/07.097/MSA

Salinity & SS Concentration





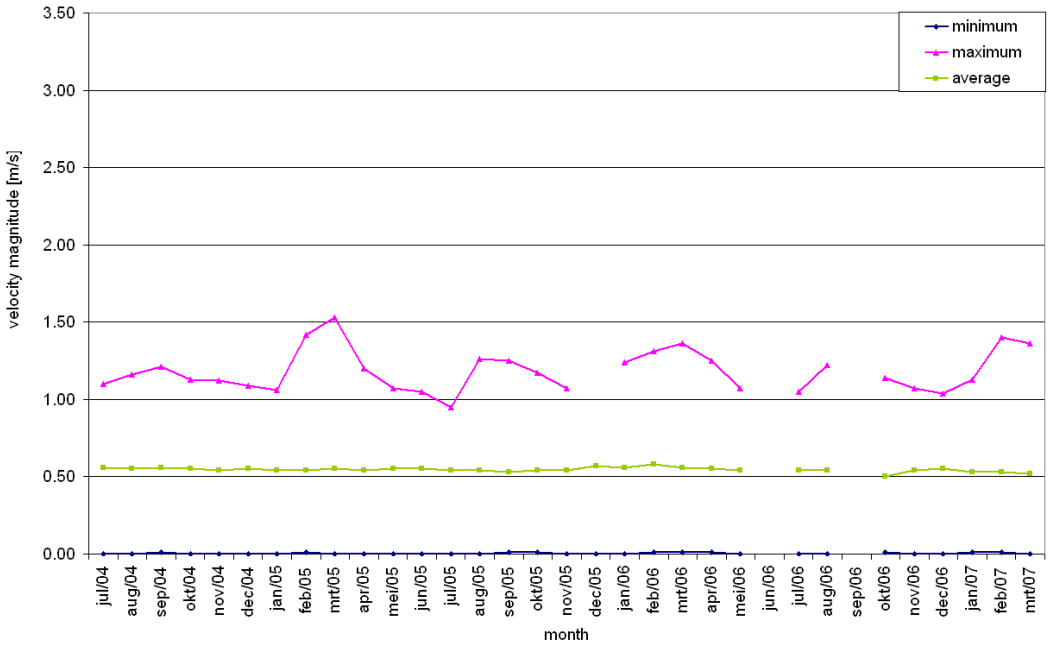
Oosterweel left bank
4.5m above bottom (-2.3m TAW)

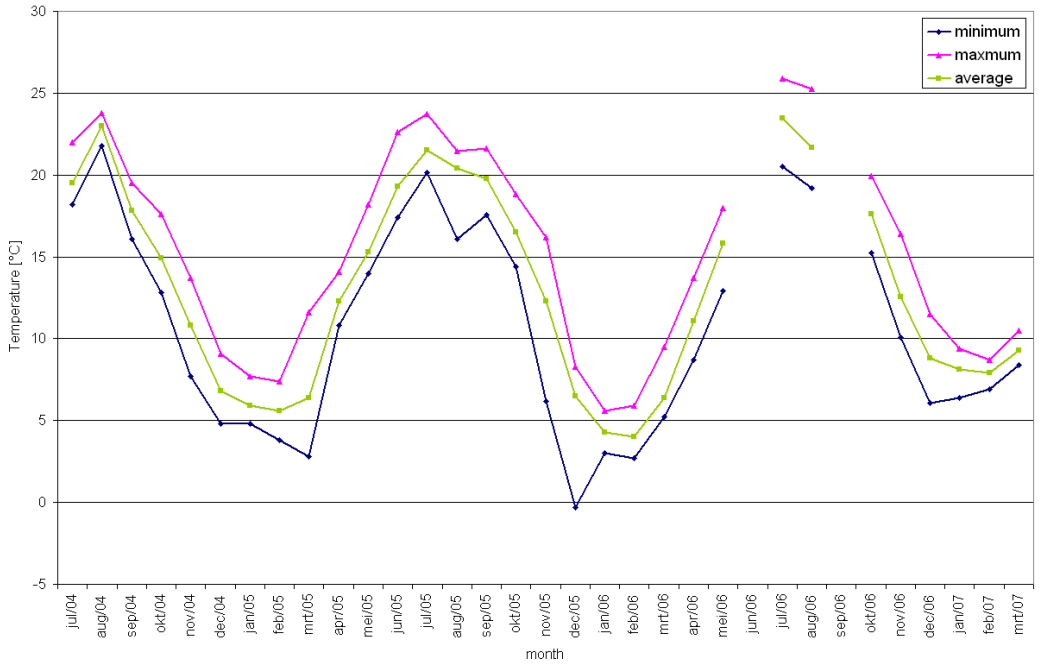
Data processed by:

In association with:

I/RA/11283/07.097/MSA

Velocity magnitude & temperature





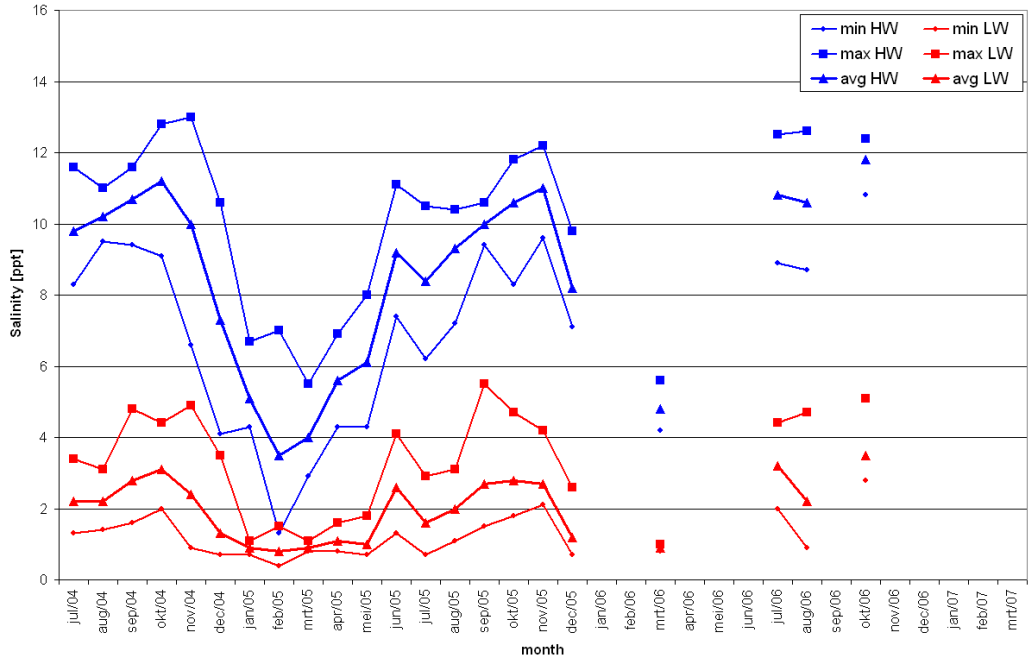
Oosterweel left bank
1m above bottom (-5.8m TAW)

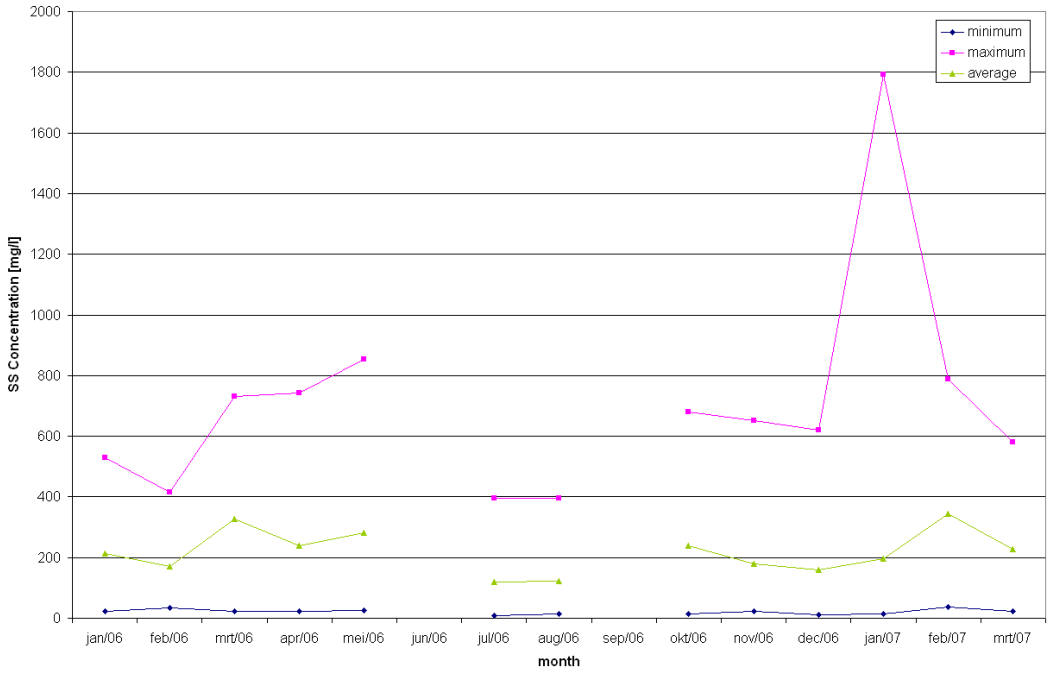
Data processed by:

In association with:

I/RA/11283/07.097/MSA

Salinity & SS Concentration





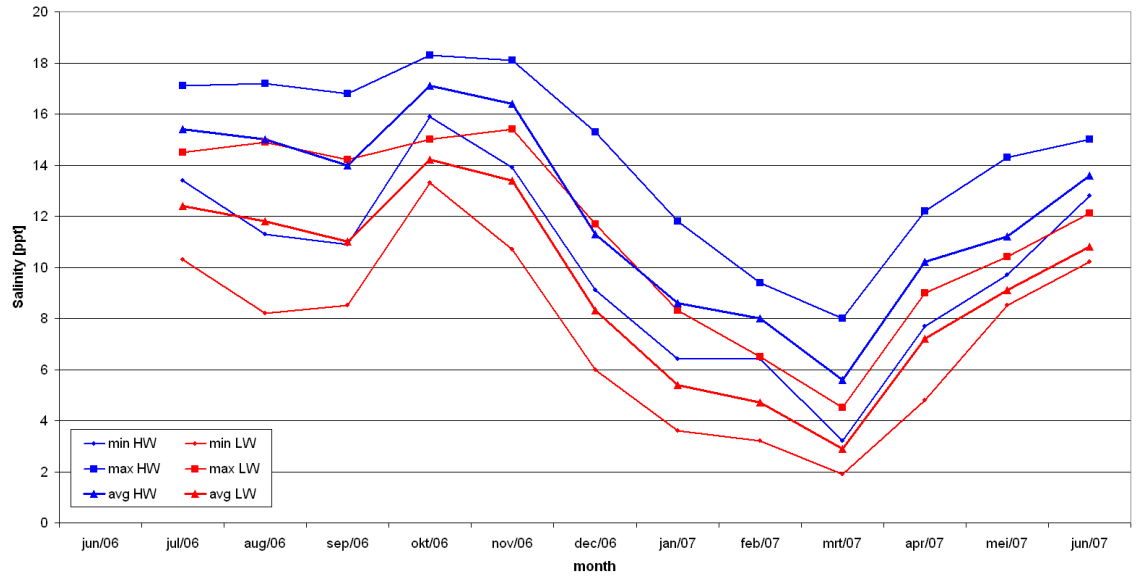
Oosterweel left bank
1m above bottom (-5.8m TAW)

Data processed by:

In association with:

I/RA/11283/07.097/MSA

Temperature & Salinity



Propsperpolder
2.5m above bottom (-1.5m TAW)

Data processed by:

In association with:

I/RA/11283/07.097/MSA

C.4 Total result from April 2007 till June 2007 of velocity magnitude, temperature, salinity and suspended sediment concentration

Averages for the whole deployment period of each instrument [April 2007 – June 2007]

Location	***Depth [m TAW]***	***Velocity [m/s]***			***Temperature [°C]***			***SS concentration [mg/l]***		
		Min	***Max***	***Avg***	***Min***	***Max***	***Avg***	***Min***	***Max***	***Avg***
Oosterweel left bank	-2.3									
Oosterweel left bank	-5.8									
Prosperpolder	-1.5	-	-	-	9.9	22.3	16.7	-	-	-

Salinity [ppt]							
Location	**Depth [m TAW]**	**Minimum**		**Maximum**		**Average**	
		Slack HW	***Slack LW***	***Slack HW***	***Slack LW***	***Slack HW***	***Slack LW***
Oosterweel left bank	-2.3						
Oosterweel left bank	-5.8						
Prosperpolder	-1.5	7.7	4.8	15.0	12.1	11.7	9.0

-: No data or less than 30% of the monthly data available.
*: Less than 70% of the monthly data available.

APPENDIX D.

MONTLY RESULTS: MINIMUM, MAXIMUM AND AVERAGE SALINITY AT BAALHOEK AND HOOFDPLAAT FOR THE PERIOD 01/01/2007 – 30/06/2007

Location: Baalhoek

Upper cell: floating at water surface
Lower cell: 4.7 meter above bottom [-3.1m TAW]

Salinity [ppt] (upper cell)			
Month	***Minimum***	***Maximum***	***Average***
January	5.9	17.1	10.8
February	5.2	14.7	9.9
March	3.3	13.6	7.6
April	7.1	17.8	12.3
May	5.9	20.1	15.9
June	11.2	20.4	16.4
Salinity [ppt] (lower cell)			
Month	***Minimum***	***Maximum***	***Average***
January	5.7	17.6	11.4
February	5.7	15.7	10.5
March	3.0	14.2	8.2
April	7.0	18.4	12.9
May	12.0	20.6	16.5
June	12.4	21.1	17.0

-: No data or less than 30% of monthly data available
*: Less than 70% of monthly data

Location: Hoofdplaat

Floating at water surface

Salinity [ppt]			
Month	***Minimum***	***Maximum***	***Average***
January	18.2	28.7	25.4
February	17.5	28.4	24.4
March	18.9	34.6	23.3
April	15.9	28.0	24.9
May	25.2	32.9	29.4
June	24.7	31.5	28.1

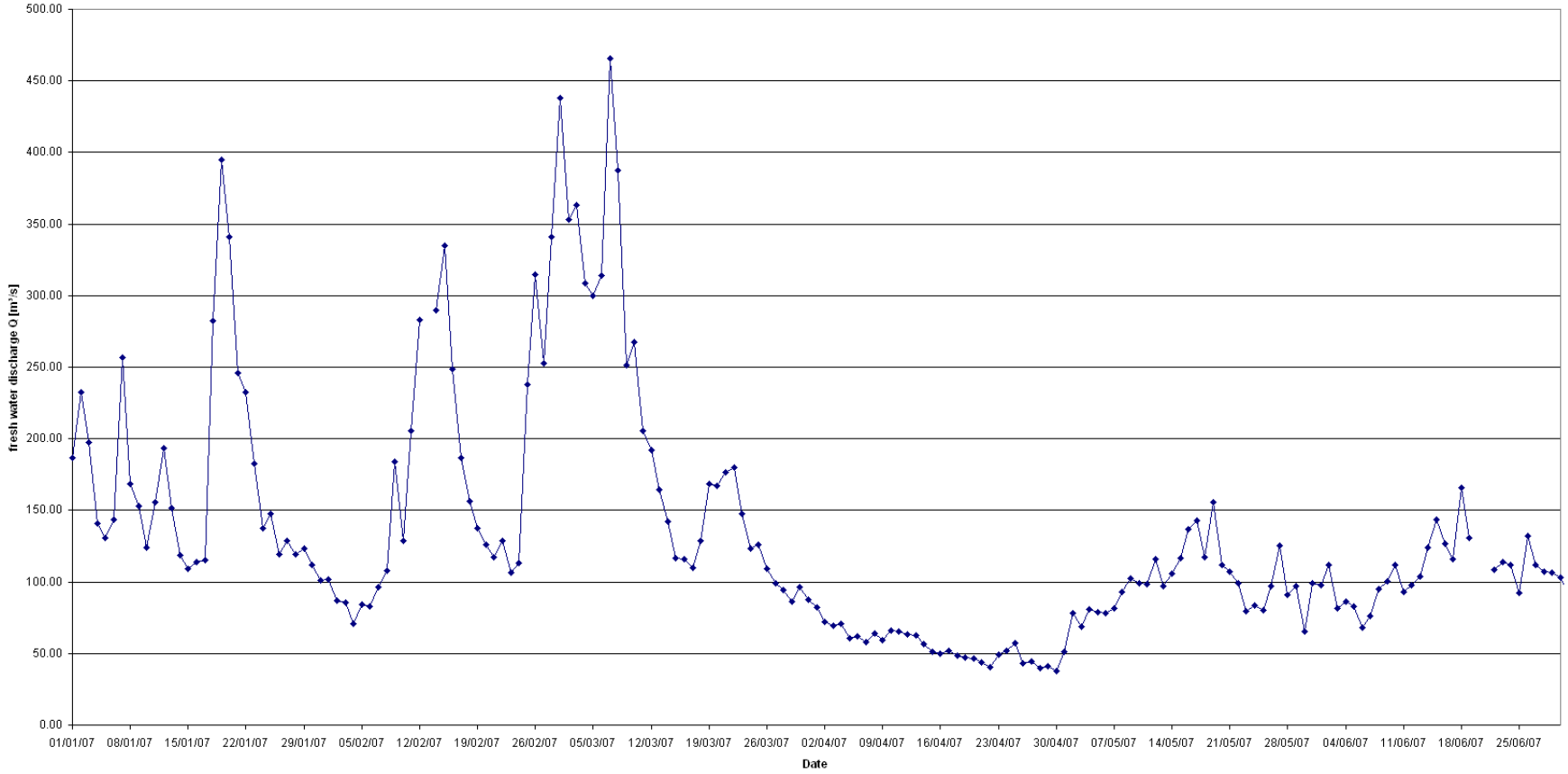
-: No data or less than 30% of monthly data available

*: Less than 70% of monthly data

APPENDIX E.

FRESH WATER DISCHARGE

11283 Opvolging aanslibbing Deurganckdok 2 – Omgevingscondities – april-juni 2007



Fresh water discharge

Location:	Date:
Schelle	01/01/2007 – 30/06/2007

Data processed by: IMDC

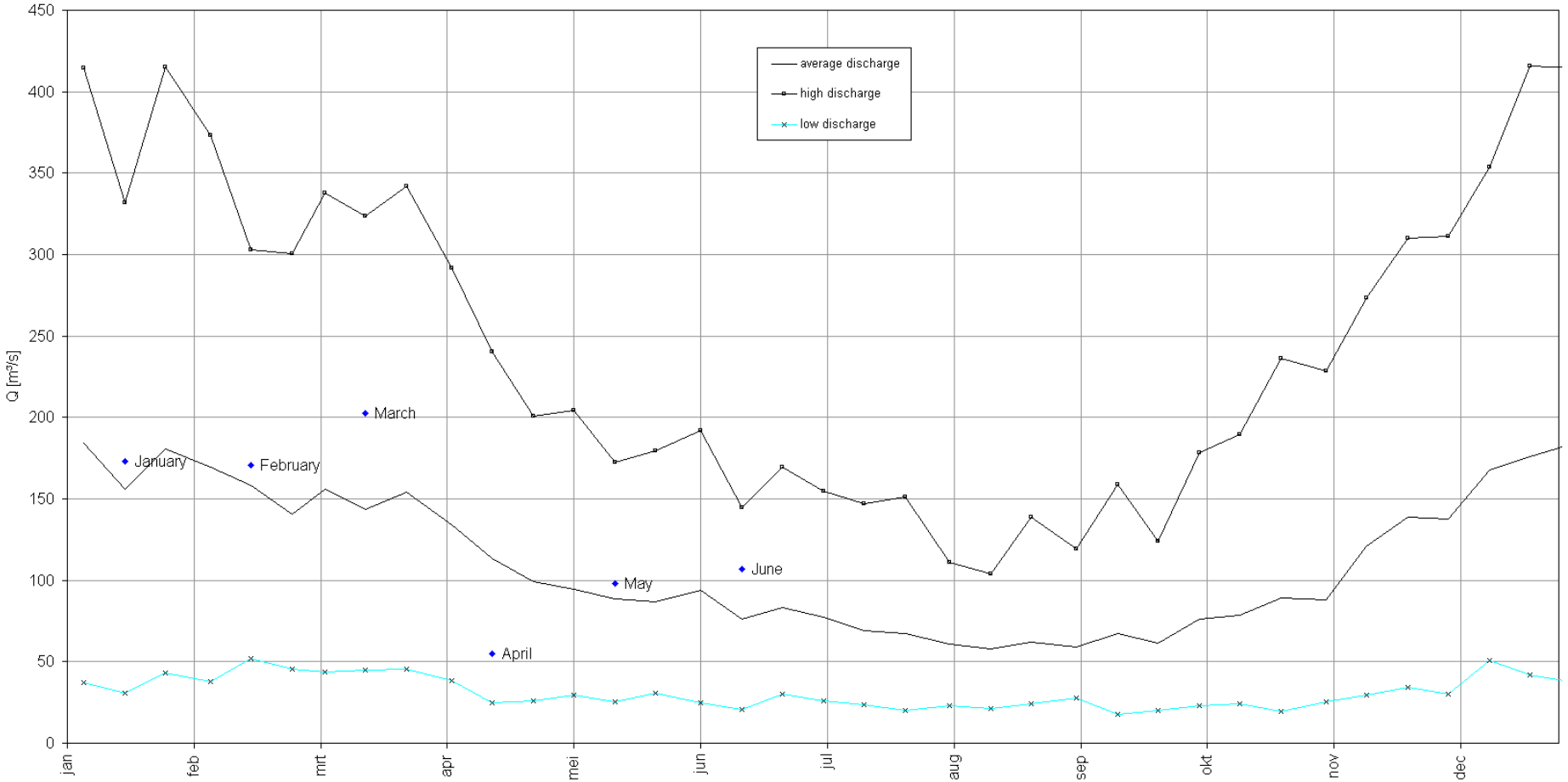
In association with: WL | delft hydraulics, GEMS International

I/RA/112831/07.097/MSA

Decade averages of the fresh water discharge [m³/s] of the Scheldt at Schelle (January 2007 – June 2007)

	First Decade	***Second Decade***	***Third Decade***
January 2007	173	198	150
February 2007	103	219	202
March 2007	345	151	121
April 2007	67	54	45
May 2007	81	120	93
June 2007	91	122	110

Average monthly discharge of 2007 compared to the long-term discharge curve (based on a long-term simulation over a period of 30 year; 1971-2000)



APPENDIX F.

OVERVIEW OF MAINTENANCE -DREDGING ACTIVITIES

01/04/2007 – 30/06/2007

Dredging and dumping volumes [10^3 m^3]

Dredging locations									
	Week 13	*Week 14*	*Week 15*	*Week 16*	*Week 17*	*Week 18*	*Week 19*	*Week 20*	*Week 21*
Drempel van Borssele	-	-	-	98.66	-	39.52	-	108.49	162.02
Pas van Terneuzen	-	-	-	-	-	-	-	-	-
Put van Terneuzen	-	-	64.39	-	-	39.67	-	-	-
Gat van Ossensisse	-	-	-	-	-	-	-	-	-
Drempel van Walsoorden	-	-	-	-	-	-	-	-	-
Overloop Hansweert	-	53.76	-	-	-	-	-	-	-
Drempel van Hansweert	-	-	-	-	-	-	120.04	-	-
Overloop van Valkenisse (B 56-62)	119.19	75.24	34.05	-	-	-	-	-	-
Drempel van Valkenisse	-	-	-	57.39	42.91	-	-	-	-
Drempel van Bath	-	-	-	-	-	-	-	-	-
Nauw van Bath (B 75)	-	-	-	-	-	-	-	-	-
Vaarwater Bath (B72-76)	-	-	-	-	-	-	-	-	-
Noordzeeterminal	-	-	-	-	-	-	-	-	-
Containerkaai noord	-	-	-	-	-	-	-	-	-
Containerkaai zuid	-	-	-	-	-	-	-	-	-
Vaarwater Oudendijk	-	-	5.67	-	-	-	-	-	-
Drempel van Zandvliet	-	-	20.15	-	47.09	-	-	85.66	-
Zandvliet+Berendrecht sluis	-	-	-	-	-	-	-	-	21.50
Drempel van Frederik	-	-	-	-	-	55.92	75.82	-	-
Drempel van Lillo	-	-	-	5.74	-	-	-	-	-
Lillo vaarwater plaat	-	-	-	-	-	-	-	-	-
Toeg Boud+Calew sluis	-	-	-	3.62	10.67	6.79	10.94	-	28.04
Deurganckdok	18.13	14.18	46.19	-	-	-	-	-	-
De Parel	-	-	-	-	-	-	-	-	-
Ketelplaat	-	-	-	-	-	-	-	-	-
Kallo sluis	16.67	11.72	-	8.80	21.91	12.56	13.86	-	36.85
Krankeloon	-	-	-	48.88	15.64	-	-	-	-
Kaaien 23-27	-	-	-	-	-	-	0.46	1.66	-

Dumping locations									
	Week 13	*Week 14*	*Week 15*	*Week 16*	*Week 17*	*Week 18*	*Week 19*	*Week 20*	*Week 21*
Spijkerplaat	-	-	13.64	98.66	-	79.19	-	108.49	162.02
Everingen	-	-	50.75	-	-	-	-	-	-
Ellewoutsdijk	92.41	129.00	34.05	11.94	20.31	-	68.17	-	-
Biezelingse Ham	26.78	-	-	-	-	-	-	-	-
Schaar van Waarde	-	-	-	45.46	22.60	-	51.87	-	-
Schaar Ouden Doel	-	-	20.95	15.81	0.17	-	0.46	87.32	-
Opspuitingen Deurganckdok	-	-	-	-	-	-	-	-	-
Oosterweel	16.25	12.30	24.72	7.87	29.99	37.44	48.97	-	49.85
Plaat van Boomke	18.54	13.59	26.34	0.48	-	-	-	-	-
Punt van Melsele	-	-	-	4.08	26.80	37.84	51.65	-	36.55
Opspuitingen Kruibeke	-	-	-	38.81	38.36	-	-	-	-

Dredging locations									
	Week 22	*Week 23*	*Week 24*	*Week 25*	*Week 26*				
Drempel van Borssele	-	-	-	-	-				
Pas van Terneuzen	73.83	-	-	-	-				
Put van Terneuzen	-	-	-	-	-				
Gat van Ossensisse	-	-	-	-	-				
Drempel van Walsoorden	-	-	-	-	54.30				
Overloop Hansweert	-	-	-	-	-				
Drempel van Hansweert	-	-	-	-	-				
Overloop van Valkenisse (B 56-62)	20.01	-	54.84	-	5.10				
Drempel van Valkenisse	95.45	123.92	69.90	-	-				
Drempel van Bath	-	-	-	-	10.89				
Nauw van Bath (B 75)	-	-	-	-	25.40				
Vaarwater Bath (B72-76)	-	-	-	-	7.10				
Noordzeeterminal	-	-	-	-	-				
Containerkaai noord	-	-	-	-	-				
Containerkaai zuid	-	-	-	-	-				
Vaarwater Oudendijk	-	-	-	-	-				
Drempel van Zandvliet	-	-	-	-	-				
Zandvliet+Berendrecht sluis	-	-	-	11.15	-				
Drempel van Frederik	-	-	-	-	-				
Drempel van Lillo	-	-	-	57.90	18.36				
Lillo vaarwater plaat	-	-	-	-	-				
Toeg Boud+Calew sluis	-	-	-	-	-				
Deurganckdok	-	-	-	-	-				
De Parel	-	-	-	39.44	25.90				
Ketelplaat	-	-	-	-	-				
Kallo sluis	-	-	-	-	-				
Krankeloon	-	-	-	-	-				
Kaaien 23-27	-	-	-	-	-				

Dumping locations									
	Week 22	*Week 23*	*Week 24*	*Week 25*	*Week 26*				
Spijkerplaat	73.83	-	-	-	-				
Everingen	-	-	-	-	-				
Ellewoutsdijk	103.45	104.25	90.07	-	32.27				
Biezelingse Ham	12.02	19.67	34.66	-	16.48				
Schaar van Waarde	-	-	-	-	54.03				
Schaar Ouden Doel	-	-	-	62.59	18.44				
Opspuitingen Deurganckdok	-	-	-	-	-				
Oosterweel	-	-	-	6.62	-				
Plaat van Boomke	-	-	-	-	-				
Punt van Melsele	-	-	-	4.54	-				
Opspuitingen Kruibeke	-	-	-	34.75	25.83				

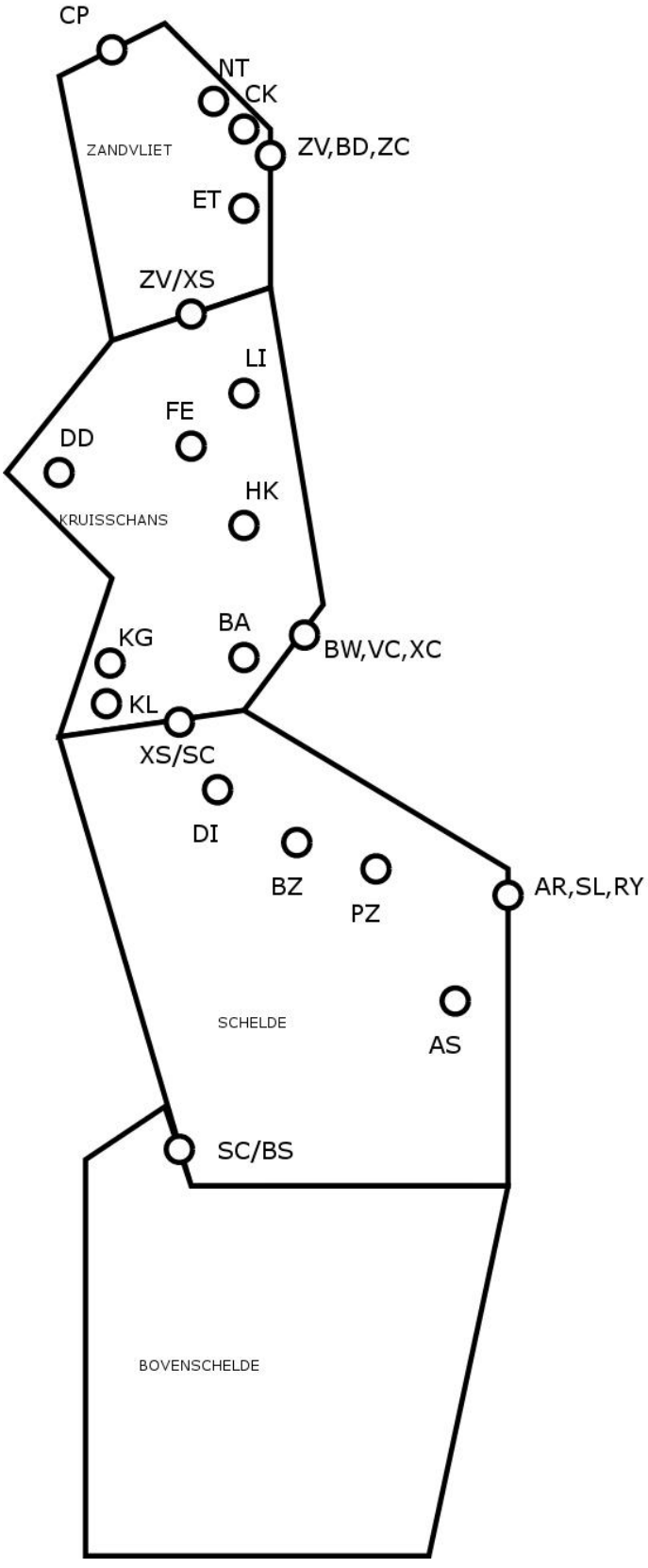
APPENDIX G.

NAVIGATION

G.1 Description of the areas

Area	*Global description*	*Detailed description*
1	Belgian border → Locks of Zandvliet – Berendrecht	Transit point CP → exit/entry point ZC, BD, ZV, NT, CK, ET or transit point ZV/XS
2	Locks of Zandvliet – Berendrecht → Deurganckdok	Transit point CP or entry/exit point ZC, BD, ZV, NT, CK, ET → transit point ZV/XS
3	Deurganckdok → Lock of Kallo	Transit point ZV/XS or entry/exit point DD → exit/entry point BA, BW, FE, HK, KG, KL, LI, VC, XC or transit point XS/SC
4	Lock of Kallo → Lock of Royers	Transit point XS/SC or entry/exit point DD, BA, BW, FE, HK, KG, KL, LI, VC, XC → entry/exit point AR, AS, BZ, DI, KT, PZ, RY, SL or transit point SC/BS

	CID	MEANING	TYPE
GA	GEBIED ANTWERPEN		
SA	Saeftinge		
	CP	Coordinatiepunt (blokgrens SA/ZV)	P
	CP2	Coordinatiepunt (blokgrens SA/ZV)	P
SC	Schelde		
	AR	Antwerpen Rede	E
	AS	Antwerpen Scheldekade/steiger	E
	AX	Antwerpen zonder detaillering	E
	BZ	BP Zwijndrecht	E
	DI	Haven Dredging International	E
	PZ	Polysar Zwijndrecht	E
	RY	Royerssluis	E
	SC/BS	Blokgrens SC/BS (boveneinde rede Antwerpen)	P
	SL	Sluizen Antwerpen Rechteroever	E
XS	Kruisschans		
	BA	Bayer Kallo	E
	BW	Boudewijnsluis	E
	DD	Deurganckdok	E
	FE	Steiger Fenol	E
	HK	Steiger Haltermann	E
	KG	Kallo geul	E
	KL	Kallosluis	E
	LI	Steiger Lillo	E
	VC	Van Cauwelaertsluis	E
	XC	Kruisschanssluiscomplex	E
	XS/SC	Blokgrens Kruisschans / Schelde	P
	XS/SC2	Blokgrens Kruisschans / Schelde	P
ZV	Zandvliet		
	BD	Berendrechtsluis	E
	CK	Containerkade Antwerpen	E
	ET	Europaterminal	E
	NT	Noordzeeterminal	E
	ZC	Zandvliet / Berendrecht sluiszencomplex	E
	ZV	Zandvliet sluis	E
	ZV/XS	Blokgrens Zandvliet / Kruisschans	P
	ZV/XS2	Blokgrens Zandvliet / Kruisschans	P



Sketch of the different areas of navigation

G.2 Weekly data

Week 13 (26/03/2007 – 01/04/2007)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	124	116	8	16	107
	0 – 8 m	939	458	476	456	480
	8 – 12 m	223	0	223	79	144
	> 12 m	36	0	36	10	26
2	Unknown	199	188	11	71	127
	0 – 8 m	683	395	283	388	292
	8 – 12 m	84	0	84	47	37
	> 12 m	14	0	14	7	7
3	Unknown	215	207	8	40	172
	0 – 8 m	642	374	263	364	275
	8 – 12 m	57	0	57	33	24
	> 12 m	0	0	0	0	0
4	Unknown	67	65	2	46	21
	0 – 8 m	155	101	54	114	41
	8 – 12 m	5	0	5	4	1
	> 12 m	0	0	0	0	0
Week 14 (02/04/2007 – 08/04/2007)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	125	119	6	14	110
	0 – 8 m	922	485	436	419	496
	8 – 12 m	186	0	186	51	135
	> 12 m	40	0	40	6	34
2	Unknown	172	164	8	53	118
	0 – 8 m	714	431	282	378	329
	8 – 12 m	64	0	64	31	33
	> 12 m	10	0	10	4	6
3	Unknown	174	168	6	26	143
	0 – 8 m	664	403	260	351	305
	8 – 12 m	34	0	34	16	18
	> 12 m	0	0	0	0	0
4	Unknown	38	33	5	23	14
	0 – 8 m	146	98	47	101	45
	8 – 12 m	0	0	0	0	0
	> 12 m	0	0	0	0	0

Week 15 (09/04/2007 – 15/04/2007)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	98	91	6	10	86
	0 – 8 m	862	428	433	395	463
	8 – 12 m	190	1	189	62	128
	> 12 m	34	0	34	7	27
2	Unknown	147	139	7	55	90
	0 – 8 m	642	376	265	339	299
	8 – 12 m	70	1	69	37	33
	> 12 m	7	0	7	3	4
3	Unknown	150	142	7	31	117
	0 – 8 m	615	367	247	323	288
	8 – 12 m	45	1	44	24	21
	> 12 m	2	0	2	1	1
4	Unknown	38	35	2	19	18
	0 – 8 m	151	98	52	96	55
	8 – 12 m	2	1	1	2	0
	> 12 m	0	0	0	0	0
Week 16 (16/04/2007 – 22/04/2007)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	107	99	8	14	86
	0 – 8 m	961	507	451	414	538
	8 – 12 m	211	0	211	64	147
	> 12 m	25	2	23	7	18
2	Unknown	139	130	9	36	96
	0 – 8 m	725	438	284	360	356
	8 – 12 m	77	0	77	39	38
	> 12 m	9	2	7	5	4
3	Unknown	147	139	8	24	116
	0 – 8 m	699	430	266	345	345
	8 – 12 m	43	0	43	22	21
	> 12 m	3	1	2	2	1
4	Unknown	37	33	4	23	14
	0 – 8 m	136	85	51	95	41
	8 – 12 m	0	0	0	0	0
	> 12 m	0	0	0	0	0

Week 17 (23/04/2007 – 29/04/2007)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	121	111	10	9	109
	0 – 8 m	910	490	420	431	475
	8 – 12 m	200	0	200	54	146
	> 12 m	24	1	23	4	20
2	Unknown	187	178	9	55	129
	0 – 8 m	715	443	272	372	340
	8 – 12 m	68	0	68	28	40
	> 12 m	8	1	7	3	5
3	Unknown	181	170	11	31	147
	0 – 8 m	688	432	256	362	323
	8 – 12 m	46	0	46	16	30
	> 12 m	1	1	0	1	0
4	Unknown	44	41	3	22	22
	0 – 8 m	125	79	46	84	41
	8 – 12 m	1	1	0	1	0
	> 12 m	0	0	0	0	0
Week 18 (30/04/2007 – 06/05/2007)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	101	95	6	9	88
	0 – 8 m	844	417	427	381	463
	8 – 12 m	204	0	204	52	152
	> 12 m	33	2	31	9	24
2	Unknown	154	144	10	49	101
	0 – 8 m	637	368	269	327	310
	8 – 12 m	62	0	62	30	32
	> 12 m	11	2	9	6	5
3	Unknown	162	153	9	29	128
	0 – 8 m	611	357	254	316	294
	8 – 12 m	32	0	32	14	18
	> 12 m	2	2	0	2	0
4	Unknown	40	38	2	19	20
	0 – 8 m	127	82	45	86	41
	8 – 12 m	1	0	1	0	1
	> 12 m	0	0	0	0	0

Week 19 (07/05/2007 – 13/05/2007)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	78	73	4	11	64
	0 – 8 m	870	454	415	405	457
	8 – 12 m	194	0	193	64	130
	> 12 m	28	0	28	5	23
2	Unknown	141	134	6	54	84
	0 – 8 m	666	401	264	337	321
	8 – 12 m	85	0	84	41	44
	> 12 m	5	0	5	1	4
3	Unknown	145	139	5	27	115
	0 – 8 m	630	386	243	319	302
	8 – 12 m	55	0	54	26	29
	> 12 m	1	0	1	1	0
4	Unknown	32	31	1	20	12
	0 – 8 m	122	84	38	80	42
	8 – 12 m	1	0	0	1	0
	> 12 m	0	0	0	0	0
Week 20 (14/05/2007 – 20/05/2007)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	85	81	4	6	78
	0 – 8 m	780	404	375	335	441
	8 – 12 m	213	0	213	77	136
	> 12 m	23	1	22	3	20
2	Unknown	104	100	4	30	73
	0 – 8 m	585	347	238	288	293
	8 – 12 m	74	0	74	43	31
	> 12 m	6	1	5	0	6
3	Unknown	122	116	6	20	100
	0 – 8 m	548	329	219	273	271
	8 – 12 m	50	0	50	28	22
	> 12 m	1	1	0	0	1
4	Unknown	33	29	4	17	16
	0 – 8 m	133	95	38	91	41
	8 – 12 m	6	0	6	4	2
	> 12 m	0	0	0	0	0

Week 21 (21/05/2007 – 27/05/2007)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	103	95	8	12	89
	0 – 8 m	908	468	439	410	495
	8 – 12 m	211	2	209	66	145
	> 12 m	27	0	27	6	21
2	Unknown	143	136	7	40	101
	0 – 8 m	672	401	270	346	323
	8 – 12 m	77	1	76	37	40
	> 12 m	7	0	7	2	5
3	Unknown	143	138	5	27	114
	0 – 8 m	630	381	248	323	304
	8 – 12 m	41	1	40	19	22
	> 12 m	1	0	1	1	0
4	Unknown	39	33	6	21	18
	0 – 8 m	155	106	49	103	52
	8 – 12 m	2	0	2	0	2
	> 12 m	0	0	0	0	0
Week 22 (28/05/2007 – 03/06/2007)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	106	100	6	16	88
	0 – 8 m	808	399	409	387	419
	8 – 12 m	222	0	222	70	152
	> 12 m	22	0	22	5	17
2	Unknown	165	158	7	59	104
	0 – 8 m	607	338	269	332	273
	8 – 12 m	77	0	77	39	38
	> 12 m	7	0	7	4	3
3	Unknown	161	151	10	39	119
	0 – 8 m	567	324	243	314	250
	8 – 12 m	42	0	42	21	21
	> 12 m	1	0	1	1	0
4	Unknown	36	30	6	22	14
	0 – 8 m	137	87	50	86	51
	8 – 12 m	0	0	0	0	0
	> 12 m	0	0	0	0	0

Week 23 (04/06/2007 – 10/06/2007)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	120	109	11	17	102
	0 – 8 m	829	415	412	385	440
	8 – 12 m	202	0	202	62	140
	> 12 m	32	0	32	6	26
2	Unknown	182	168	14	61	120
	0 – 8 m	643	368	273	336	304
	8 – 12 m	77	0	77	38	39
	> 12 m	7	0	7	2	5
3	Unknown	180	166	14	34	144
	0 – 8 m	604	352	250	317	284
	8 – 12 m	44	1	43	18	26
	> 12 m	0	0	0	0	0
4	Unknown	70	64	6	28	41
	0 – 8 m	148	92	56	90	57
	8 – 12 m	3	0	3	3	0
	> 12 m	0	0	0	0	0
Week 24 (11/06/2007 – 17/06/2007)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	99	88	11	15	82
	0 – 8 m	889	466	421	408	474
	8 – 12 m	210	1	209	74	136
	> 12 m	26	1	25	2	24
2	Unknown	174	161	13	64	108
	0 – 8 m	684	415	268	345	333
	8 – 12 m	88	1	87	47	41
	> 12 m	6	1	5	2	4
3	Unknown	181	166	15	32	146
	0 – 8 m	641	393	247	327	308
	8 – 12 m	49	1	48	28	21
	> 12 m	1	1	0	0	1
4	Unknown	44	39	5	25	19
	0 – 8 m	131	76	55	80	51
	8 – 12 m	2	1	1	2	0
	> 12 m	0	0	0	0	0

Week 25 (18/06/2007 – 24/06/2007)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	114	103	11	21	91
	0 – 8 m	899	498	398	431	467
	8 – 12 m	195	0	195	63	132
	> 12 m	27	0	27	6	21
2	Unknown	155	146	9	56	97
	0 – 8 m	672	439	231	363	308
	8 – 12 m	72	0	72	37	35
	> 12 m	7	0	7	3	4
3	Unknown	160	151	9	37	120
	0 – 8 m	638	420	216	347	290
	8 – 12 m	46	0	46	23	23
	> 12 m	1	0	1	1	0
4	Unknown	39	36	3	19	19
	0 – 8 m	160	109	50	109	51
	8 – 12 m	0	0	0	0	0
	> 12 m	0	0	0	0	0
Week 26 (25/06/2007 – 01/07/2007)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	93	82	11	13	73
	0 – 8 m	847	452	391	399	441
	8 – 12 m	208	0	208	66	142
	> 12 m	27	0	27	5	22
2	Unknown	152	137	15	56	90
	0 – 8 m	651	389	258	348	297
	8 – 12 m	79	0	79	40	39
	> 12 m	9	0	9	4	5
3	Unknown	145	133	12	29	109
	0 – 8 m	599	367	228	315	278
	8 – 12 m	38	0	38	18	20
	> 12 m	1	0	1	1	0
4	Unknown	42	37	5	26	14
	0 – 8 m	157	104	53	99	58
	8 – 12 m	1	0	1	1	0
	> 12 m	0	0	0	0	0