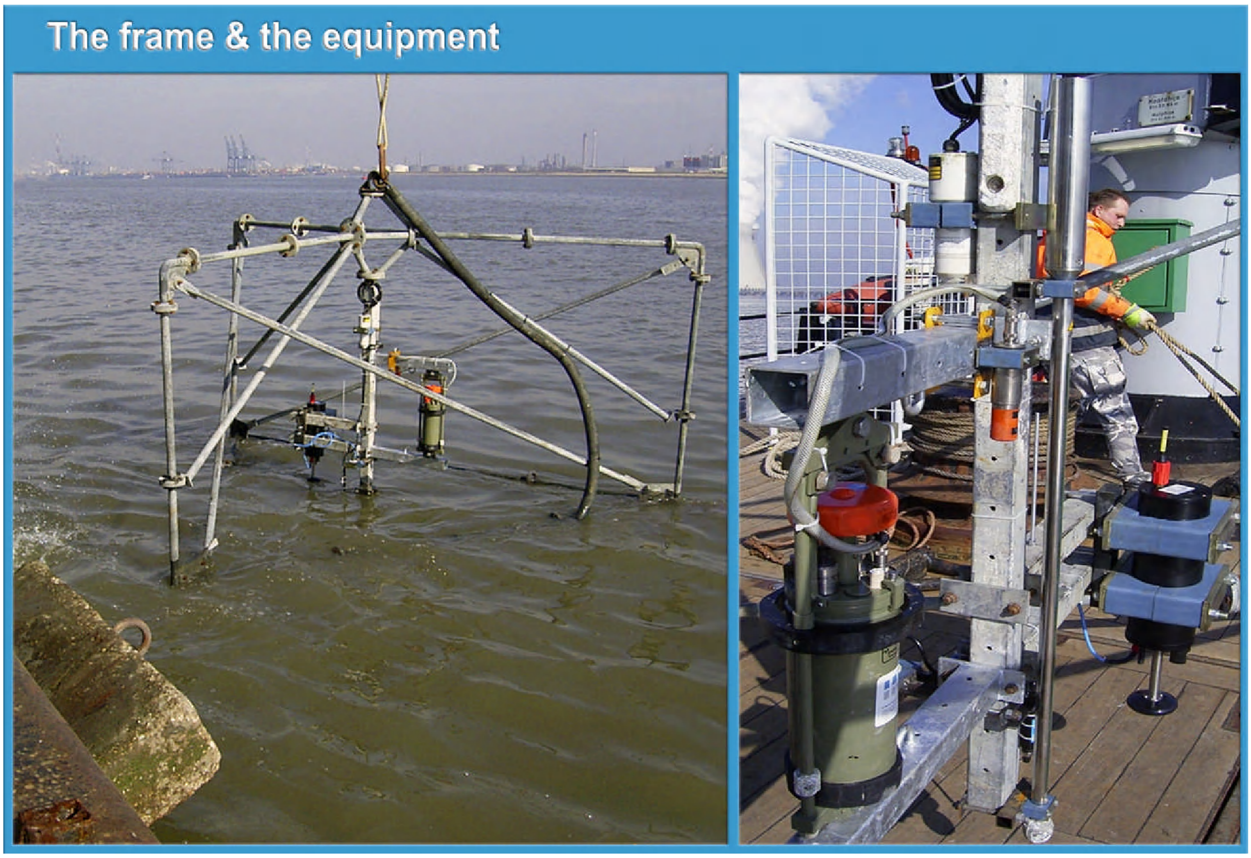
VLAAMSE OVERHEID

DEPARTEMENT MOBILITEIT EN OPENBARE WERKEN
WATERBOUWKUNDIG LABORATORIUM

Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing

Bestek 16EB/05/04



Deelrapport 2.17: Zout – en slibverdeling Deurganckdok & frame metingen 20/09/2007 – 18/12/2007

Report 2.17: Salt – Silt distribution & frame measurements Deurganckdok 20/09/2007 – 18/12/2007

26 March 2008

I/RA/11283/07.093/MSA

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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, 'Opvolging aanslibbing Deurganckdok'.

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 as essential for understanding sediment transport between the dock and the Scheldt river.

1.3. Overview of the Reports

Reports of the project 'Opvolging aanslibbing Deurganckdok 2' for the period April 2006 – March 2008 are summarized in Table 1-1.

Reports of the measurement campaign HCBS2 for which the winter and summer campaign has been carried out simultaneously with measurements in this report are listed in APPENDIX F.

Table 1-1: Overview of Deurganckdok Reports

Report	Description
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)
1.10	Sediment Balance: Three monthly report 1/4/2007 - 30/06/2007(I/RA/11283/07.081/MSA)
1.11	Sediment Balance: Two monthly report 1/7/2007 – 31/08/2007 (I/RA/11283/07.082/MSA)
1.12	Sediment Balance: Four monthly report 1/09/2007 – 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	
2.1	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)

Report	Description
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)
2.6	Salinity-Silt distribution & Frame Measurements Deurganckdok 13/3/2006 – 31/05/2006 (I/RA/11283/06.121/MSA)
2.7	Salinity-Silt distribution & Frame Measurements Deurganckdok 15/07/2006 – 31/10/2006 (I/RA/11283/06.122/MSA)
2.8	Salinity-Silt distribution & Frame Measurements Deurganckdok 15/01/2007 – 15/03/2007 (I/RA/11283/06.123/MSA)
2.9	Calibration stationary equipment autumn (I/RA/11283/07.095/MSA)
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)
2.18	Salt-Silt distribution & Frame Measurements Deurganckdok winter (18/02/2008 - 31/3/2008) (I/RA/11283/07.094/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	
3.1	Boundary conditions: Three monthly report 1/1/2007 – 31/03/2007 (I/RA/11283/06.127/MSA)
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)

Report	Description
Analysis	
4.1	Analysis of Siltation Processes and Factors (I/RA/11283/06.129/MSA)
4.10	Analysis of Siltation Processes and Factors (I/RA/11283/07.102/MSA)

1.3.1. Measurement actions

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

1. Monitoring upstream discharge in the Scheldt river
2. Monitoring Salt and sediment concentration in the Lower Sea Scheldt taken from on permanent data acquisition sites at Lillo, Oosterweel 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 one measurement campaign:

- Long term salt/silt measurements in the Deurganckdok: 18 September – 18 December 2007
- Near bed frame measurements in the vicinity of Deurganckdok from 26 September until 5 December 2007.

The first chapter comprises an introduction. The second chapter describes the project. Chapter 3 describes the measurement campaign, equipment and the course of the actual measurements. The measurement results and processed data are presented in Chapter 4, whereas chapter 5 gives a preliminary analysis of the data.

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

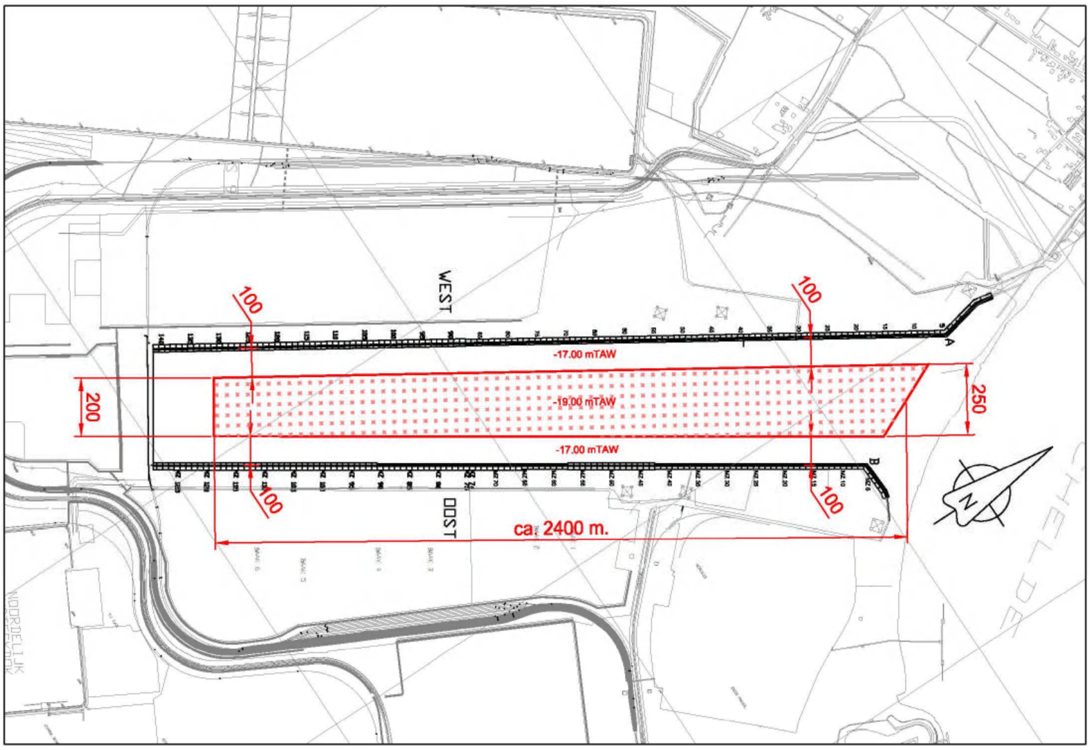

Figure 2-1: Overview of Deurganckdok

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. In February 2007, the third dredging phase started and is planned to be finalised in 12 months time (by February 2008).

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).

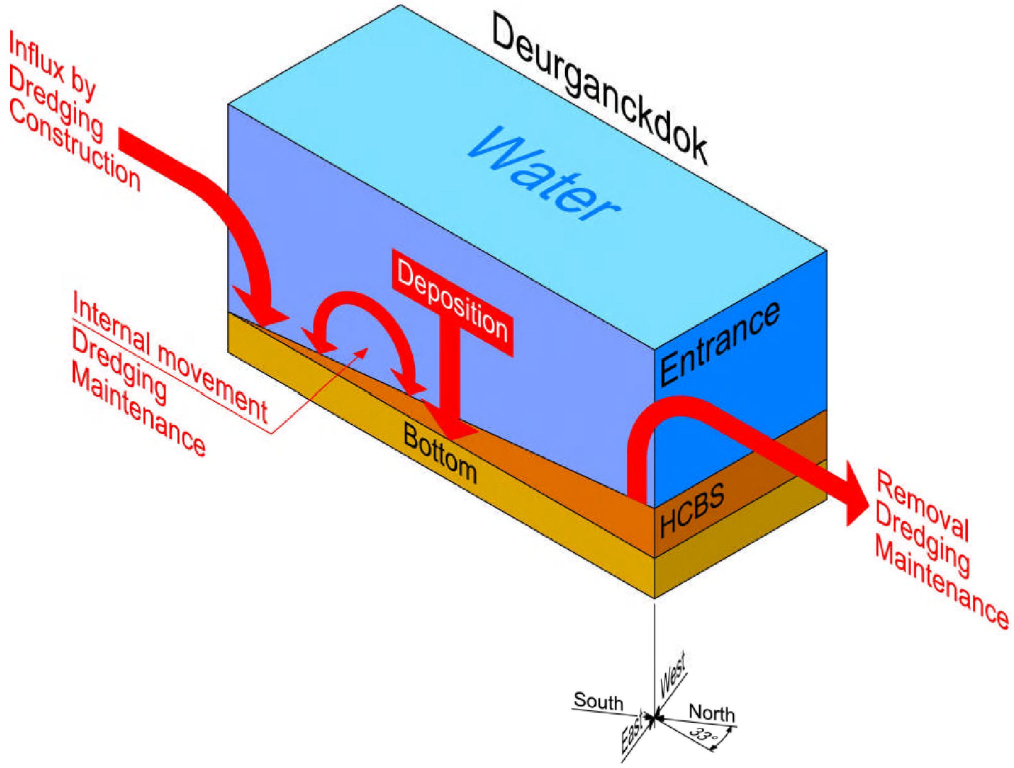

Figure 2-2: Elements of the sediment balance

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.

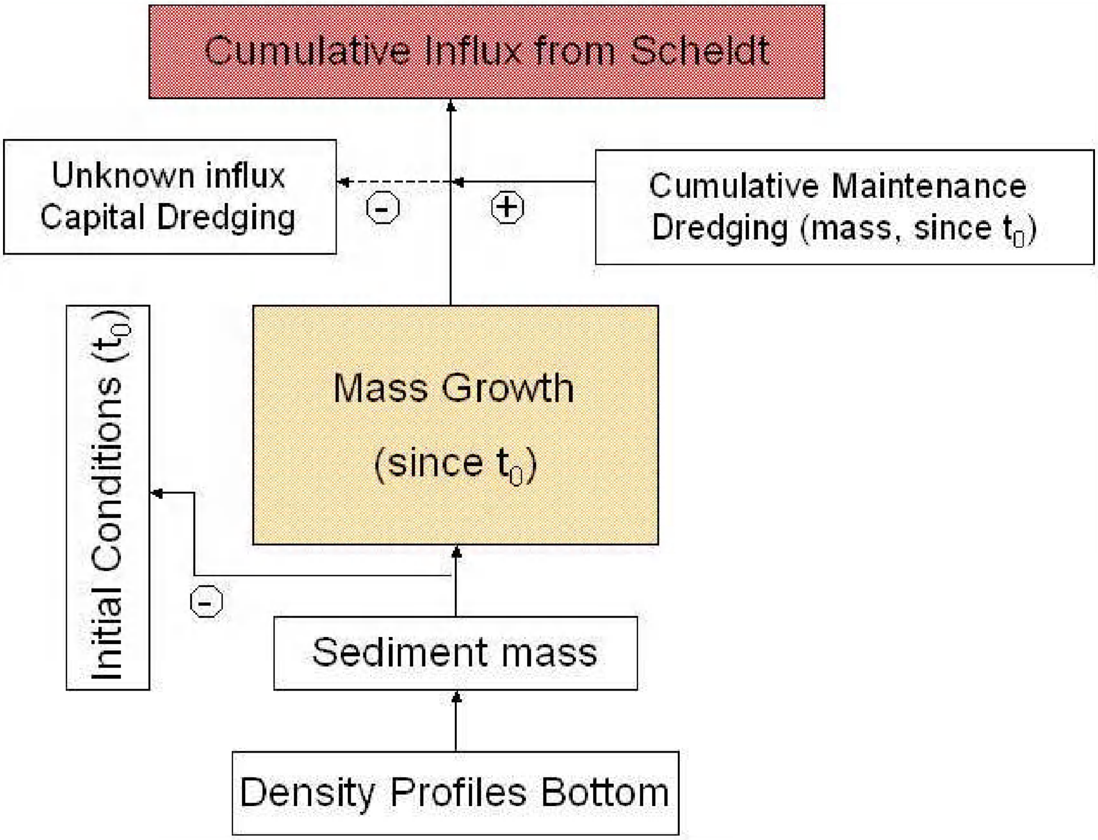

Figure 2-3: Determining a sediment balance

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

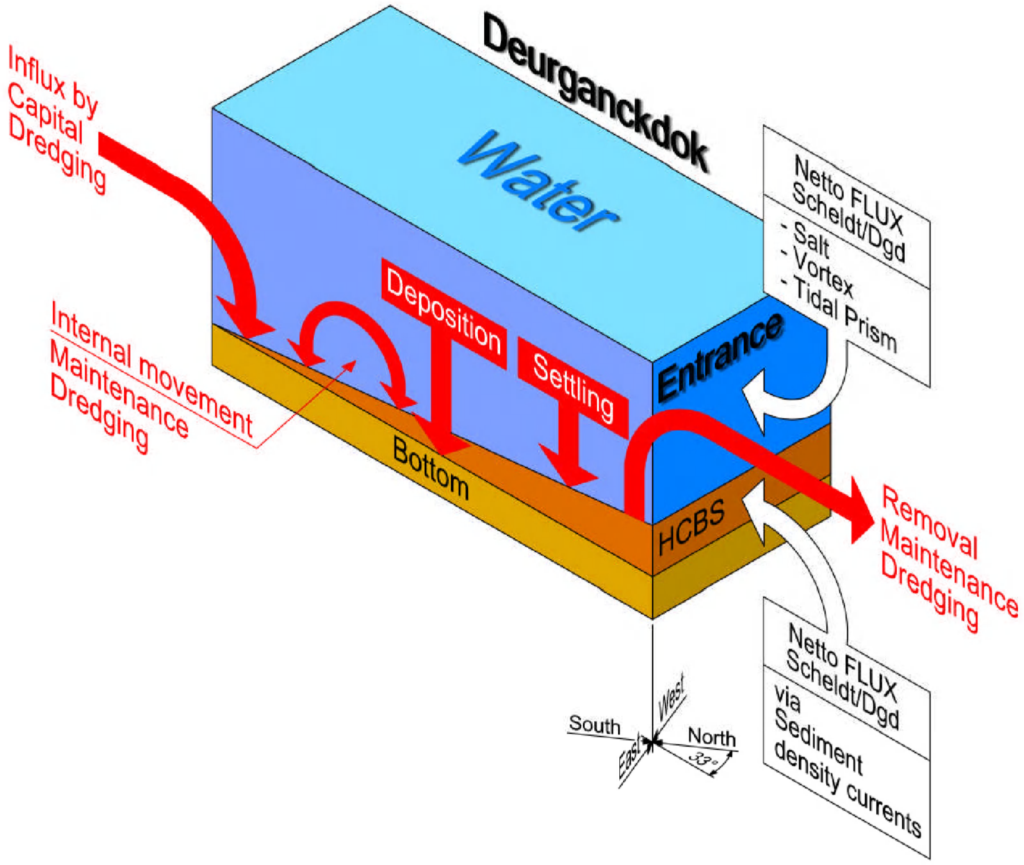

Figure 2-4: Transport mechanisms

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 Scheldt river.
- 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. Measurement objectives

2.3.1. Objective of the near bed continuous monitoring

The purpose of the deployment of the anchored measuring frame/rig is to monitor the detailed vertical structure of flow and suspended sediment concentration within a few decimeters from the bed. This frame measures at one location only, by definition, and is difficult to reposition. Therefore, it should be positioned at a location where near-bed HCBS are most likely, and with a vertical resolution of the instruments that matches the concentration gradients in suspension. The vertical flow and sediment structure assessed with the preliminary 3D mud transport model allows for an optimization of the layout of the anchored measuring frame with respect to the instrumentation.

2.3.2. Objective of the long term measurements near the quay walls

The goal of the survey is to monitor the spatial distribution of salt and silt in the Deurganckdok. Longitudinal, vertical and horizontal (from north to south quay) distribution is surveyed in this set up. The entrance of the dock is a favoured location because of the dynamics caused by the river-dock interaction. One deeper location in the dock is necessary to sample the longitudinal distribution of salt and silt along the dock.

3. THE MEASUREMENT CAMPAIGNS

3.1. Description of the long term suspended sediment-salinity measurements 18/09/2007 – 18/12/2007

3.1.1. Measurement location

During the period from 18/09/2007 till 18/12/2007, 6 multi parameter probes were placed on 3 fixed locations hanging from the quay wall in Deurganckdok at fixed depths.

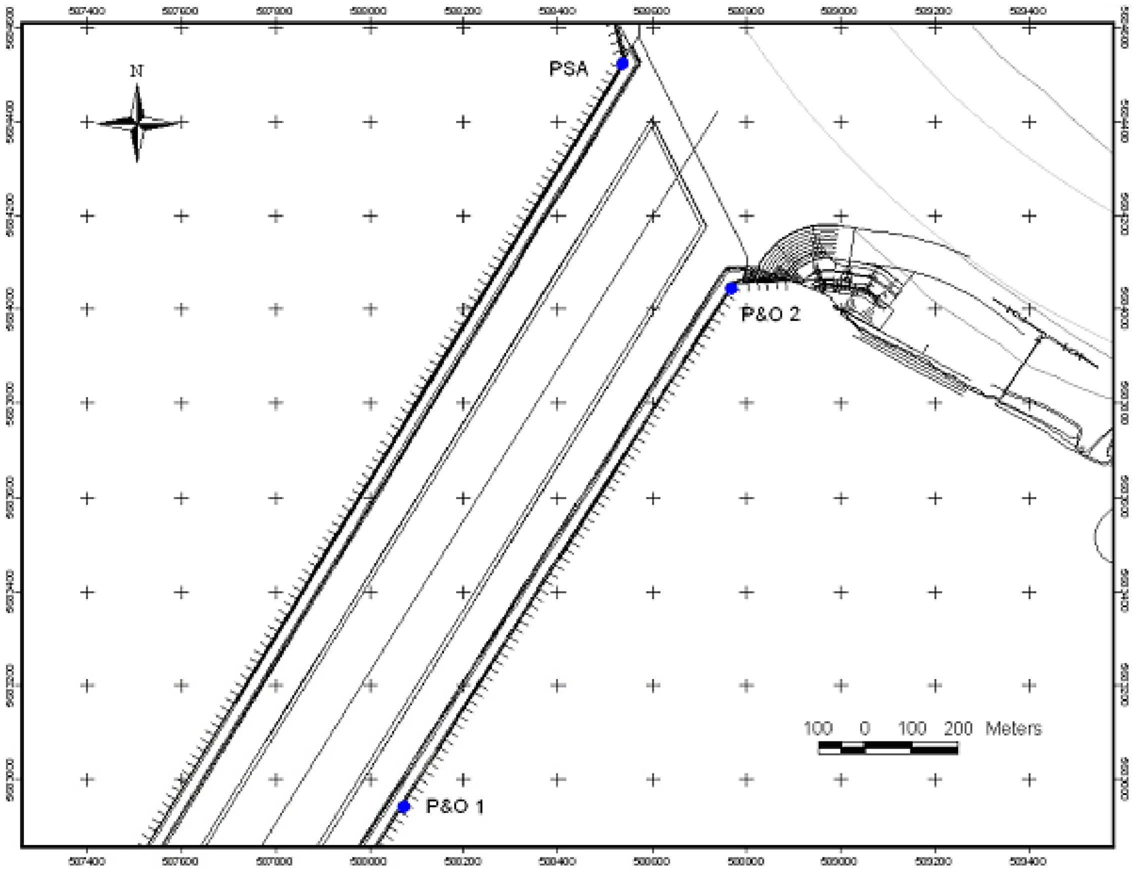

Figure 3-1: Map of the measurement locations for long term salt-silt measurements in Deurganckdok

Table 3-1: Measurement locations in UTM ED50

Location	*EASTING*	*NORTHING*	*Boulder*	*Operator*
P&O 1 (S-back)	588074	5682942	Moot 72	P&O Ports
P&O 2 (S-entrance)	588767	5684045	Moot 7	P&O Ports
PSA (N-entrance)	588536	5684523	Moot 5 (boulder 286)	PSA HNN

Table 3-2: Deployment depths of all instruments for the measurement period

Salt Silt Measurements Deurganckdok				
Location	*Easting (UTM ED 50)*	*Northing (UTM ED 50)*	*Depth of instrument [m TAW]*	*Period*
P&O 1 top	588074	5682942	-2.65	18/09/2007 – 18/12/2007
P&O 1 bottom	588074	5682942	-12.3	18/09/2007 – 18/12/2007
P&O 2 top	588767	5684045	-3.0	18/09/2007 – 18/12/2007
P&O 2 bottom	588767	5684045	-11.8	18/09/2007 – 18/12/2007
PSA top	588536	5684523	-2.5	18/09/2007 – 18/12/2007
PSA bottom	588536	5684523	-11.9	18/09/2007 – 18/12/2007

3.1.2. The equipment

3.1.2.1. Quay Frame set up

A simple rectangular measurement frame was conceived for suspending the instruments from the quay wall down into the Deurganckdok. Two frames rest against the dock wall and are suspended by stainless steel cables hanging from a rawlplug, secured on top of the quay wall.

Using a guiding system and a winch, it was possible to recover these instruments without the help of a survey vessel.

Figure 3-2: Guiding system and chain suspended from the rawlplug (left), frame with RCM-9 and steel cables (right)

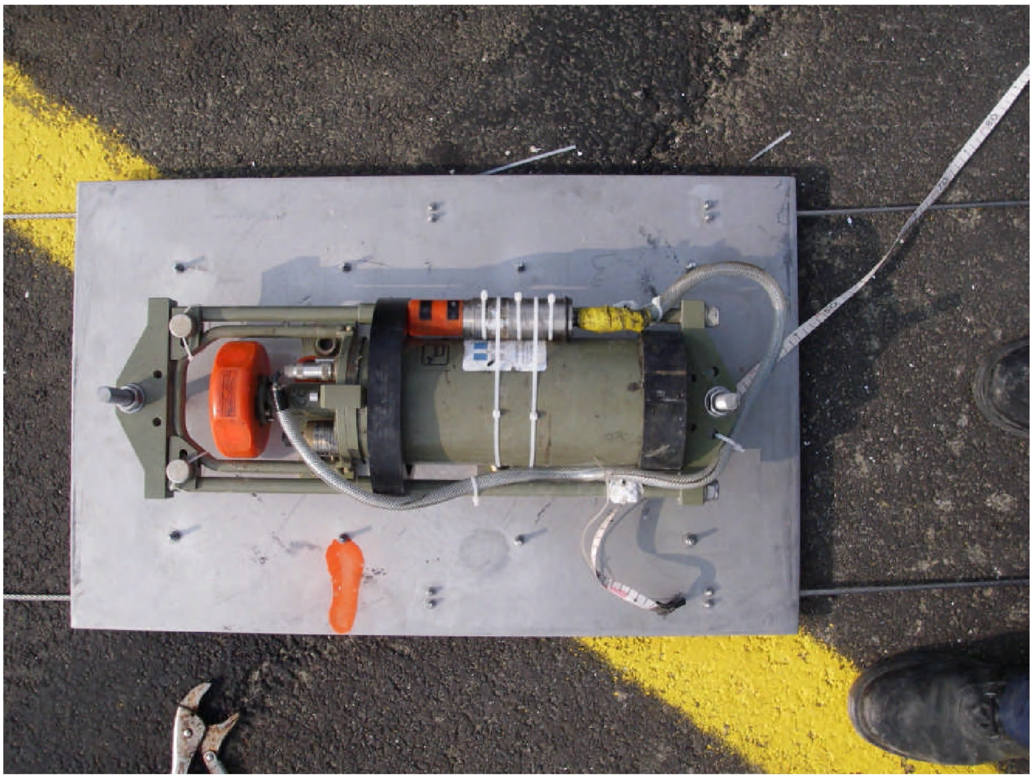

Figure 3-3: frame design

3.1.2.2. Aanderaa RCM-9

The Aanderaa Recording Current Meter RCM-9 MkII is a multi-parameter instrument that consists of a CTD probe, Doppler Current Sensors and a Turbidity Sensor. It was set up to measure an average of a number of pings spread over an interval of 10 minutes for conductivity, depth, temperature and turbidity.

IMDC (2006a) gives more technical details on the RCM-9.

3.1.2.3. D& A Instruments OBS 3A

The D & A Instruments OBS 3A is a multiparameter instruments that consists of a CTD probe and a turbidity sensor. The instrument was set up to measure every ten minutes for a minute at a frequency of 1 Hz and output the average.

IMDC (2006a) gives more technical details on the OBS 3A.

3.1.3. Course of the measurements

After deployment on 18/09/2006, the instruments were recovered, cleaned and read out every two weeks. Table 3-3 lists the measurement periods and possible issues. Only OBS 3A instruments were deployed during this measurement period

Table 3-3: Overview of measurement periods and data gaps

P&O1 (S-BACK): -12.1 m TAW			
Period	*No data*	*Faulty data*	*Comments*
20 Sept 2007			Start measurement period
9, 13, 15, 22, 23Nov 2007 1, 9 Dec 2007		X	Faulty data
8, 13 Oct 2007 23-29 Nov 2007	X		Gaps in data (buried sensor)
18 Dec 2007			End measurement period
P&O1 (S-BACK): -2.6 m TAW			
Period	*No data*	*Faulty data*	*Comments*
20 Sept 2007			Start measurement period
18 Dec 2007		X	Faulty data
29 Nov 2007	X		Gaps in data
18 Dec 2007			End measurement period
P&O 2 (S-ENTRANCE): -13.0 m TAW			
Period	*No data*	*Faulty data*	*Comments*
20 Sept 2007			Start measurement period
18 Dec 2007		X	Faulty data
9, 10, 16, 17 Oct 2007, 1 Nov 2007 9-16 Nov 2007	X		Gaps in data Battery cap flaw
18 Dec 2007			End measurement period
P&O 2 (S-ENTRANCE): -2.2 m TAW			
Period	*No data*	*Faulty data*	*Comments*
20 Sept 2007			Start measurement period
12, 13 Oct 2007	X		Gaps in data
18 Dec 2007			End measurement period

PSA (N-ENTRANCE): -12.0 m TAW			
Period	*No data*	*Faulty data*	*Comments*
20 Sept 2007			Start measurement period
28 Nov 2007	X		Gaps in data
18 Dec 2007			End measurement period
PSA (N-ENTRANCE): -2.3 m TAW			
Period	*No data*	*Faulty data*	*Comments*
20 Sept 2007	X		Start measurement period
7 Oct 2007	X		Gaps in data
18 Dec 2007			End measurement period

3.2. Description of the near bed continuous monitoring 26/09/2007 – 05/12/2007

3.2.1. Measurement location

During the period 26/09/2007 till 05/12/2007, two frames were placed in the vicinity of the entrance of Deurganckdok. The first one was placed at the upstream edge of the Deurganckdock, on the sill. The depth at the location of the frame is –14m TAW roughly. Placement of the frame occurred on the 10th of October at 10h20; the removal of the frame happened on 28th of November at 12h00. The second frame was placed at the downstream edge of the dock. This location is situated nearby the future CDW (Current Deflecting Wall) location, near the left bank of the Scheldt. The frame was placed at a depth of –15m TAW roughly. The placement of this frame occurred on 26th of September at 14h00, the removal of the frame happened on 5th of December at 11h45. To signal the presence of the frames, buoys were placed near the frames.

Spring tides occurred around the 12th of October 2007 and the 11th of November 2007. Time is always given in MET.

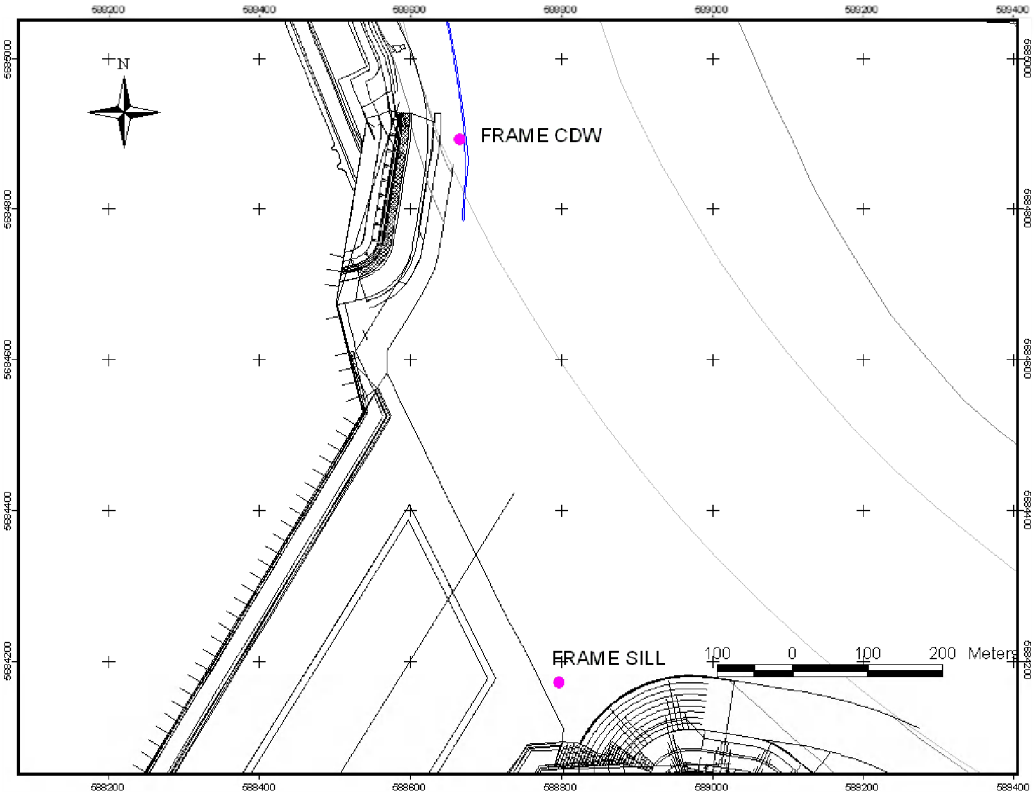

Figure 3-4: Map of the measurement location

3.2.2. The equipment

3.2.2.1. The frames

Two new frames were developed for autonomous measurement of sediment transport phenomena. The frames are equipped with an ARGUS ASM-IV high-resolution turbidity array, an ALTUS precision echosounder and two multiprobes: an Aanderaa RCM-9 and a Valeport MIDAS.

This way, proper instrumentation in the near bed zone was ensured. Data about the orientation, pitch and roll of the frames are obtained from a magnetic compass (orientation, Valeport MIDAS) and a tilt sensor (pitch and roll, ARGUS ASM-IV / Aanderaa RCM-9).

The set-up of the CDW frame is as follows:

- The RCM 9 was installed at 1.04m above the bottom, with the following sensors: a CTD probe, Doppler Current Sensors and a Turbidity Sensor
- The Valeport Midas was installed at 0.16m above the bottom, with the following sensors: a CTD- probe, an Electromagnetic Current Meter (ECM) and an OBS3+ turbidity sensor
- The ALTUS was installed at 0.44m above the bottom
- The ARGUS ASM-IV was installed in such a way that the lowest turbidity sensor was placed at 0.28m above the bottom

Since the Sill frame penetrated considerably during previous measurements, the supporting surface was enlarged. Further set up of the Sill frame is as follows:

- The RCM 9 was installed at 0.99m above the bottom, with the following sensors: a CTD probe, Doppler Current Sensors and a Turbidity Sensor
- The Valeport Midas was installed at 0.1m above the bottom, with the following sensors: a CTD-probe, an electromagnetic Current Meter (ECM) and an OBS3+ turbidity sensor
- The ALTUS was installed at 0.50m above the bottom
- The ARGUS ASM-IV was installed in such a way that the lowest turbidity sensor was placed at 0.33m above the bottom

This is anticipated to allow a proper measurement of the lower current profile and give additional information on the suspended sediment concentration structure. Figure 3-5 shows the CDW frame with all the sensors. The Sill frame is built up identically.

Each sensor has its own data logger and power supply from internal batteries.

The frames were designed for easy transport and installation. The sensor positions, in particular sensor height above the bed, can be adjusted to specific requirements over a wide range. The structure of the frames consists of a tripod with a separation of about 4 metres between the legs. The height is about 2.3 m. Several girders give the frames the required sturdiness. The sensors can be clamped to adjustable supports. Hoisting support facilities are attached to the top of the frames.

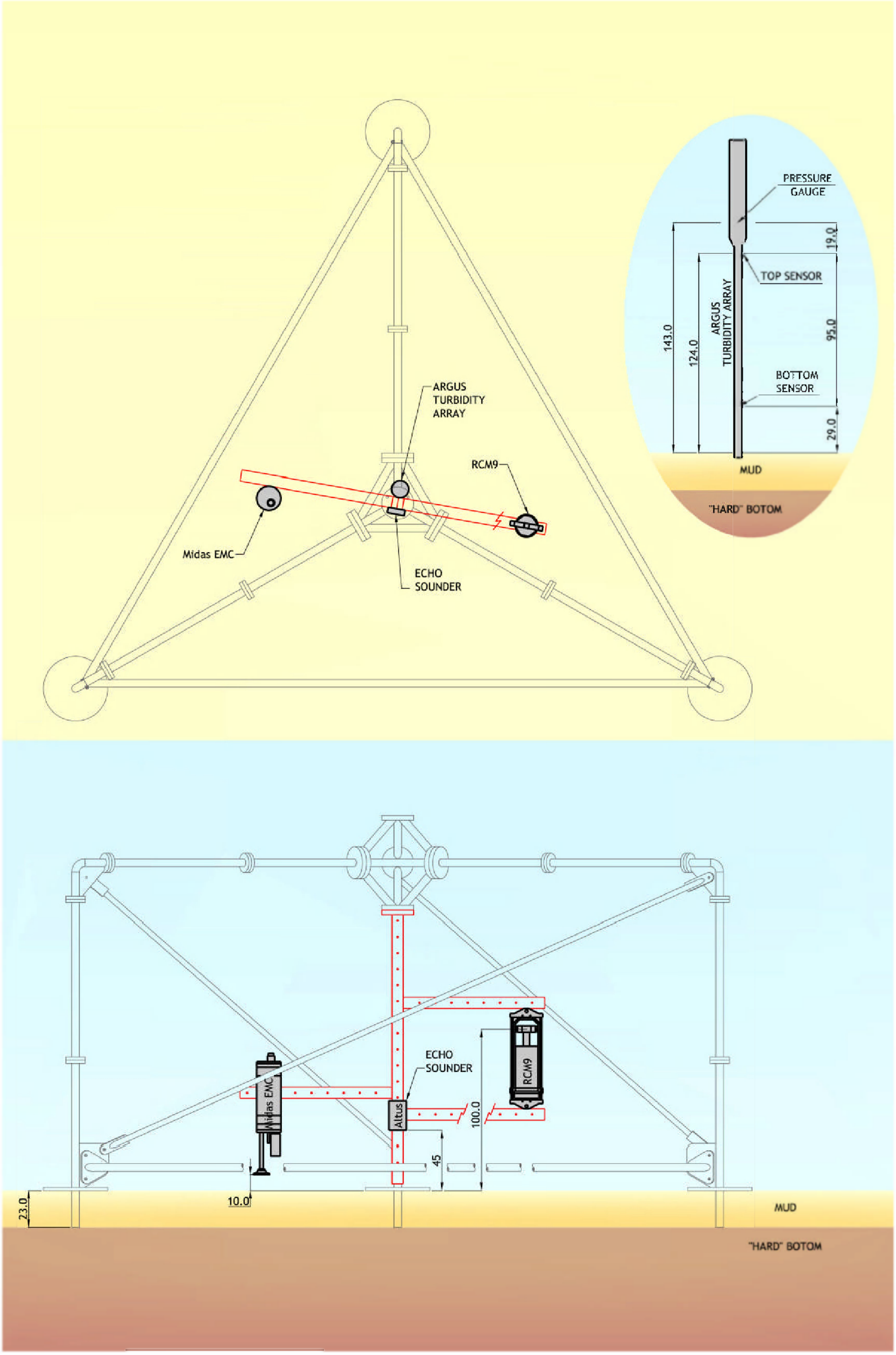

Figure 3-5: Sketch of the CDW frame with all the sensors (dimensions in [cm])

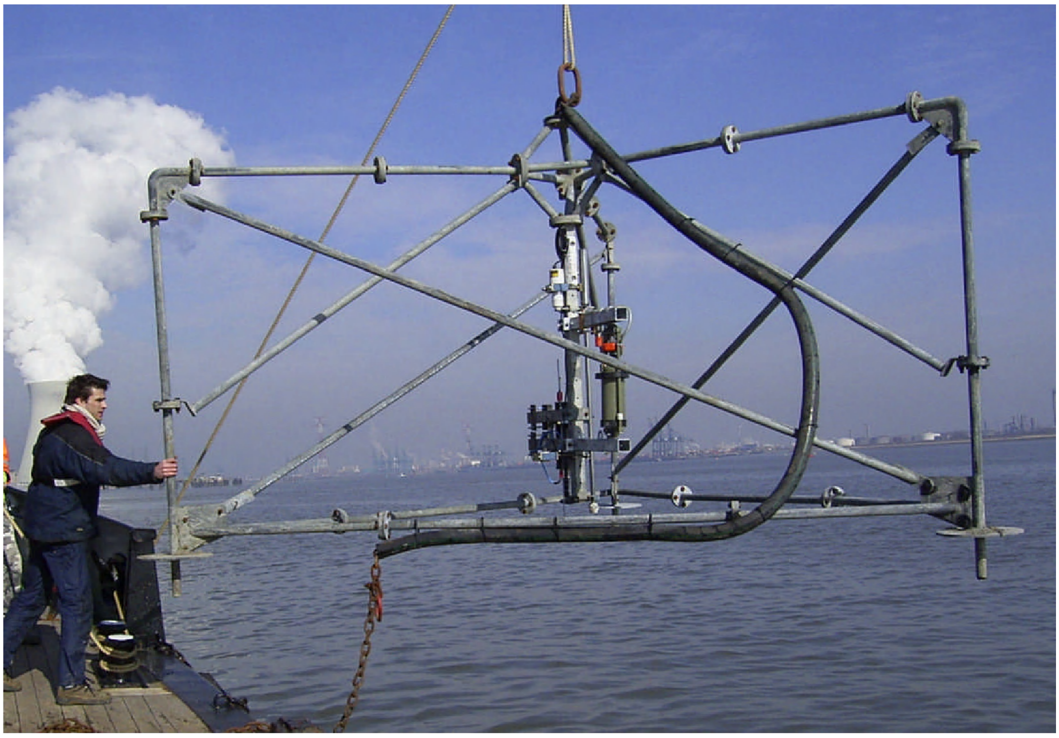

Figure 3-6: Installation of the CDW frame

3.2.2.2. ARGUS ASM-IV

The ARGUS ASM-IV was used to detect the vertical structure of the suspended sediment concentration in the zone of 1 meter above the bed.

The ARGUS ASM-IV was developed for high resolution measuring of accretion and erosion of the riverbed. (ARGUS UMWELT-MEATECHNIK, 2005). The instrument operates with backscatter infrared laser sensors embedded in a stainless steel rod. The 96 sensors are placed on an active board at a distance of 0.01m of each other. There are three additional sensors: an inclinometer, a pressure gauge and a on board temperature sensor.

A battery powered central unit in the head of the instrument controls activation and power supply of the sensors as well as the transmission of the signals. The sealed in unit consists of a microprocessor, a data memory, the additional sensors and the energy supply.

The ARGUS ASM-IV has a sampling interval of 5 seconds and every cycle there are 20 samples taken. The break range between each burst (i.e. pause) is set at 500 seconds. This means that the total cycle time is 600 seconds.

The measurement range of the ARGUS ASM-IV is from 0 to 5000mg/l.

More details on the ARGUS ASM-IV can be found in the February Survey Reports of the HCBS 1 measurement campaign (IMDC, 2005h)

Figure 3-7: ARGUS ASM-IV

3.2.2.3. ALTUS

The ALTUS is specially designed for mainly muddy environments to precisely quantify changes of bottom elevation. It is a high frequency acoustic submersible recording altimeter and is based on a 2 MHz echo sounder which transducer is located at a given distance from the bed. The echosounder was attached to the frame such that (looking downward) it can measure bottom variations with an accuracy of about 2mm. A separate container includes altimeter electronics, data logger, pressure sensor and energy.

The logging cadence was 600 seconds.

The technical details on the Altus are described in the February Survey Reports of the HCBS 1 measurement campaign (IMDC, 2005h).

3.2.2.4. Valeport MIDAS OBS3+

The Valeport MIDAS is a multiparameter instrument that has a CTD- probe, an electromagnetic Current Meter (EMC) and an OBS3+ turbidity sensor with a range of 0-1500 FTU. The instrument was set to measure in cycles of 10 minutes, divided into 100 samples at a rate of 1Hz and a pause of 500 seconds.

The principle of the electromagnetic current meter enables velocity measurements at very large suspended sediment concentrations (in comparison to measurement techniques based on the Doppler principle). Further technical details on the Valeport MIDAS OBS3+ are described in the Report 6.1 Winter calibration (IMDC, 2006a) of the HCBS2 Measurement campaign.

Figure 3-8: Valeport MIDAS EMC and OBS3+

3.2.2.5. *Aanderaa RCM-9*

There can be referred to § 3.1.2.2. 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.

3.2.3. Course of the measurements

At the entrance of Deurganckdok the two frames were set to measure, the Sill frame from the 10th of October until the 28th of November 2007 and the CDW frame from the 26th of September till the 5th of December 2007. Every week one of the two frames was recovered, the data of all equipment was downloaded and batteries were replaced, whereupon the frame was deployed again.

After removal of the frames, data of all equipment was tested. For the frame at the sill of Deurganckdok, the Argus turbidity rod measured 20 samples per cycle with a sample interval of 5s with a pause of 500s between successive cycles, obtaining a total cycle time of 10 minutes. The instrument measured properly and the tilt meter indicates a good horizontal position of the frame (tilt less than 3°), except during the third deployment at which faulty data was obtained from the 4th until the 14th of November 2007. Since during this period the tilt meter indicated no longer a horizontal position of the frame, collapsing of the frame was considered. But looking more in detail it seemed that the data obtained from the other sensors (pressure and temperature) was also erroneous, whereas the data of the other instruments installed on the frame did not show any irregularities on the 4th of November 2007. The data obtained during the next deployment was again correct, so there is no indication of what had happened. The Altus echosounder and the Aanderaa RCM9, both with a measurement cadence of 10 minutes, worked properly. But after the first deployment period, the seal of the Aanderaa RCM9 was broken and since no spare was available on board, redeployment of the RCM9 was postponed until the next recovery/deployment. The Valeport MIDAS OBS3+ only measured properly during the third deployment (31/10/2007 – 14/11/2007). During the other deployments the instrument was submerged in the silt. The location at the sill of Deurganckdok is known as a very silty area. Measures are taken to prevent the frame from penetrating into the bottom, but the possibility of slight penetration still exists. One measurement cycle of the Valeport took 10 minutes (30 samples were taken at a rate of 1 sample per second and a pause of 570s).

Concerning the frame at the downstream edge of Deurganckdok (CDW) the instruments measured with the same tuning as the Sill frame. The Aanderaa RCM9 worked properly. A good horizontal position (tilt less than 7°) is shown by the RCM9. The Altus and the MIDAS OBS3+ also measured properly, but at the end of the first two deployments the MIDAS OBS3+ ran short of battery and during the third deployment, it seemed that the Altus was out of range. Concerning the ARGUS, during the first two deployments (26/09/2007 – 17/10/2007 & 17/10/2007 – 08/11/2007) no problems occurred during measurements. Afterwards, it was not managed to start up the instrument again, so no more data was obtained.

An overview of the measurement locations is given in Table 3-4, while a chronological overview of measured data with an explanation can be found in Table 3-5.

Table 3-4: Overview of the measurement locations (UTM50) and periods

Near bed continuous monitoring			
Location	*Easting (UTM ED 50)*	*Northing (UTM ED 50)*	*Period*
Deurganckdok CDW	588573	5684677	26/09/2007 – 05/12/2007
Deurganckdok Sill	588697	5683941	10/10/2007 – 28/11/2007

Table 3-5: Chronological overview of missing and faulty data

Deurganckdok Sill			
Period	***No data***	***Faulty data***	***Comment***
10/10/2007			Deployment
10/10/2007 – 25/10/2007		MIDAS OBS 3+	Instrument submerged in silt
25/10/2007			Recovery/Deployment
25/10/2007 – 31/10/2007		MIDAS OBS 3+	Instrument submerged in silt
25/10/2007 – 31/10/2007	RCM9		Instrument not deployed
31/10/2007			Recovery/Deployment
04/11/2007 – 14/11/2007		ARGUS	Instrument failing
14/11/2007			Recovery/Deployment
14/11/2007 – 28/11/2007		MIDAS OBS 3+	Instrument submerged in silt
28/11/2007			Recovery
Deurganckdok CDW			
Period	***No data***	***Faulty data***	***Comment***
26/09/2007			Deployment
12/10/2007 – 17/10/2007	MIDAS OBS 3+		No battery
17/10/2007			Recovery/Deployment
07/11/2007 – 08/11/2007	MIDAS OBS 3+		No battery
08/11/2007			Recovery/Deployment
08/11/2007 – 21/11/2007	ARGUS		Instrument failing
08/11/2007 – 21/11/2007	ALTUS		Out of range instrument
21/11/2007			Recovery/Deployment
21/11/2007 – 05/12/2007	ARGUS		Instrument failing
05/12/2007			Recovery

4. PROCESSING OF DATASETS

4.1. Calibration of the sensors

A crucial aspect of the accuracy and reliability of the data concerns the calibration of the instruments before the measurement campaign. The calibration procedures and results are described in report 6.1 Winter calibration of the HCBS2 measurements (IMDC, 2006a), report 6.2 Summer calibration of the HCBS2 measurements (IMDC, 2007a) and report 2.09 autumn 2007 calibration of the Long Term Deurganckdok measurements (IMDC, 2008).

4.2. Long term measurements near quay wall

A second period of the long term measurements executed at two depths (on average -2.7 m TAW and -12 m TAW) at three locations on the quay walls of Deurganckdok lasted from 20 September until 18 December 2007. Depth, temperature, salinity and suspended sediment concentration have been logged. All gathered time series have been converted to appropriate engineering units and combined to form series covering the complete period. During validation erroneous data due to mid term recovery, sensor malfunction and buried equipment has been removed. In this form the data is ready for processing.

4.2.1. Factual data: Weekseries

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

- The title shows the week number followed by the year
- 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

Faulty data is omitted from these graphs.

4.2.2. Average tidal cycle of local parameters

For all parameters measured at one location data has been organised in separate series per tidal cycle (low water to next low water). High water moments were placed on a fixed position in the series, low water moments differ in time relative to high water due to variation in flood and ebb length with neap-spring phases. In this way a time series with time relative to high water is produced for each tide. When tidal elevation data showed substantial gaps data from pressure gauges was used to divide the long series into tidal series.

By defining average tidal amplitude A for neap, average and spring tides, it becomes possible to classify tidal cycles in three categories in the following way:

$$Neap : A \le \alpha(A_{neap} + A_{aver})$$

$$Spring : A \ge \alpha(A_{spring} + A_{aver})$$

$$Average : \alpha(A_{neap} + A_{aver}) < A < \alpha(A_{spring} + A_{aver})$$

where: A_{neap}, A_{aver} and A_{spring} are average amplitudes

α is a factor to decide where to distinguish between categories (here taken as 0.5)

Using such categorisation the tidal series can be grouped in neap, average and spring tides. Within these groups an average is made per parameter per tidal phase relative to high water (Figure 4-1).

In this way an average neap tidal cycle, an average middle tidal cycle and an average spring tidal cycle is obtained for all parameters.

The same exercise is repeated for relative values, which are the measured values divided by the tidal average (the average parameter value for that particular tidal cycle). All three types are shown in one plot with a plot for salinity, sediment concentration and temperature per page in APPENDIX G1.

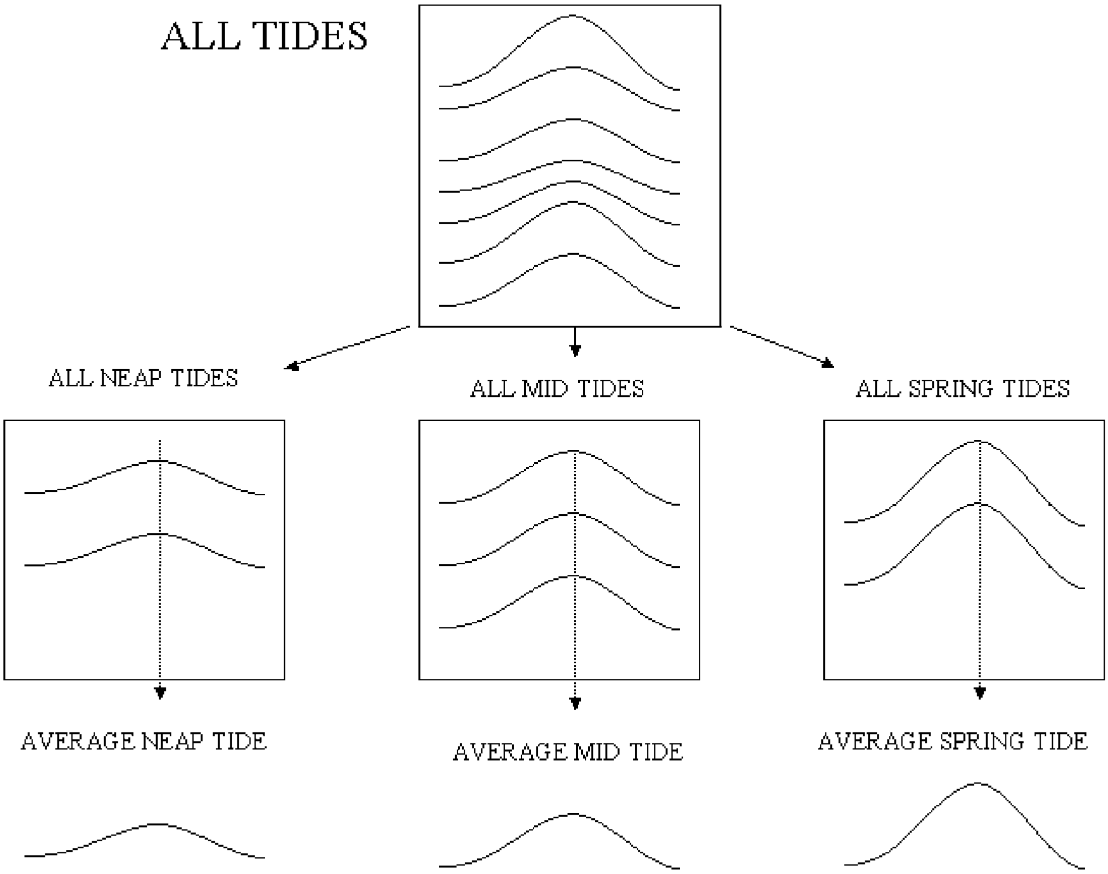

Figure 4-1: Categorisation of tidal tidal cycles

4.2.3. Average tidal cycle of gradients

For each of the three parameters being processed, four horizontal gradients (along dock's axis and cross dock, each at two depths) and three vertical gradients (one per location) have been calculated. The gradient along Deurganckdok was obtained by the difference of measurements between locations P&O2 (S-ENTRANCE) and P&O1 (S-BACK) (P&O1 minus P&O2), the gradient across Deurganckdok was calculated as the difference between locations P&O2 (S-ENTRANCE) and PSA (N-ENTRANCE) (PSA minus P&O2). For each of the locations a vertical gradient has been calculated from the difference between the measurements at approximately –2.7 m TAW and the measurements at approximately –12 m TAW (-12 m data minus –2.7 m data).

The time series of gradients obtained as such have then been processed following exactly the same tidal separation technique as for the local parameters (described in 4.2.2). The results are shown in APPENDIX G2.

4.3. Near bed continuous monitoring

4.3.1. Methodology of processing the ARGUS ASM-IV data

The data gathered by the ARGUS ASM-IV during the measurements was processed with the ASMA 3.11 software (provided by ARGUS UMWELT-MEATECHNIK).

Raw data files are loaded in combination with the appropriate calibration file. This file is set up during the calibration. Finally only the data at the beginning and the end of the time series (apparatus not submerged) needed to be removed.

Time series, which show the sedimentation profile measured by the 96 sensors, can be found in APPENDIX C. In these plots the time axis shows MET-time. Also a table showing average values for SS concentration per tidal phase is shown. All sensors are organized per 10 (except top 6 are together) and averaged over flood and ebb phases. An average tidal phase (i.e. tidal phase with an average tidal difference) is also shown for every deployment period in APPENDIX C.

4.3.2. Methodology of processing the Altus data

The Altus data were validated and processed. Outliers were screened and removed.

The ALTUS gathers echo-signals at 4 different threshold values. The maximal echo value is used as a reference value for the hardness of the bottom. When the echo signal exceeds certain percentage of this emitted signal strength, a high percentage (70%) threshold will give an indication of the hard bottom, lower percentage threshold values (11%, 23%, 39%) indicate various levels in the soft bottom with a decreasing 'density'. Increasing distances indicate a net erosion, decreasing distances a net sedimentation. The differences between the 4 signals at one given time and measurement give an indication on the 'firmness or solidity' of the soft bottom. These differences are hard to quantify and are more to be analysed qualitatively. Table 4-1 shows the threshold values used and their colour in the graphs.

Week series are shown in APPENDIX C together with the ARGUS week series. Altus datasheets show values for all measured signals including the tide at a nearby tidal station (Liefkenshoek).

A table is added with the Altus Echosounder-Bottom distances of every signal for each High Water (HW) and Low Water (LW). An average tidal phase is also shown for every deployment period in APPENDIX C.

Table 4-1: Overview of the used threshold values for the Altus Echosounder

Legend name used	***Threshold value [% of Signal]***	***Colour in the graph***
Signal 1	11%	Red
Signal 2	23%	Green
Signal 3	39%	Blue
Signal 4	70%	Black

4.3.3. Multiprobes: RCM9 and Valeport data

RCM9 and Valeport MIDAS OBS3+ data were validated and processed. Outliers were screened and removed.

Velocities were computed with a reference to the magnetic North.

Datasheets in APPENDIX D give the '2 days'-series of RCM9 and Valeport data:

- Velocity Magnitude and Direction of UP sensors (RCM9)
- Velocity Magnitude and Direction of DOWN sensors (Valeport)
- Suspended Sediment Concentration of UP (blue) and DOWN (red) sensors. Tidal height is included together with these parameters from the nearest tidal station (Liefkenshoek)
- Absolute Suspended Sediment Flux of UP (blue) and DOWN (red) sensors. Tidal height is included together with these parameters from the nearest tidal station (Liefkenshoek)

The Absolute Suspended Sediment Flux is not defined for a defined cross-section. It is an absolute flux (Velocity Magnitude x SS Concentration).

In APPENDIX D tables are showing average values for Velocity Magnitude, Direction, SS Concentrations and Absolute Fluxes for both UP and DOWN sensors per tidal phase (ebb/flood).. An average tidal phase is also shown in APPENDIX D.

In APPENDIX E the suspended sediment concentration measured by the RCM9 and Valeport sensors (blue) was compared to the suspended sediment concentration measured by the ARGUS sensors (red) at the same height (when data was available):

- For the Sill frame, the UP sensor was located at 0.99 m above the bottom and was compared to the ARGUS sensor 47, which resided at the same depth.
- For the Sill frame, the DOWN sensor was located at 0.1 m above the bottom and was compared to the ARGUS sensor 86, which was located at 0.43 m above the bottom.
- For the CDW frame, the UP sensor was located at 0.84 m above the bottom and was compared to the ARGUS sensor 40, which resided at the same depth.
- For the CDW frame, the DOWN-sensor was located at 0.16 m above the bottom and was compared to the lowest ARGUS sensor 96, which was located at 0.28 m above the bottom.

Tidal height is included together with these parameters from the nearest tidal station (Liefkenshoek).

In APPENDIX E tables are showing average values for SS Concentrations of both Argus and RCM9 and Valeport sensors per tidal phase (ebb/flood). An average tidal phase is also shown in APPENDIX E.

5. PRELIMINARY ANALYSIS

5.1. Long term salinity measurements 18/9/2007 – 18/12/2007

For each of the three locations salinity, sediment concentration and temperature have been logged at two depths. Apart from week series of every parameter, average tidal cycles have been determined for each parameter. This was done for absolute and relative values, as well as for horizontal gradients along and across the dock, and vertical gradients (APPENDIX **G**). All of these results are discussed below.

5.1.1. Week series

5.1.1.1. P&O 1 (S-BACK)

The water temperature measured around 18°C at the start of the measurement campaign and steadily decreased to 7°C by the end of the measurements.

The initial surface water salinity of approximately 15 ppt slightly decreased to 13 ppt in the first days, after which the salinity stagnated in the period of 15 October – 11 November 2007. It further decreased until a value of 10 ppt by 15 November after which it stabilized until 3 December. Then, surface water salinity again decreased to 3-4 ppt. Salinities at the bottom followed similar trends but measured around 2 ppt more than the subsurface water salinities. As will be discussed in §5.1.2.1, salinity variation indeed followed the neap-spring tide variation, superimposed on the daily tides.

The suspended sediment concentration at the landside of the dock was in the range of 25-50 mg/l for both bottom and surface water measurement locations. Peaks of suspended solids concentrations of up to 600 mg/l were seen near the water surface but, in general, peaks were in the order of 300 mg/l. At the bottom of the dock, concentrations go up to values of 800 mg/l. In the period of 25-29 September, a high frequency of occurrence peaks could be observed near the bottom.

5.1.1.2. P&O 2 (S-ENTRANCE)

Also at this location, water temperature gradually dropped from 18°C to a value of 7°C by the end of the measurement period.

Measured salinities showed almost no tidal fluctuations near the bottom; the tidal variation was more pronounced near the water surface. During the measurement campaign, the bottom salinity slightly varied between 15 and 17 ppt in the period 18 September – 8 November 2007. From 8 November to the start of December the salinity varied between 10-15 ppt. Near the water surface, salinity varied between values of 13 and 15 ppt. At this location, it decreased to 10 ppt from 13 November on. At 4 December, the surface and bottom salinity dropped to a value of 3-4 ppt.

Near the bottom of the dock the base suspended sediment concentration measured around 50-75 mg/l. Close to the water surface, base concentrations were below 50 mg/l. Whereas maximal concentrations go up to values of 600-800 mg/l near the bottom, maximum concentrations of 100-150 mg/l were observed near the water surface. Frequent peaks of suspended solids concentrations were seen the last 9 days of November.

5.1.1.3. PSA (N-ENTRANCE)

Again, water temperature decreased from 18°C to a value of 7°C by the end of the measurement period.

Near the bottom, salinity measured around 15-17 ppt until mid-November. Salinity subsequently gradually decreased to 10 ppt to stay constant until 4 December. A second drop then occurred to a salinity of 4 ppt. The same trend could be observed for the near-surface salinities. Tidal variation in salinity was larger near the water surface in comparison to the near-bottom salinities, i.e. 5 ppt instead of 2-3 ppt.

The time series of bottom suspended sediment concentration was generally characterised by peak values of up to 800 mg/l at flood tides. The base sediment concentration was around 50 mg/l though. More peaks seemed to occur in the periods 27-28 September, 15-16 October and 21 November – 2 December 2007. Note also that the sediment concentration peaks were less pronounced near the water surface and showed values up to 200 mg/l SSC. Only in the period 21 November – 2 December, peaks of suspended solids concentrations occurred with values up to 600-800 mg/l.

5.1.2. Average tidal cycles

Plots of averaged tidal cycles can be found in APPENDIX **G**.

5.1.2.1. Local Parameters

The water temperature was rather constant over a tidal cycle and varied between 12 and 17°C. The lowest temperature was observed at average tides, whereas neap tide returned an equal or lower temperature in comparison with spring tide.

Similar to temperature, a minimal salinity was obtained during an average tide. At the southern berths, i.e. S-ENTRANCE and S-BACK, almost no tidal variation could be observed. If a maximum occurred, it was seen 4-5 hours after flood tide. Instead, a distinct maximum and minimum prevailed near the surface at N-ENTRANCE; a difference of around 4 ppt was seen here. Near the bottom, this tidal variation was less distinct though.

In comparison with salinity and temperature, suspended sediment concentration showed the largest variation over all tidal cycles. The southern berths (S-ENTRANCE and S-BACK) showed a maximum suspended solids concentration at flood tide; this occurred only near the bottom. At spring tide, this maximum concentration was in the range of less than 250 mg/l SSC. Instead, at N-ENTRANCE a maximum concentration of 200 mg/l was observed at spring tide; during neap tide, almost no tidal variation was seen. This maximum occurred between 0 and 2 hours after flood tide near the water surface. Close to the bottom, a maximum concentration of 400 mg/l prevailed 1 hour after high water at N-ENTRANCE.

5.1.2.2. Gradients

Cross-dock gradients from P&O 2 (S-ENTRANCE) towards PSA (N-ENTRANCE) have been calculated at both –2.8 m TAW and –11.8 m TAW. In general, calculated gradients were low and close to zero.

The cross-section gradient of salinity near the bottom of the dock was negative indicating that the salt concentration was largest near the southern quay. Positive gradients occurred 1-2 hours after flood tide. Although positive values could be observed for the suspended sediment concentration gradient, a similar (positive) peak gradient as for salinity was seen after flood tide for approximately 2 hours. Larger bottom water temperatures were measured at the southern quay wall in comparison with the northern quay. The opposite, but very weak, counted around flood tide.

Closer to the water surface at the dock entrance, gradients varied more compared to the bottom gradients, except for the suspended solids concentration. The change of suspended sediment concentration near the water surface after flood tide was the same as close to the bottom. Again, the salinity and the temperature showed a positive cross-dock gradient just before and after flood tide. However, the positive gradient persisted longer in time: 2 and 4 hours for temperature and salinity respectively.

Along-dock gradients run from the entrance towards the inland end of the dock. From the observations it is clear that salinity and temperature gradients were very small at both the bottom and the surface. Although very small and negatively valued in general, a positive temperature gradient was observed for 2 hours after flood tide close to the bottom, i.e. the water temperature at the back-end of the dock was smaller than at the entrance. Conversely, positive temperature gradients were observed 4 to 6 hours prior to flood tide. Comparable to the temperature gradients close to the bottom, salinity showed positive gradients starting from 2 hours after flood tide. Near the surface, negative gradients prevail 3 hours prior to and after flood tide.
From the measurements, it was seen that the bottom suspended sediment concentration gradient was negative for the entire tidal cycle, except for the period of 1-4 hours after flood tide. In other words, the sediment concentration near the bottom of the dock was smaller near the entrance in comparison to the inland side of the dock for this 3-hours period after flood tide. The gradients for suspended sediment concentration were less pronounced near the water surface.

Vertical gradients were small for salinity and very small for temperature. Salinity gradients were always positive, with a maximum at 0-3 hours after low tide; no real maximum occurred at the landside end of the dock. Similarly, the suspended solids concentration was always positive, except for 2-5 hours prior to flood tide at S-ENTRANCE. A peak in solids concentration could be seen between 1 hour prior to and 2 hours after flood tide at the entrance measurement locations. At the landside end of the dock, the peak occurred later, i.e. 1-3 hours after flood tide. At PSA (N-ENTRANCE), vertical sediment concentration gradients measured up to 2 mg/l/m at spring tide, whereas P&O1 (S-ENTRANCE) was characterised with values of up to approximately 1.2 mg/l/m. Inside the dock, positive sediment concentration gradients prevailed and measured around 2 mg/l/m. These vertical gradients are very small nonetheless considering the measurement accuracy of the instruments (OBS 3A) and should therefore be interpreted with caution.

5.1.3. Comparison with previous measurements

Because this measurement campaign occurred in autumn, its outcome is to be expected in between the previous summer and winter campaigns. In comparison to the February-March 2007 measurement campaign (see IMDC (2007j), Appendices), the range of salinities and temperatures were very similar for the winter months of the actual measurements. The base suspended sediment concentrations were larger and measured up to 150 mg/l SSC compared to the 50 mg/l as observed in this research period. The peaks of solids concentration were also less pronounced than before, i.e. peaks of up to 1000 mg/l did not occur here.

With respect to the averaged tidal cycles, most phenomena were in accordance with the summer 2007 campaign. However, discrepancies exist for the following:

- temperatures were lower in comparison to the summer measurement campaign;
- salinity magnitude showed the same range as the summer measurements. During spring tides, the autumn peak salinities were larger in comparison with the summer values;
- a maximum suspended solids concentration after flood tide was absent during summer time for the bottom locations S-BACK and S-ENTRANCE. Also here, the autumn peak concentrations were larger when compared to the summer values.

With respect to the parameter gradients, many similarities can be seen between the different measurement campaigns. With respect to the parameters' magnitudes, the autumn measurements are ranged between the summer and winter 2007 measurements. The trends are all similar but some distinct differences exist:

<u>Winter 2007:</u>

- In comparison to the autumn measurements, the suspended solids concentration and salinity peak cross-dock gradients were pronounced more and less respectively;
- In comparison to the autumn measurements, the suspended solids concentration and temperature peak cross-dock gradients were more pronounced, but very limited;
- For all measurement locations, the peak solids concentrations and temperature vertical gradients were more pronounced when compared with the autumn measurement campaign.

<u>Summer 2007:</u>

- Bottom salinity peak cross-dock gradients were more pronounced when compared to the actual measurements. The same counted for temperature.

5.2. Near bed continuous monitoring 19/4/2006 – 23/5/2006

5.2.1. CDW frame data

Average concentrations per tidal phase in layers of 10 cm, measured by the ARGUS, vary from 0.2 to 388 mg/l. Higher concentrations occur in the lowest centimetres of the water column, but concentrations are generally alike over the whole length of the measuring rod. During flood, suspended sediment concentrations are higher than those measured during ebb.

It appears from the recorded data that the bottom is situated about 62 and 57 cm below the Altus sensor for the first and second deployment respectively (see week series in APPENDIX C). During the third deployment, the Altus sensor went out of range, which means that the distance between the sensor and the bottom was more than 75 cm. For the last deployment, it appears that de bottom is situated about 37 cm below the Altus sensor. After every high water disturbance of the bottom can be seen. During the first two deployments the same is seen, but not as much pronounced. Concerning the difference of the bottom elevation, this can vary a little depending on the deployment. Furthermore, some datasheets show a slight sedimentation after every high water.

Average velocities per tidal phase (ebb/flood) at 1 m above the bed vary from 0.2 up to 0.5 m/s; at 0.1 m above the bed, they vary from 0.1 up to 0.5 m/s (Figure 5-1). Average SS concentrations as measured by the RCM-9 turbidity sensor (top) are very similar to those measured by the lower sensor (Figure 5-2). This is in line with the measurements of the ARGUS.

When comparing the SS concentration measured by these sensors to the ARGUS sensors at the same height, it seems that the ARGUS gives lower values (2x and 2.5x lower for the upper and lower sensor respectively, see Figure 5-3 and Figure 5-4). However, it should be kept in mind that for the lower sensors the Valeport is mounted to the frame at a lower level than the lowest sensor of the ARGUS. Previous measurements showed the same trend. Post-calibration of the ARGUS is hard to do, but it is good to keep this conclusion in mind when analysing the ARGUS-data.

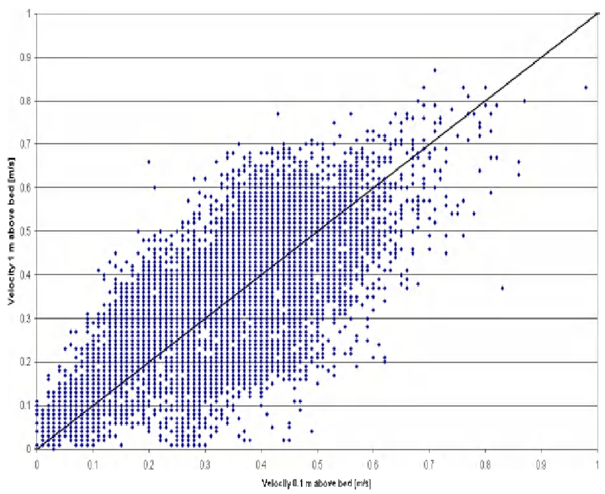

Figure 5-1: Near bed current velocities (26/09/2007 – 05/12/2007) CDW frame

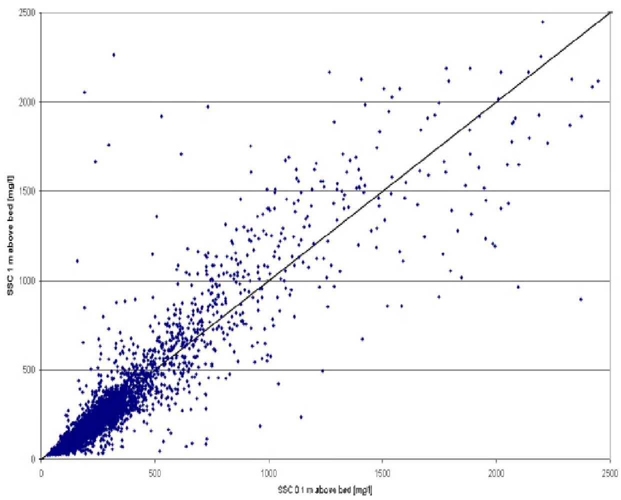

Figure 5-2: Near bed SS concentrations (26/09/2007 – 05/12/2007) CDW frame

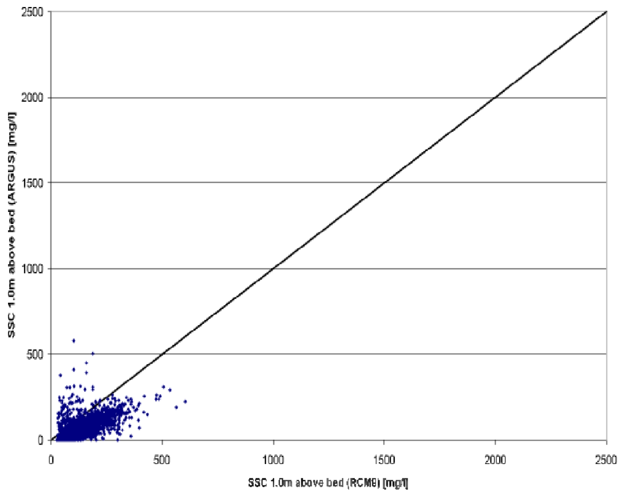

Figure 5-3: ARGUS vs. Aanderaa RCM9 - 1m above bed (26/09/2007 – 05/12/2007) CDW Frame

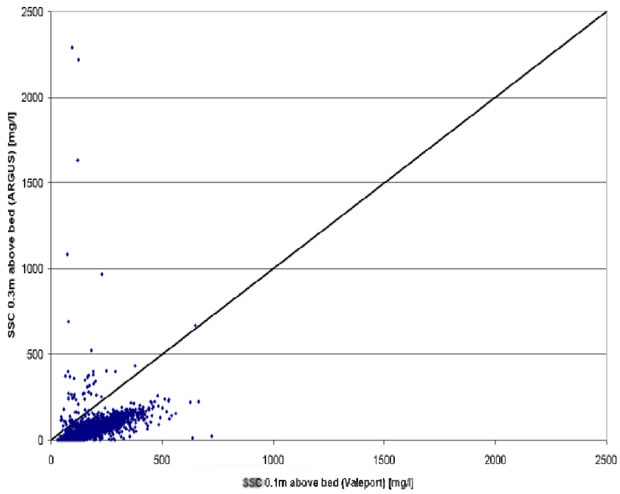

Figure 5-4: ARGUS vs. Valeport - 0.3m resp. 0.1m above bed (26/09/2007 – 05/12/2007) CDW frame

5.2.2. Sill frame data

Average concentrations per tidal phase in layers of 10 cm, measured by the ARGUS vary from 11 to 935 mg/l. The highest concentrations occur in the lowest centimetres of the water column as expected. During flood, suspended sediment concentrations are higher than those measured during ebb. In the weekseries (APPENDIX C) there can be seen that the lowest sensors constantly measured high values. During a previous campaign the same was noticed, which indicates that these sensors probably are broken. This is also the reason why not the lowest sensor was taken to compare the measurements of the ARGUS with those of the Valeport for the Sill frame (see §4.3.3).

It appears from the recorded data that the bottom is situated between 25 cm and 48 cm below the Altus sensor. Depending on the deployment, this can vary a little (see weekseries APPENDIX C). Furthermore, it seems that some sedimentation occurs.

Average velocities per tidal phase (ebb/flood) at 1 m above the bed vary from 0.1 up to 0.3 m/s; at 0.1 m above the bed, they vary from 0.1 up to 0.2 m/s (Figure 5-5). Average SS concentrations measured by the RCM-9 turbidity sensor are smaller than those measured by the lower sensor (Valeport MIDAS) (Figure 5-6). When comparing the Altus sensors to the ARGUS at the same height, it seems that the ARGUS gives 2x lower values than the Valeport (see Figure 5-8). However, it should be kept in mind that the Valeport is mounted to the frame at a lower level than the lowest sensor of the ARGUS.

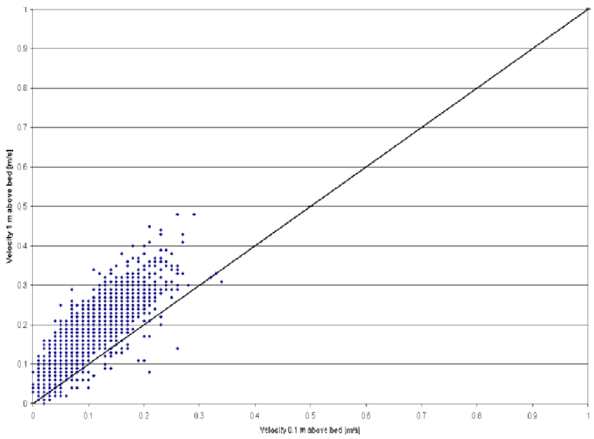

Figure 5-5: Near bed current velocities (31/10/2007 – 14/11/2007) Sill frame

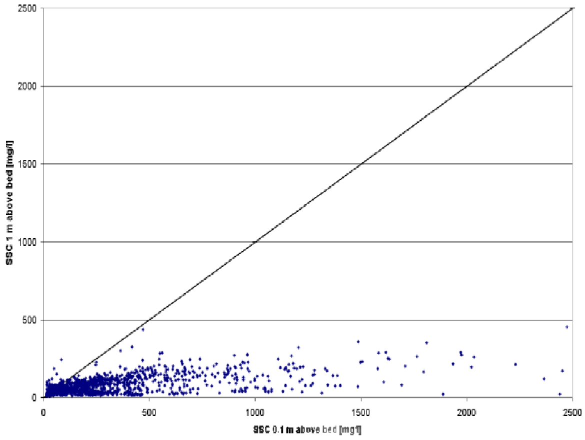

Figure 5-6: Near bed SS concentrations (31/10/2007 – 14/11/2007) Sill frame

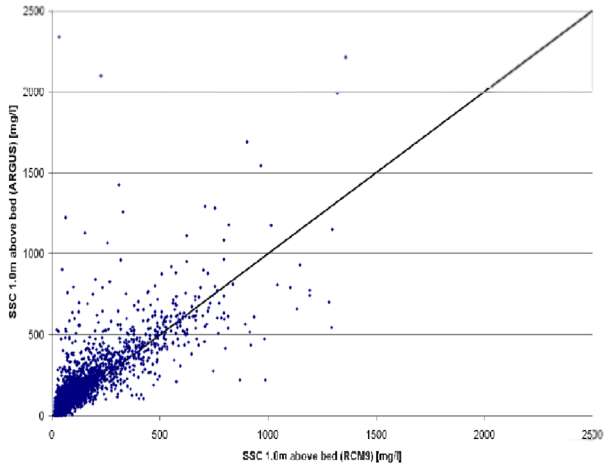

Figure 5-7: ARGUS vs. Aanderaa RCM9 - 1m above bed Sill Frame

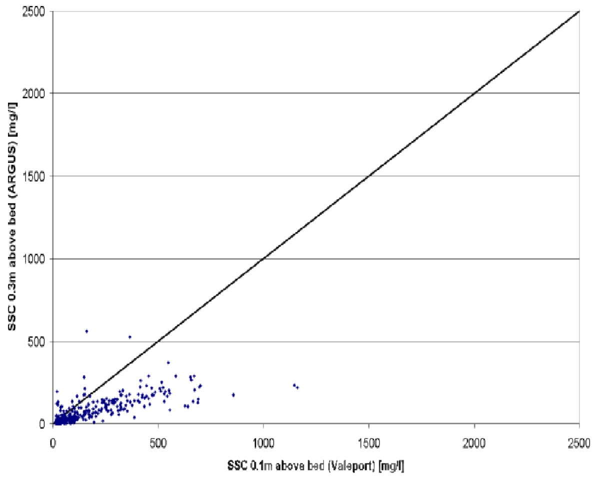

Figure 5-8: ARGUS vs. Valeport - 0.3m resp. 0.1m above bed Sill frame

5.2.3. Comparison with previous measurements

Previous measurements at the same locations were executed as part of the HCBS project (17/02/2005 – 03/03/2005, 14/03/2006 – 05/04/2006) and as part of the first part of this project (spring: 19/04/2006 – 23/05/2006; summer: 18/07/2006 – 11/10/2006; winter: 09/02/2007 – 18/04/2007). The frame measurements of this autumn measurement campaign will be compared to the summer measurements of 2006 since these measurements were more or less executed during the same time of the year. Comparison will be made for a period of comparable tidal amplitudes, i.e. 11/08/2006 – 18/08/2006 and 26/10/2007 – 02/11/2007.

Table 5-1 gives an overview of the abbreviations used in the figures for the comparison of the measurement campaigns of the Deurganckdok project. Also the measurement period is given.

Table 5-1: Measurement period and abbreviations used for the comparison of the frame measurements of the Deurganckdok project

Measurement campaign	***Period***	***Abbreviation***
Summer measurements 2006	18/07/2006 – 11/10/2006	DGD summer
Autumn measurements 2007	26/09/2007 – 05/12/2007	DGD autumn

5.2.3.1. CDW frame

Comparing the average concentration per tidal phase in layers of 10 cm as measured by the ARGUS, for a period of comparable tidal amplitudes, it is observed that tidal changes are similar (larger value near high water than near low water). Generally, slightly higher concentrations were measured during the summer measurements. Figure 5-9 gives a comparison of the ARGUS sensors 67 to 76 (sensor 1 = uppermost sensor). Notice that during the measurements the ARGUS was mounted to the frame at a higher position during the autumn measurements, which can explain the lower measured concentrations (11 cm higher during autumn measurements).

The bottom variations measured by the CDW frame during a period of comparable tidal amplitudes are very alike (Figure 5-10). Average echosounder – bottom distances seem to be larger for the autumn measurements. Notice that, during the autumn measurements, the Altus was mounted to the frame about 7 cm higher than during the summer measurements. This means that the difference between the distances measured during autumn and those measured during summer is about 10 cm. This may indicate that more sedimentation occurred during summer, but also a slight different location can explain the difference. As mentioned before, it is difficult to reposition the frame at exactly the same location.

Comparing average suspended sediment concentrations measured at 1m above the bed (RCM9), during a period of comparable tidal amplitudes, it seems that slightly higher values are measured during this autumn measurement campaign (Figure 5-11). Further the same trend can be noticed. Average velocities 1m above the bed are more or less the same as during the summer measurement campaign (Figure 5-12). No data of the suspended sediment concentrations and velocities measured 0.1m above the bed (Valeport) were obtained during the summer measurements for the considered period due to problems with the Valeport (IMDC 2006n). During all measurements, RCM9 was mounted to the frame at nearly the same height.

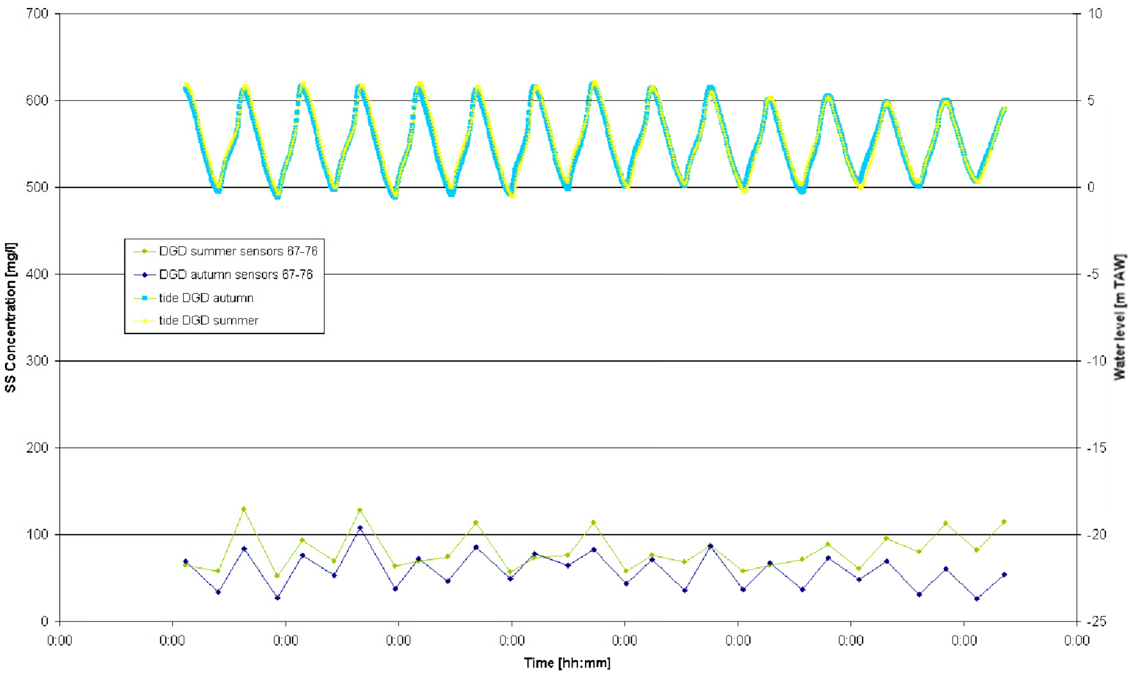

Figure 5-9: Average concentration per tidal phase for ARGUS sensors 67-76 (DGD autumn vs.DGD summer) [CDW frame]

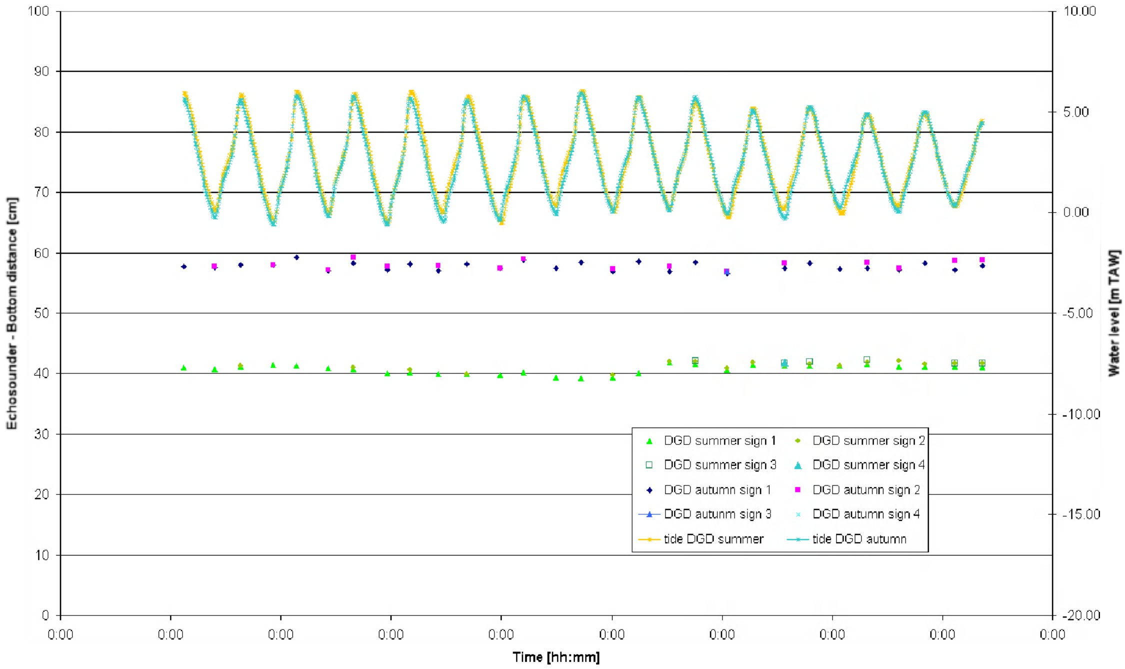

Figure 5-10: Echosounder - bottom variation for each HW/LW (DGD autumn vs. DGD summer) [CDW frame]

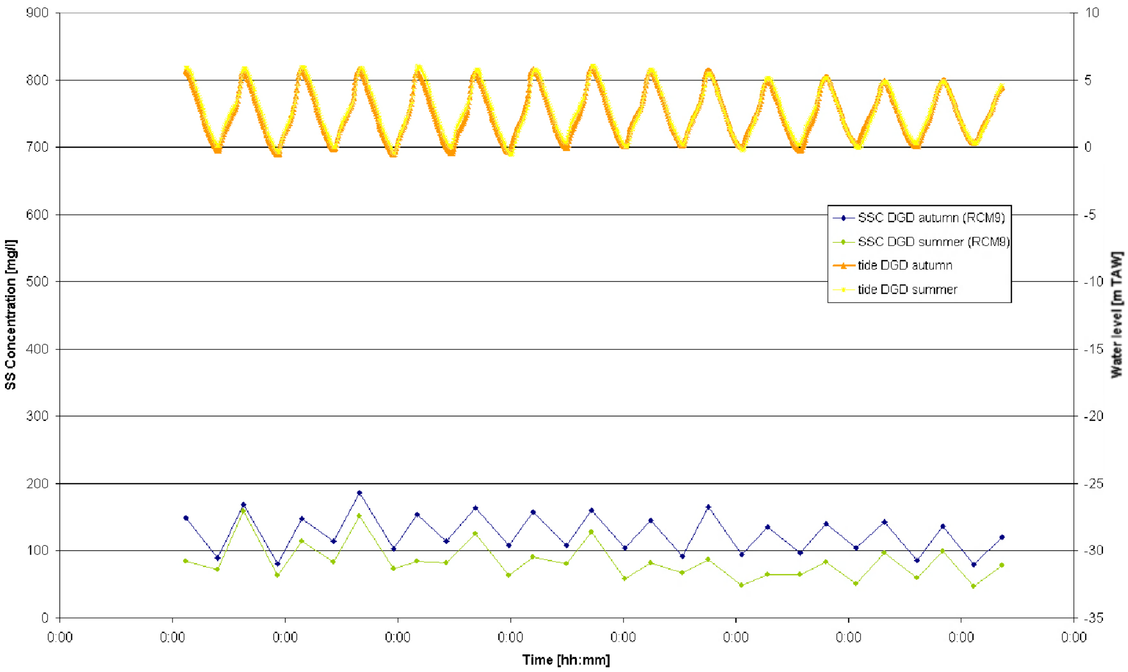

Figure 5-11: Average concentration per tidal phase 1.0m above the bed (DGD autumn vs. DGD summer) [CDW frame]

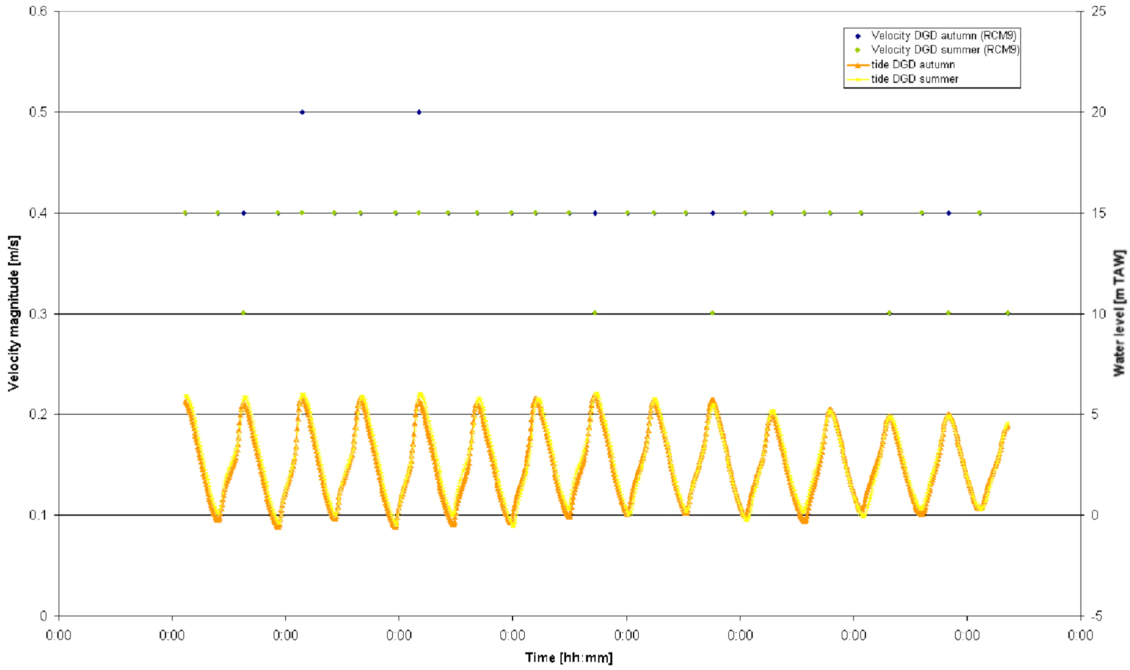

Figure 5-12: Average velocity magnitude per tidal phase 1.0m above the bed (DGD autumn vs. DGD summer) [CDW frame]

5.2.3.2. Sill frame

Concerning the Sill frame, a different period of comparable tidal amplitudes is considered (28/07/2006 – 02/08/2006 & 13/10/2007 – 18/10/2007).

Comparing the average SS concentration per tidal phase in layers of 10 cm measured by the ARGUS, for a period of comparable tidal amplitudes, it is seen that during summer higher concentrations were measured. This is due to bio-fouling on the instrument during the summer measurement campaign (IMDC, 2006n). Hence, a good comparison is not possible. Nevertheless Figure 5-13 gives a comparison of the ARGUS sensors 67 to 76 (sensor 1 = uppermost sensor).

Figure 5-14 gives the summer and autumn echosounder measurements of the bottom variations for comparable tidal amplitudes. During both measurements the Altus was mounted to the frame 7 cm higher during autumn measurements. So, the distance between the bottom and the sensor would be almost the same during the considered period.

When comparing average suspended sediment concentrations measured 1 m above the bed (RCM9), during a period of comparable tidal amplitudes, both measurements seem similar (Figure 5-15). Variations are also similar but small. Average velocities 1m above the bed are similar during winter and summer measurements (Figure 5-16). Also this instrument was mounted at almost the same height during the measurement campaigns

During the period of comparable tidal amplitudes, the Valeport MIDAS mounted on the Sill frame obtained no data during the autumn measurements.

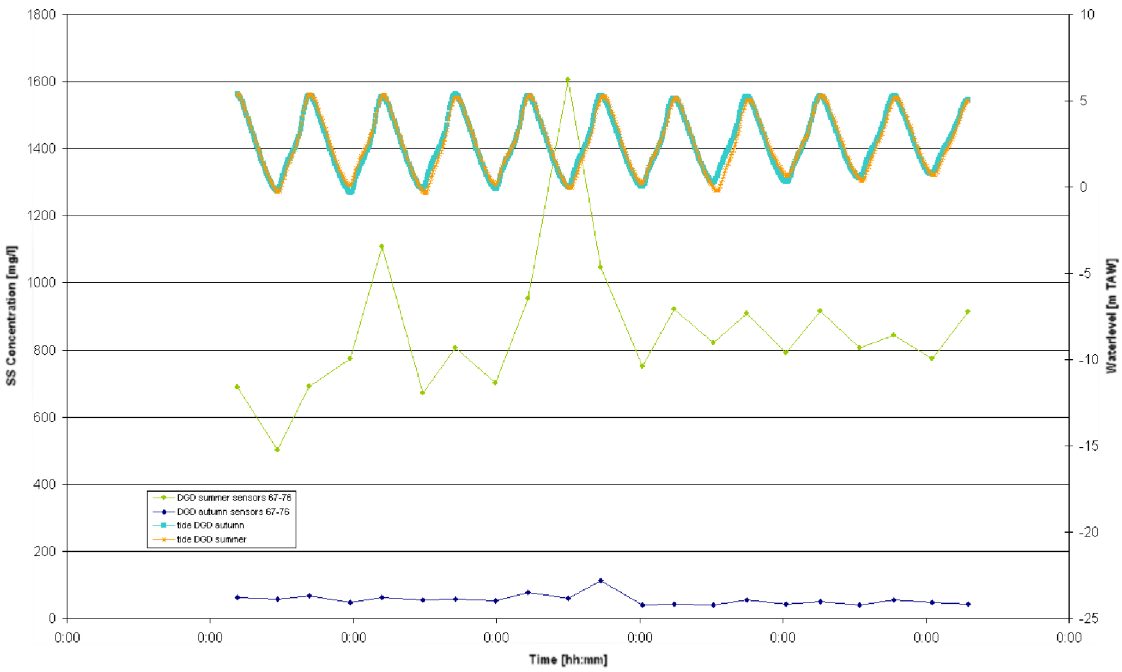

Figure 5-13: Average concentration per tidal phase for ARGUS sensors 67-76 (DGD autumn vs.DGD summer) [Sill frame]

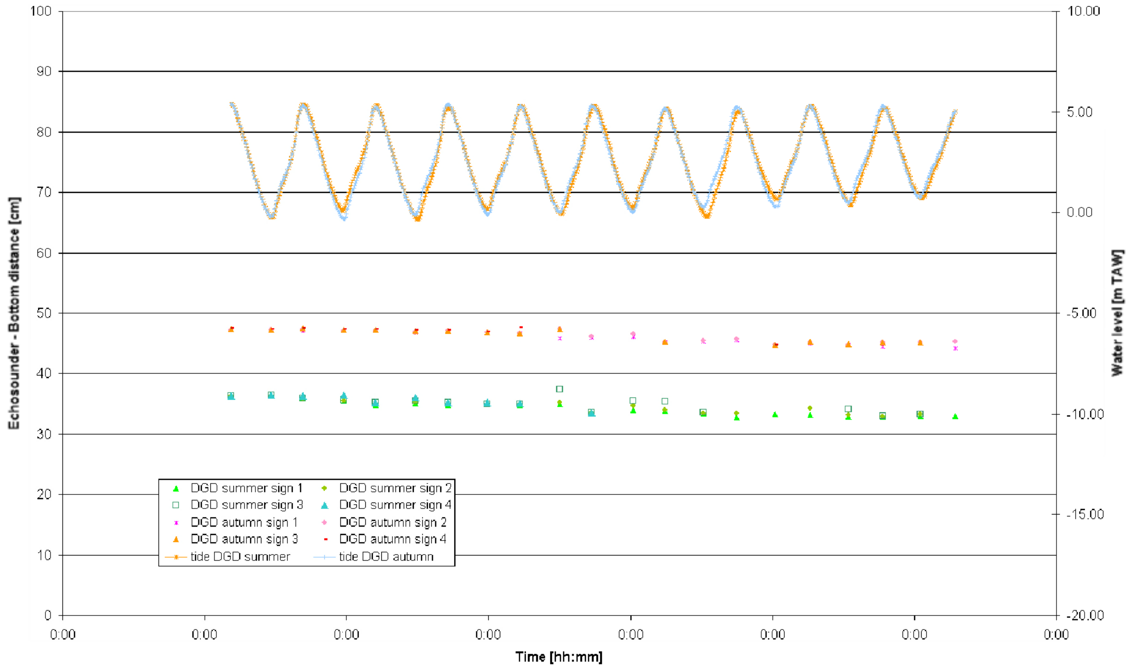

Figure 5-14: Echosounder - bottom variation for each HW/LW (DGD autumn vs. DGD summer) [Sill frame]

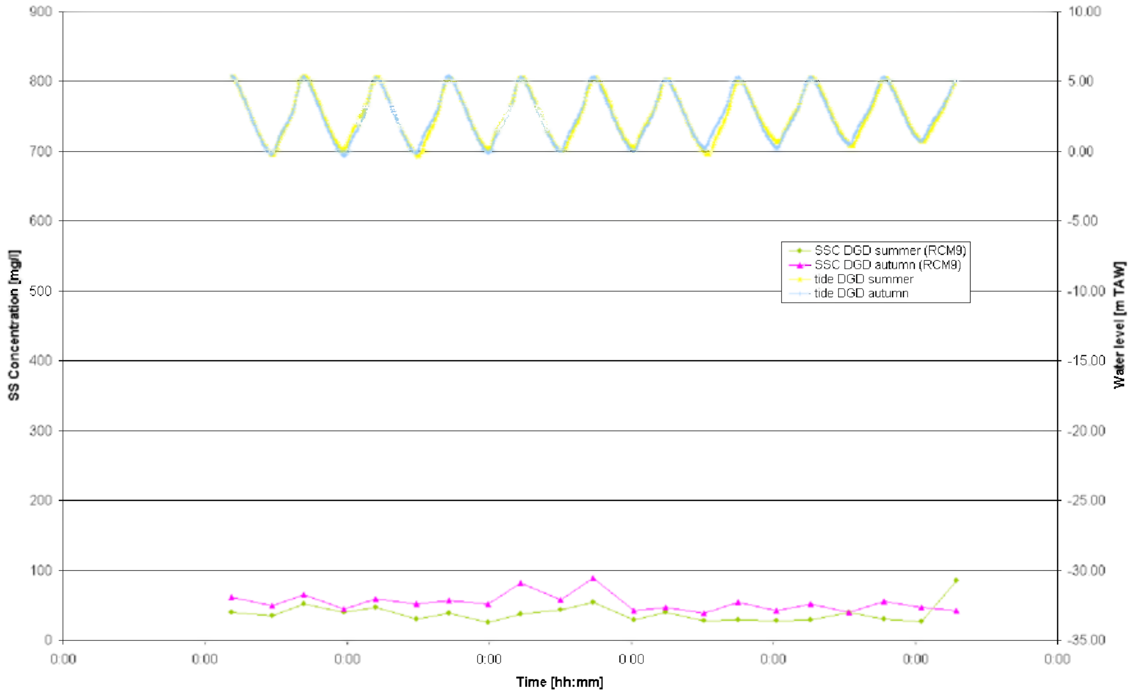

Figure 5-15: Average concentration per tidal phase 1.0m above the bed (DGD autumn vs. DGD summer) [Sill frame]

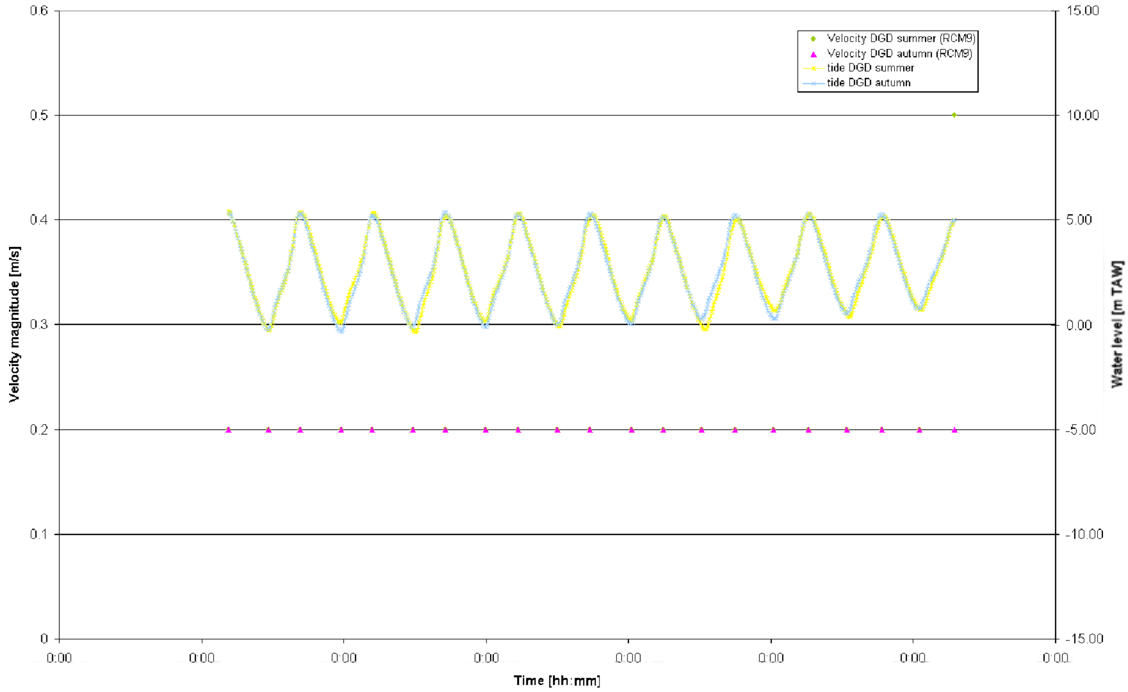

Figure 5-16: Average velocity magnitude per tidal phase 1.0m above the bed (DGD autumn vs. DGD summer) [Sill frame]

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IMDC (2005e). Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 2.4: Schelle 17/02/2005, I/RA/11265/05.0012/MSA.

IMDC (2005f). Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 2.5: Deurganckdok 16/02/2005, I/RA/11265/05.013/MSA.

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APPENDIX A.

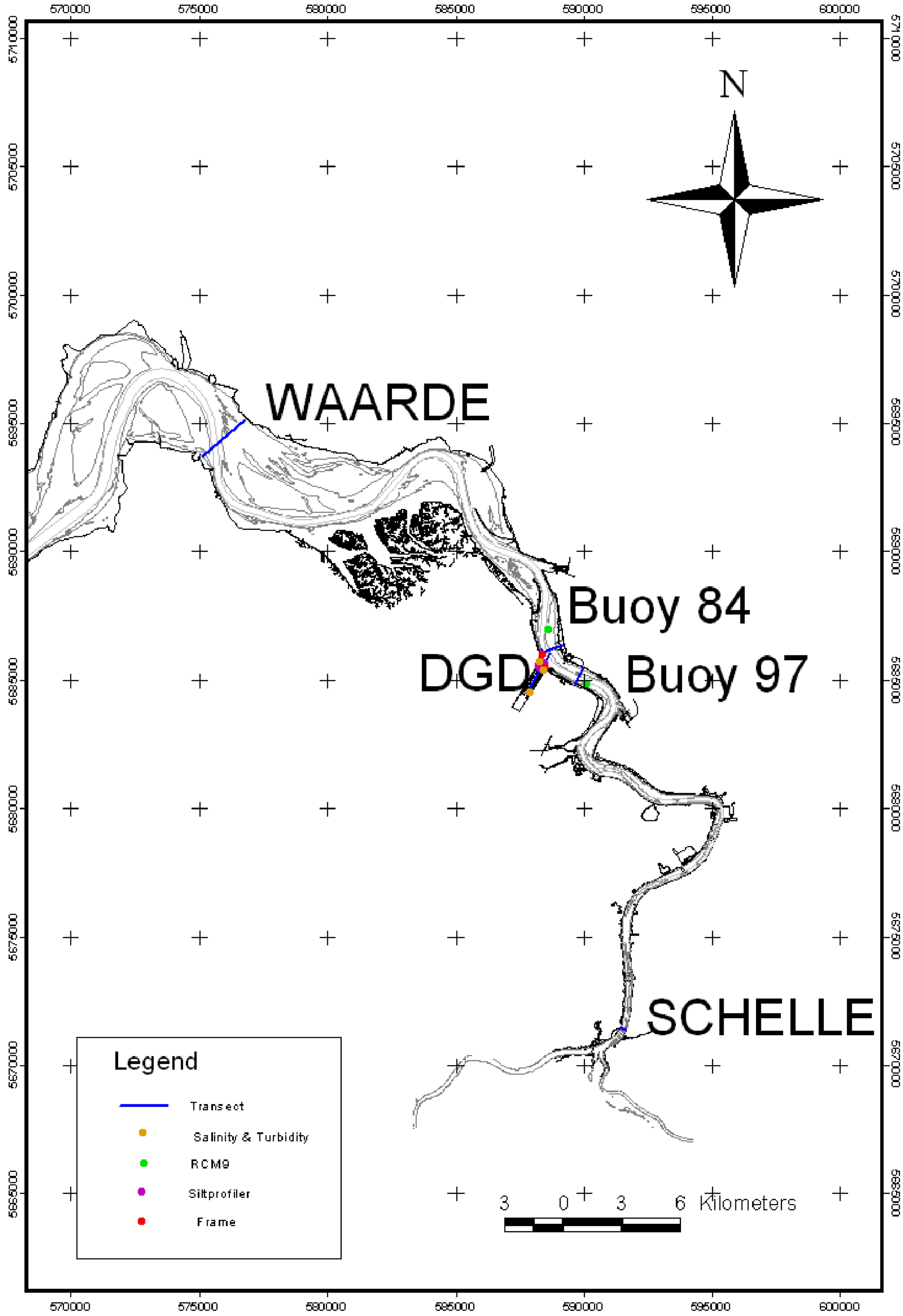
OVERVIEW OF MEASUREMENTS

A.1 Overview of the measurement locations for the whole HCBS 2 measurement campaign & DGD measurement campaign (1 & 2)

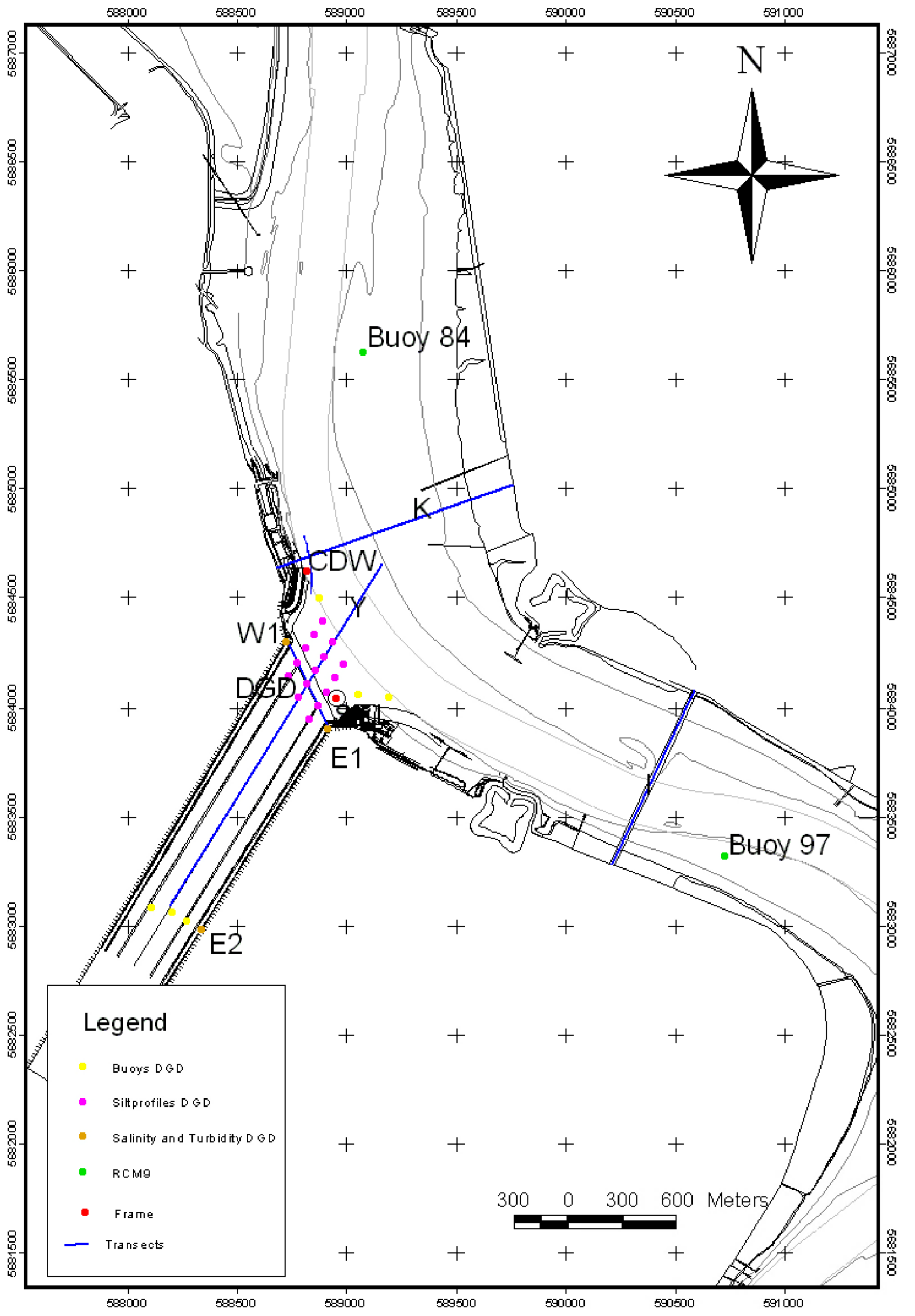
Through tide measurements: Transects					
Location	*Easting (UTM ED 50)*		*Northing (UTM ED 50)*		*Period*
Deurganckdok (in dock)	*Left Bank*	*Right Bank*	*Left Bank*	*Right Bank*	21/03/2006 & 26/09/2006
(transect Y)	*589059*	591298	*5684948*	*5683077*	
Liefkenshoek	*Left Bank*	*Right Bank*	*Left Bank*	*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	
Waarde	*Left Bank*	*Right Bank*	*Left Bank*	*Right Bank*	23/03/2006 & 28/09/2006
(transect W)	573541	571318	5696848	5694933	
Deurganckdok (in dock)	*Left Bank*	*Right Bank*	*Left Bank*	*Right Bank*	21/03/2006 & 26/09/2006
(transect au-bu)	588561	588682	5684369	5684113	
Deurganckdok (in dock)	*Left Bank*	*Right Bank*	*Left Bank*	*Right Bank*	24/10/2007
(transect ad-bd)	588623	588745	5684470	5684214	
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 & 23/10/2007
Location 2: Xb	588596		5684411		
Location 3: Xc	588643		5684486		

Through tide measurements: Siltprofiler gauging points			
Location	*Easting (UTM ED 50)*	*Northing (UTM ED 50)*	*Period*
Location 4: Xd	588690	5684562	21/03/2006 & 26/09/2006 & 23/10/2007
Location 5: Xe	588737	5684638	
Location 6: Ya	588606	5684217	
Location 7: Yb	588653	5684293	
Location 8: Yc	588700	5684368	
Location 9: Yd	588747	5684444	
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
Deurganckdok Sill	588805	5684170	09/02/2007 – 18/04/2007
Deurganckdok CDW	588573	5684677	09/02/2007 – 05/12/2007
Deurganckdok Sill	588697	5683941	10/10/2007 – 28/11/2007
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

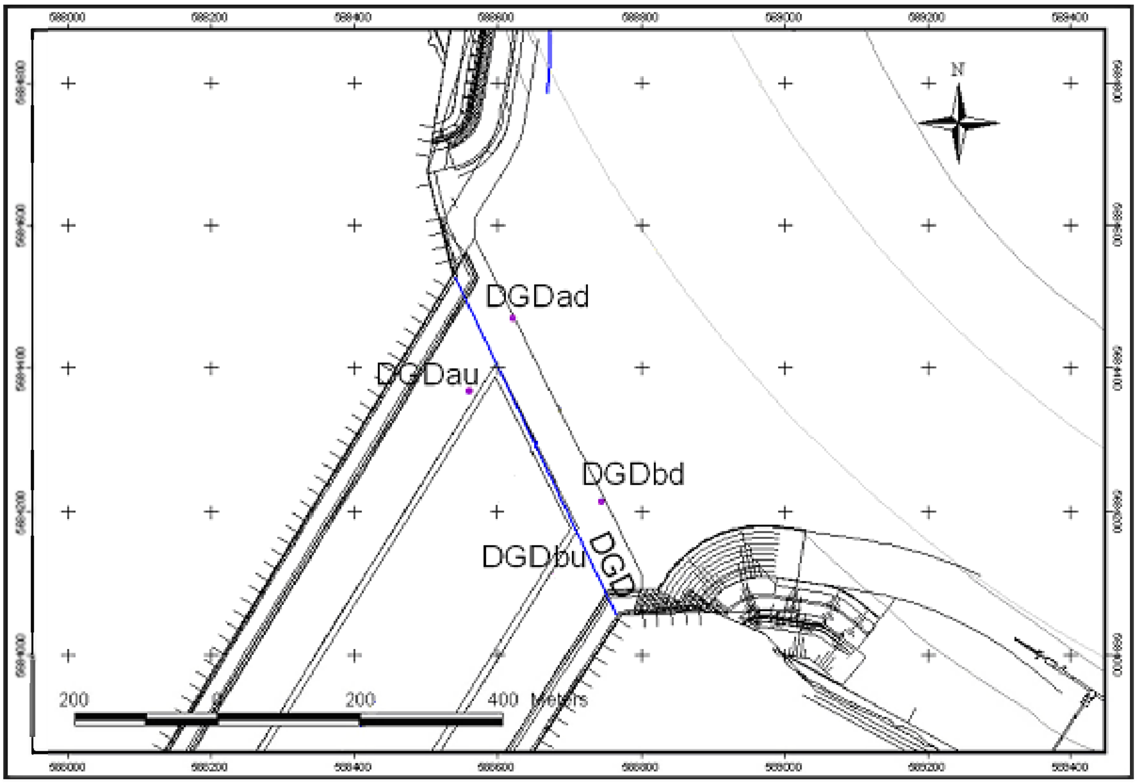
PSA	588536	5684523	17/03/2006 – 28/04/2006
P&O 1	588074	5682942	20/07/2006 – 12/10/2006
P&O 2	588767	5684045	20/07/2006 – 12/10/2006
PSA	588536	5684523	20/07/2006 – 12/10/2006
P&O 1	588074	5682942	12/02/2007 – 27/03/2006
P&O 2	588767	5684045	12/02/2007 – 27/03/2006
PSA	588536	5684523	12/02/2007 – 27/03/2006
P&O 1	588074	5682942	18/09/2007 – 18/12/2006
P&O 2	588767	5684045	18/09/2007 – 18/12/2006
PSA	588536	5684523	18/09/2007 – 18/12/2006
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



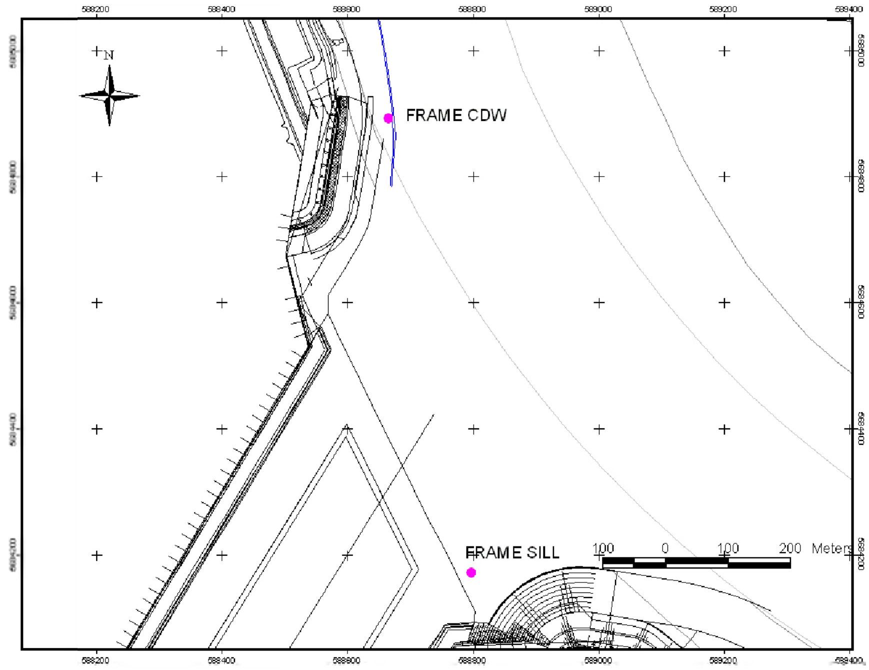
Overview of the measurement locations
21/03/2006 – 23/03/2006 & 26/09/2006 – 28/09/2006



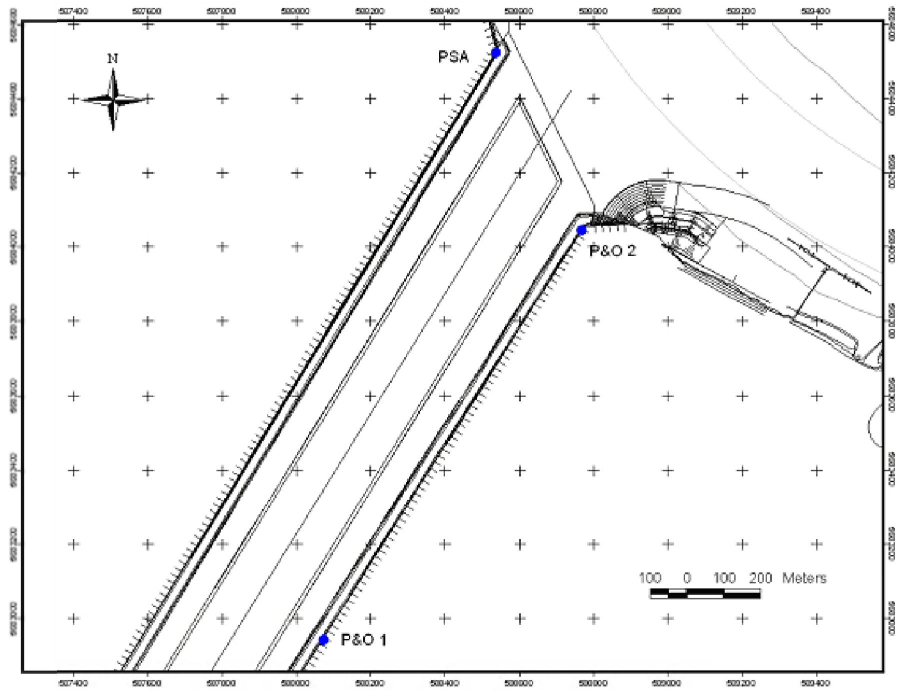
Overview of the measurement locations in Deurganckdok
21/03/2006 – 23/03/2006 & 26/09/2006 – 28/09/2006 & 23/10/2007



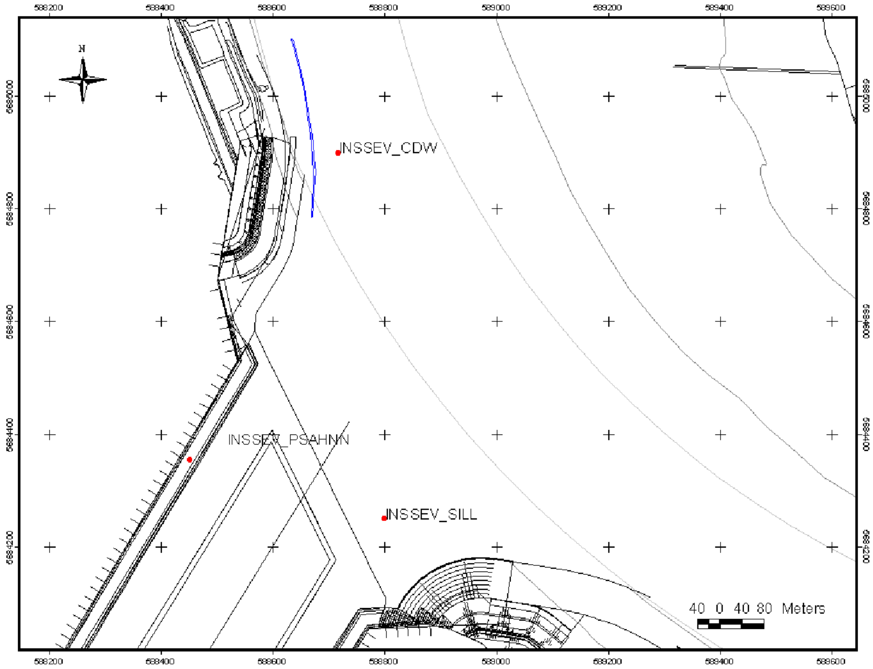
Overview measurement locations in Deurganckdok 24/10/07



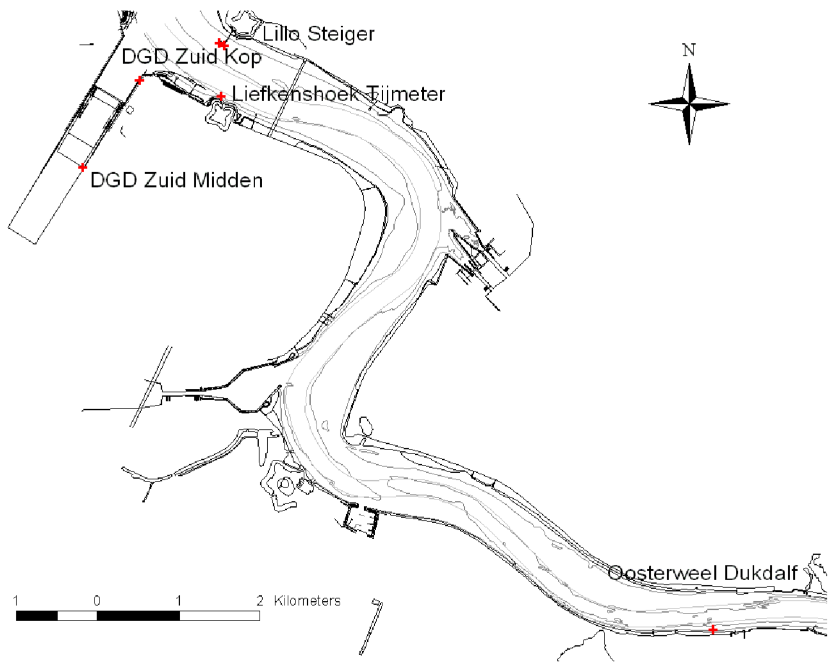
Near bed continuous monitoring
14/03/2006 – 05/04/2006 & 19/04/2006 – 23/05/2006 & 18/07/2006 – 11/10/2006 & 09/02/2007 – 18/04/2007



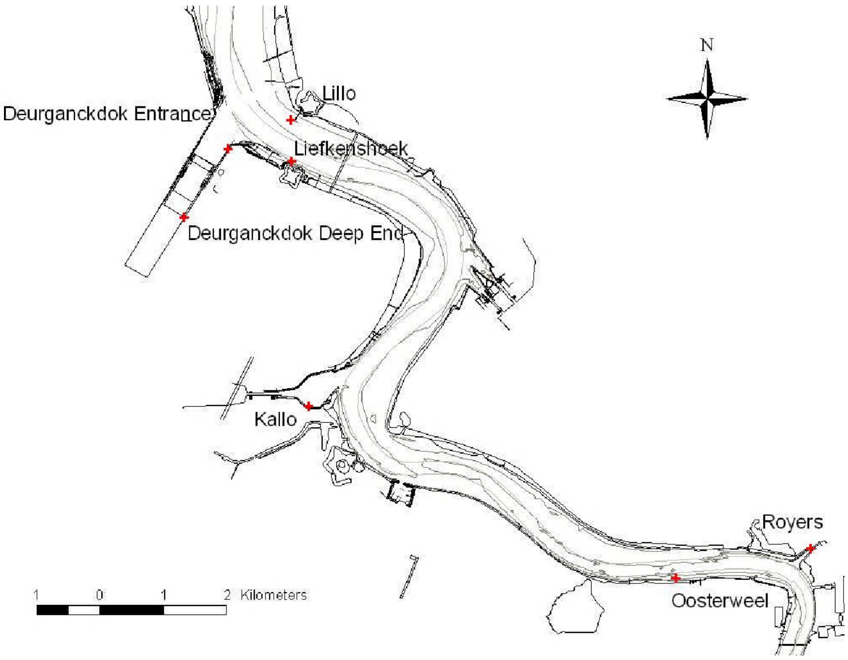
Long term salt-silt measurements in Deurganckdok
17/03/2006 – 28/04/2006 & 20/07/2006 – 12/10/2006 & 12/02/2007 – 27/03/2007



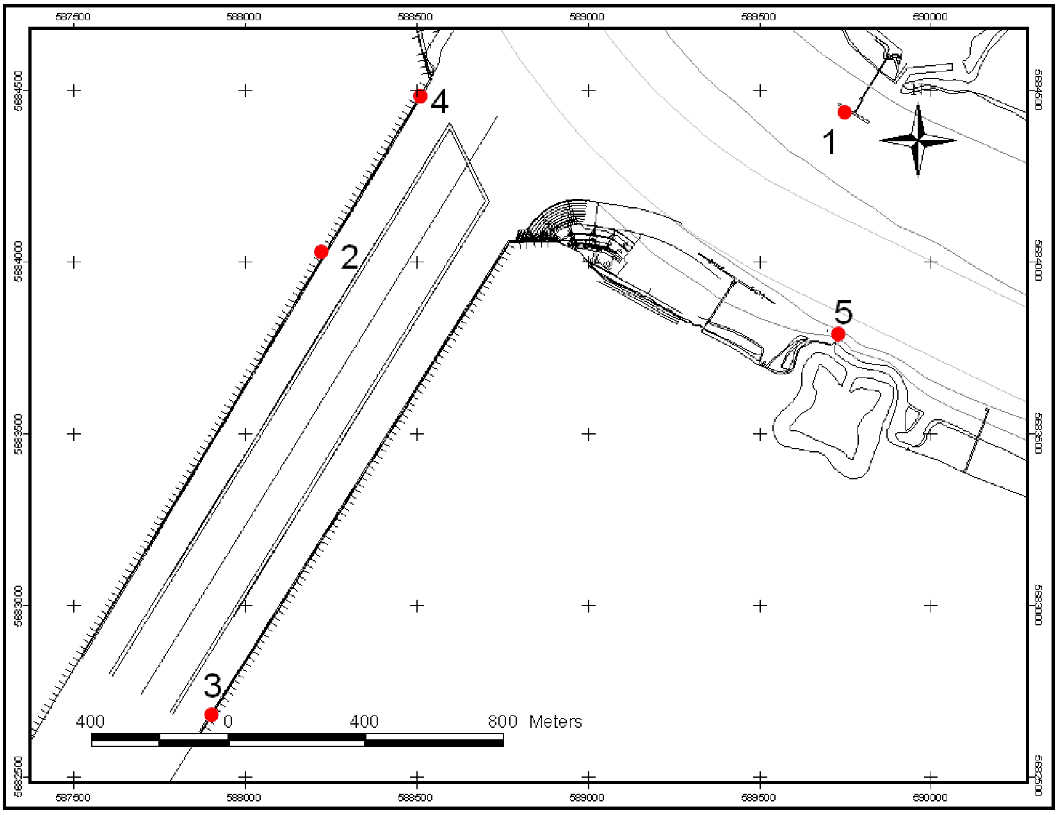
Settling velocity (INSSEV) 05/09/2006 – 07/09/2006



Calibration measurements - 15/03/2006 & 14/04/2006



Calibration measurements - 23/06/2006 & 18/09/2006



Calibration measurements 10/09/2007

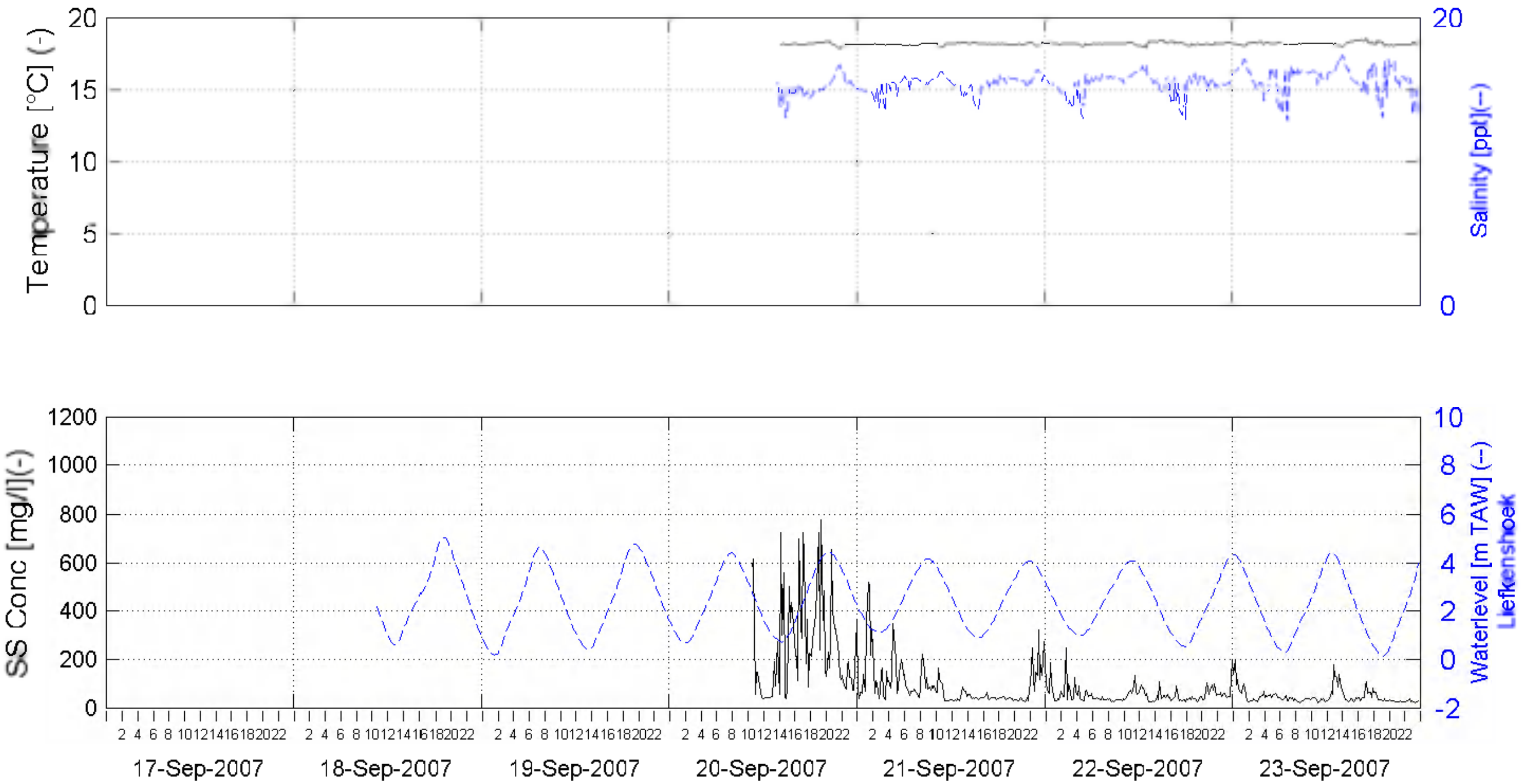
APPENDIX B.

WEEKSERIES ZOUT- SLIB METINGEN DGD

B.1 PSA (N-ENTRANCE)

11283 - Long-term monitoring DGD - Autumn 2007

Week 38 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:
N-ENTRANCE BOTTOM 5.1m above bottom (-11.9m TAW)

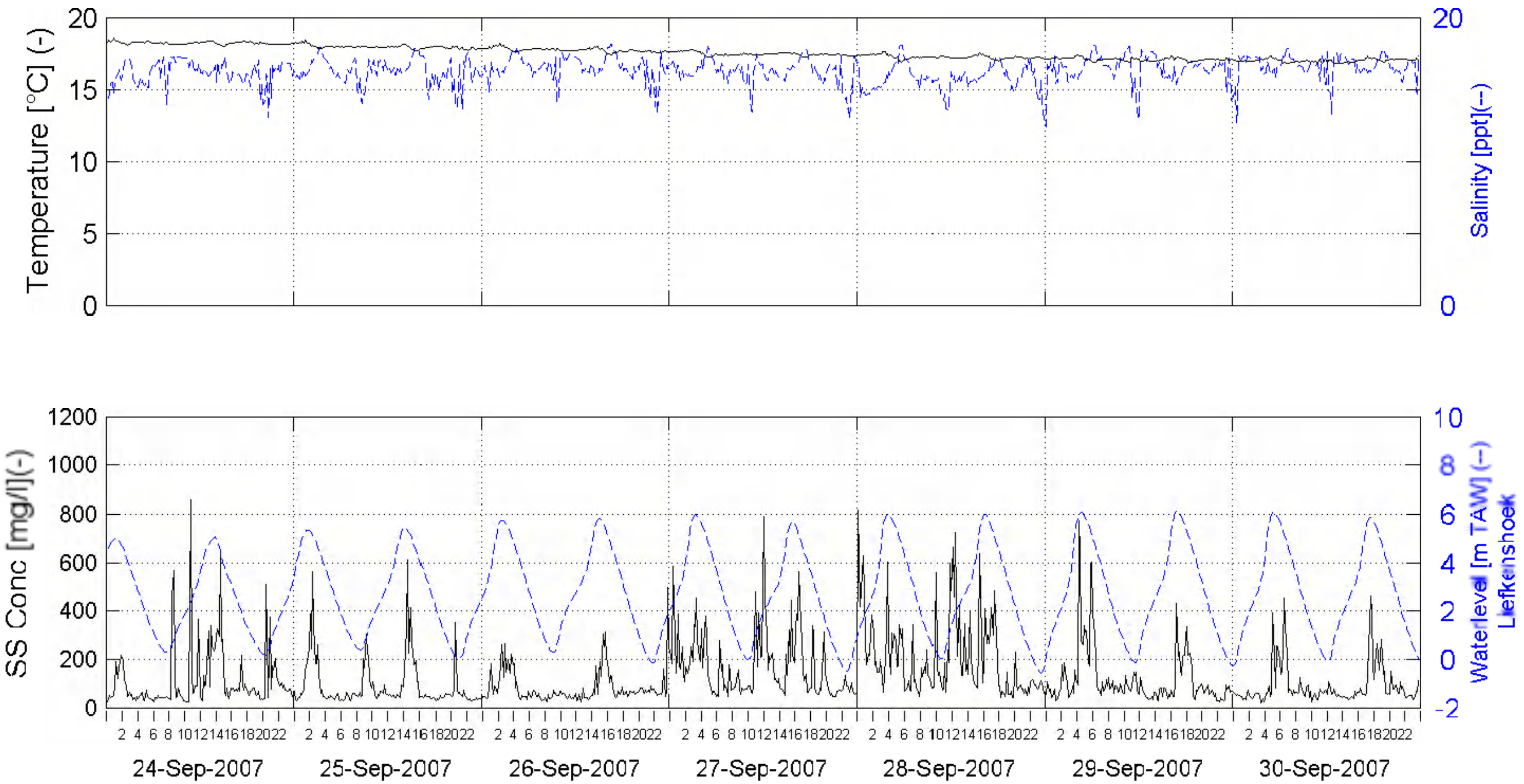
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 39 - 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:

N-ENTRANCE BOTTOM 5.1m above bottom (-11.9m TAW)

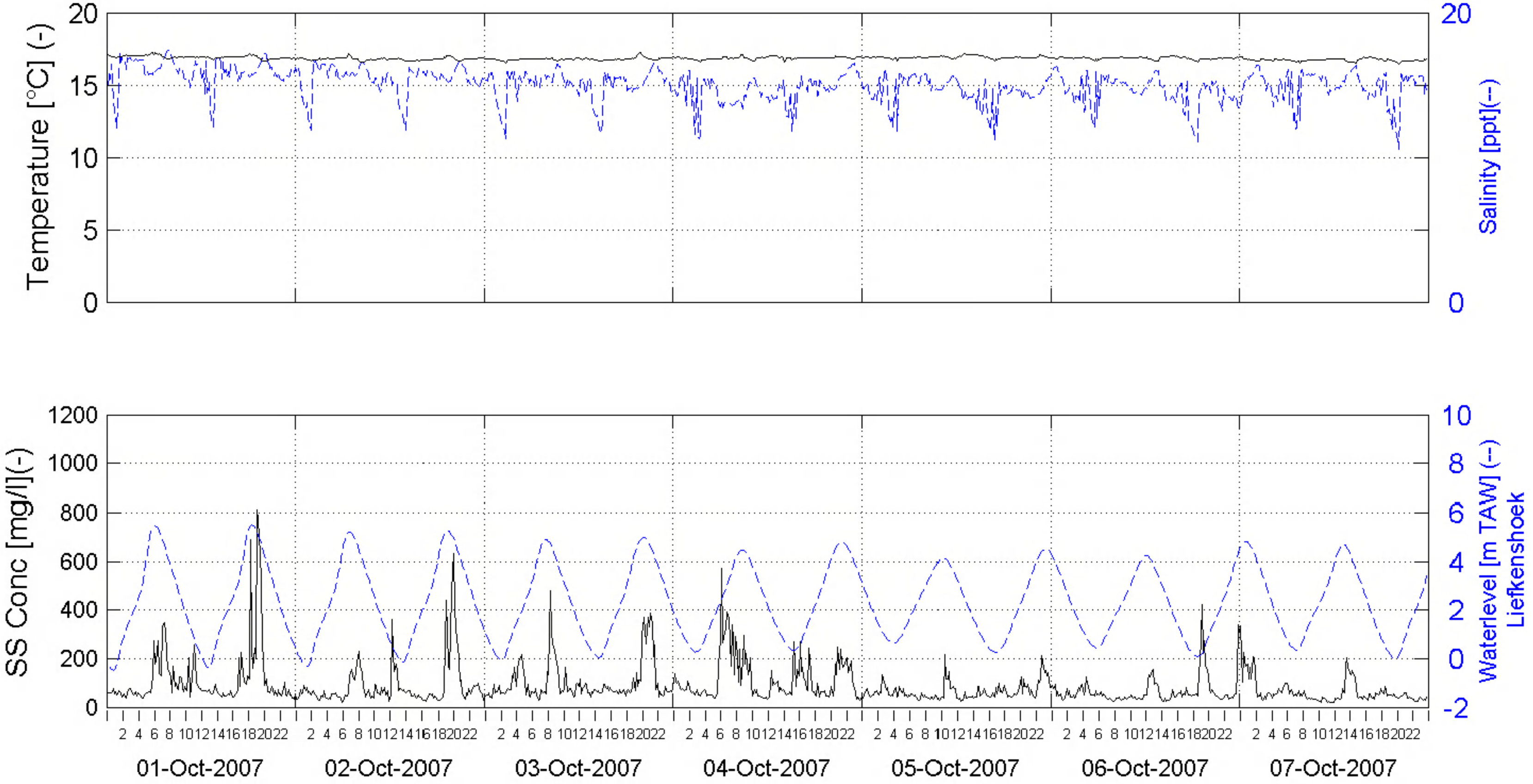
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 40 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Processed by:

In Association with:

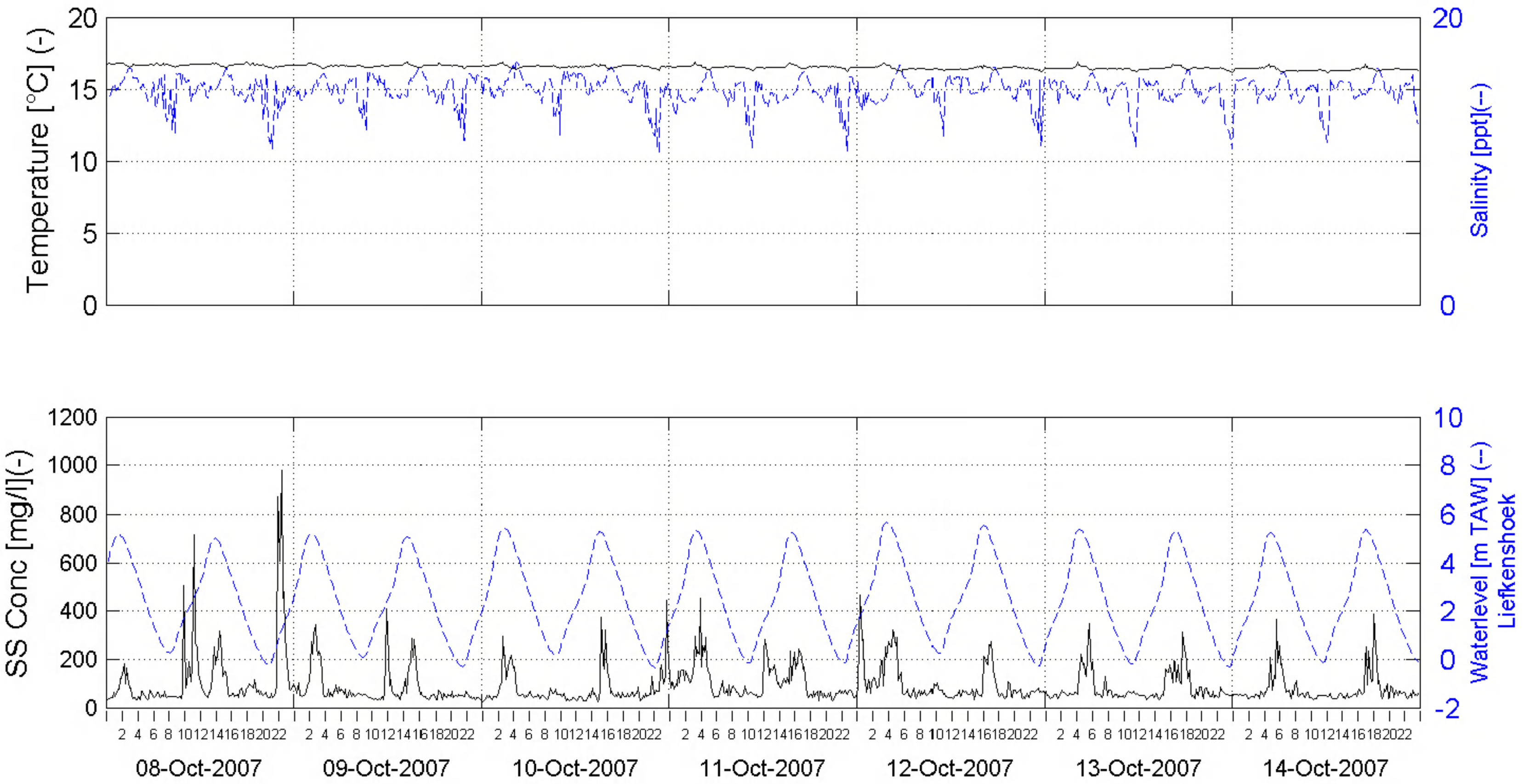
Location:

N-ENTRANCE BOTTOM 5.1m above bottom (-11.9m TAW)

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 41 - 2007



Week series of Salinity, Temperature, SS Concentration and Tide

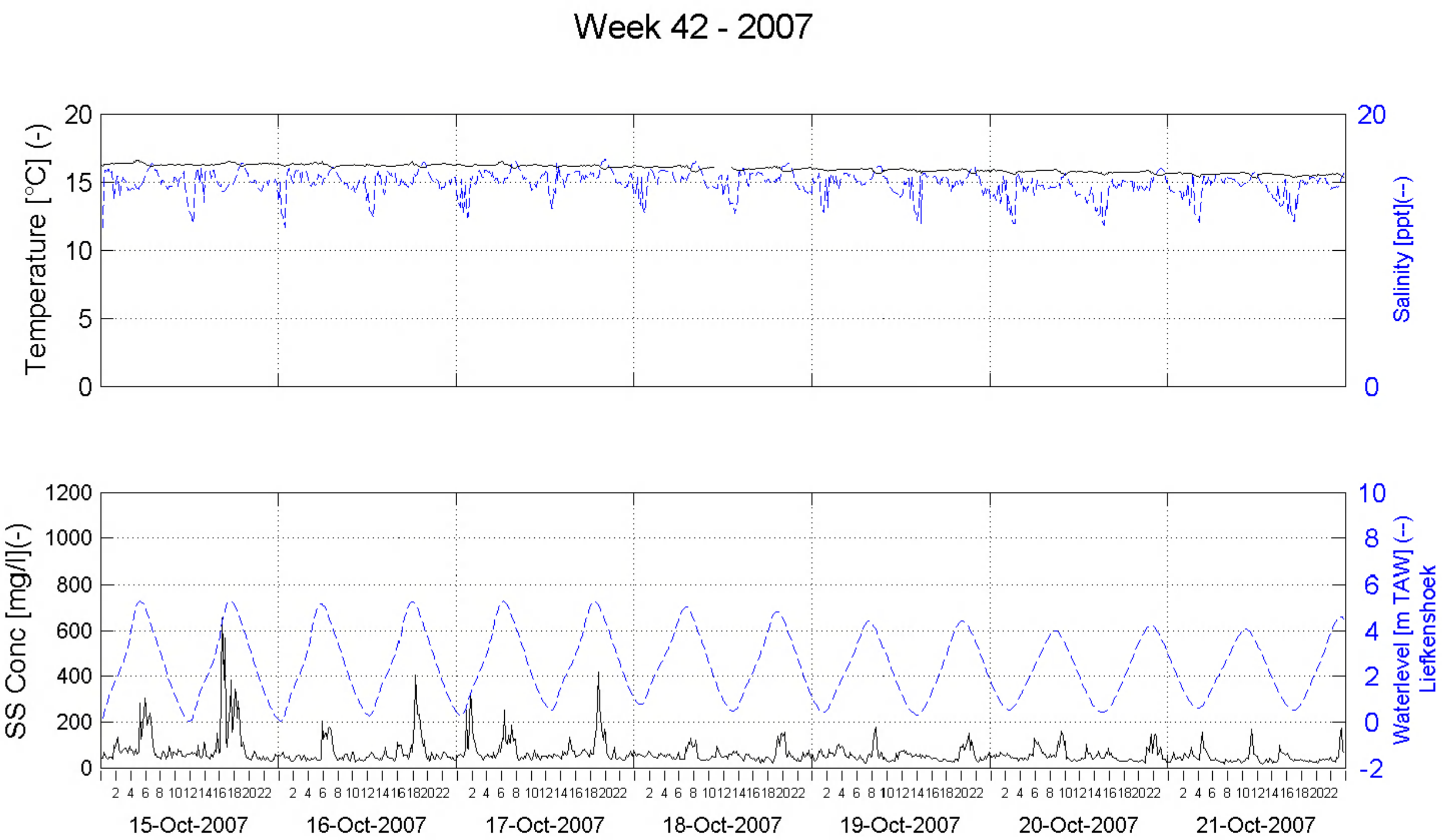
Location:
N-ENTRANCE BOTTOM 5.1m above bottom (-11.9m TAW)

Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:
N-ENTRANCE BOTTOM 5.1m above bottom (-11.9m TAW)

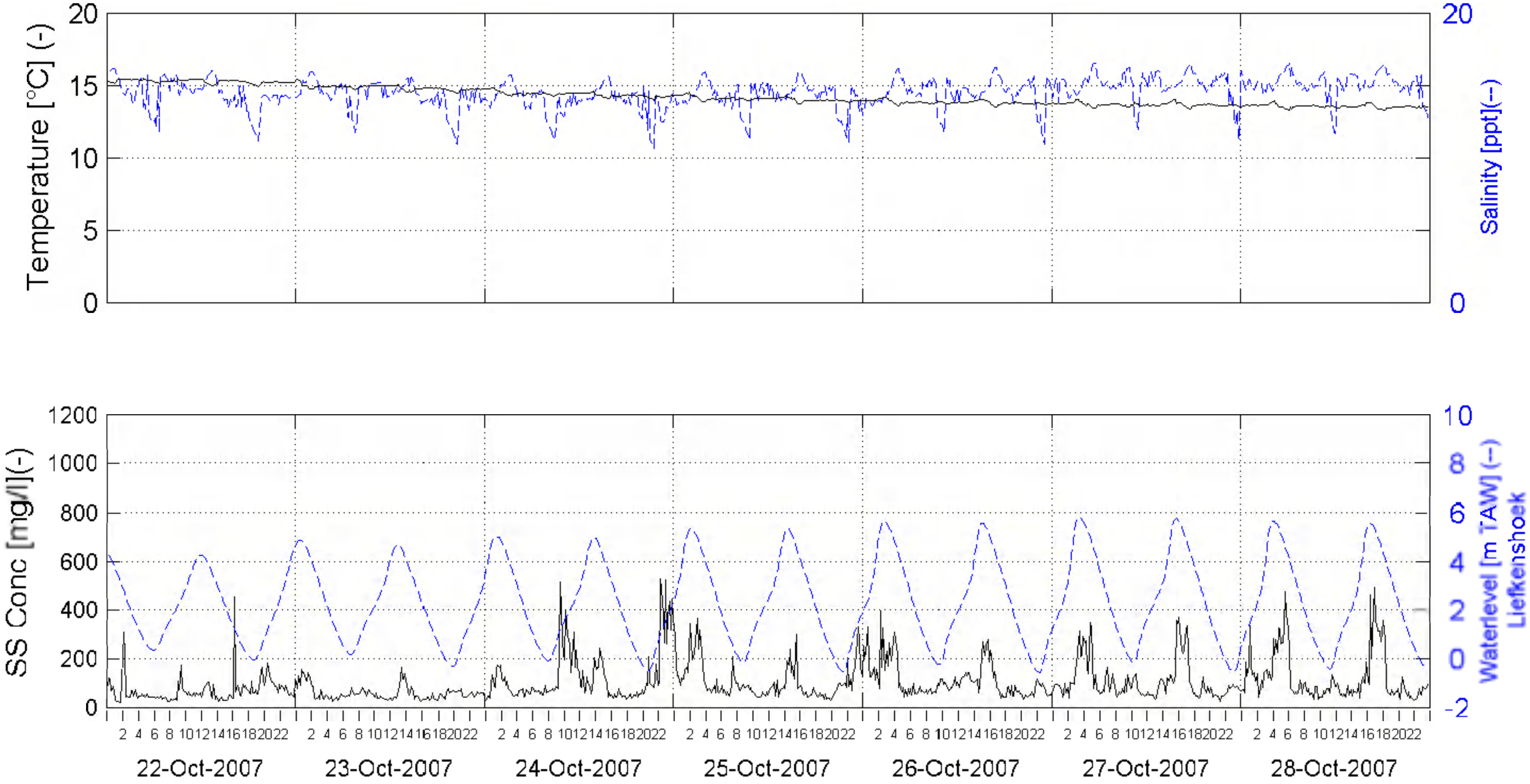
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 43 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Processed by:

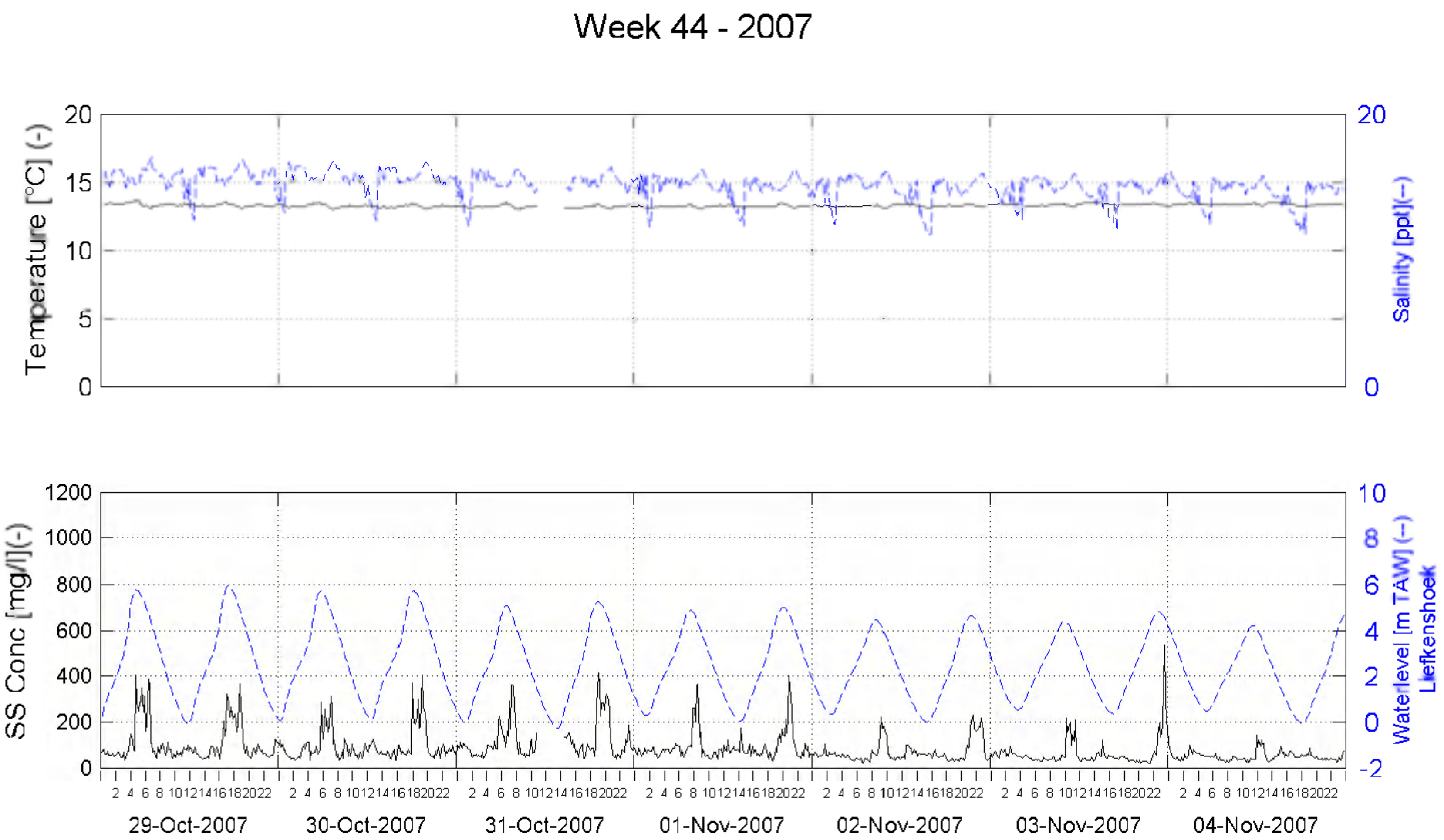
In Association with:

I/RA/11283/07.093/MSA

Location:

N-ENTRANCE BOTTOM 5.1m above bottom (-11.9m TAW)

11283 - Long-term monitoring DGD - Autumn 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:
N-ENTRANCE BOTTOM 5.1m above bottom (-11.9m TAW)

Processed by:

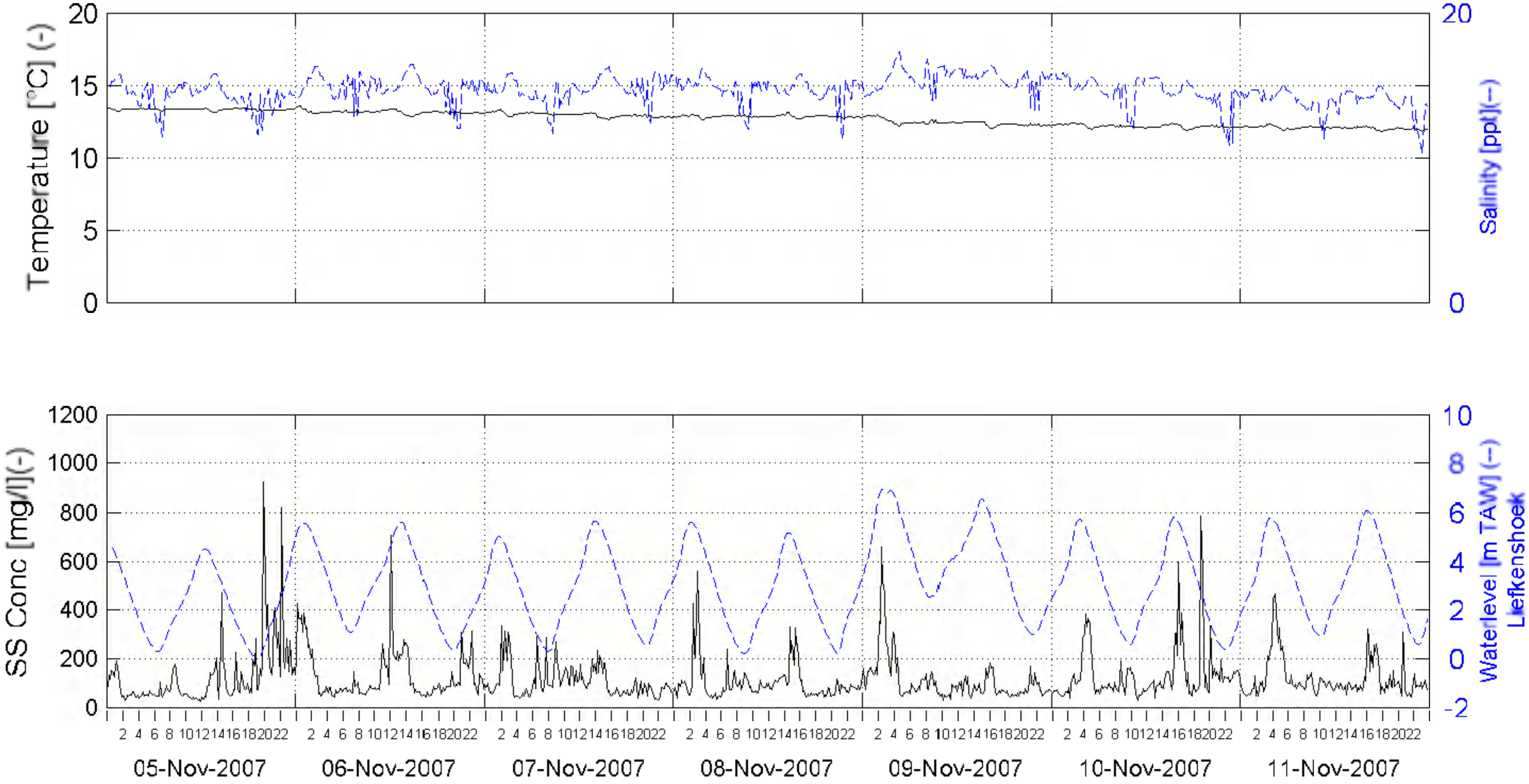
IMDC

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 45 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Processed by: IMDC

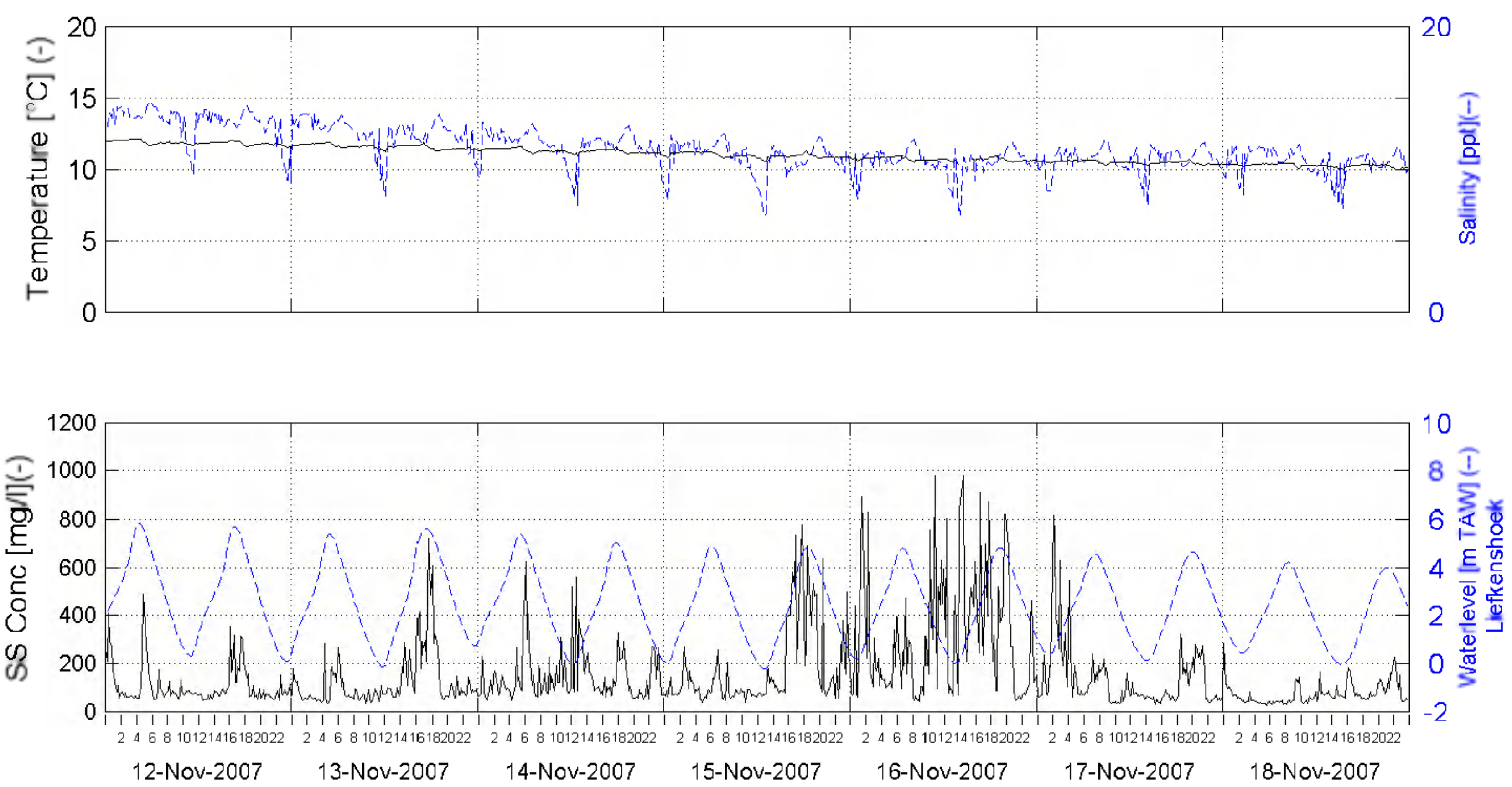
In Association with:

Location:
N-ENTRANCE BOTTOM 5.1m above bottom (-11.9m TAW)

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 46 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Processed by:

In Association with:

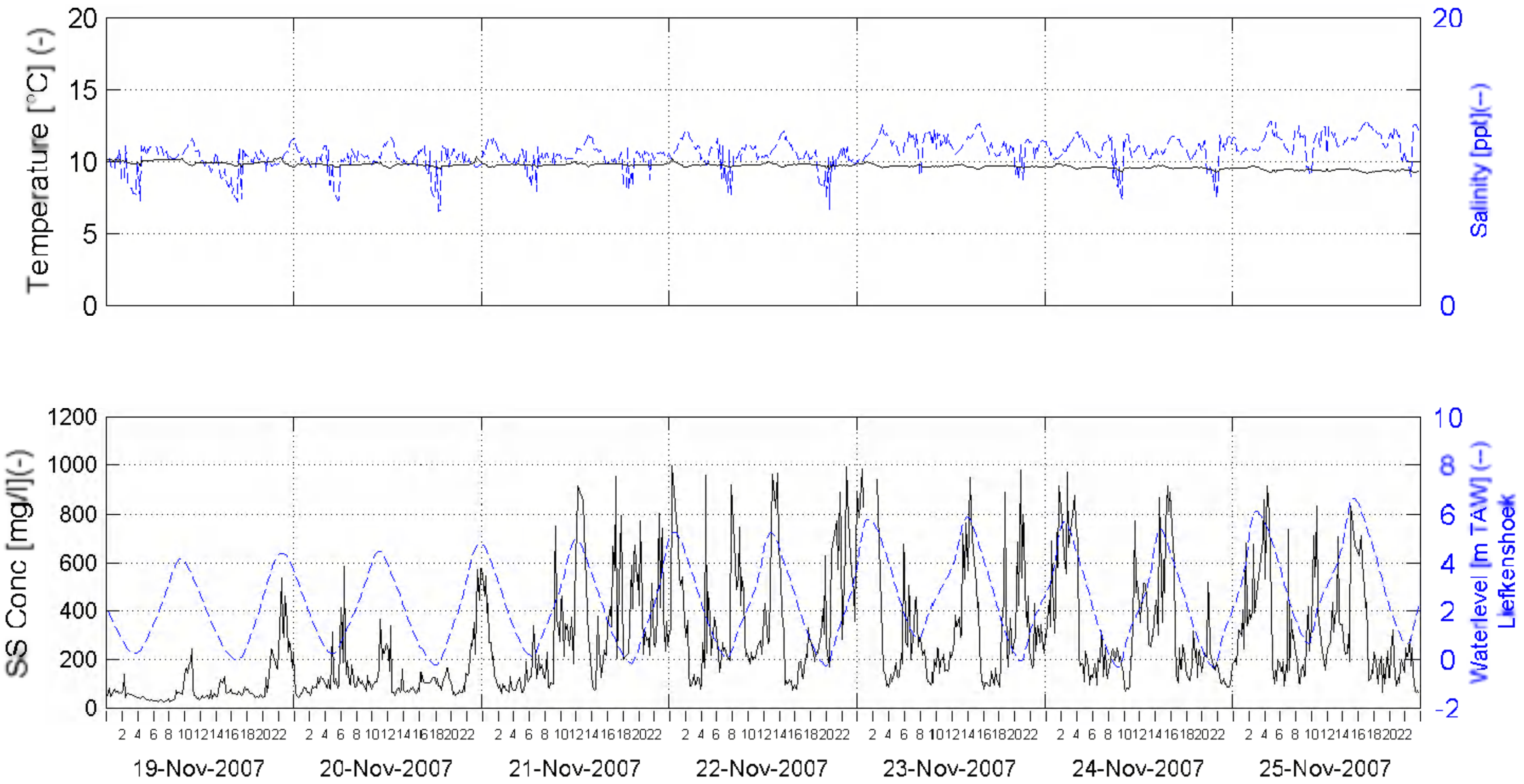
Location:

N-ENTRANCE BOTTOM 5.1m above bottom (-11.9m TAW)

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 47 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:
N-ENTRANCE BOTTOM 5.1m above bottom (-11.9m TAW)

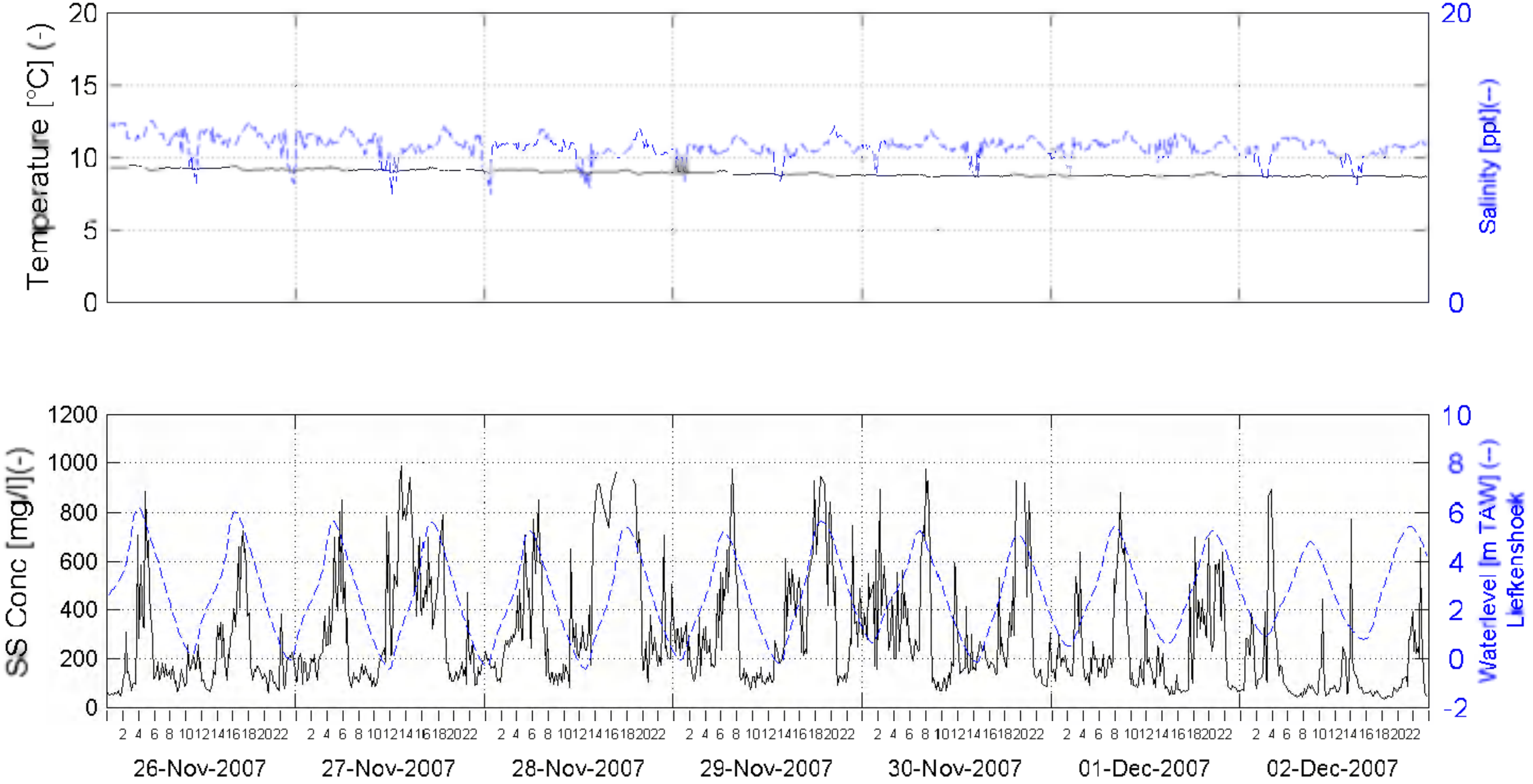
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 48 - 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:
N-ENTRANCE BOTTOM 5.1m above bottom (-11.9m TAW)

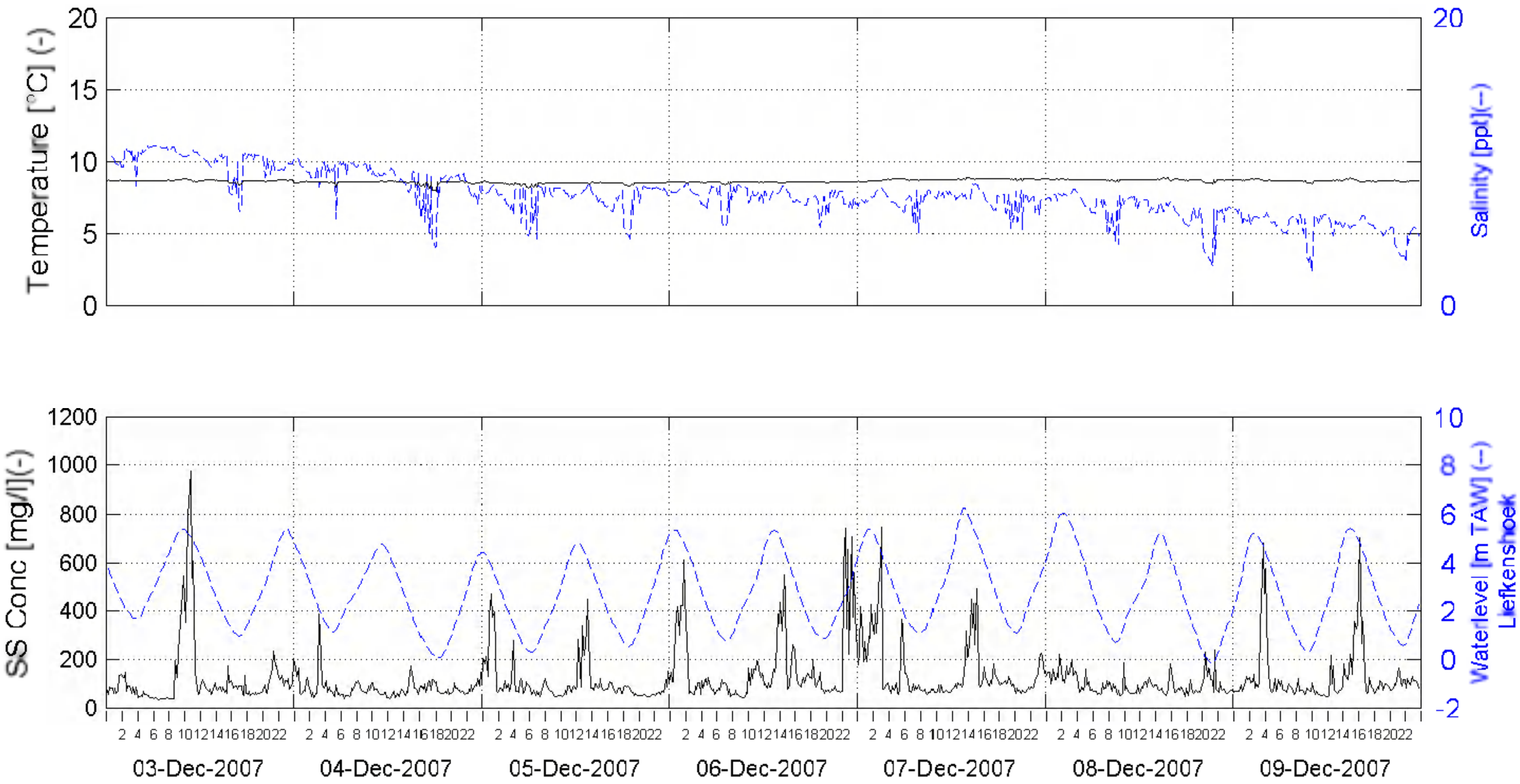
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 49 - 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:

N-ENTRANCE BOTTOM 5.1m above bottom (-11.9m TAW)

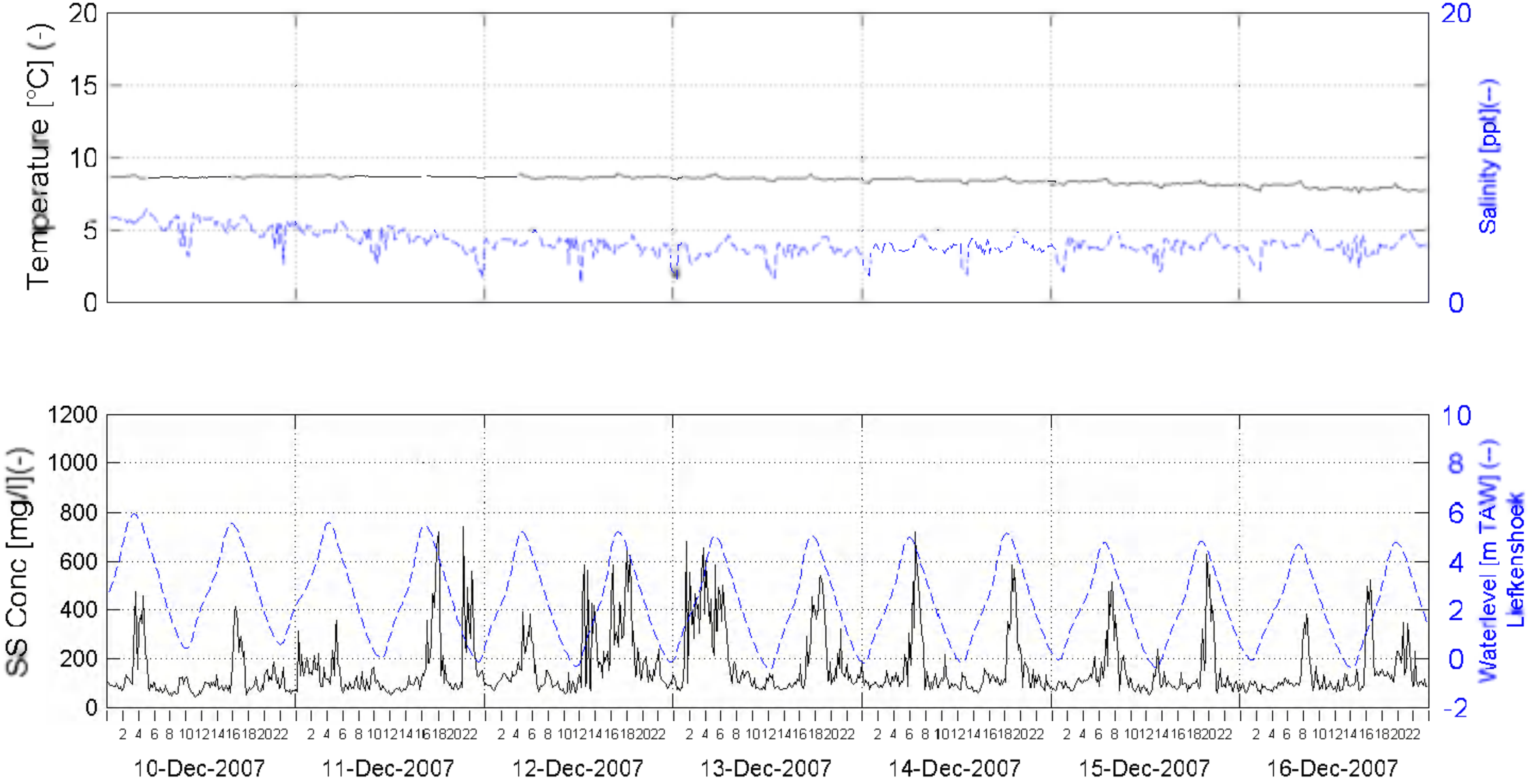
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 50 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:
N-ENTRANCE BOTTOM 5.1m above bottom (-11.9m TAW)

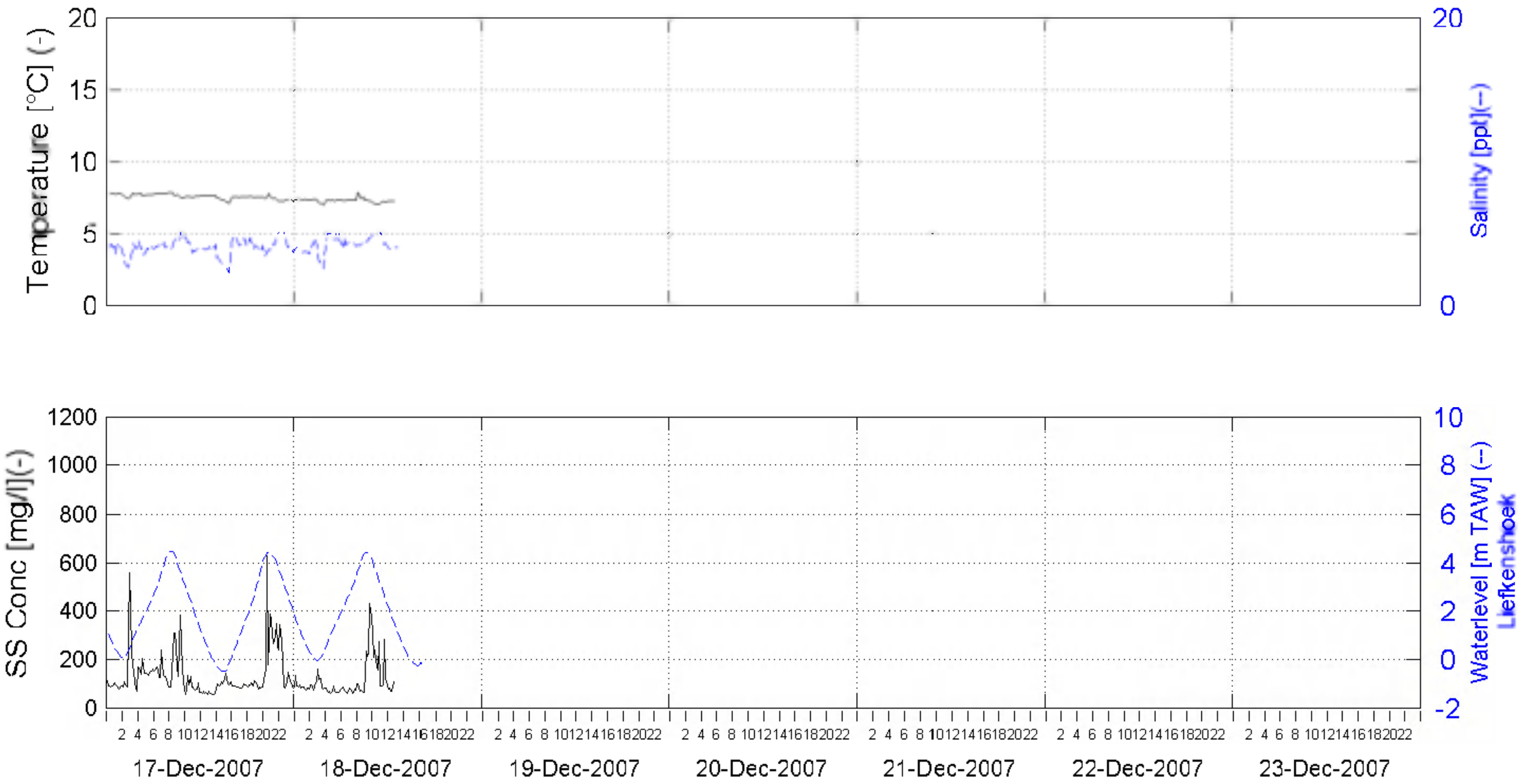
Processed by: IMDC

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 51 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Processed by:

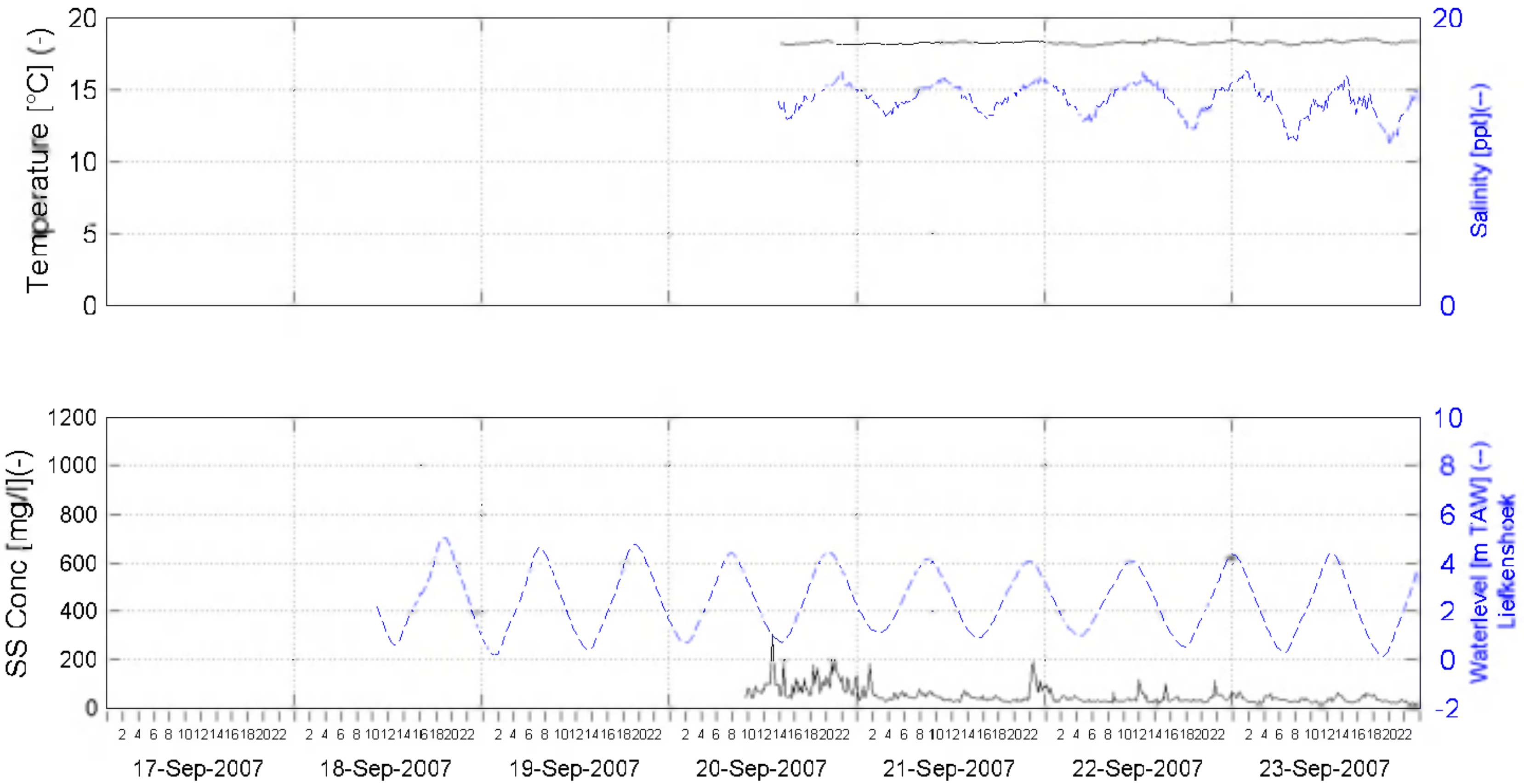
In Association with:

Location:
N-ENTRANCE BOTTOM 5.1m above bottom (-11.9m TAW)

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 38 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:

N-ENTRANCE TOP 14.5m above bottom (-2.5m TAW)

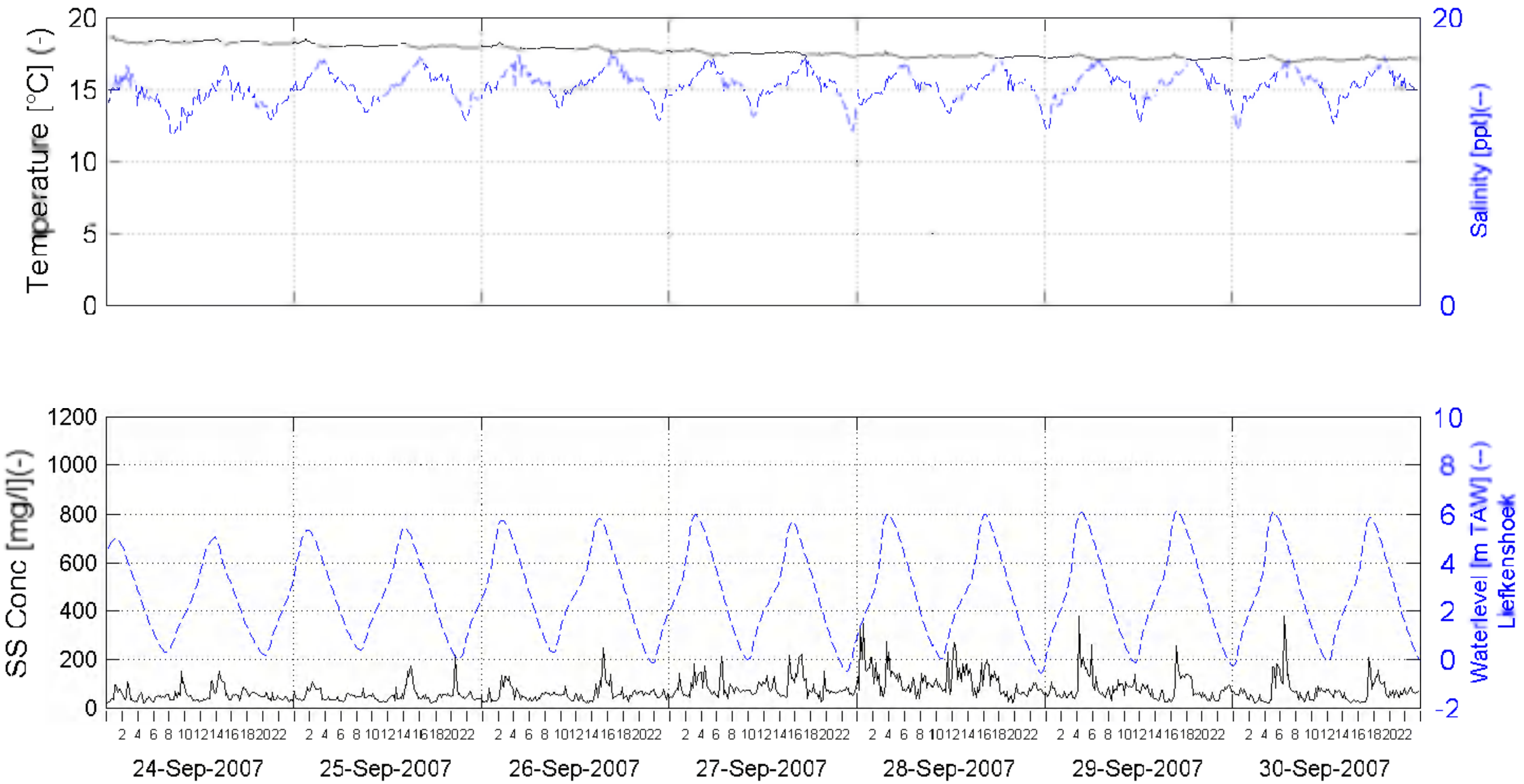
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 39 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:
N-ENTRANCE TOP 14.5m above bottom (-2.5m TAW)

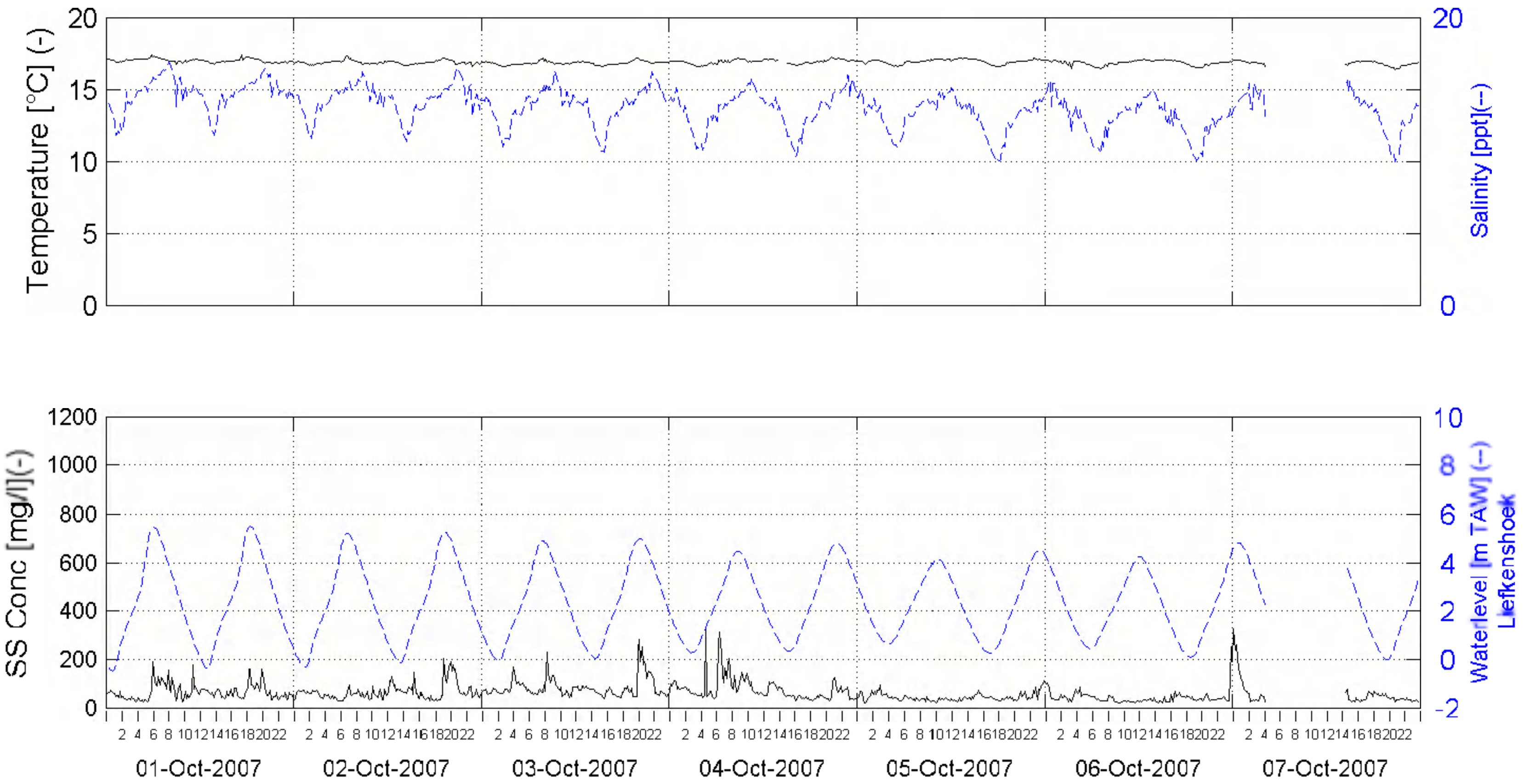
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 40 - 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:

N-ENTRANCE TOP 14.5m above bottom (-2.5m TAW)

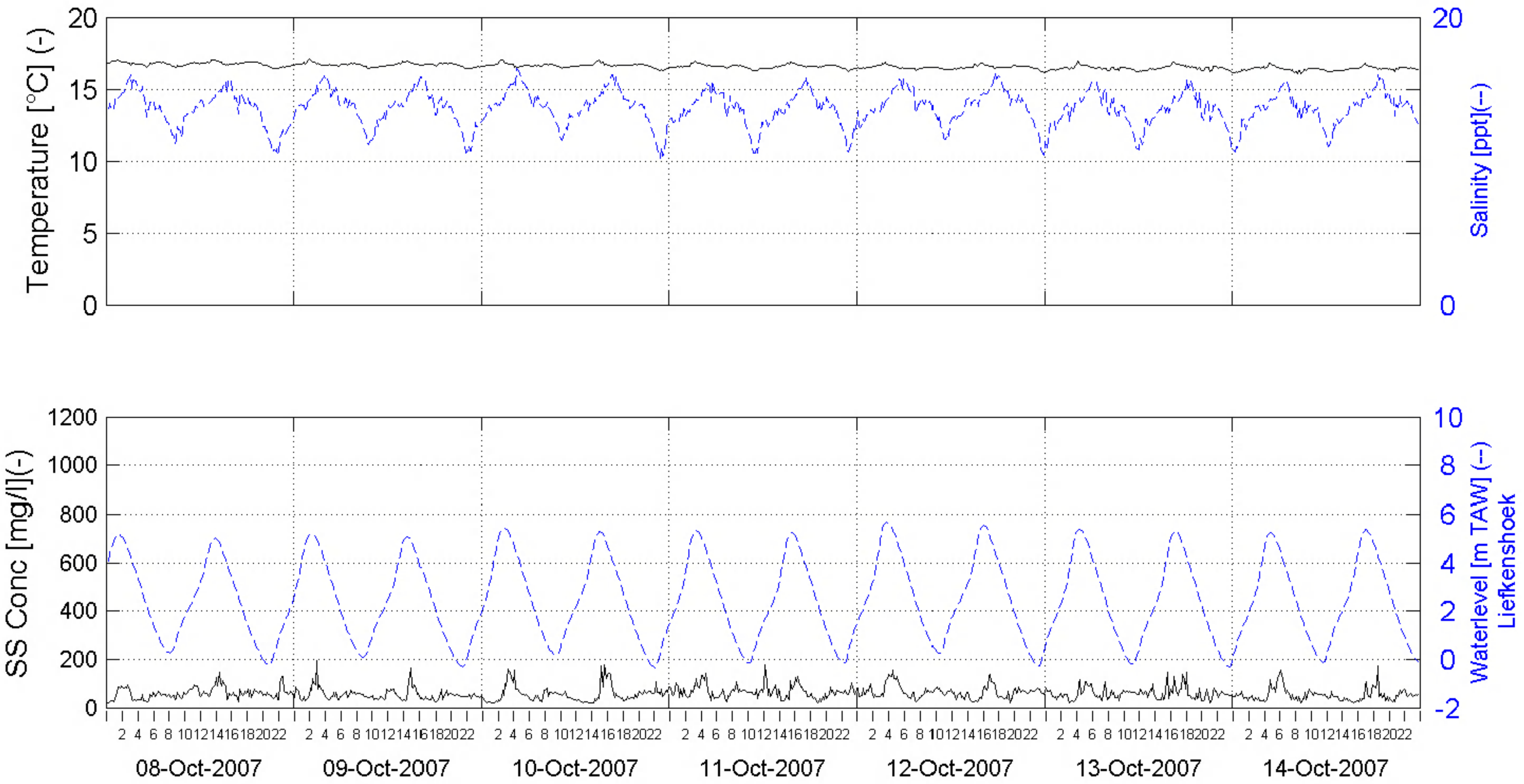
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 41 - 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:

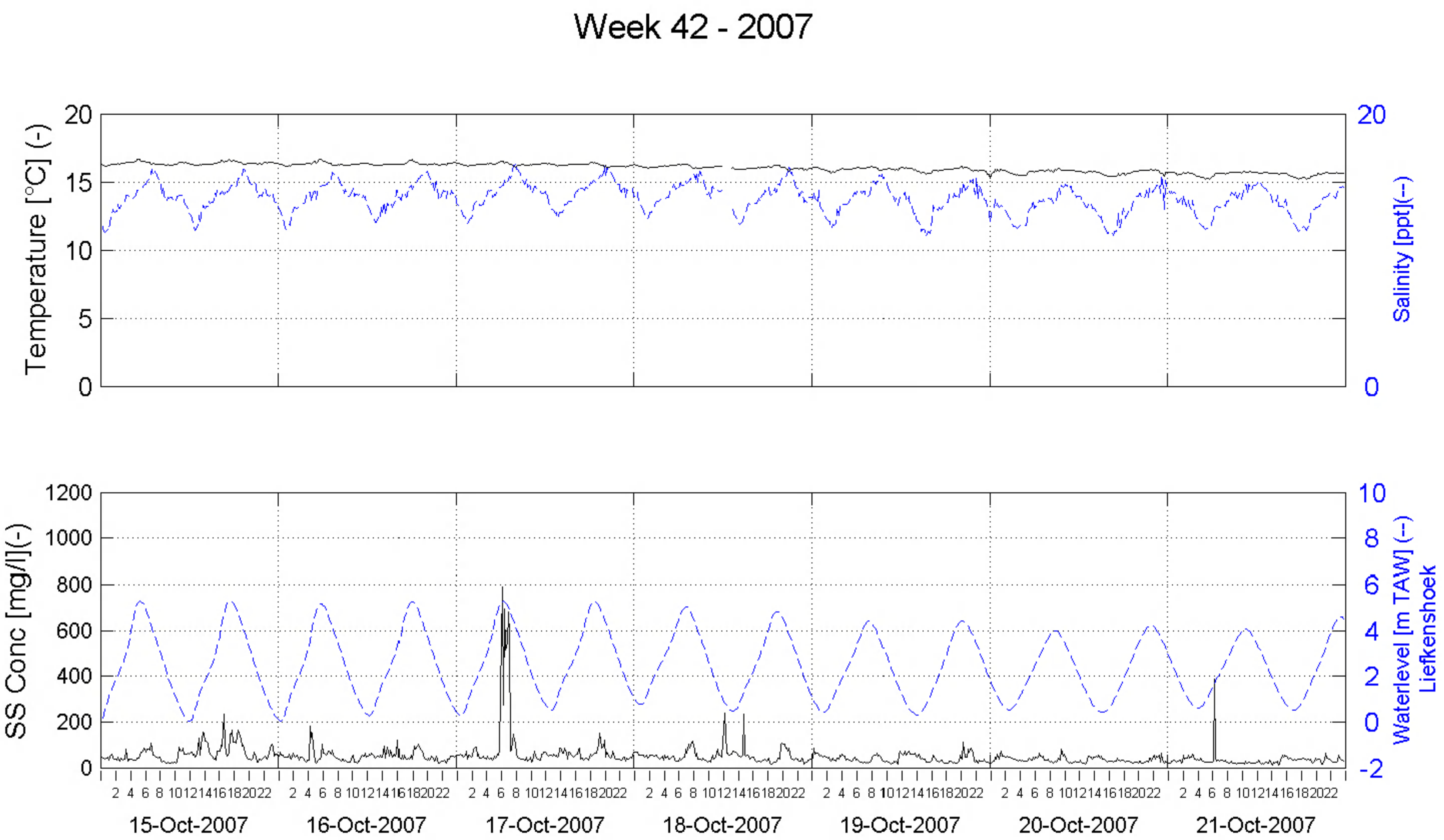
N-ENTRANCE TOP 14.5m above bottom (-2.5m TAW)

Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:

N-ENTRANCE TOP 14.5m above bottom (-2.5m TAW)

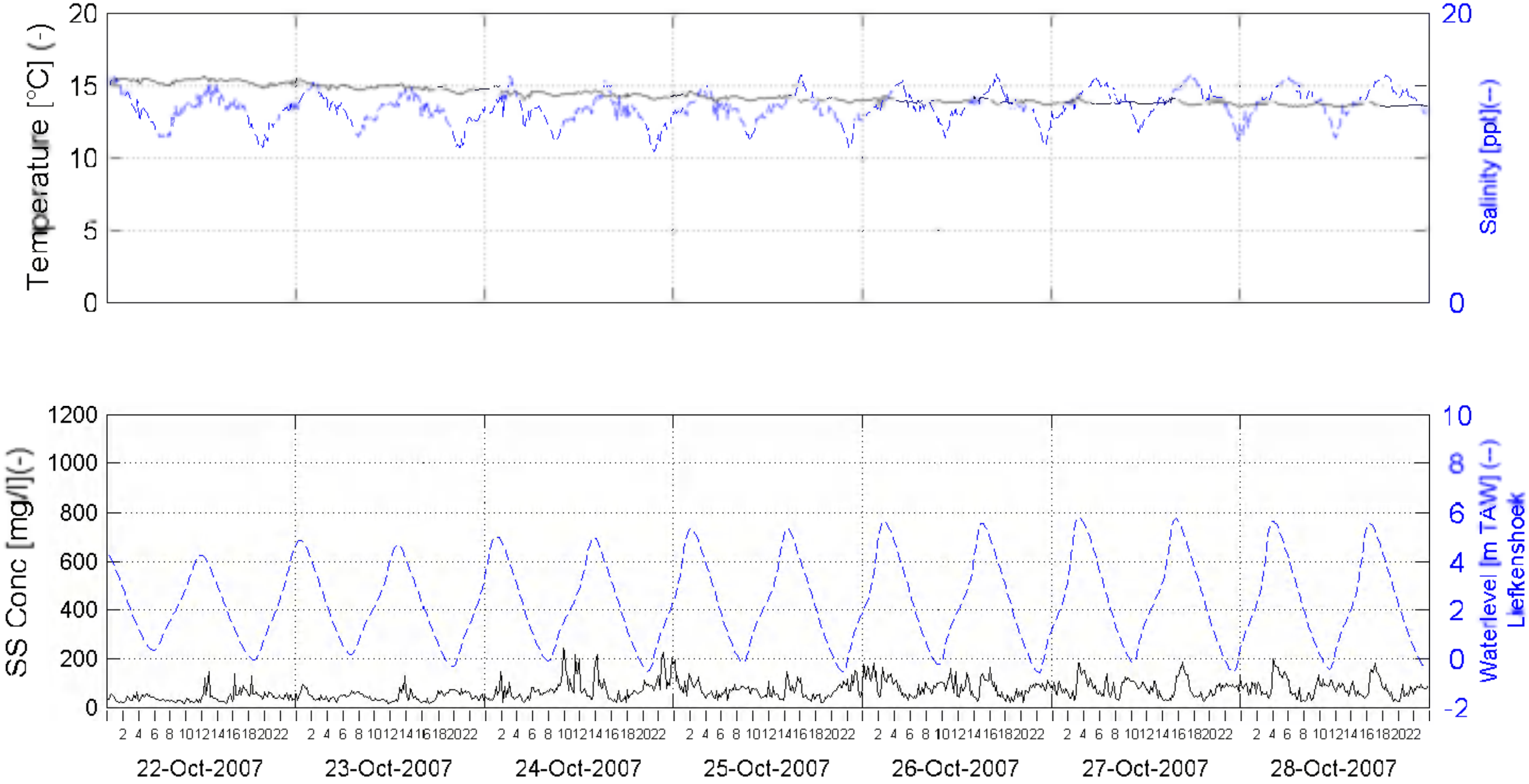
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 43 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Processed by:

In Association with:

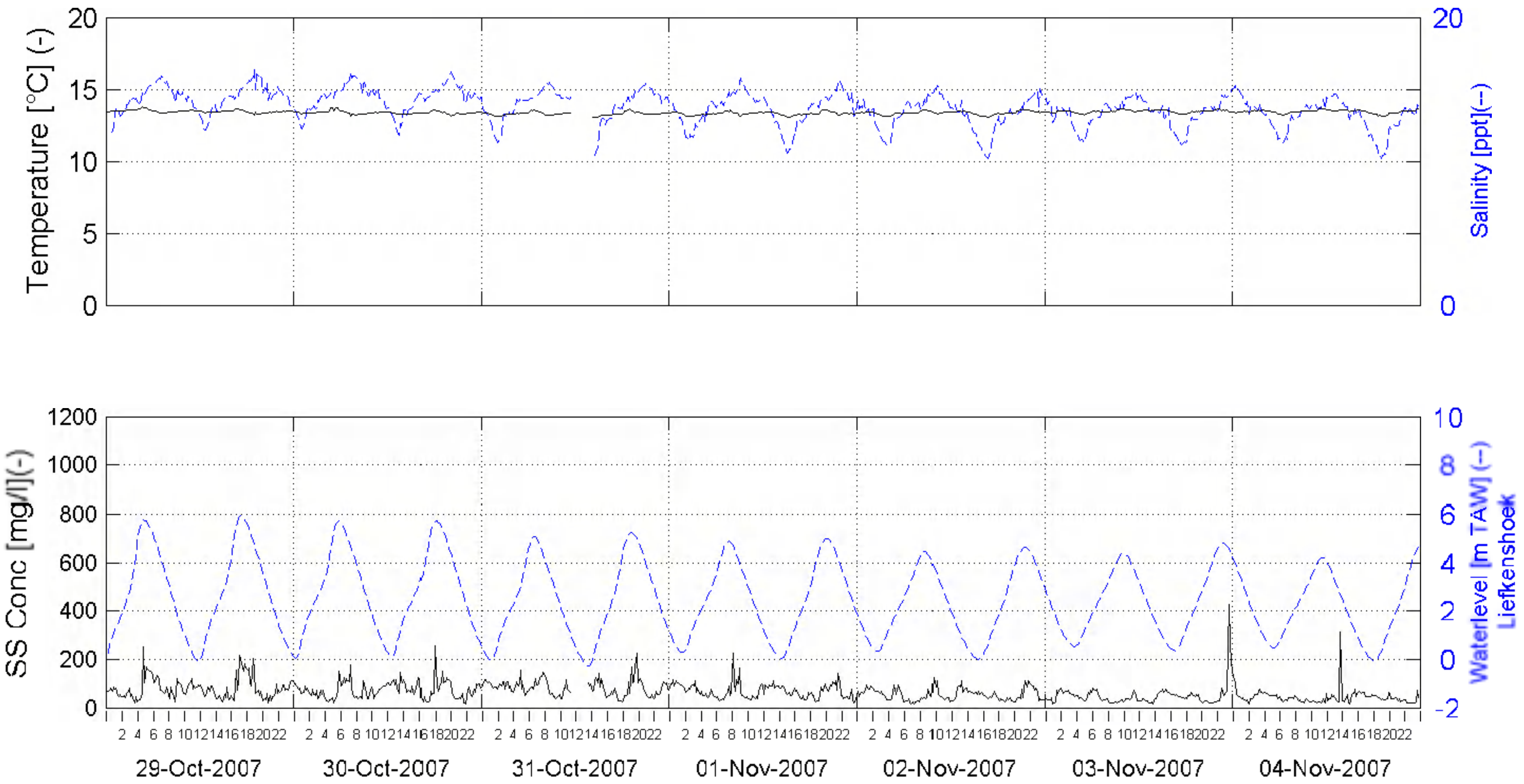
Location:

N-ENTRANCE TOP 14.5m above bottom (-2.5m TAW)

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 44 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

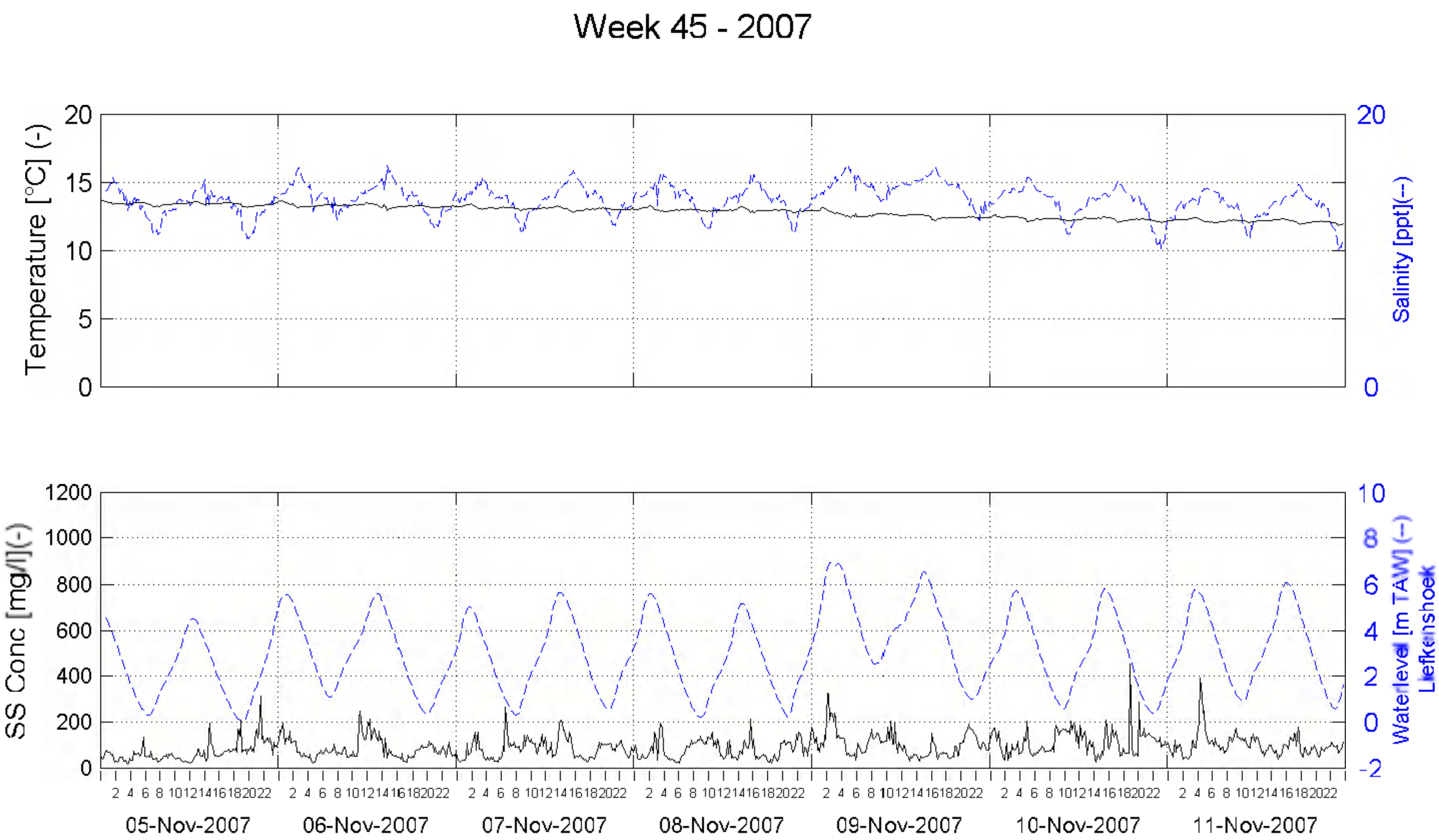
Location:
N-ENTRANCE TOP 14.5m above bottom (-2.5m TAW)

Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:

N-ENTRANCE TOP 14.5m above bottom (-2.5m TAW)

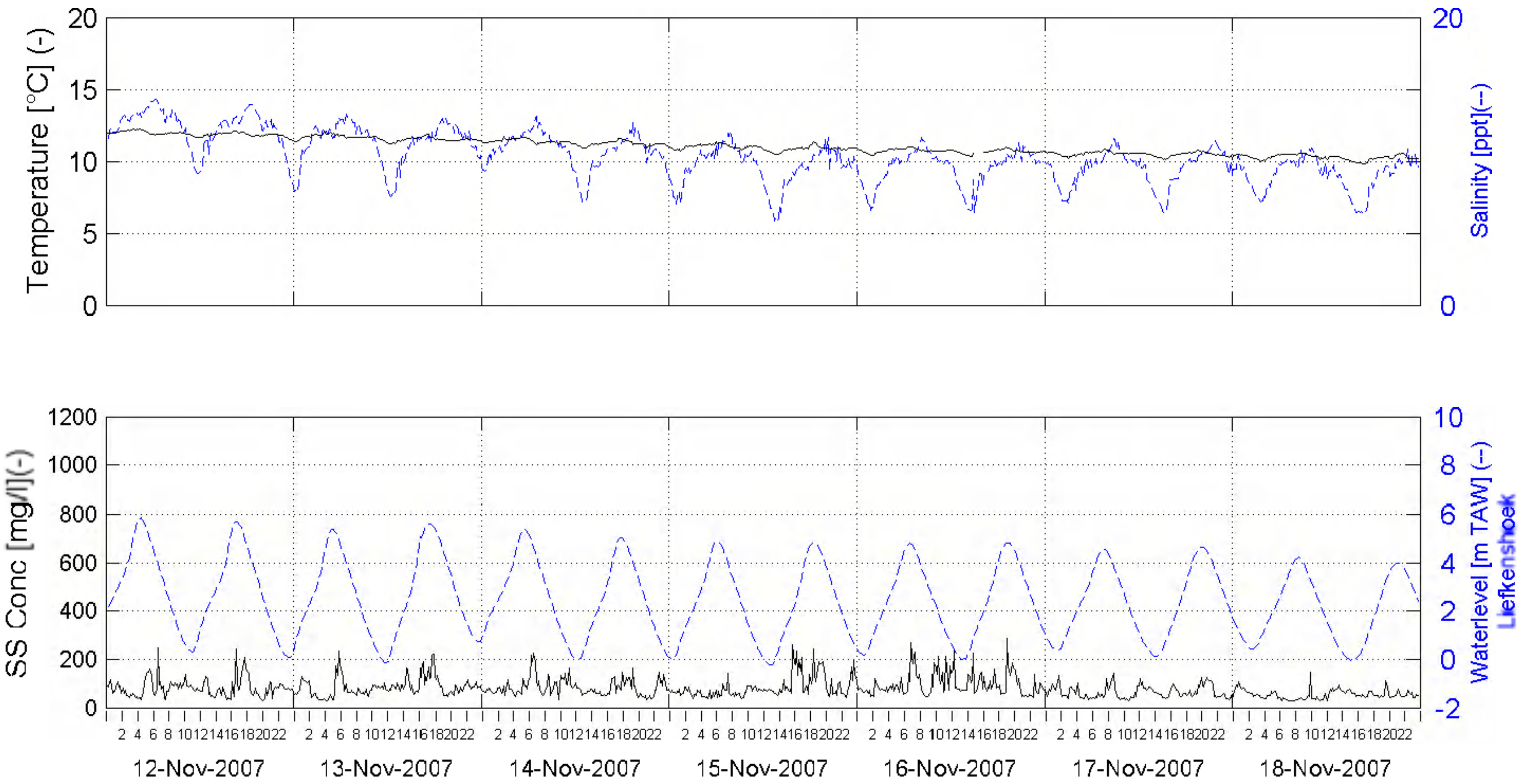
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 46 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Processed by:

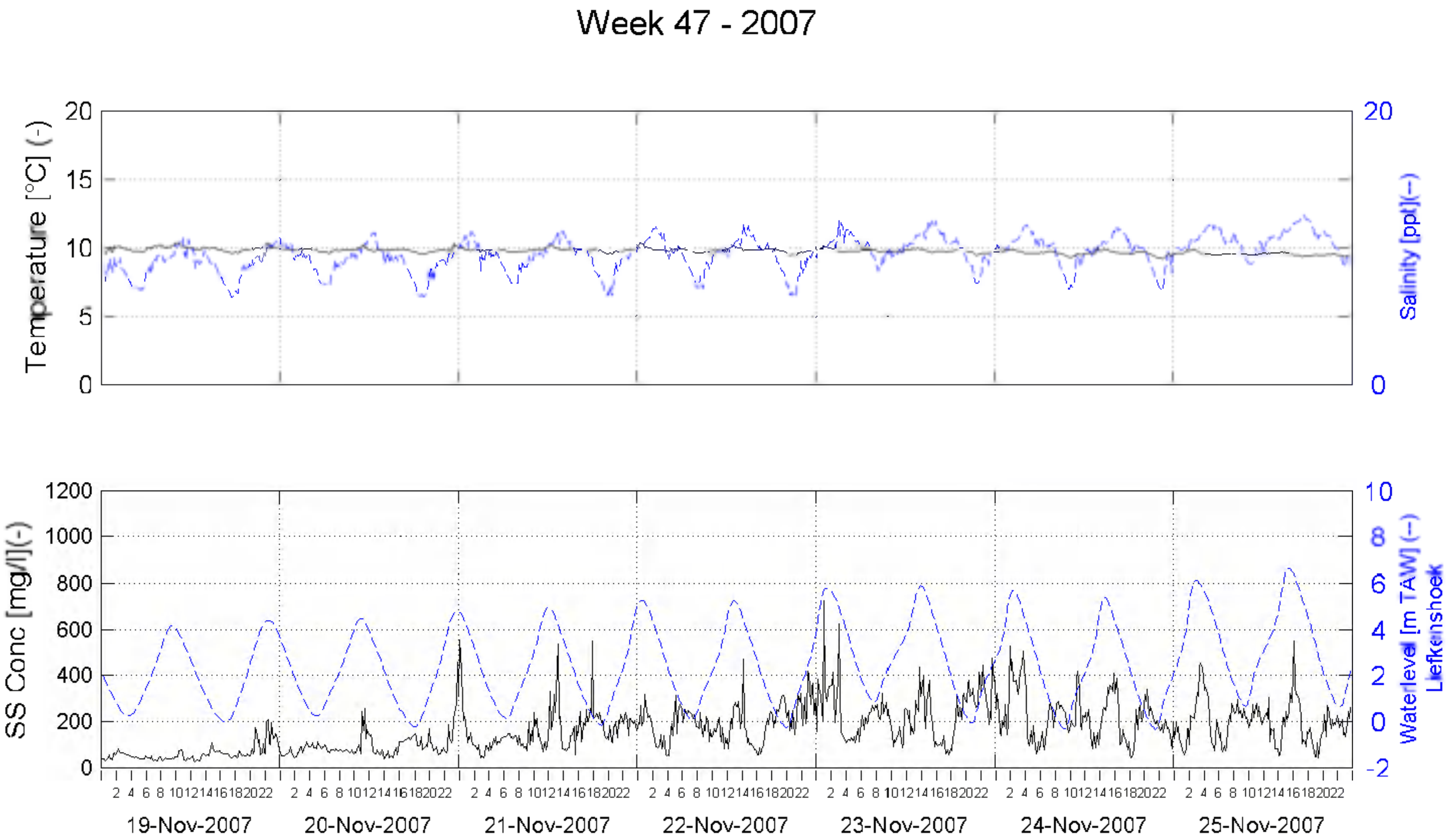
In Association with:

Location:

N-ENTRANCE TOP 14.5m above bottom (-2.5m TAW)

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:
N-ENTRANCE TOP 14.5m above bottom (-2.5m TAW)

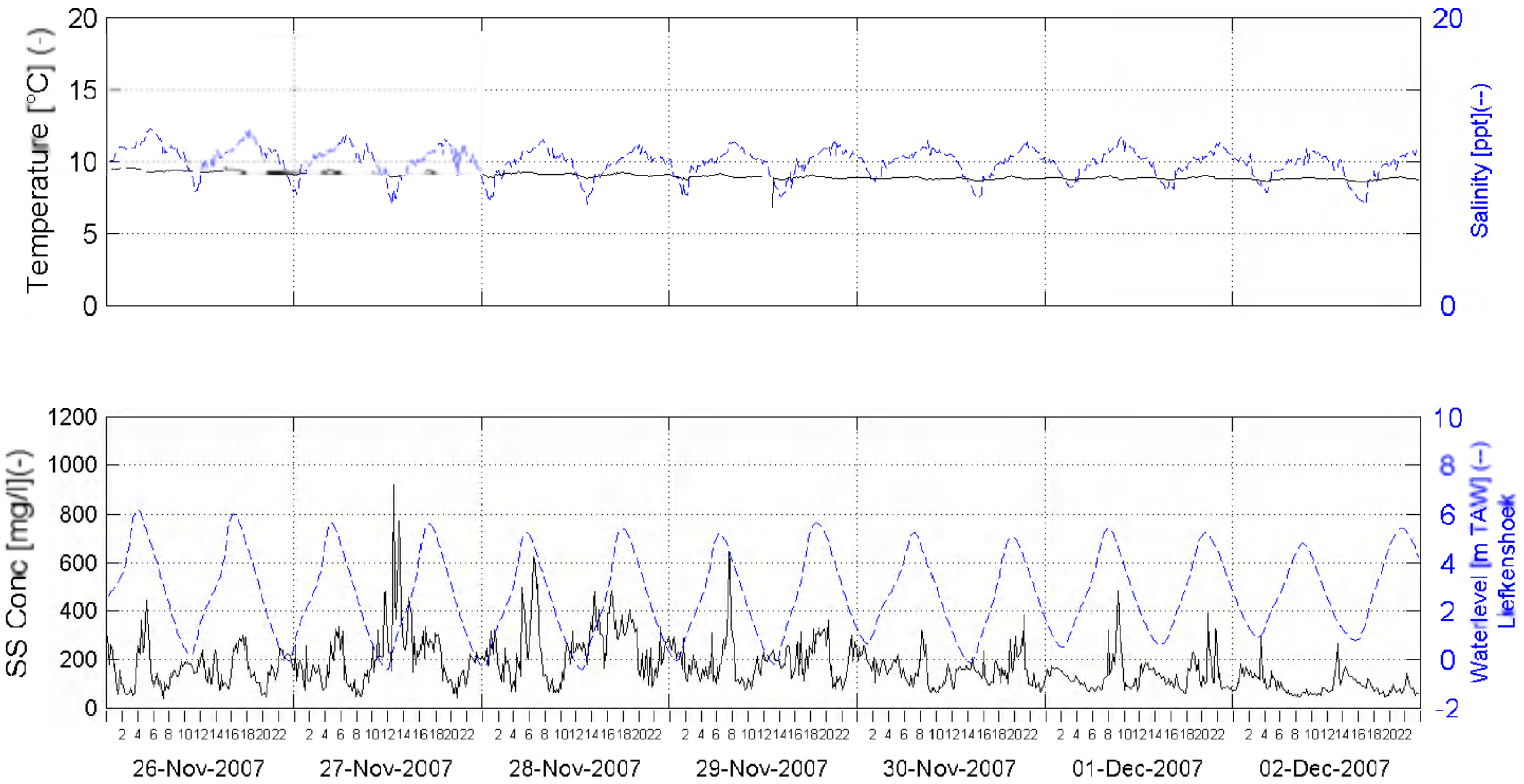
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 48 - 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:

N-ENTRANCE TOP 14.5m above bottom (-2.5m TAW)

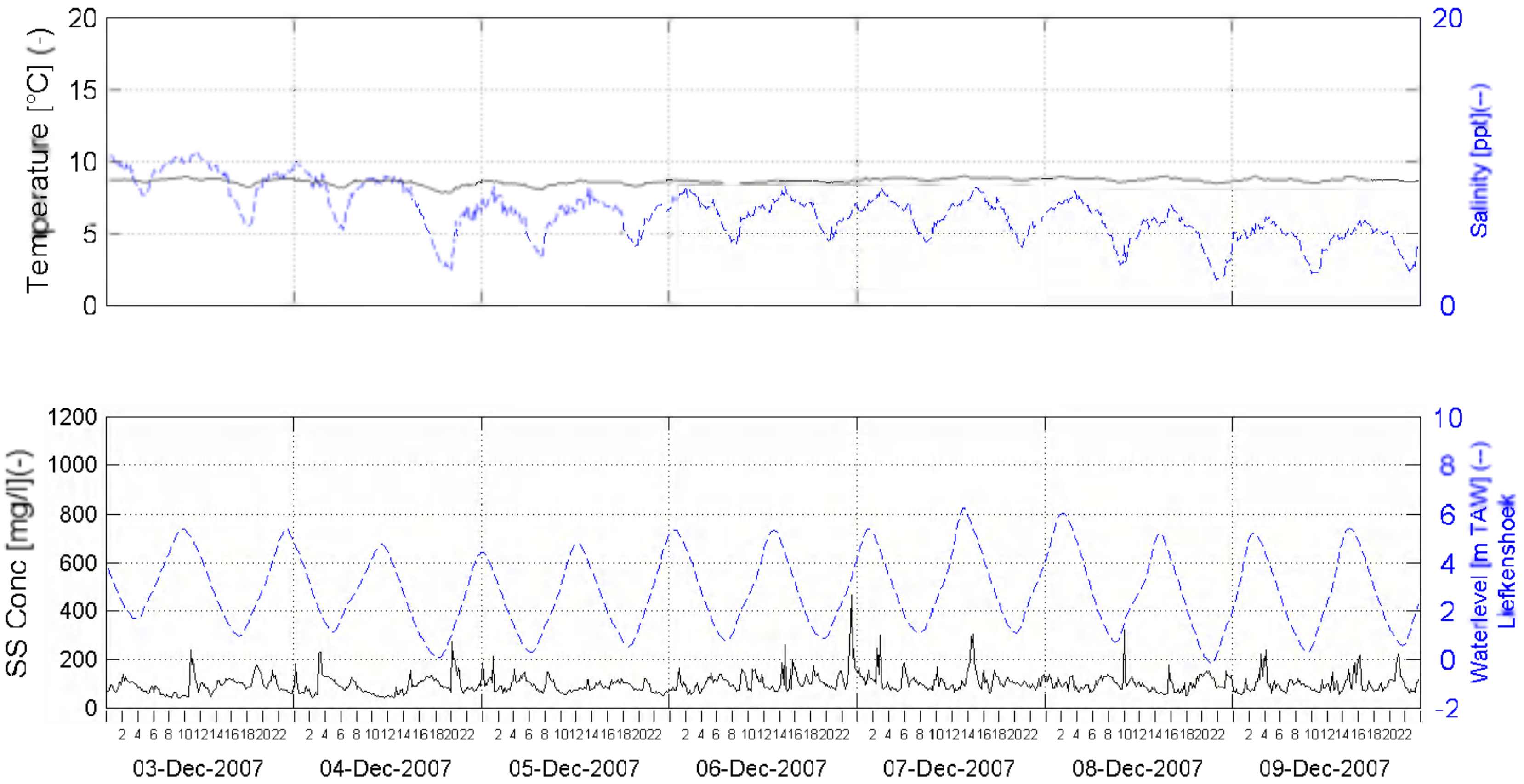
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 49 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:
N-ENTRANCE TOP 14.5m above bottom (-2.5m TAW)

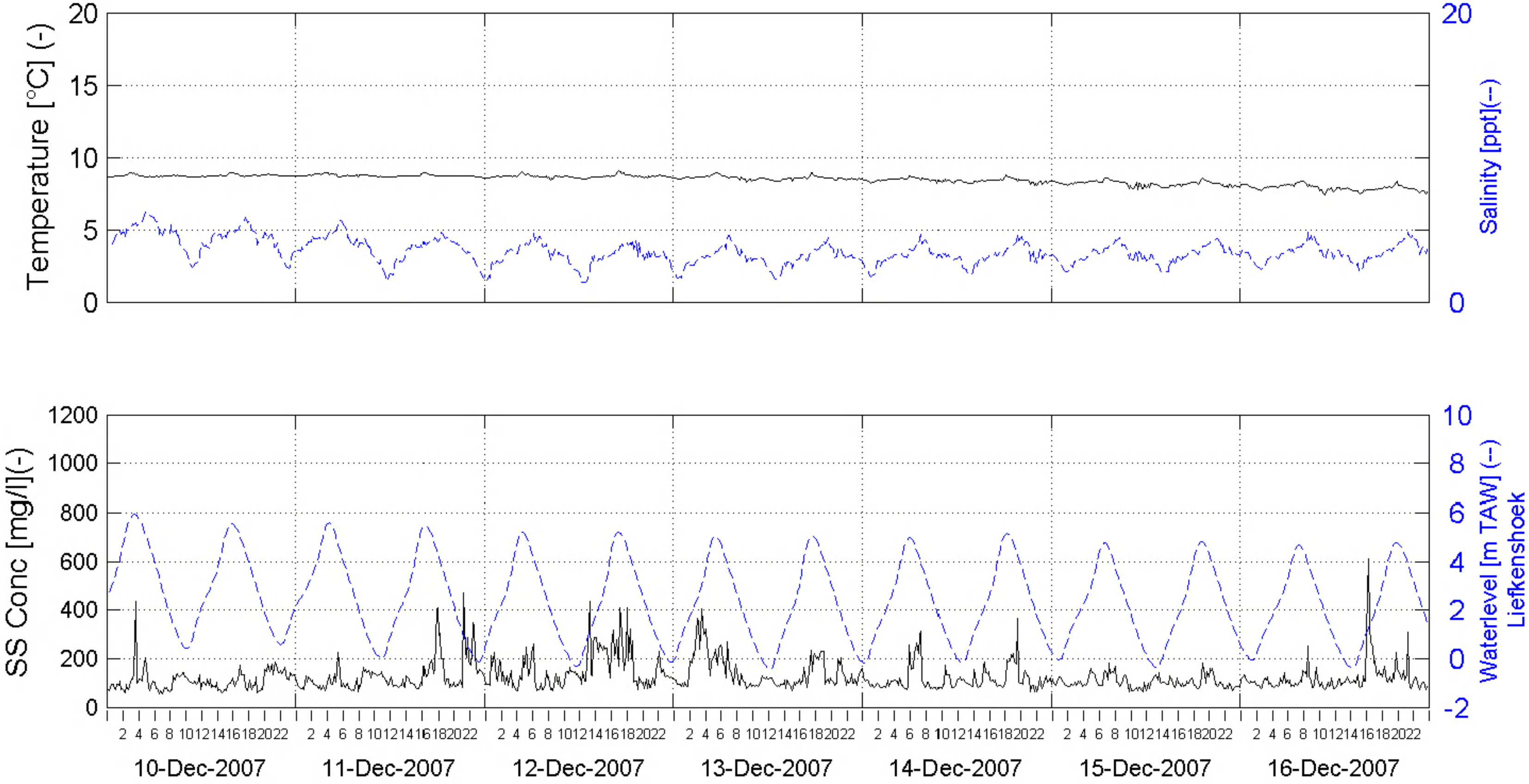
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 50 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:

N-ENTRANCE TOP 14.5m above bottom (-2.5m TAW)

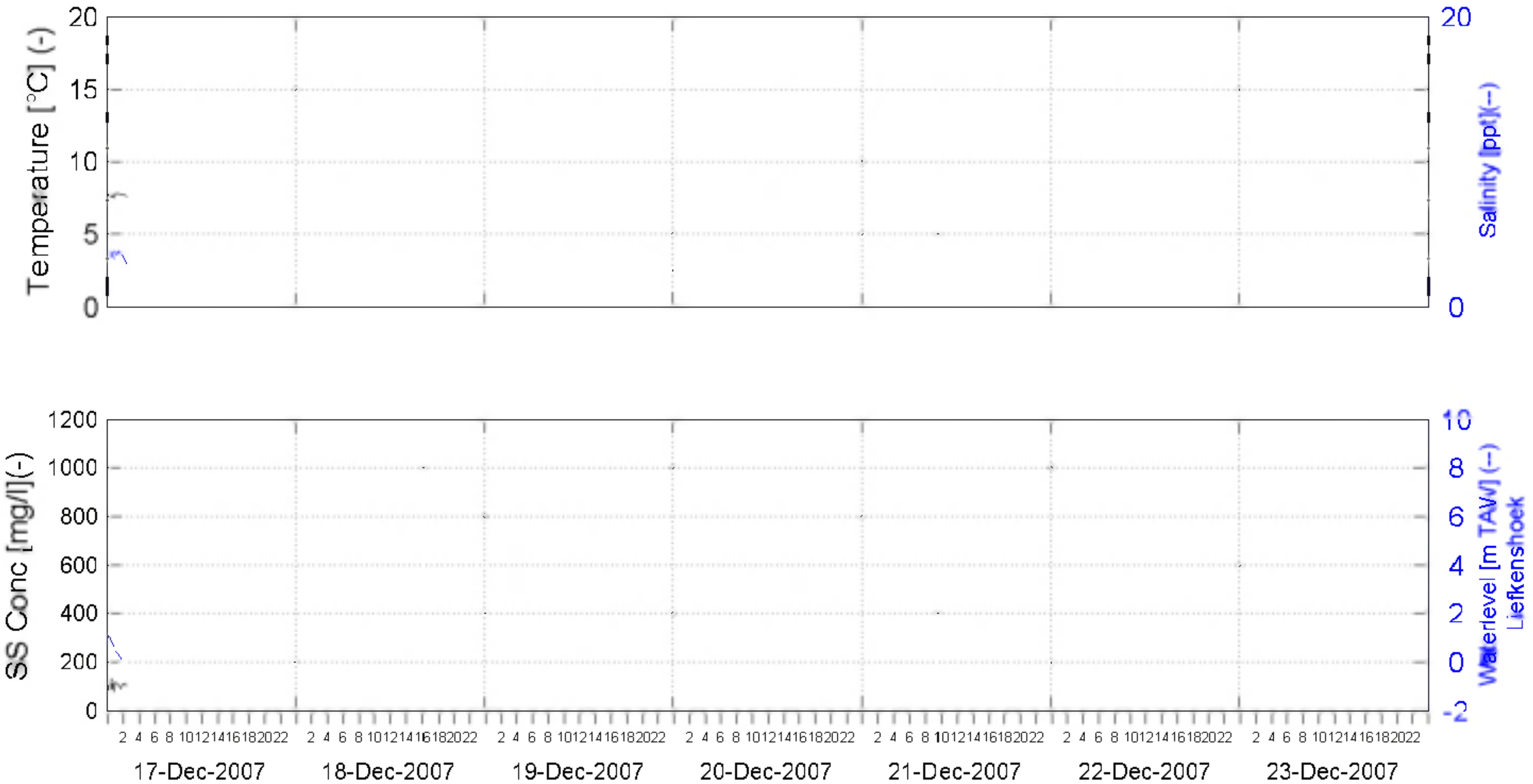
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 51 - 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Processed by:

In Association with:

Location:

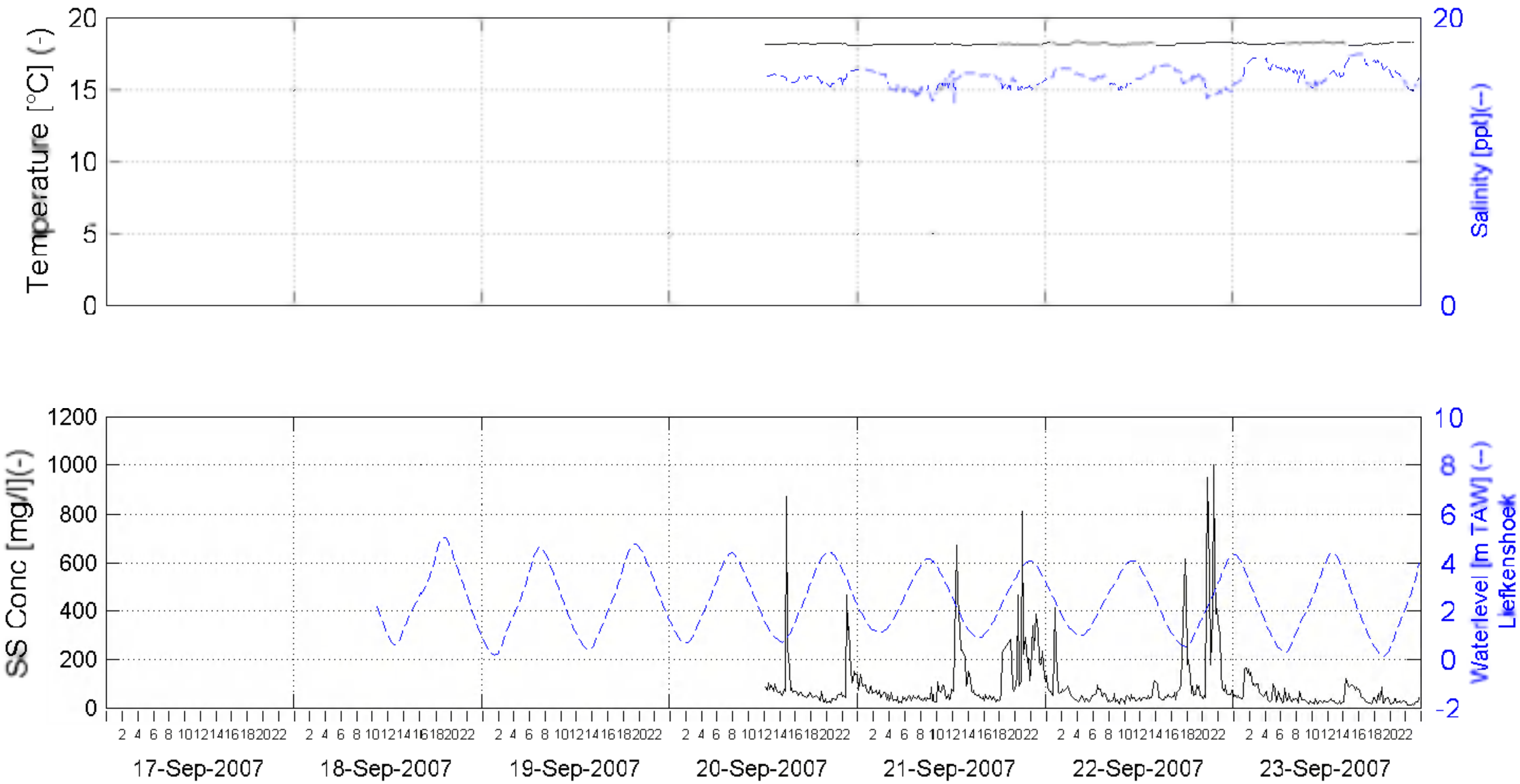
N-ENTRANCE TOP 14.5m above bottom (-2.5m TAW)

I/RA/11283/07.093/MSA

B.2 P&O1 (S-BACK)

11283 - Long-term monitoring DGD - Autumn 2007

Week 38 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Processed by:

In Association with:

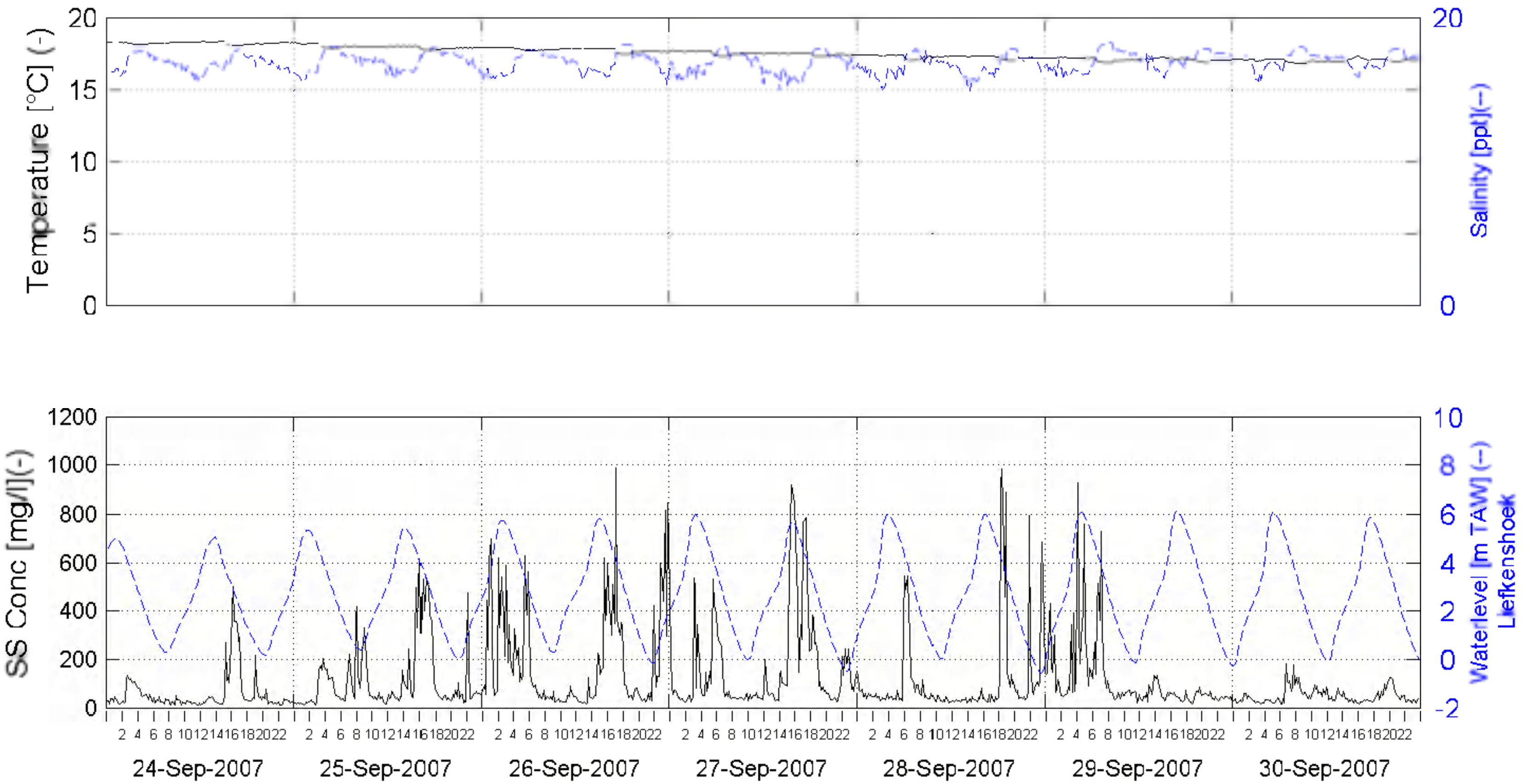
I/RA/11283/07.093/MSA

Location:

S-BACK BOTTOM 4.7m above bottom (-12.3m TAW)

11283 - Long-term monitoring DGD - Autumn 2007

Week 39 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:

S-BACK BOTTOM 4.7m above bottom (-12.3m TAW)

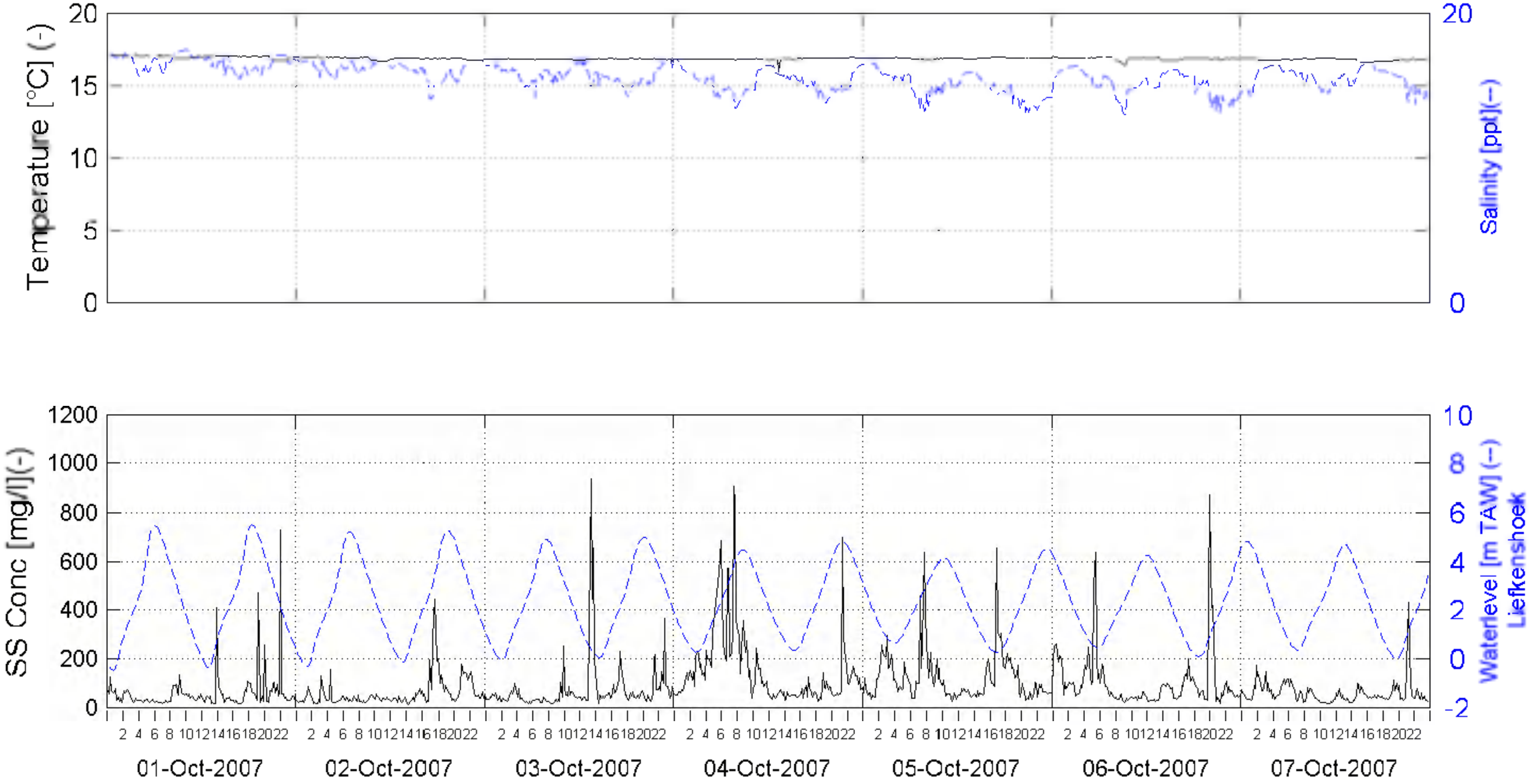
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 40 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

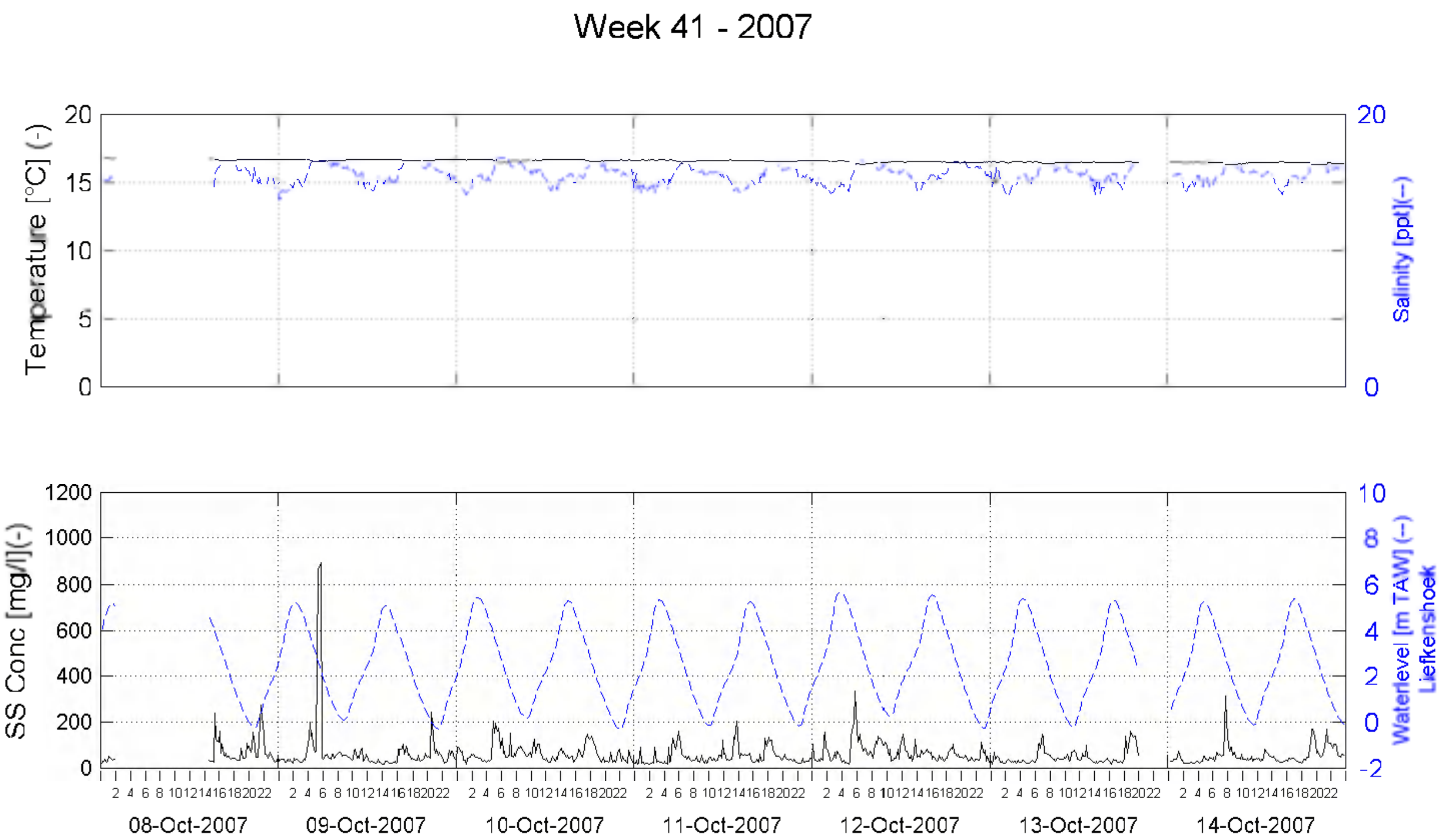
Location:
S-BACK BOTTOM 4.7m above bottom (-12.3m TAW)

Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:

S-BACK BOTTOM 4.7m above bottom (-12.3m TAW)

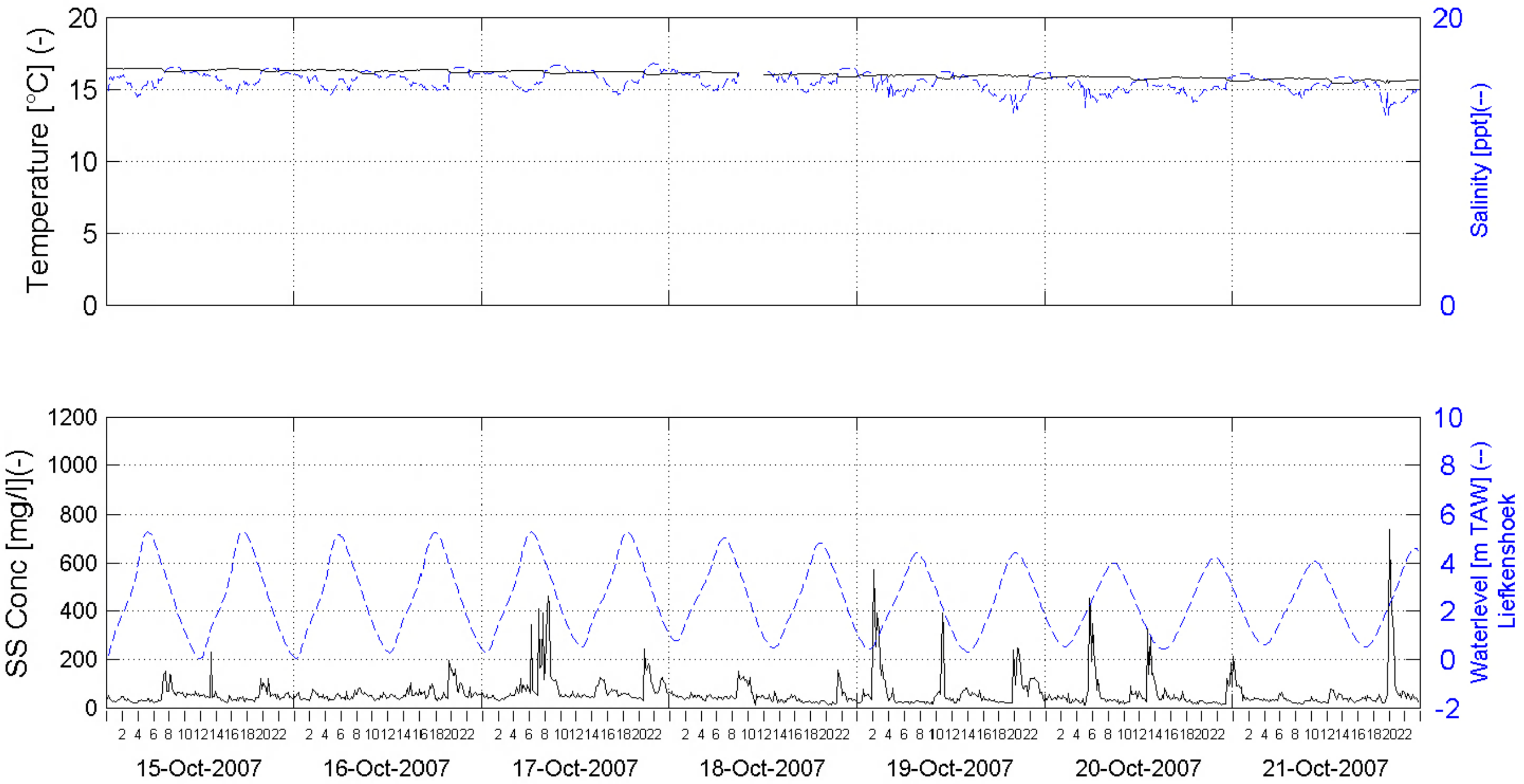
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 42 - 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:

S-BACK BOTTOM 4.7m above bottom (-12.3m TAW)

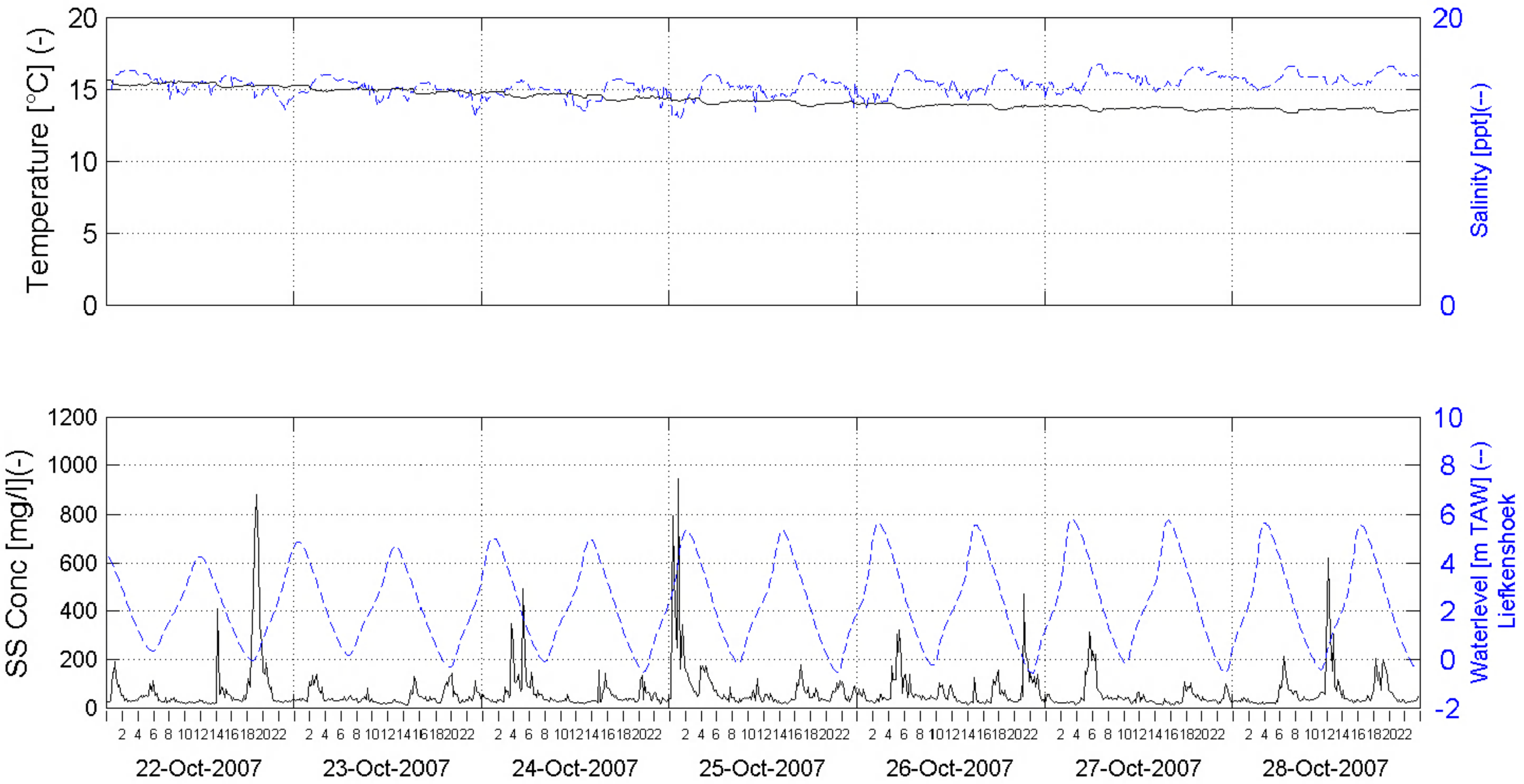
Processed by: IMDC

In Association with: wL | delft hydraulics, GEMS International

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 43 - 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:

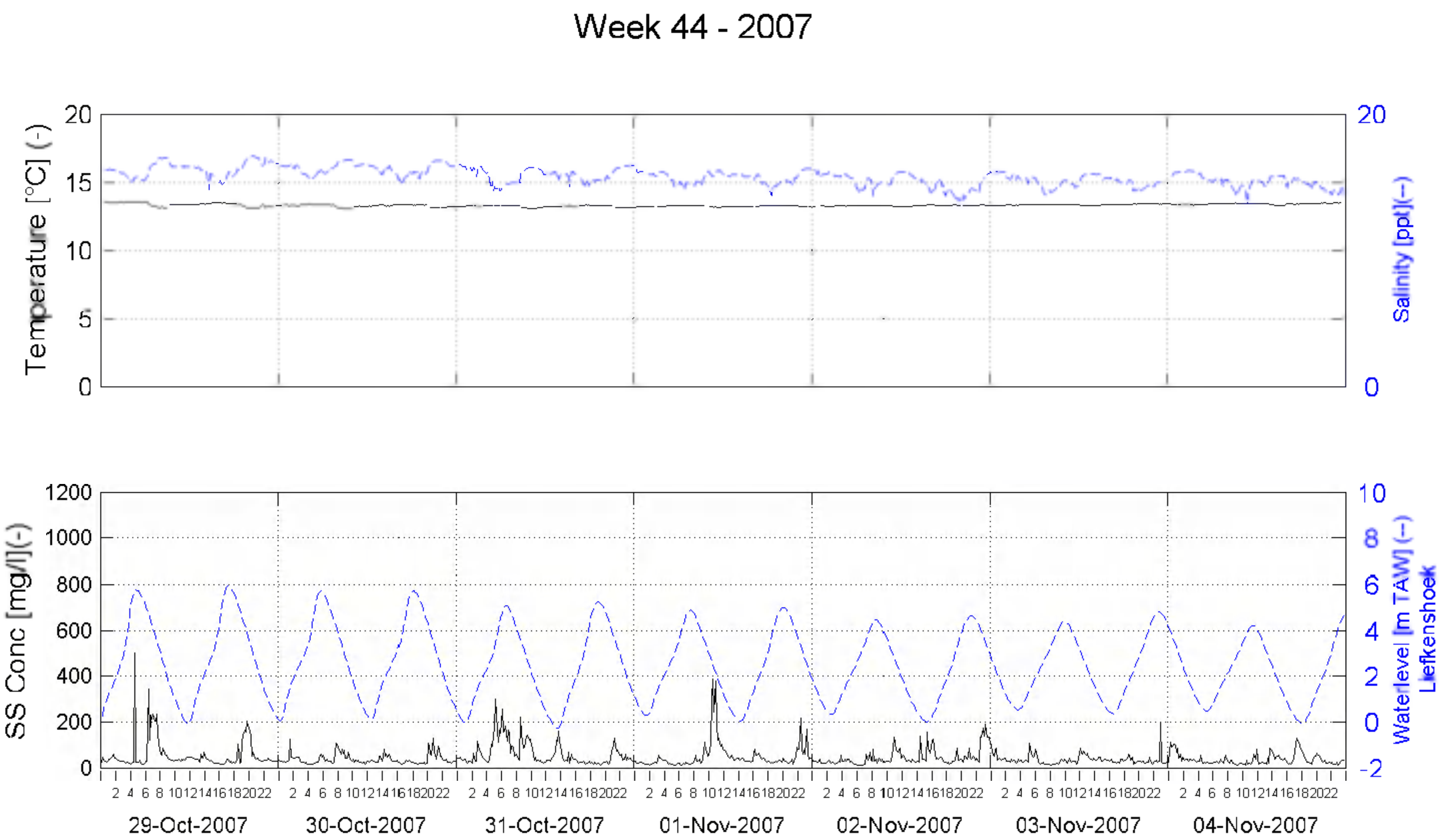
S-BACK BOTTOM 4.7m above bottom (-12.3m TAW)

Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:

S-BACK BOTTOM 4.7m above bottom (-12.3m TAW)

Processed by:

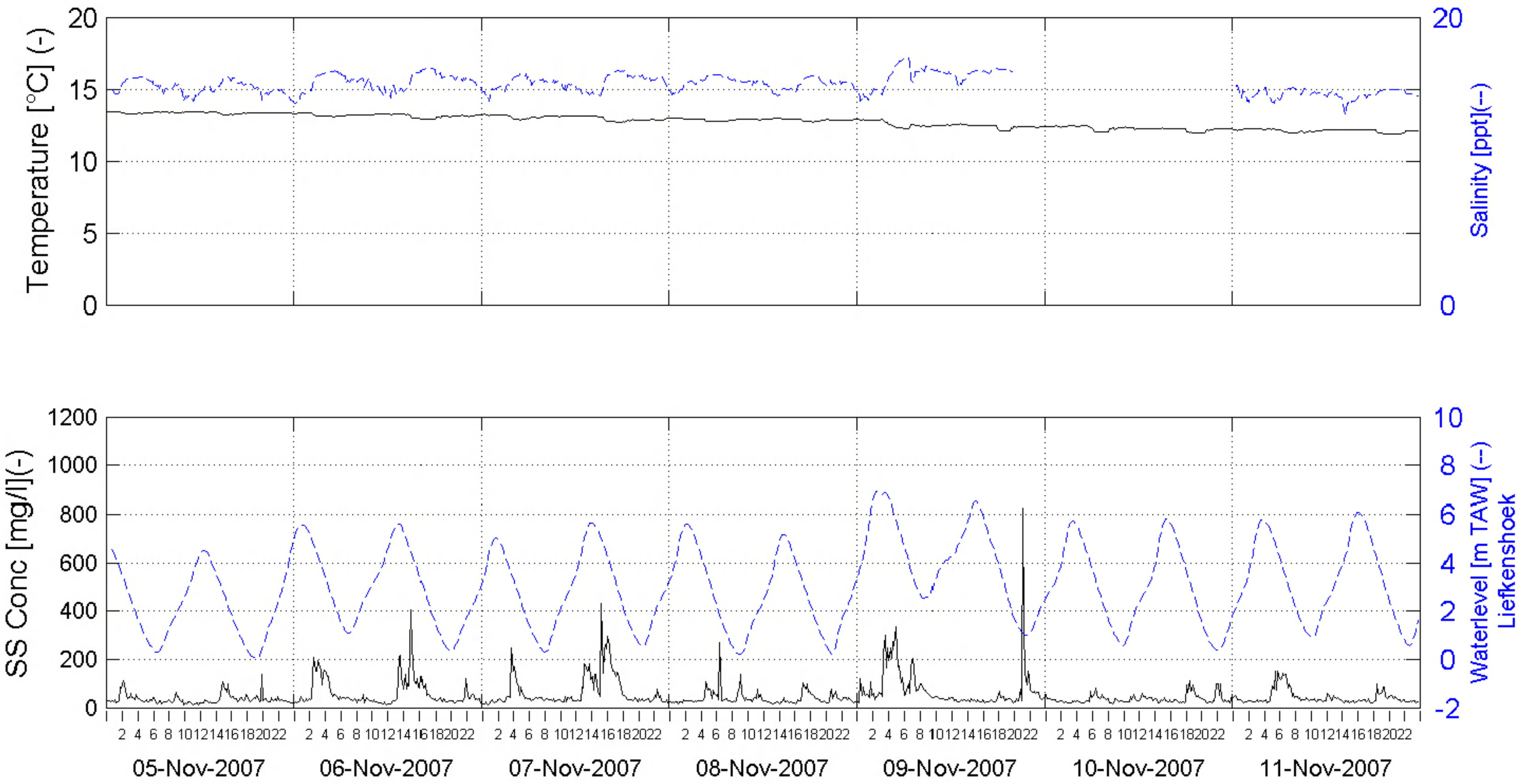
IMDC

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 45 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

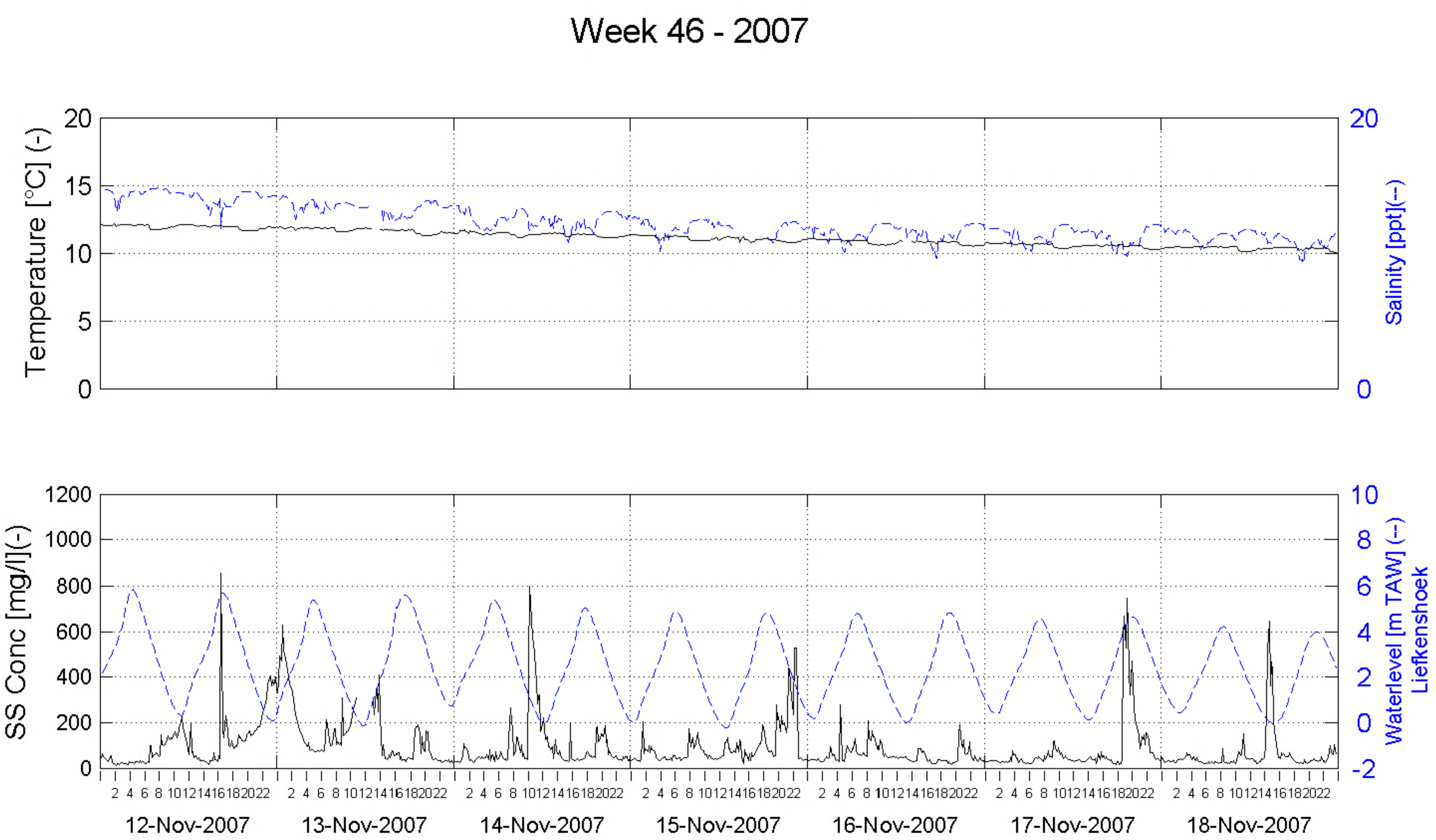
Location:
S-BACK BOTTOM 4.7m above bottom (-12.3m TAW)

Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Processed by:

In Association with:

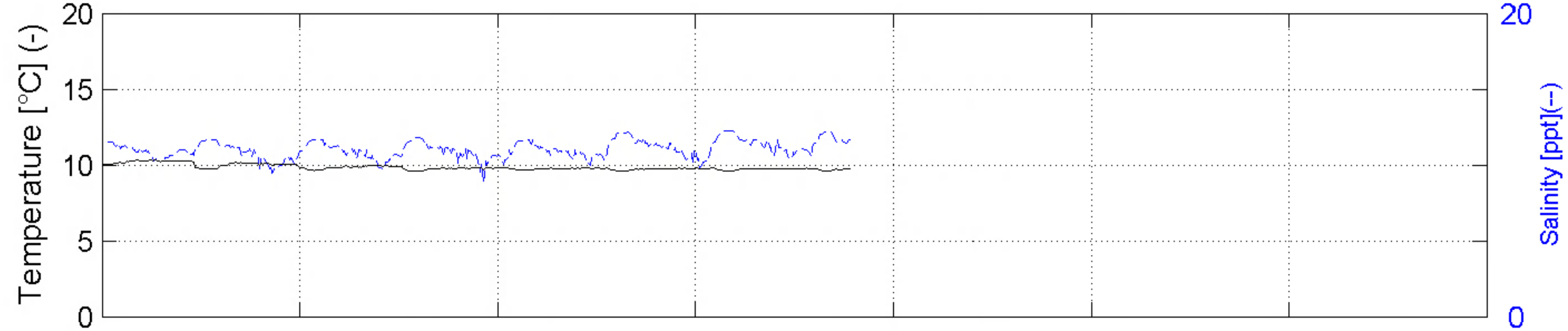
Location:

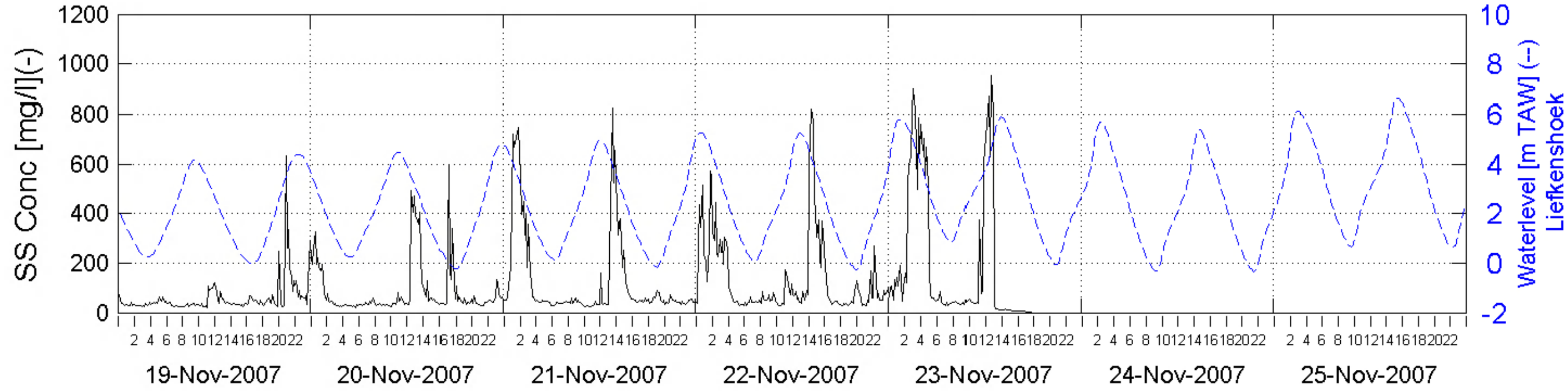
S-BACK BOTTOM 4.7m above bottom (-12.3m TAW)

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 47 - 2007





Week series of Salinity, Temperature,
SS Concentration and Tide

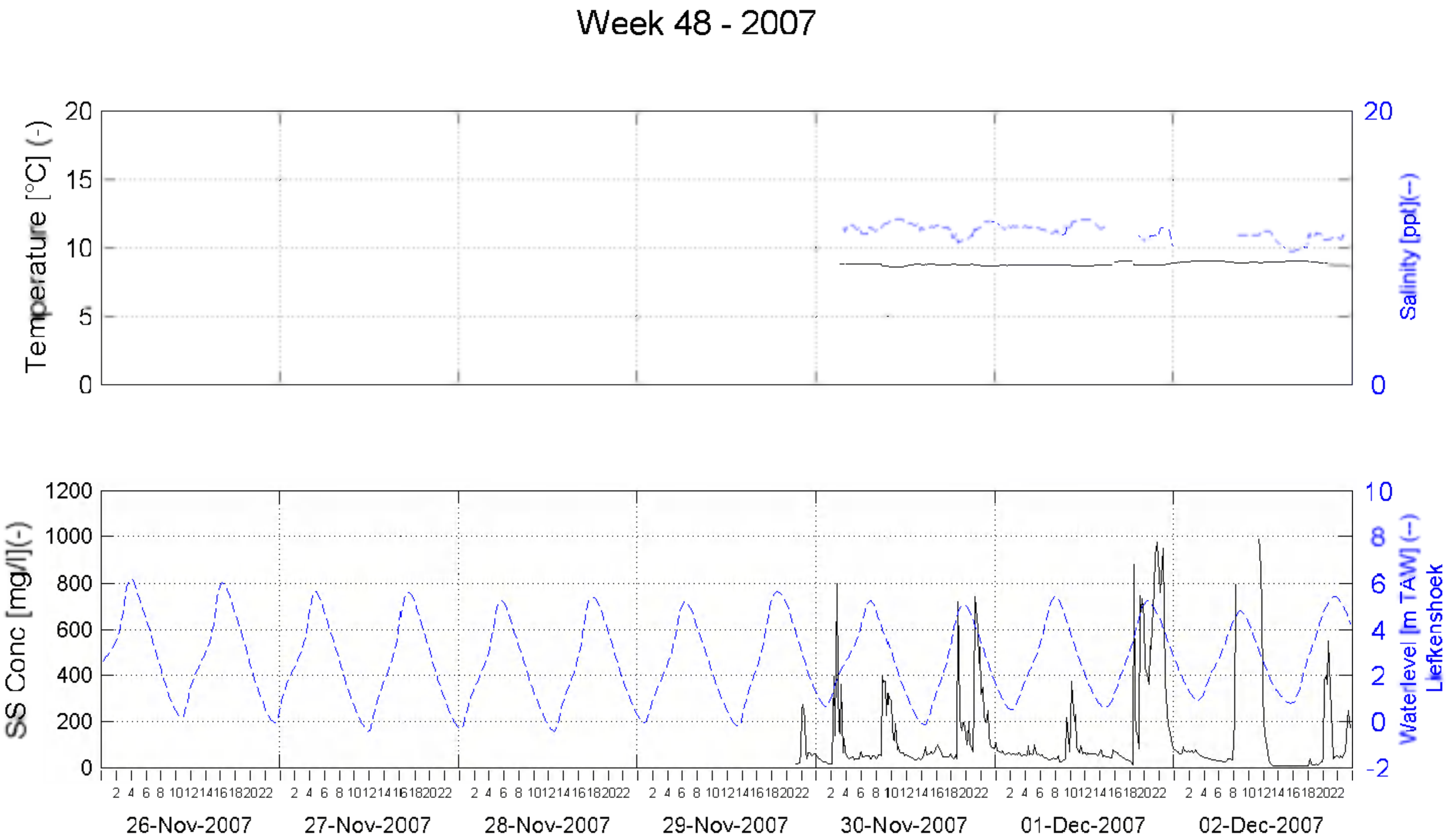
Processed by:

In Association with:

Location:
S-BACK BOTTOM 4.7m above bottom (-12.3m TAW)

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:
S-BACK BOTTOM 4.7m above bottom (-12.3m TAW)

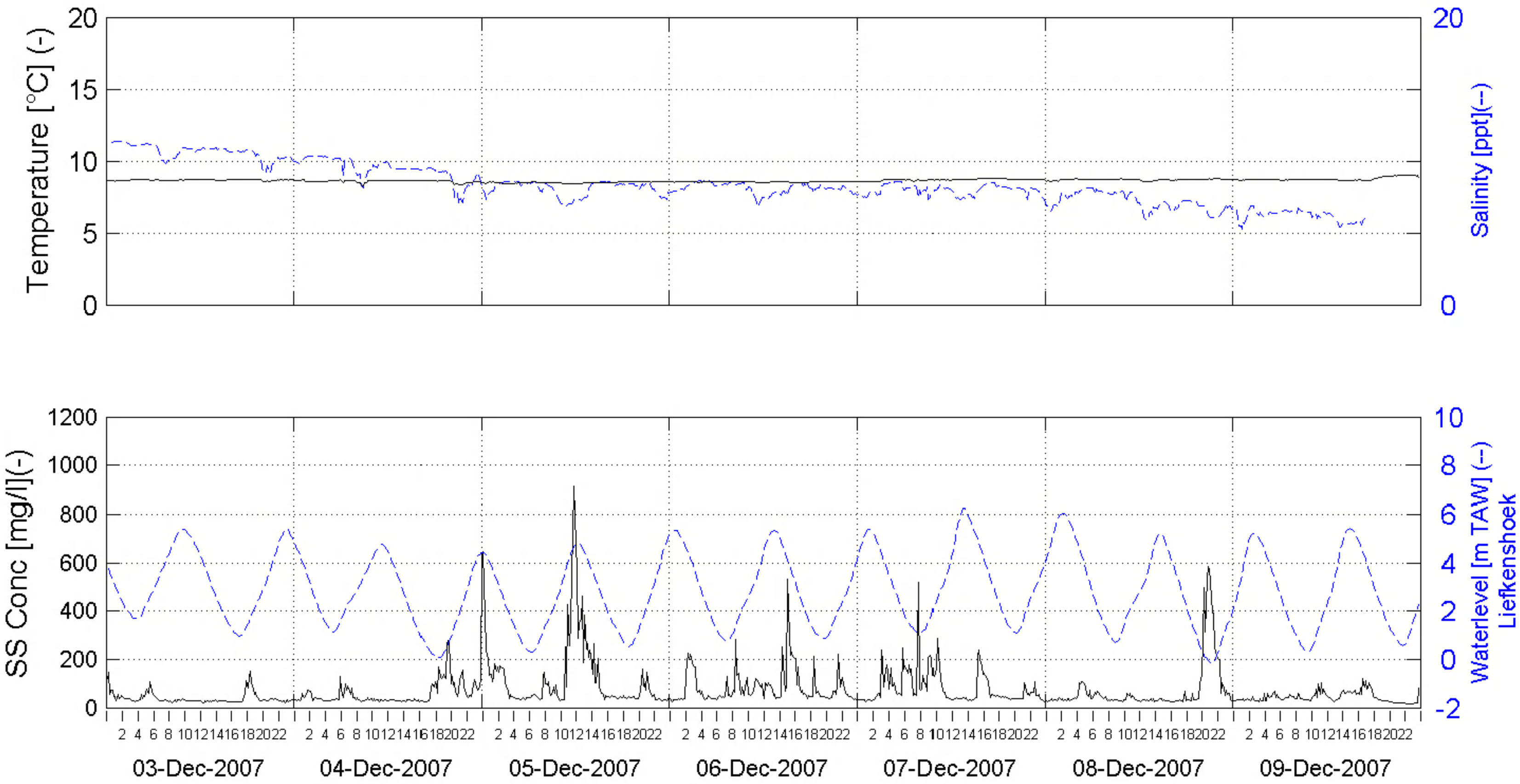
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 49 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:
S-BACK BOTTOM 4.7m above bottom (-12.3m TAW)

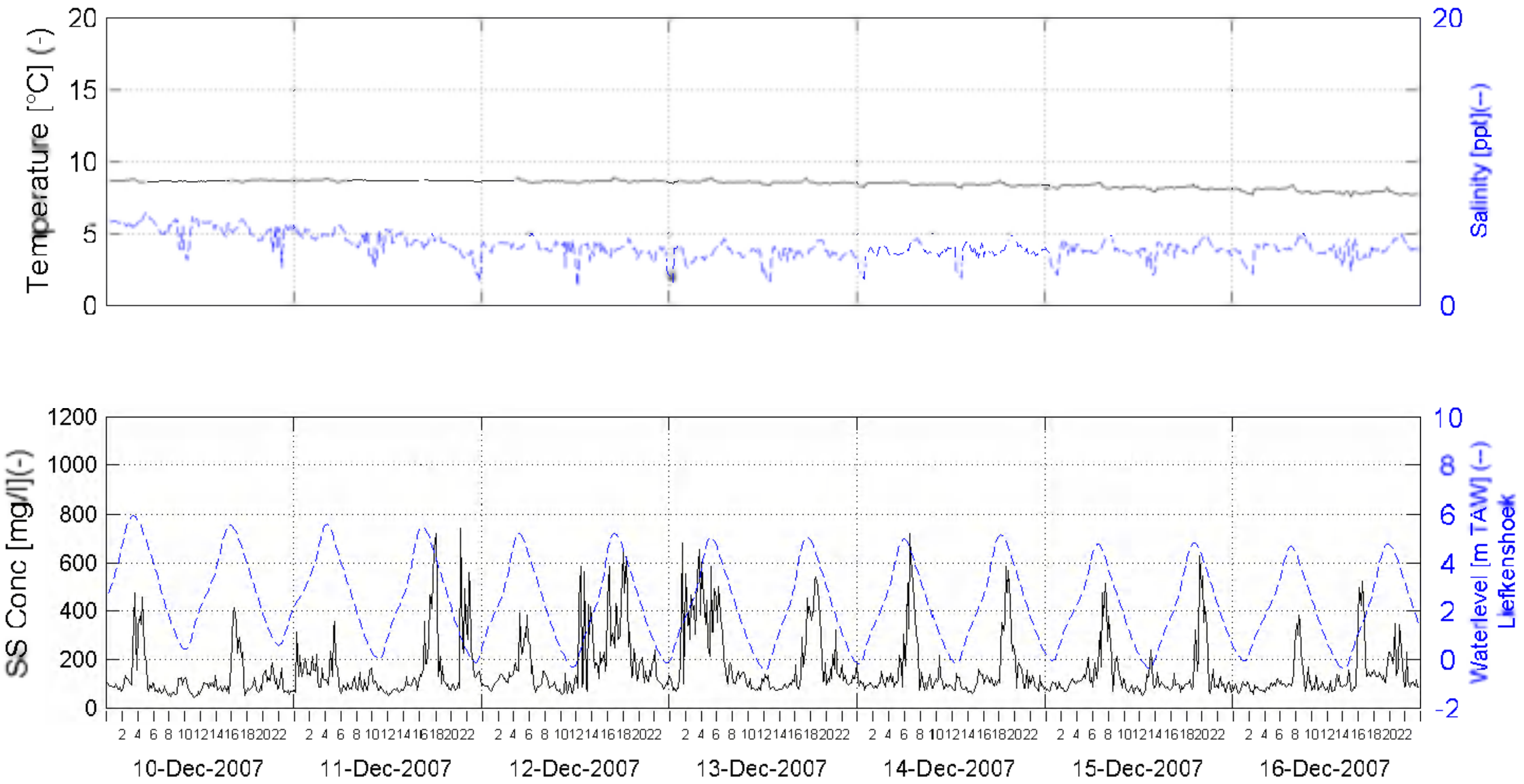
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 50 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:
N-ENTRANCE BOTTOM 5.1m above bottom (-11.9m TAW)

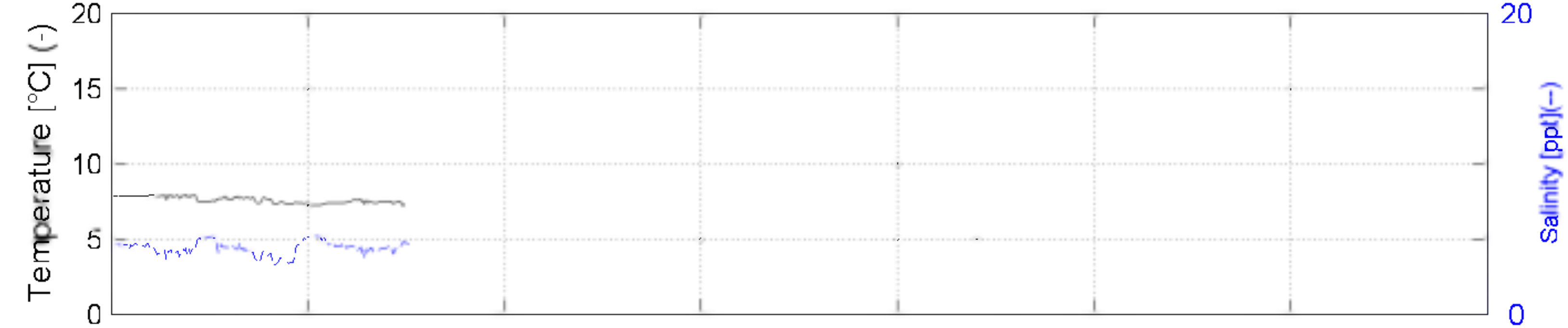
Processed by:

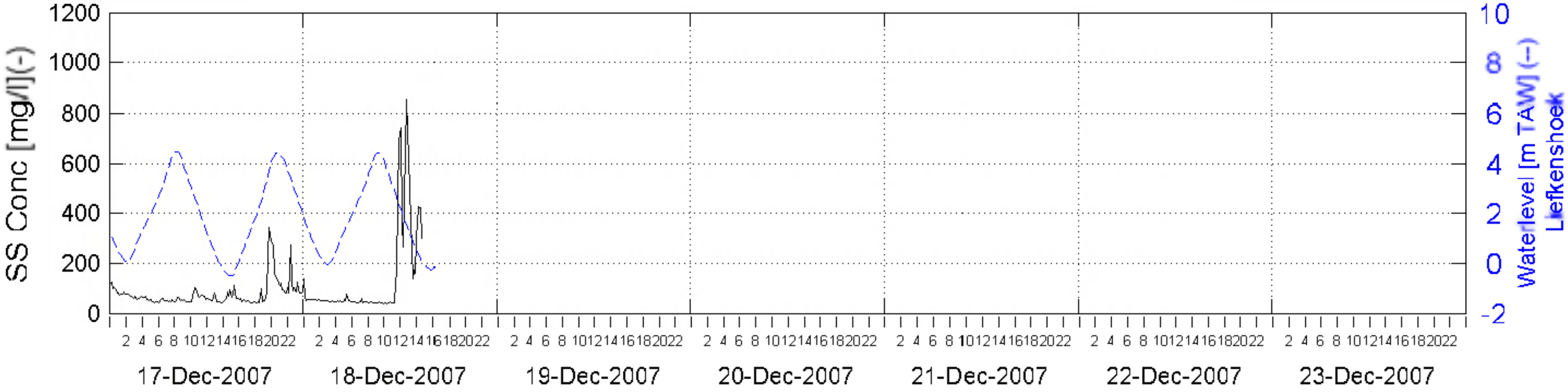
In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 51 - 2007





Week series of Salinity, Temperature,
SS Concentration and Tide

Location:
S-BACK BOTTOM 4.7m above bottom (-12.3m TAW)

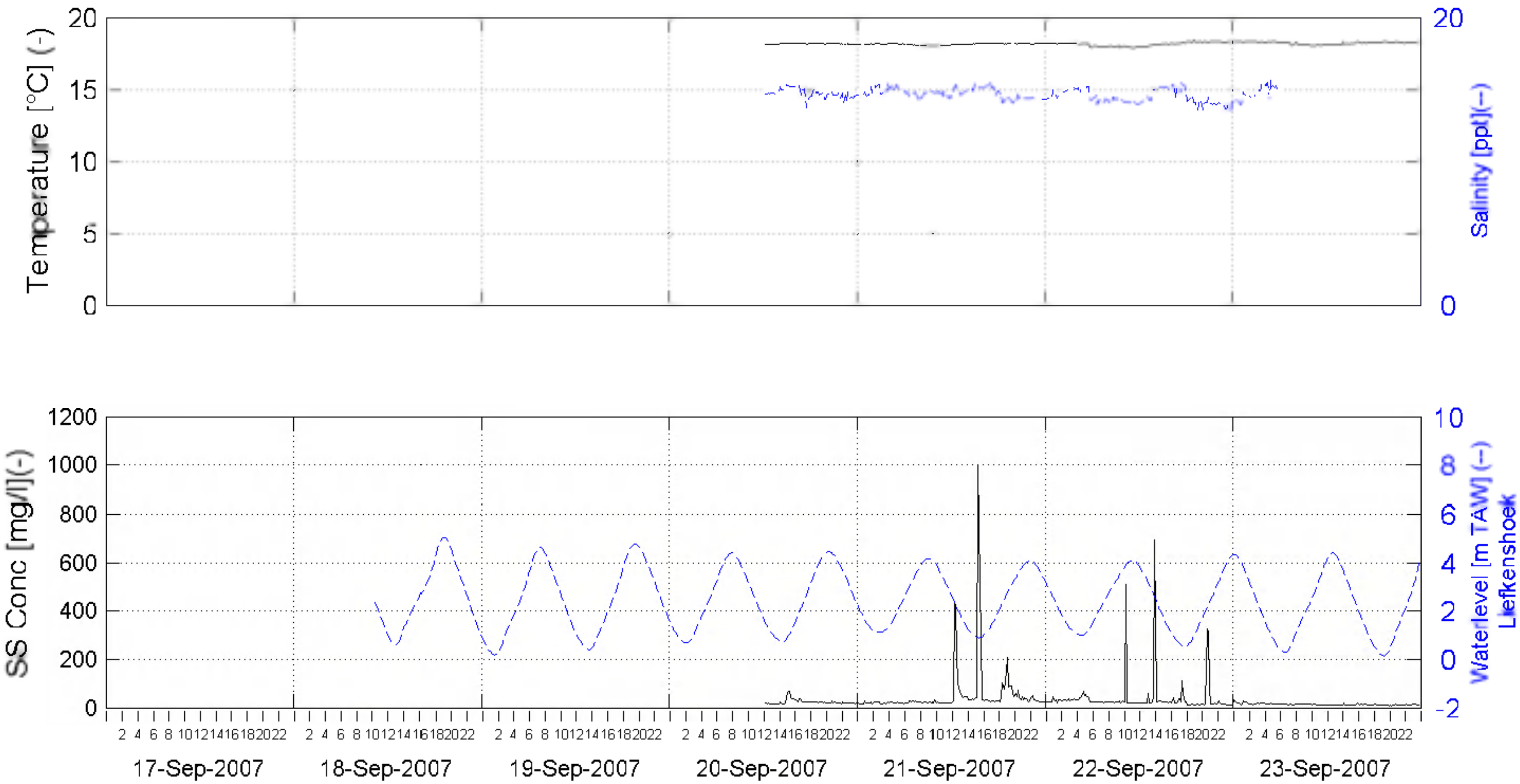
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 38 - 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Processed by:

In Association with:

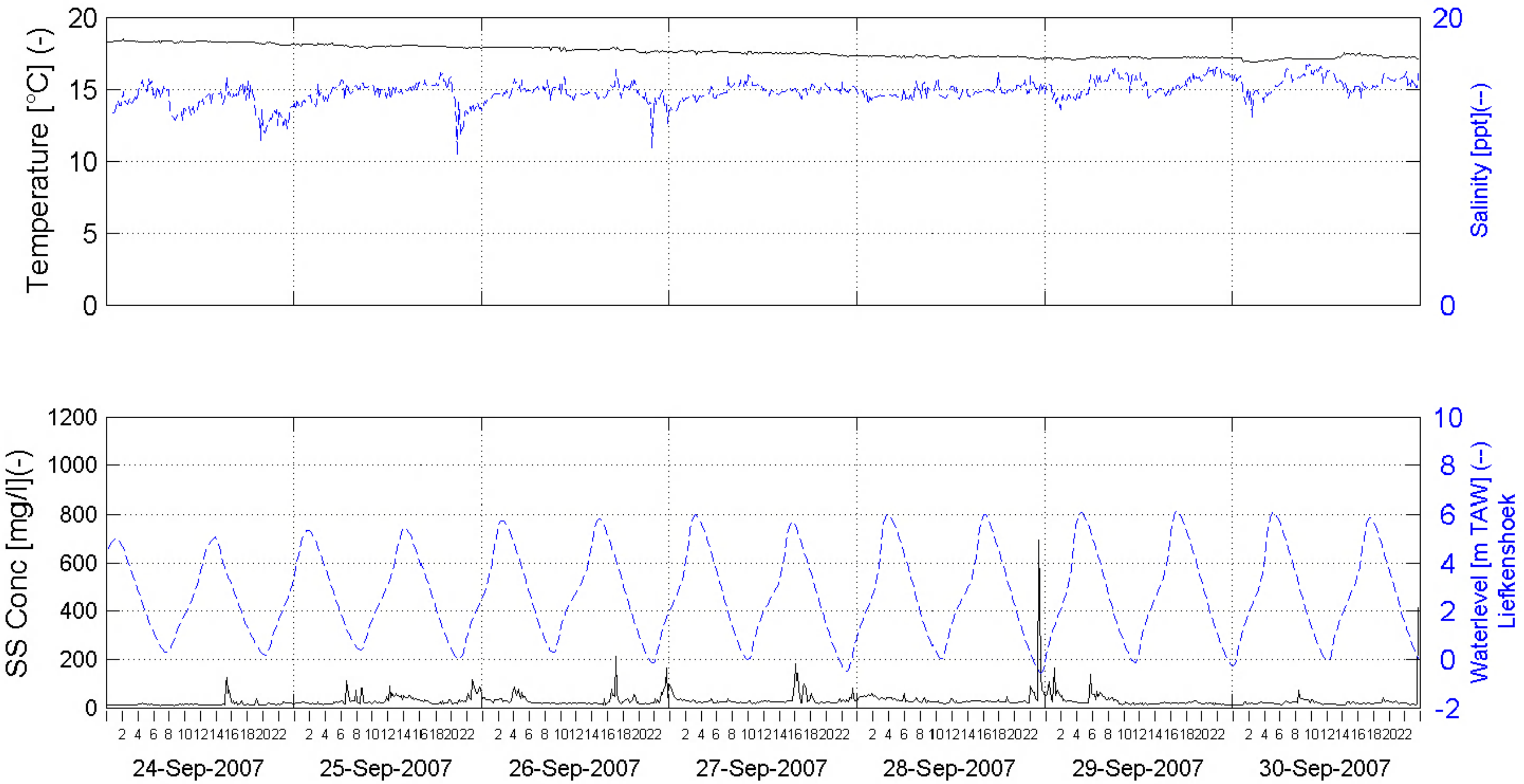
Location:

S-BACK TOP 14.3m above bottom (-2.7m TAW)

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 39 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:

S-BACK TOP 14.3m above bottom (-2.7m TAW)

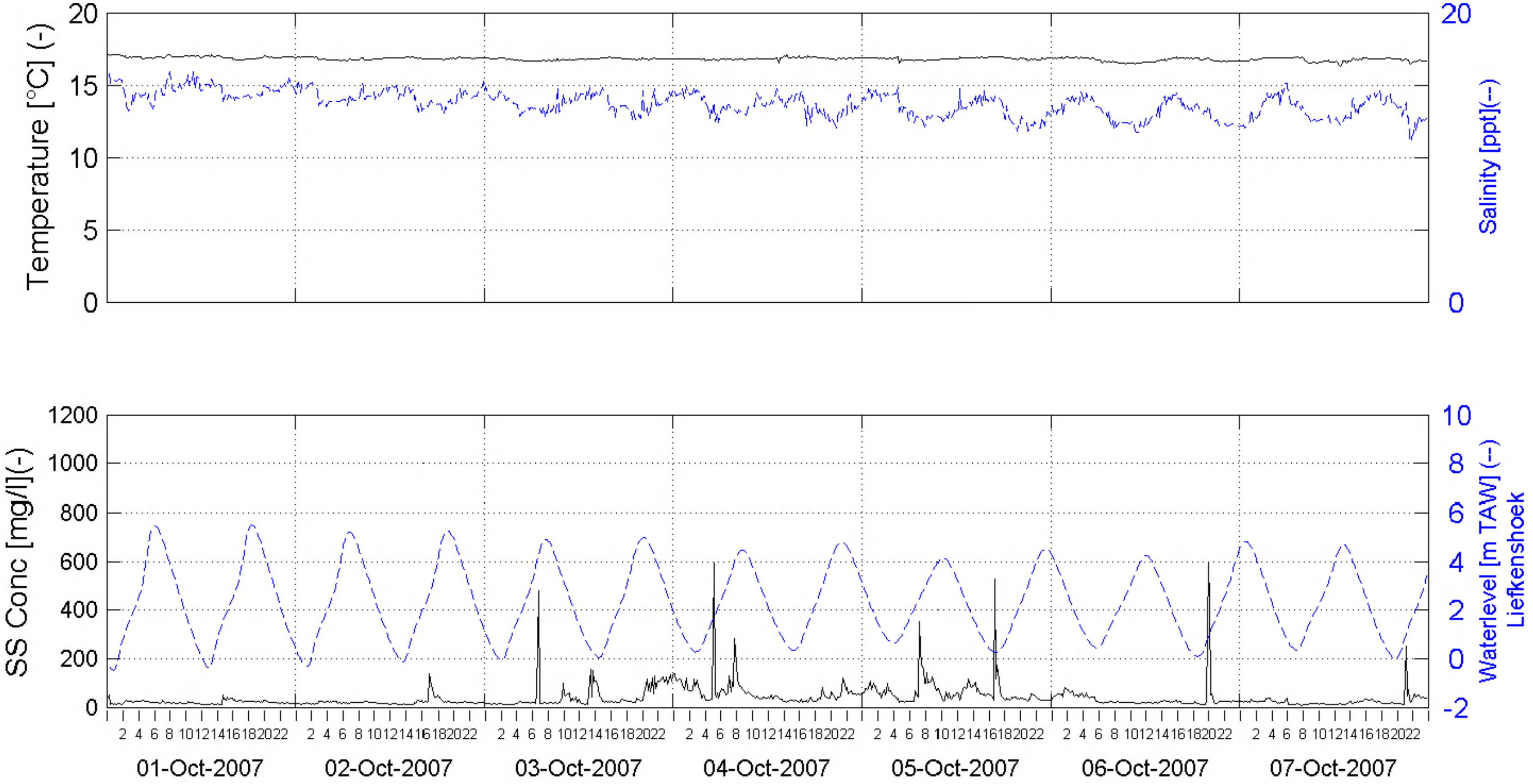
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 40 - 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:

S-BACK TOP 14.3m above bottom (-2.7m TAW)

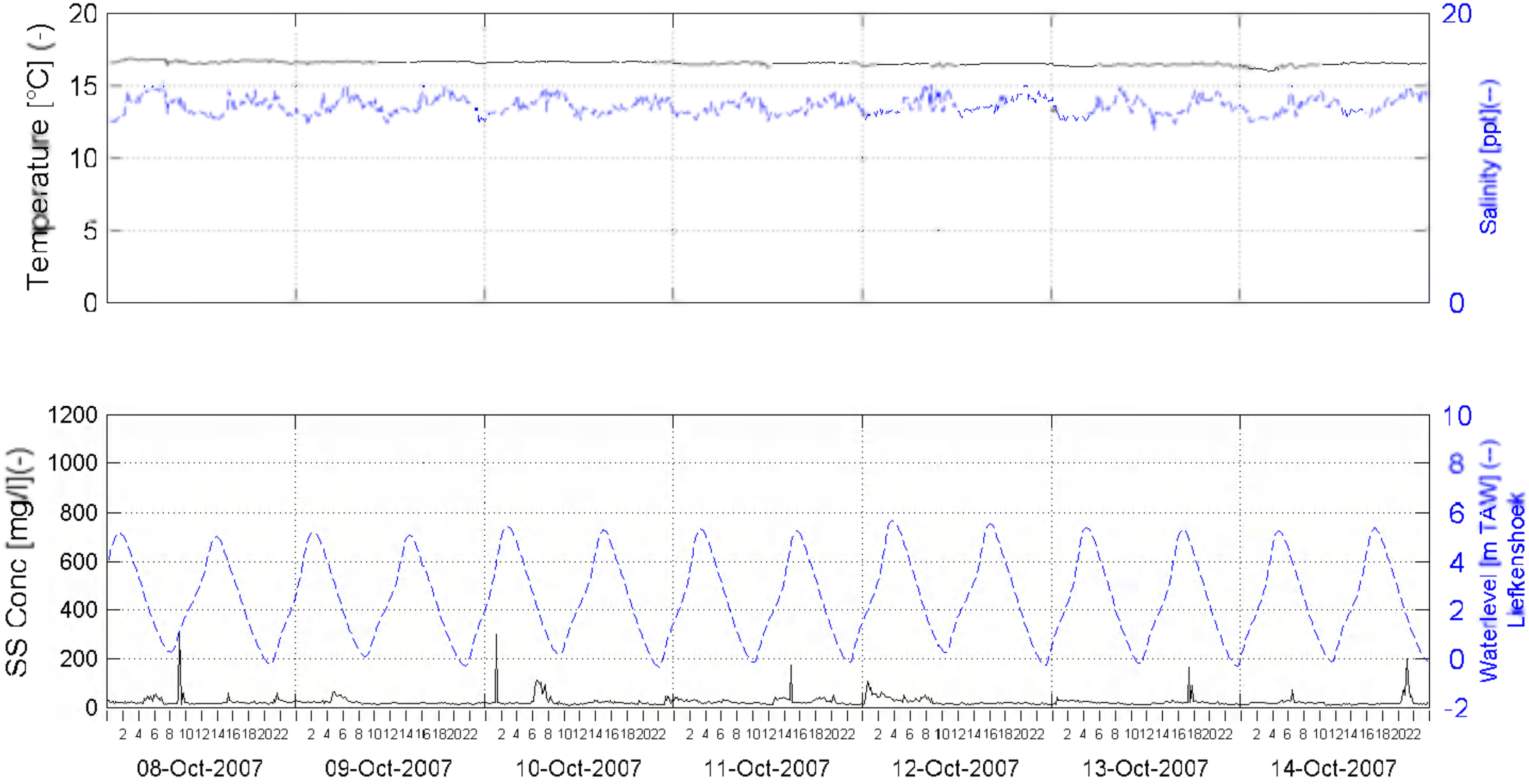
Processed by: IMDC

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 41 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:

S-BACK TOP 14.3m above bottom (-2.7m TAW)

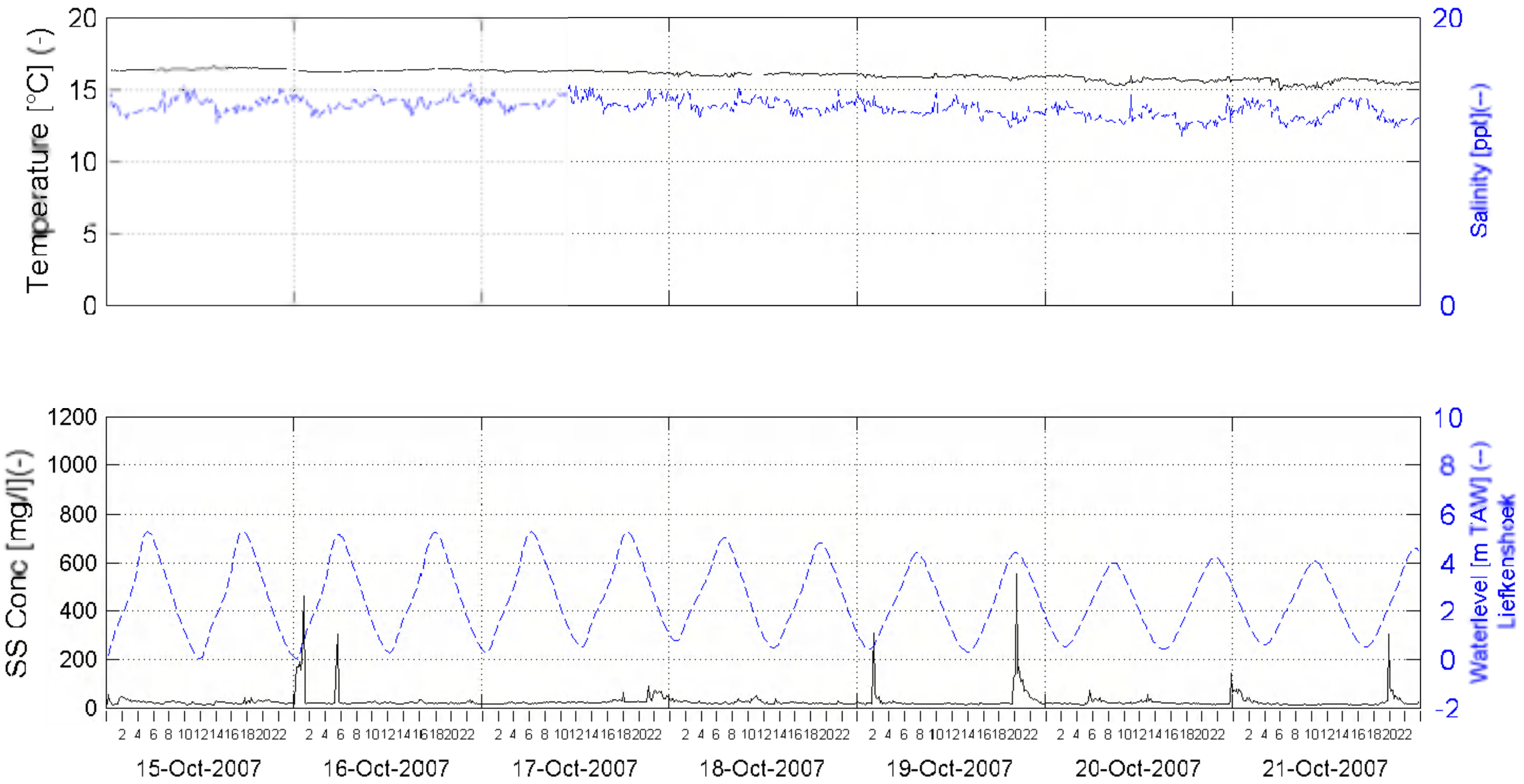
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 42 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:

S-BACK TOP 14.3m above bottom (-2.7m TAW)

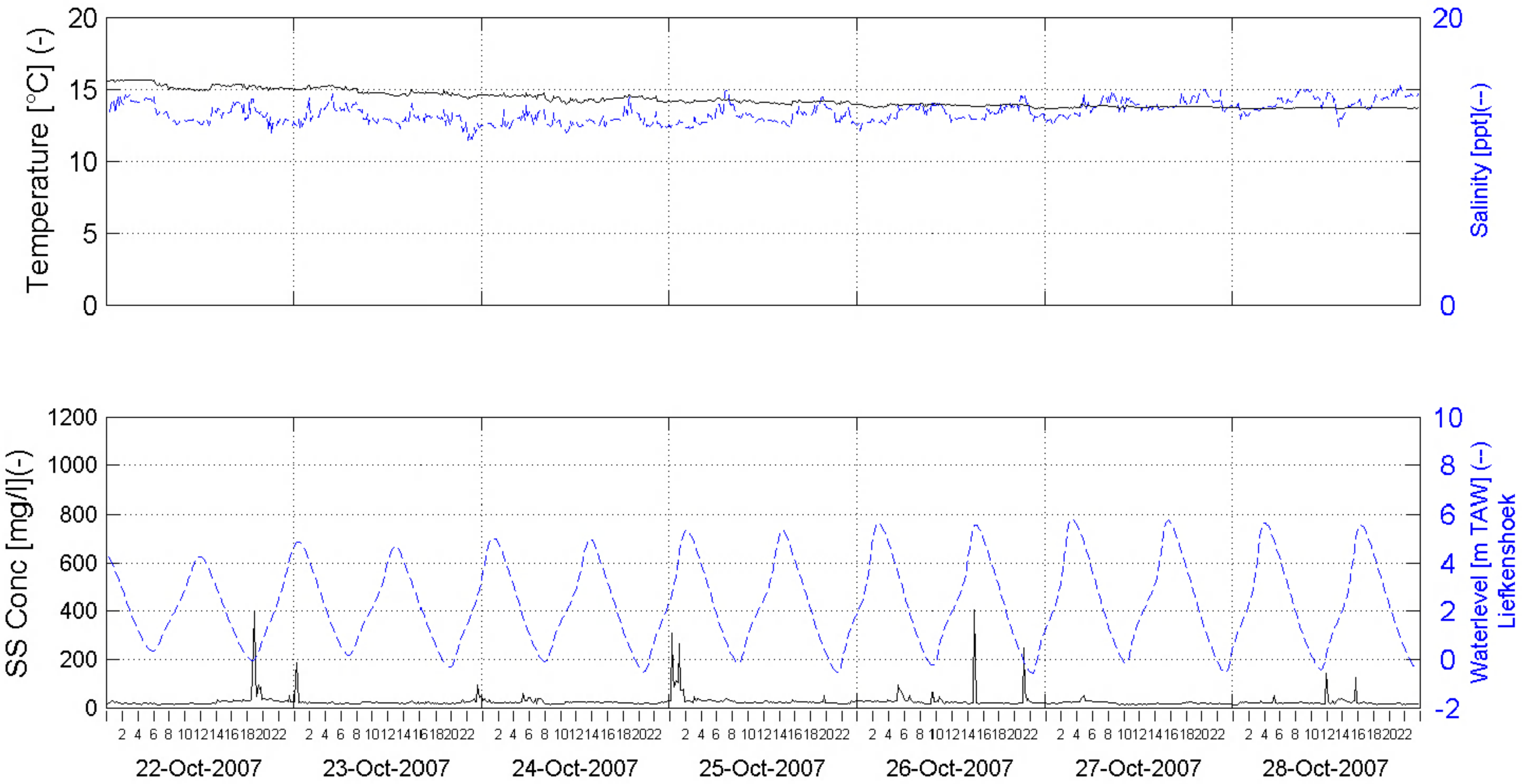
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 43 - 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:

S-BACK TOP 14.3m above bottom (-2.7m TAW)

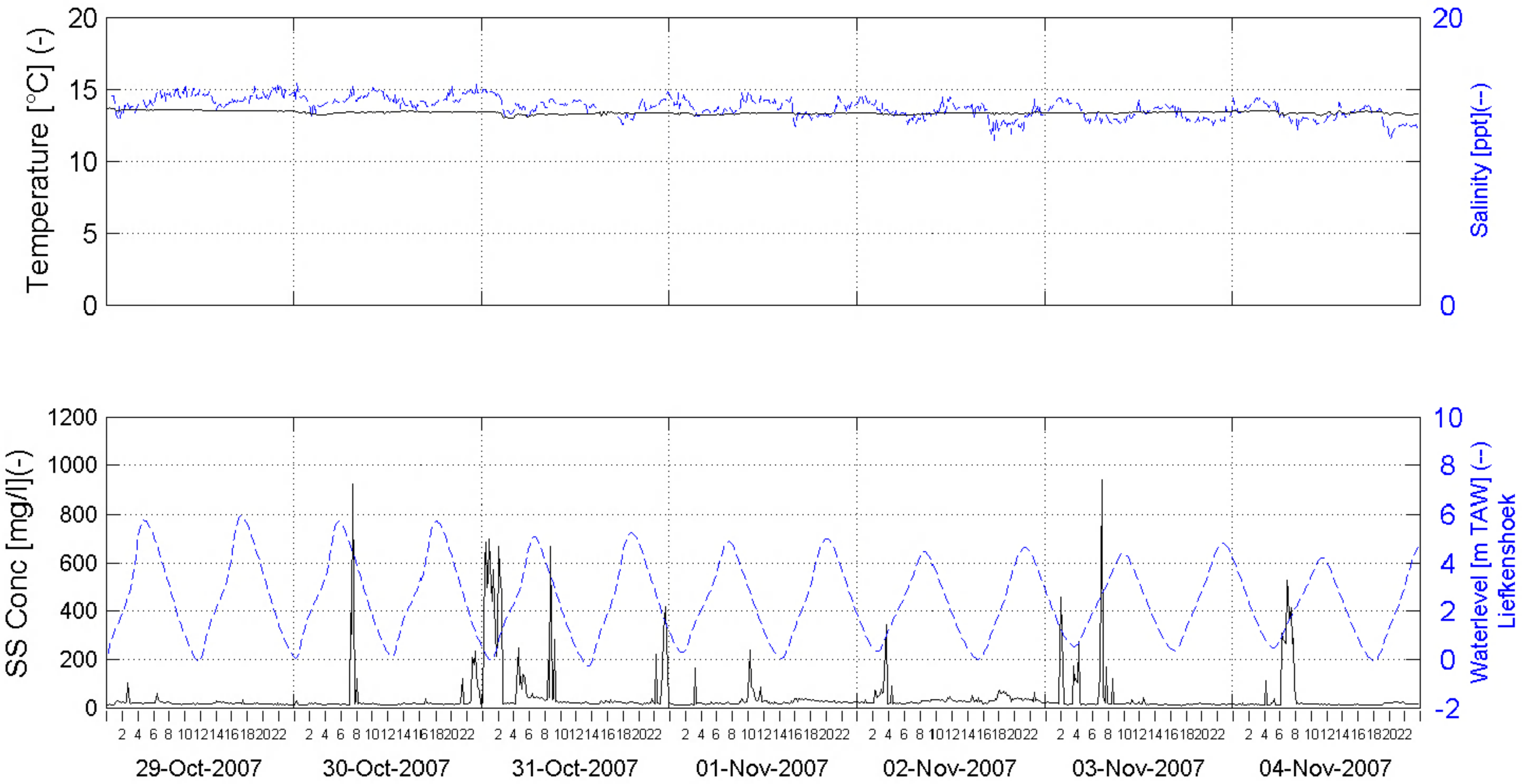
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 44 - 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:

S-BACK TOP 14.3m above bottom (-2.7m TAW)

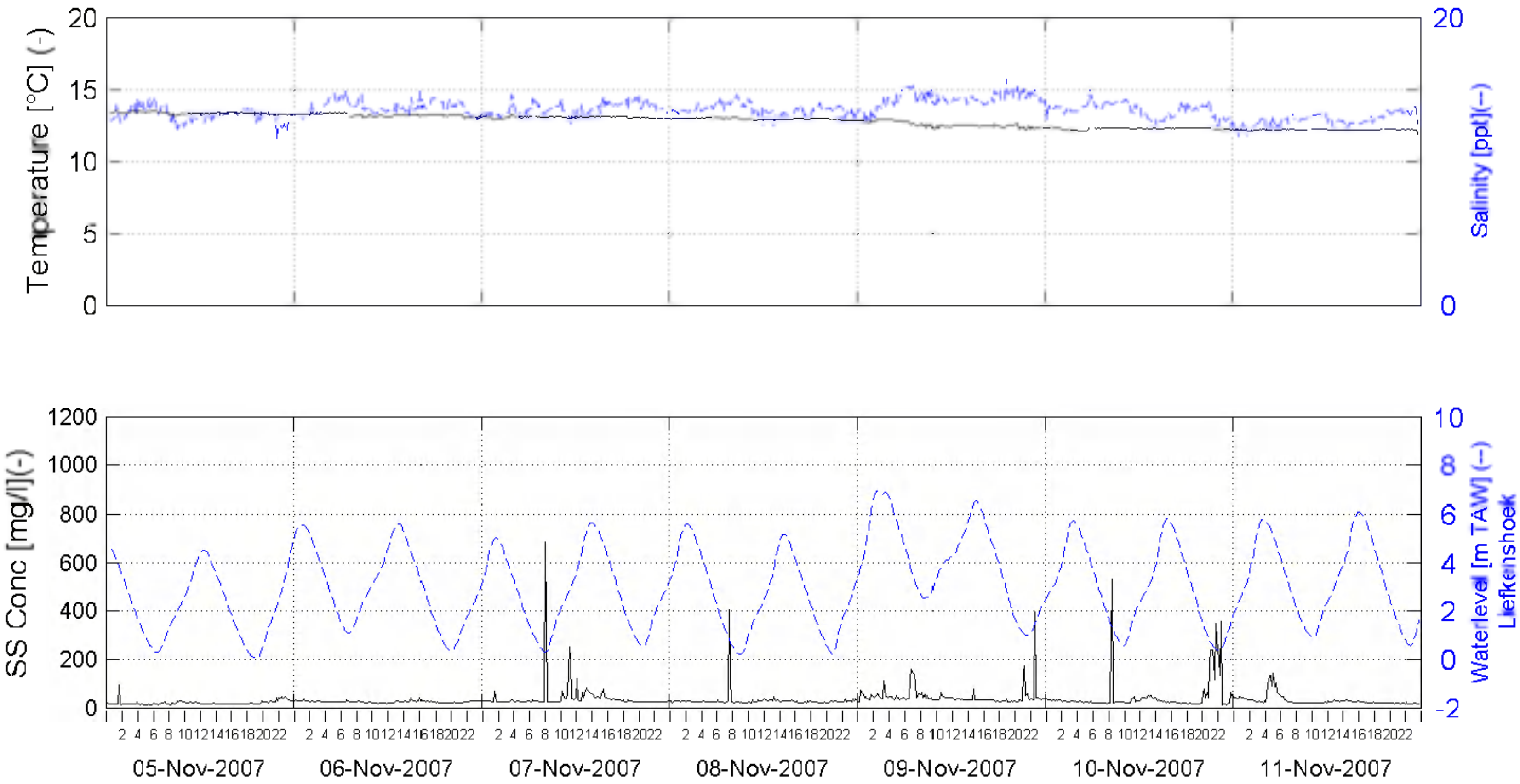
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 45 - 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:

S-BACK TOP 14.3m above bottom (-2.7m TAW)

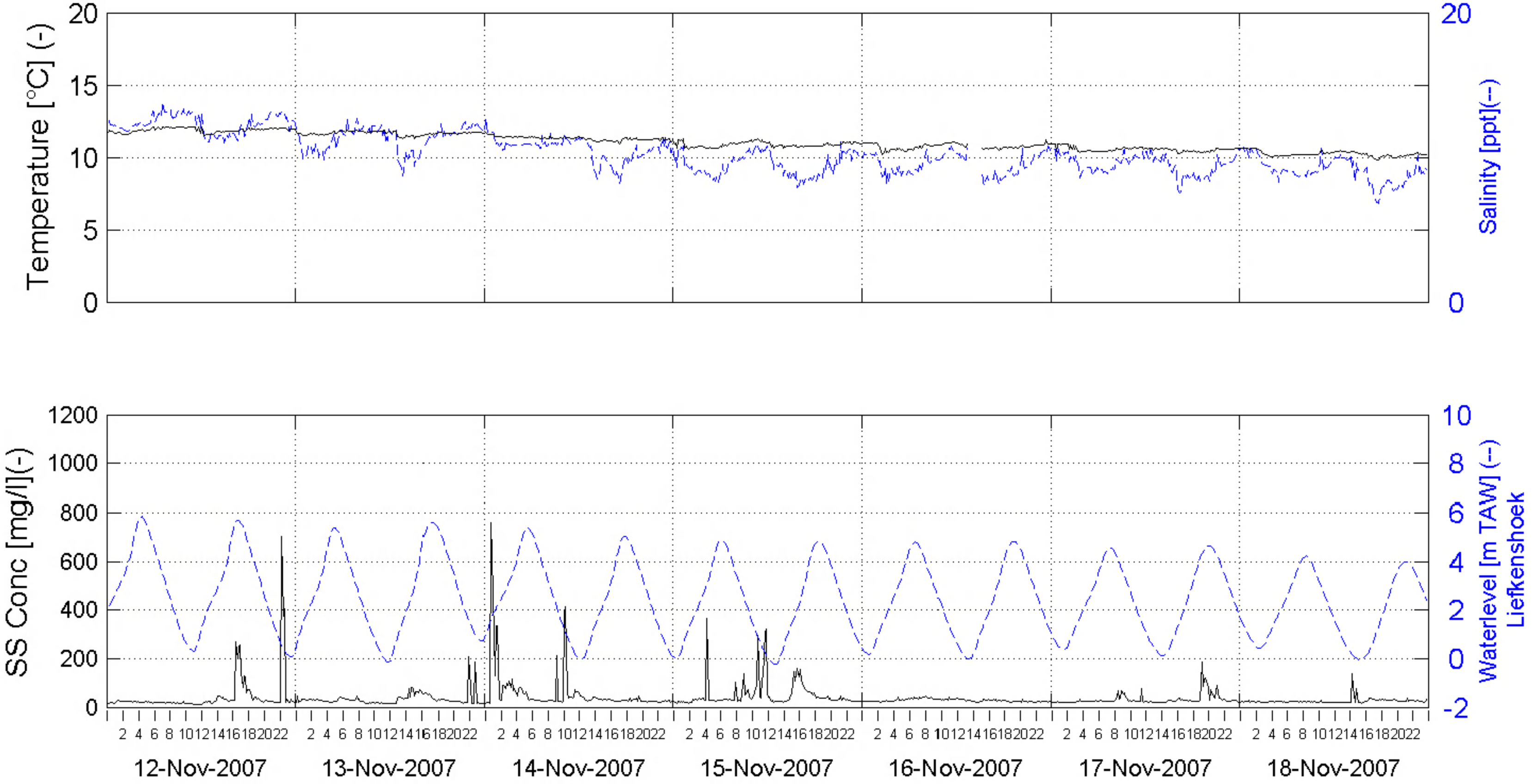
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 46 - 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:

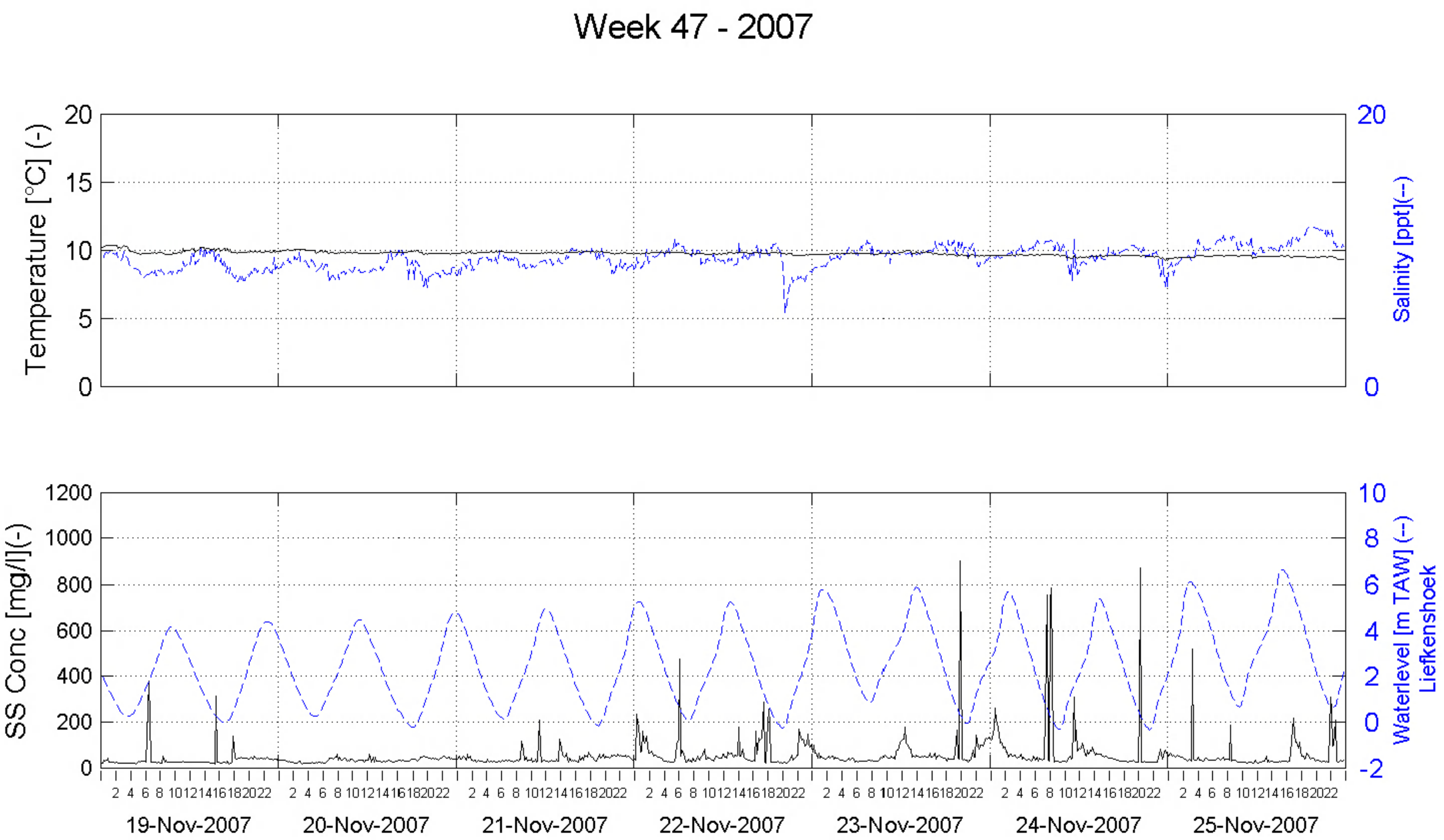
S-BACK TOP 14.3m above bottom (-2.7m TAW)

Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:

S-BACK TOP 14.3m above bottom (-2.7m TAW)

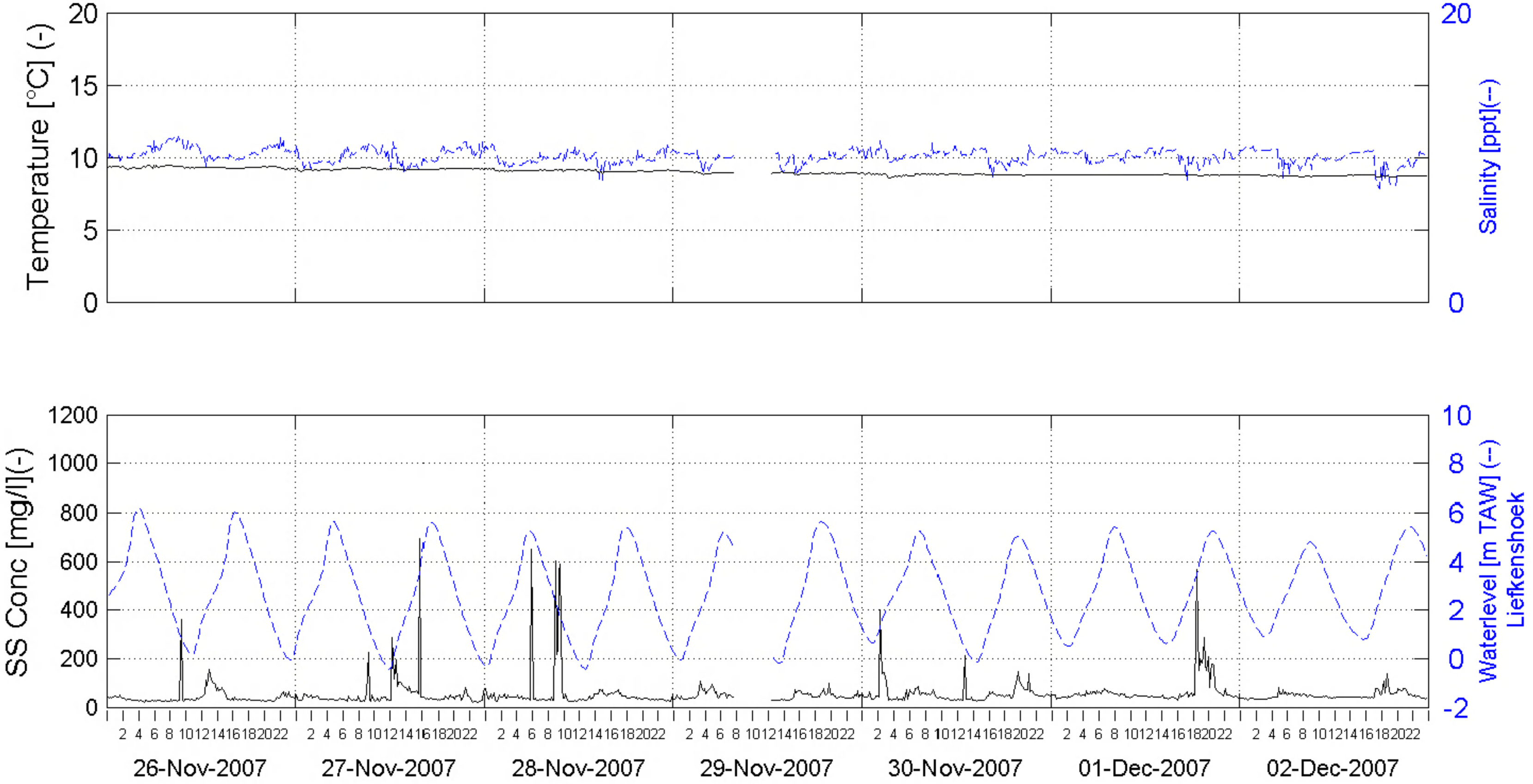
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 48 - 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:

S-BACK TOP 14.3m above bottom (-2.7m TAW)

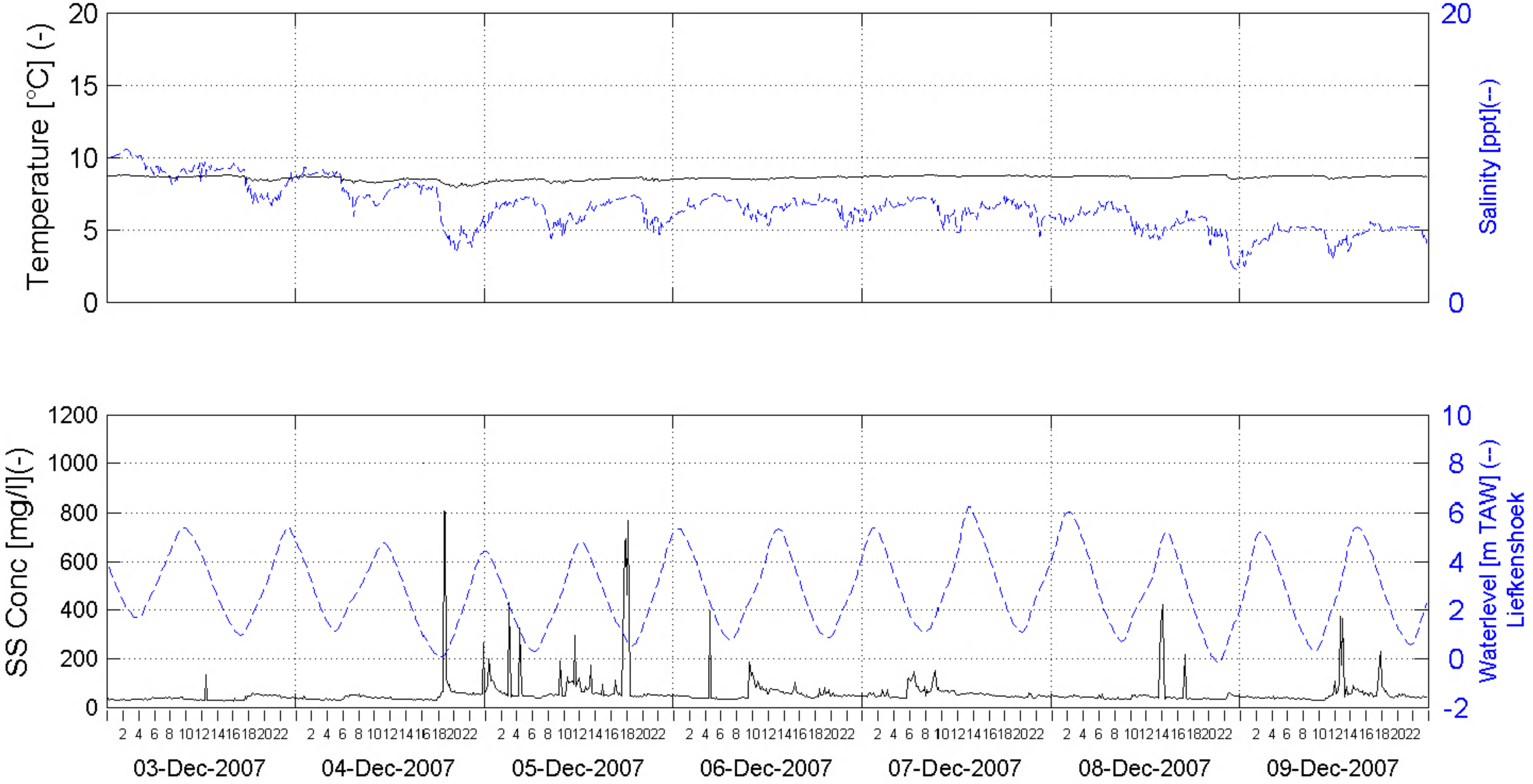
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 49 - 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:

S-BACK TOP 14.3m above bottom (-2.7m TAW)

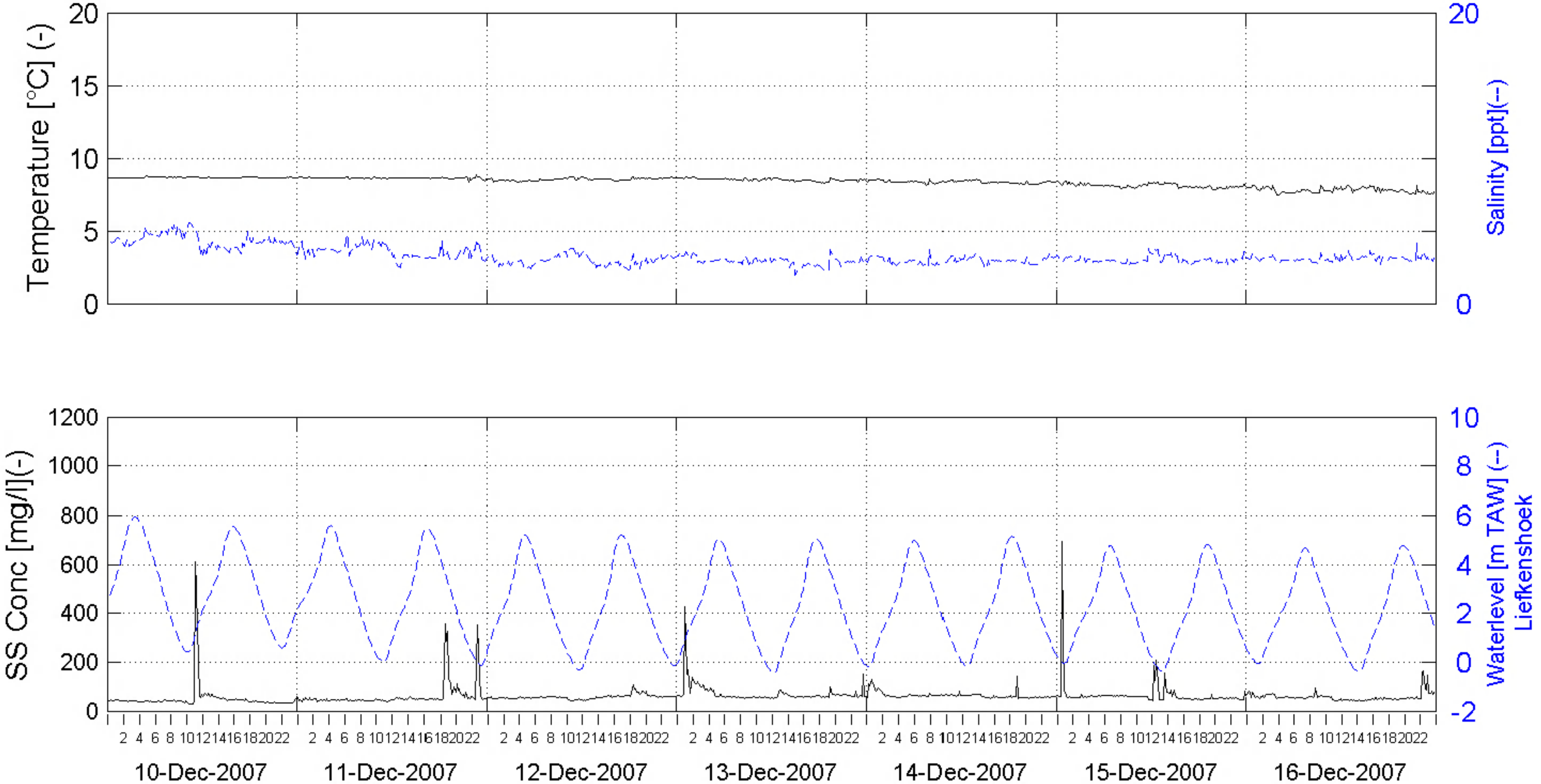
Processed by: IMDC

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 50 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:

S-BACK TOP 14.3m above bottom (-2.7m TAW)

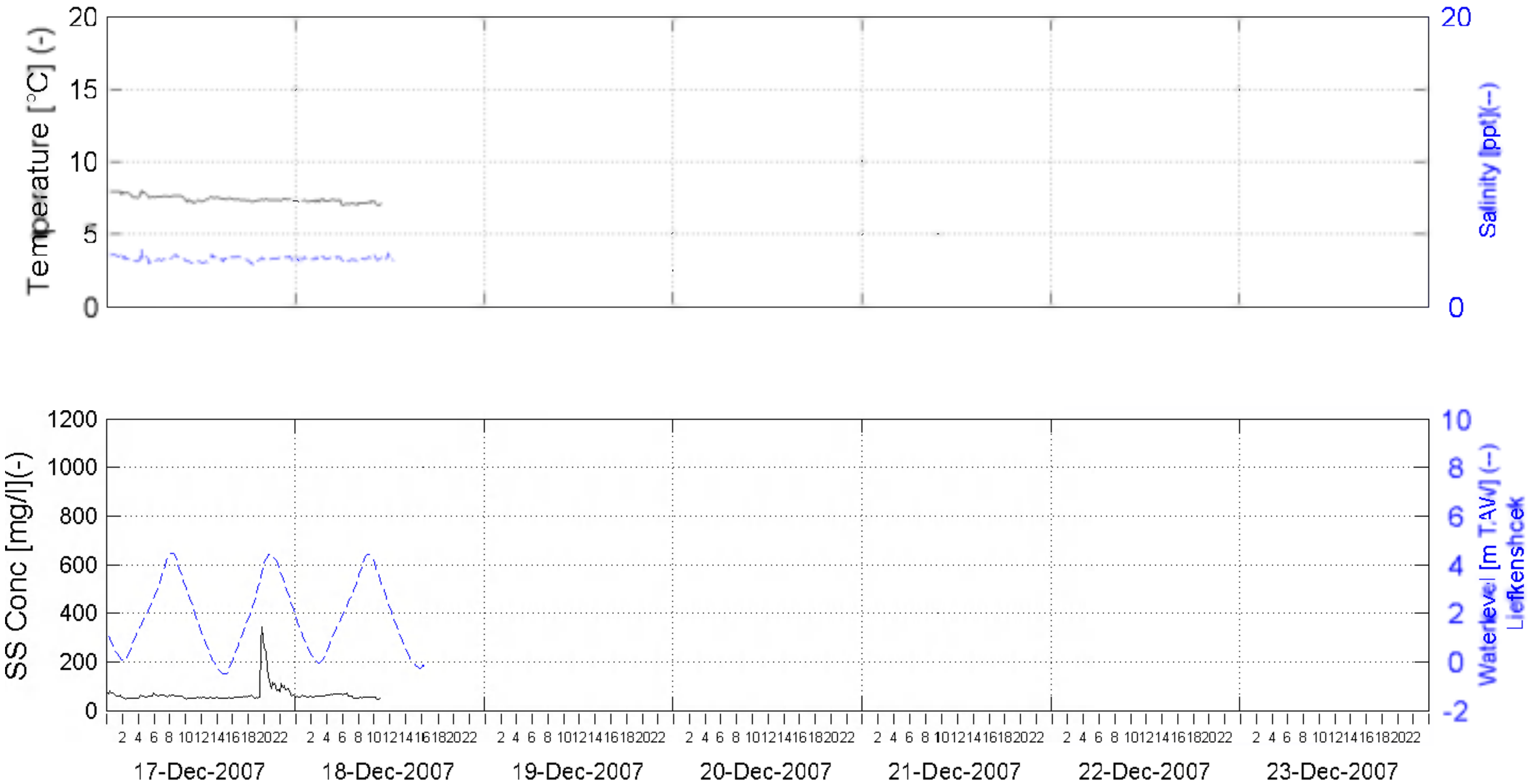
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 51 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:

S-BACK TOP 14.3m above bottom (-2.7m TAW)

Processed by:

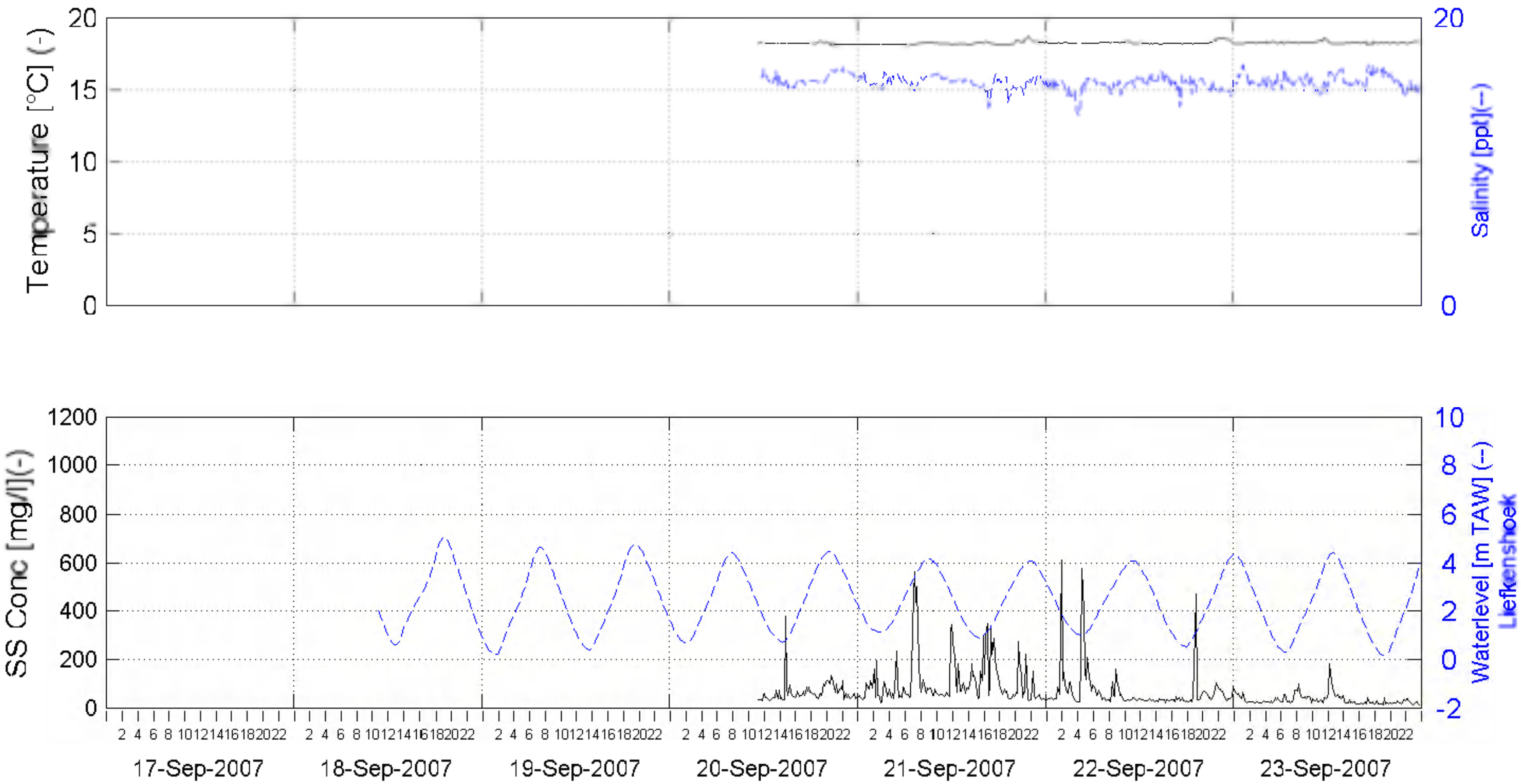
In Association with:

I/RA/11283/07.093/MSA

B.3 P&O 2 (S-ENTRANCE)

11283 - Long-term monitoring DGD - Autumn 2007

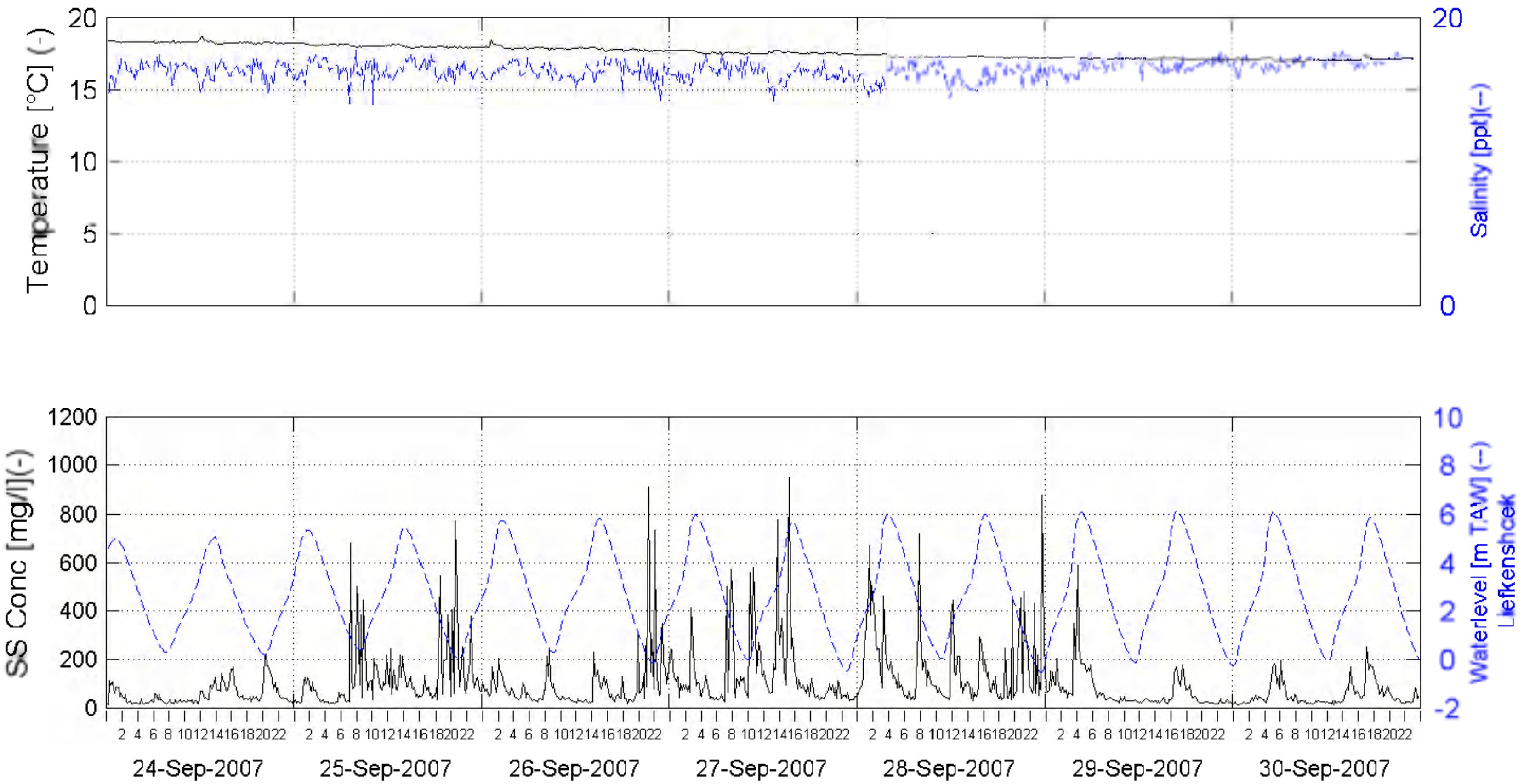
Week 38 - 2007



Week series of Salinity, Temperature, SS Concentration and Tide	Processed by:
Location: S-ENTRANCE BOTTOM 5.2m above bottom (-11.8m TAW)	In Association with:
	I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 39 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

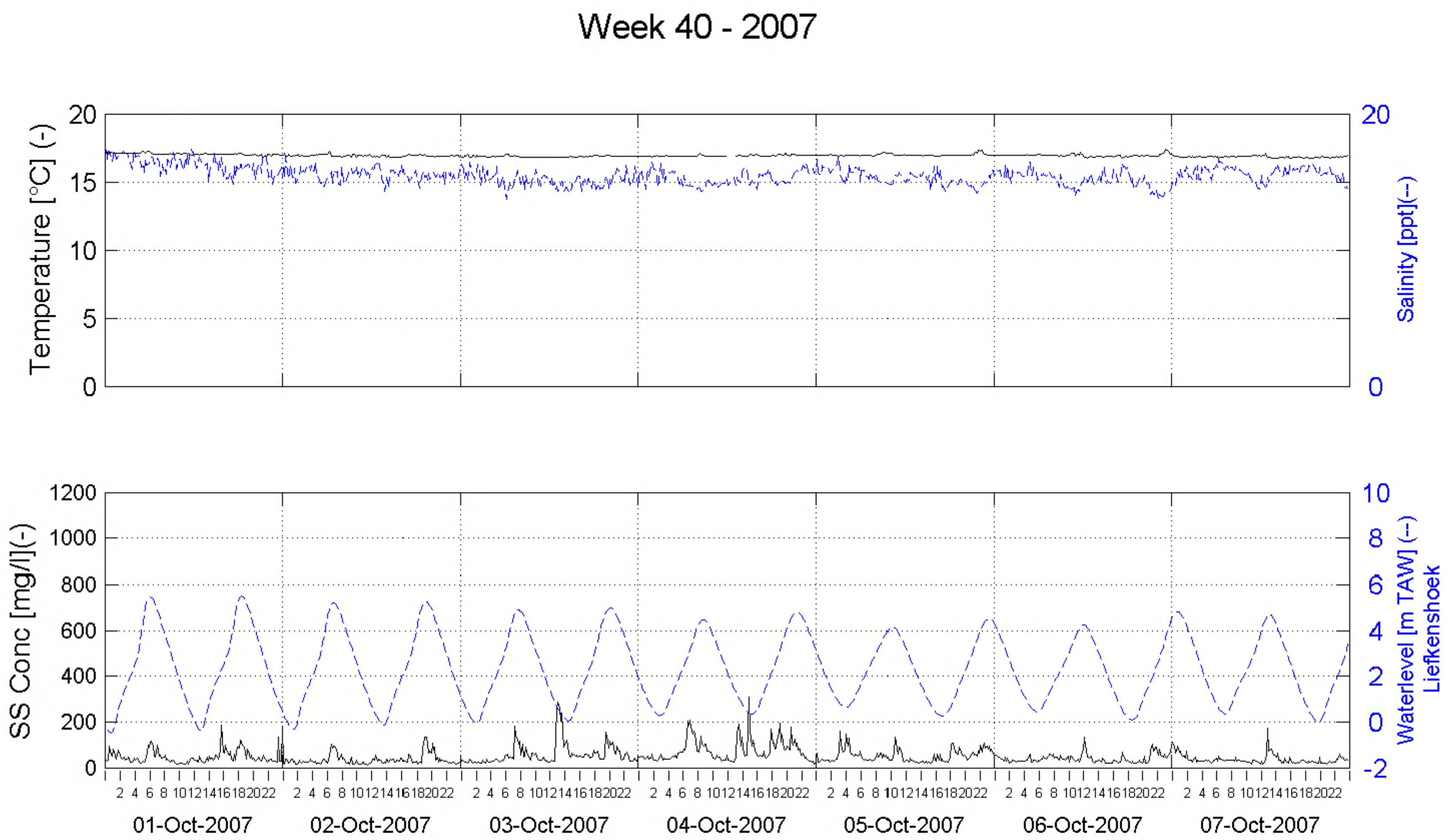
Location:
S-ENTRANCE BOTTOM 5.2m above bottom (-11.8m TAW)

Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:

S-ENTRANCE BOTTOM 5.2m above bottom (-11.8m TAW)

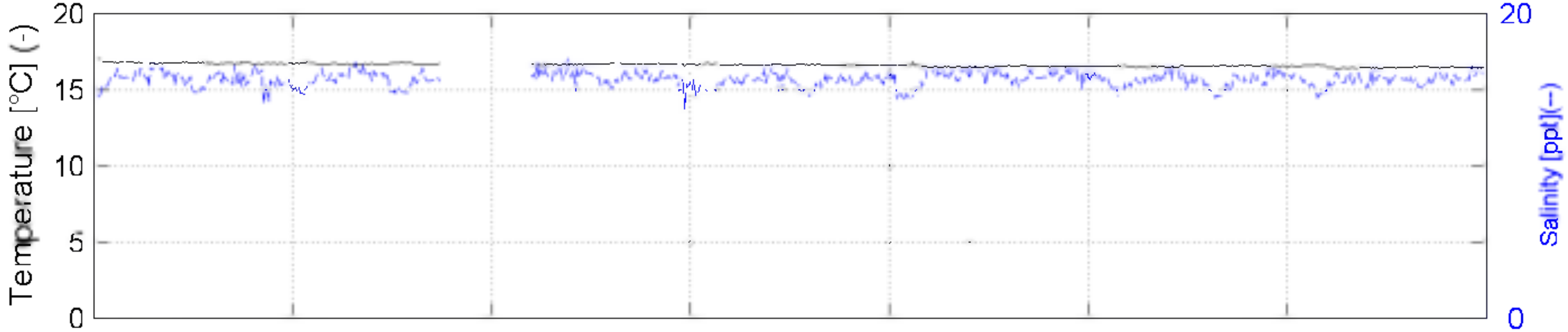
Processed by: IMDC

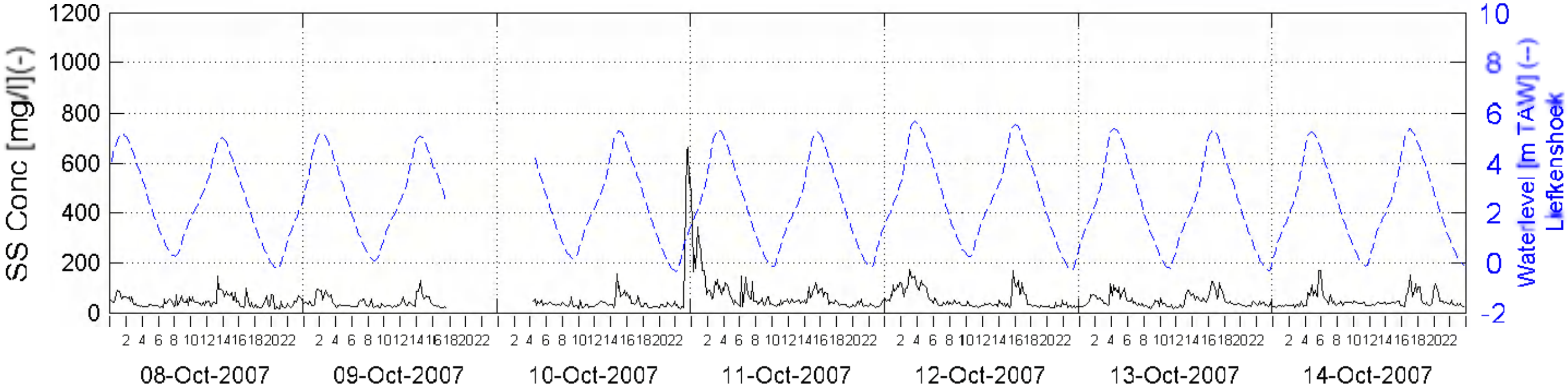
In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 41 - 2007





Week series of Salinity, Temperature, SS Concentration and Tide

Processed by:

Location:

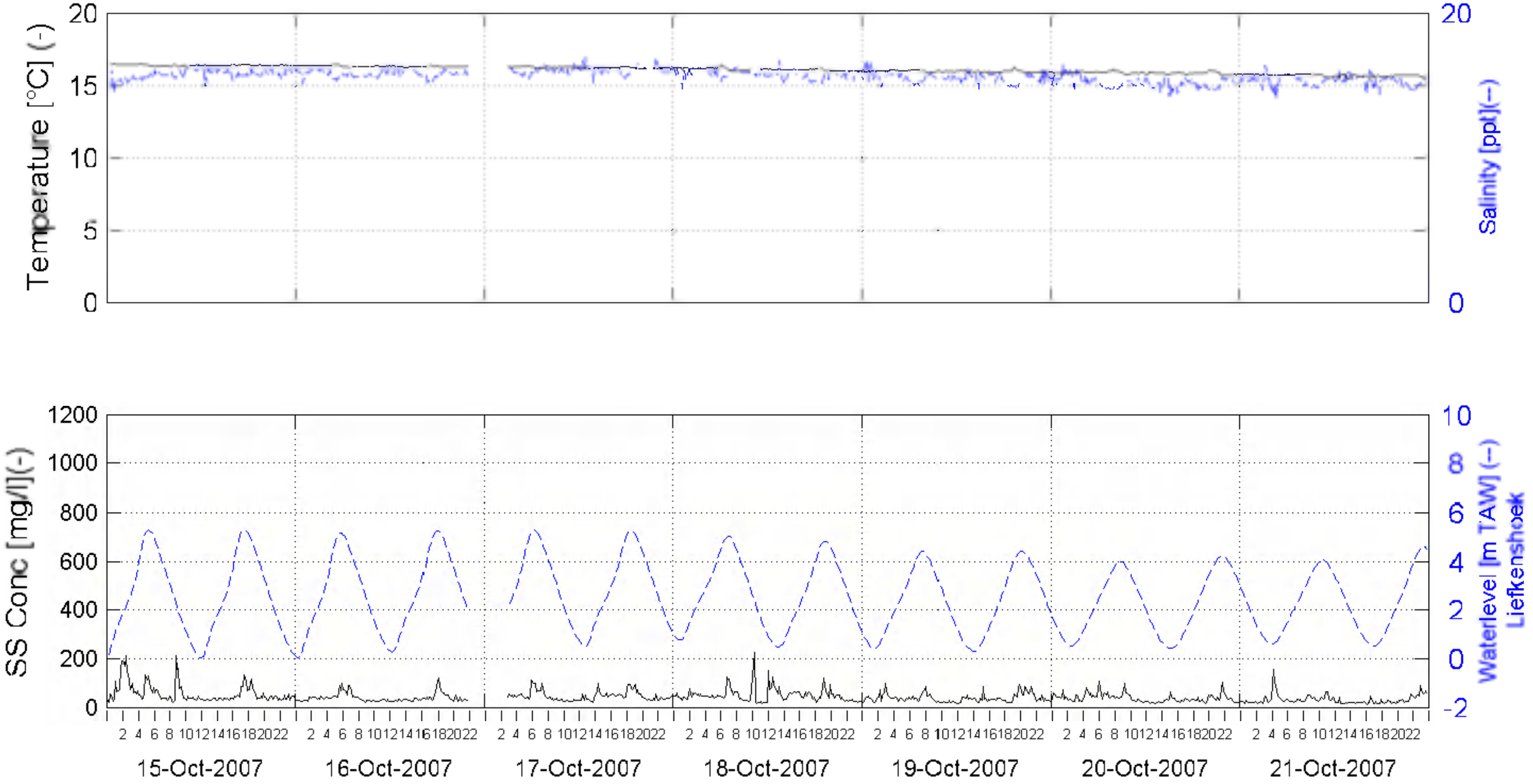
S-ENTRANCE BOTTOM 5.2m above bottom (-11.8m TAW)

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 42 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:
S-ENTRANCE BOTTOM 5.2m above bottom (-11.8m TAW)

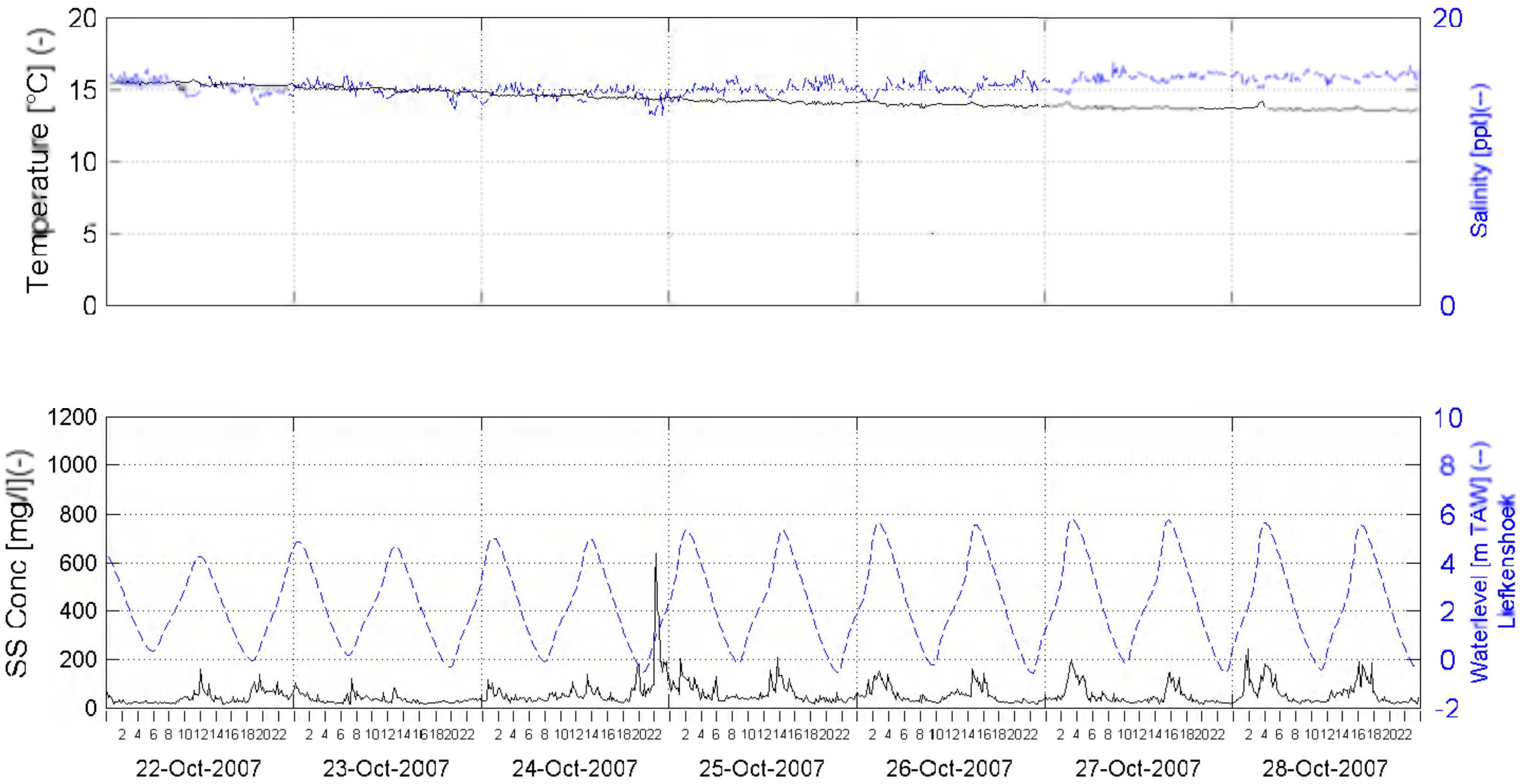
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 43 - 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Processed by:

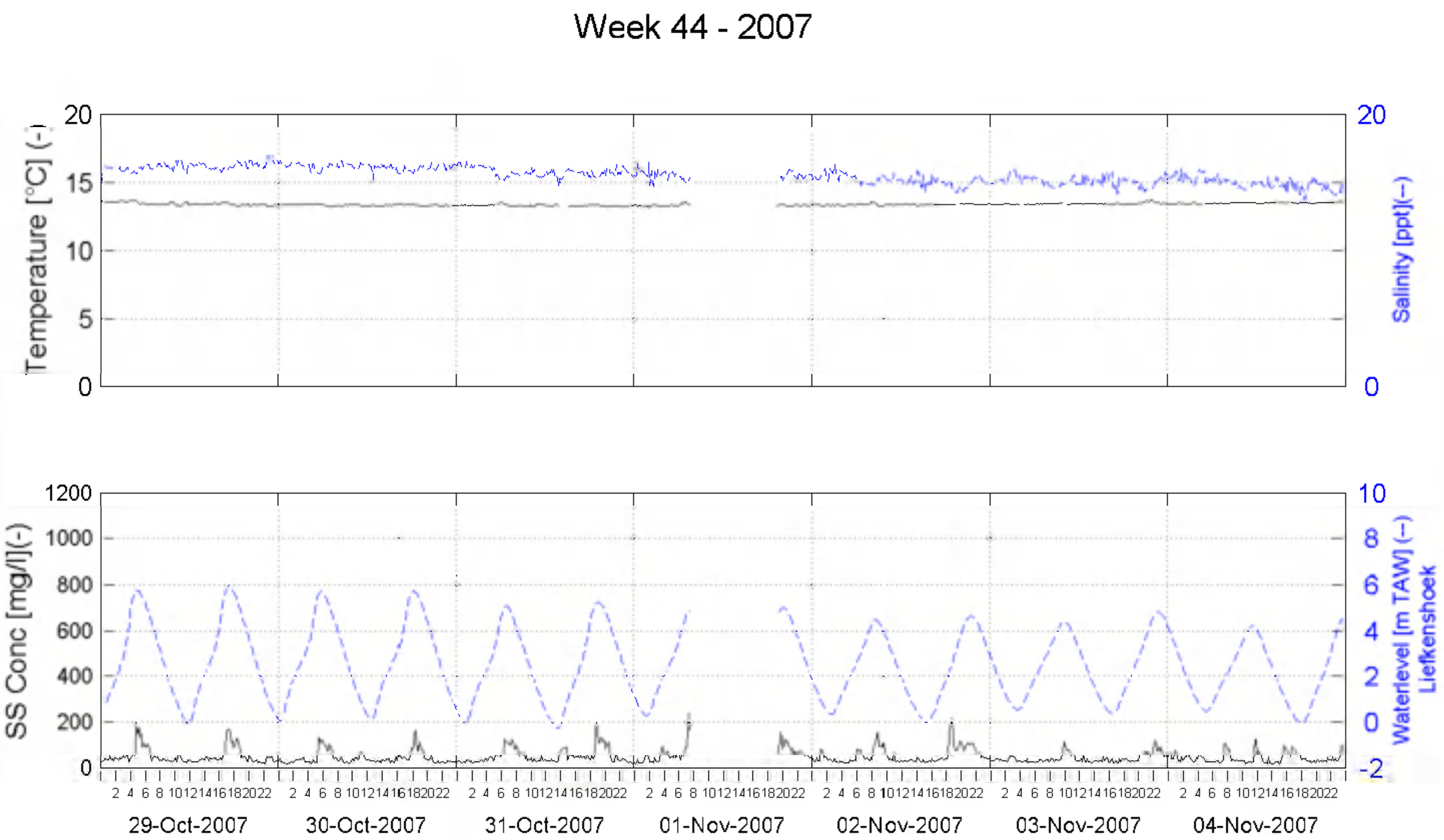
In Association with:

Location:

S-ENTRANCE BOTTOM 5.2m above bottom (-11.8m TAW)

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:
S-ENTRANCE BOTTOM 5.2m above bottom (-11.8m TAW)

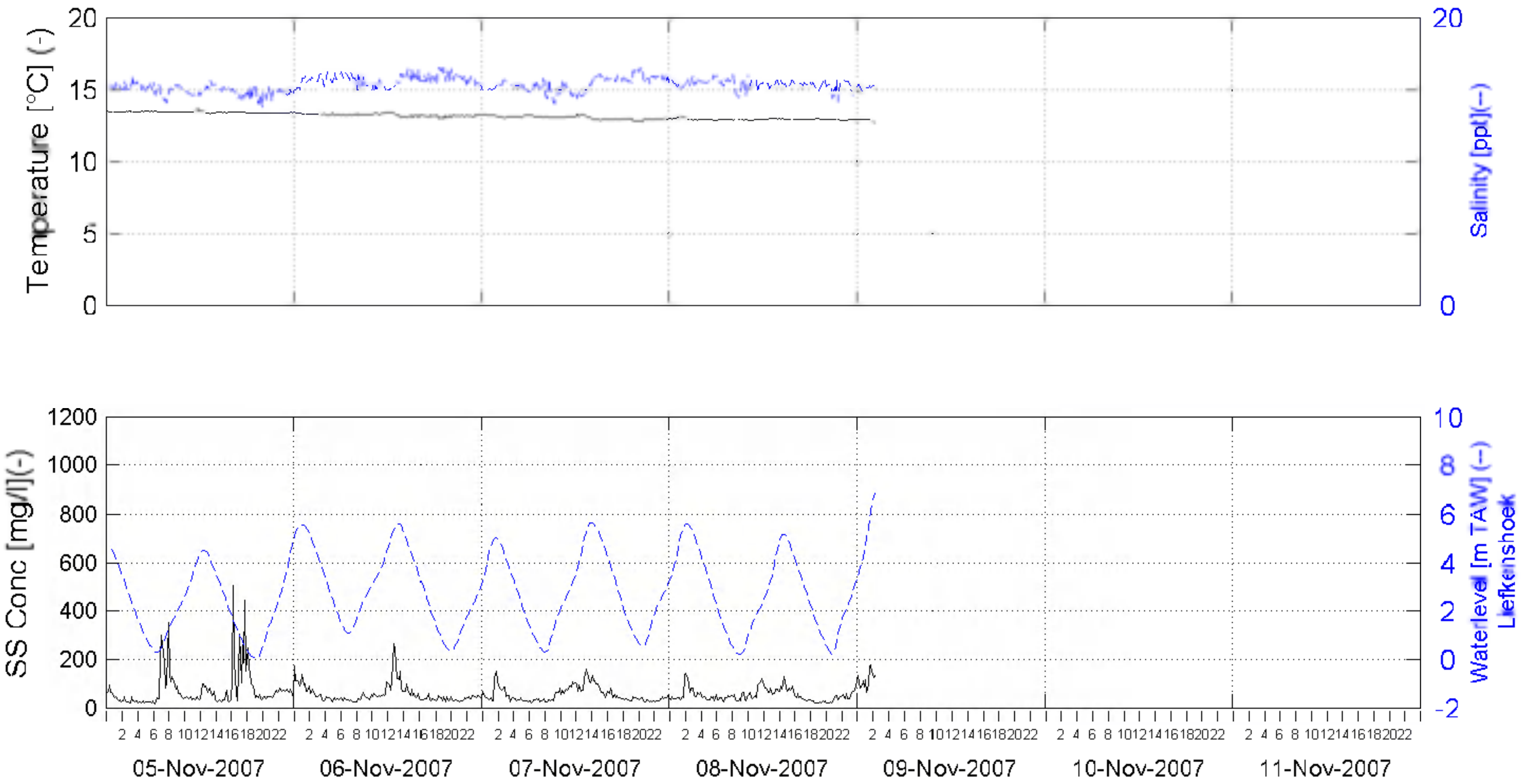
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 45 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:

S-ENTRANCE BOTTOM 5.2m above bottom (-11.8m TAW)

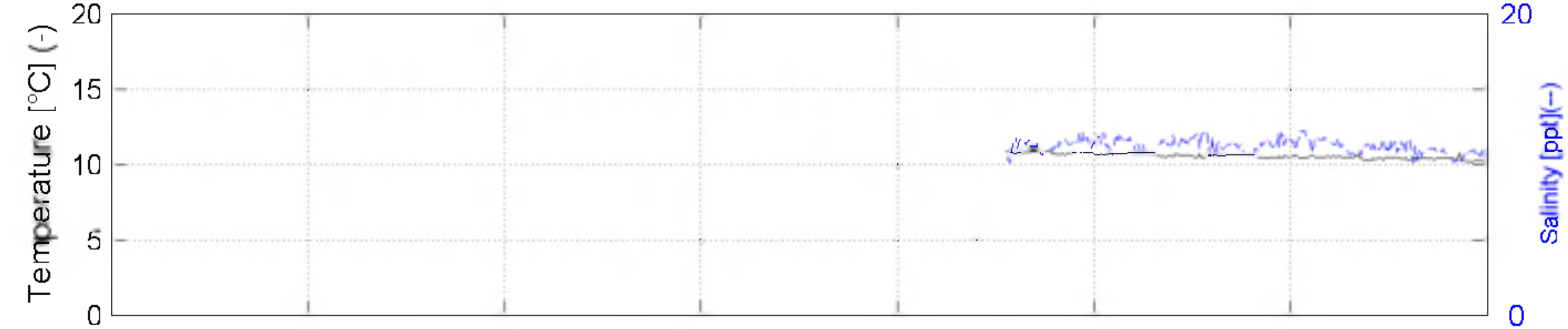
Processed by:

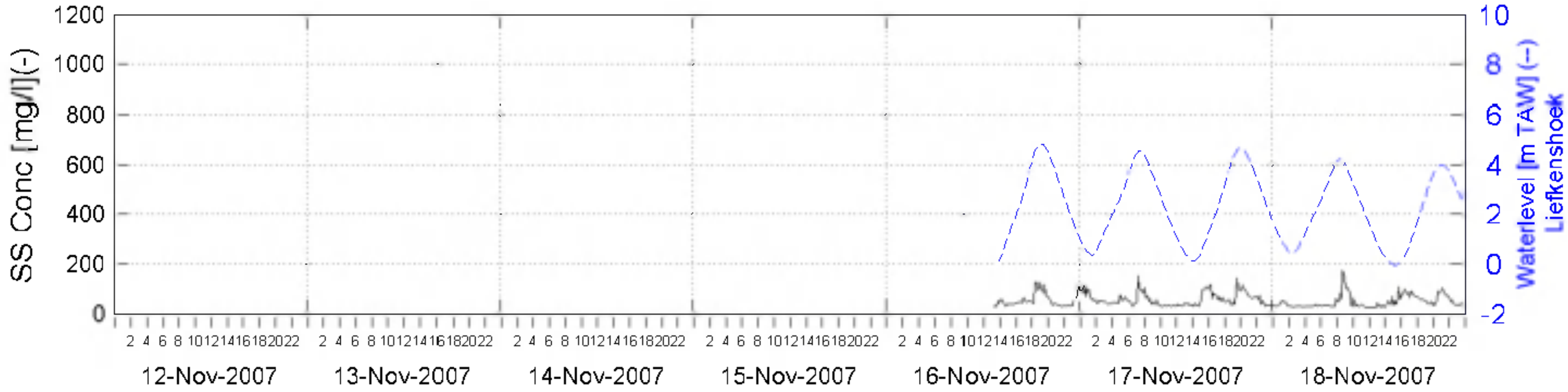
In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

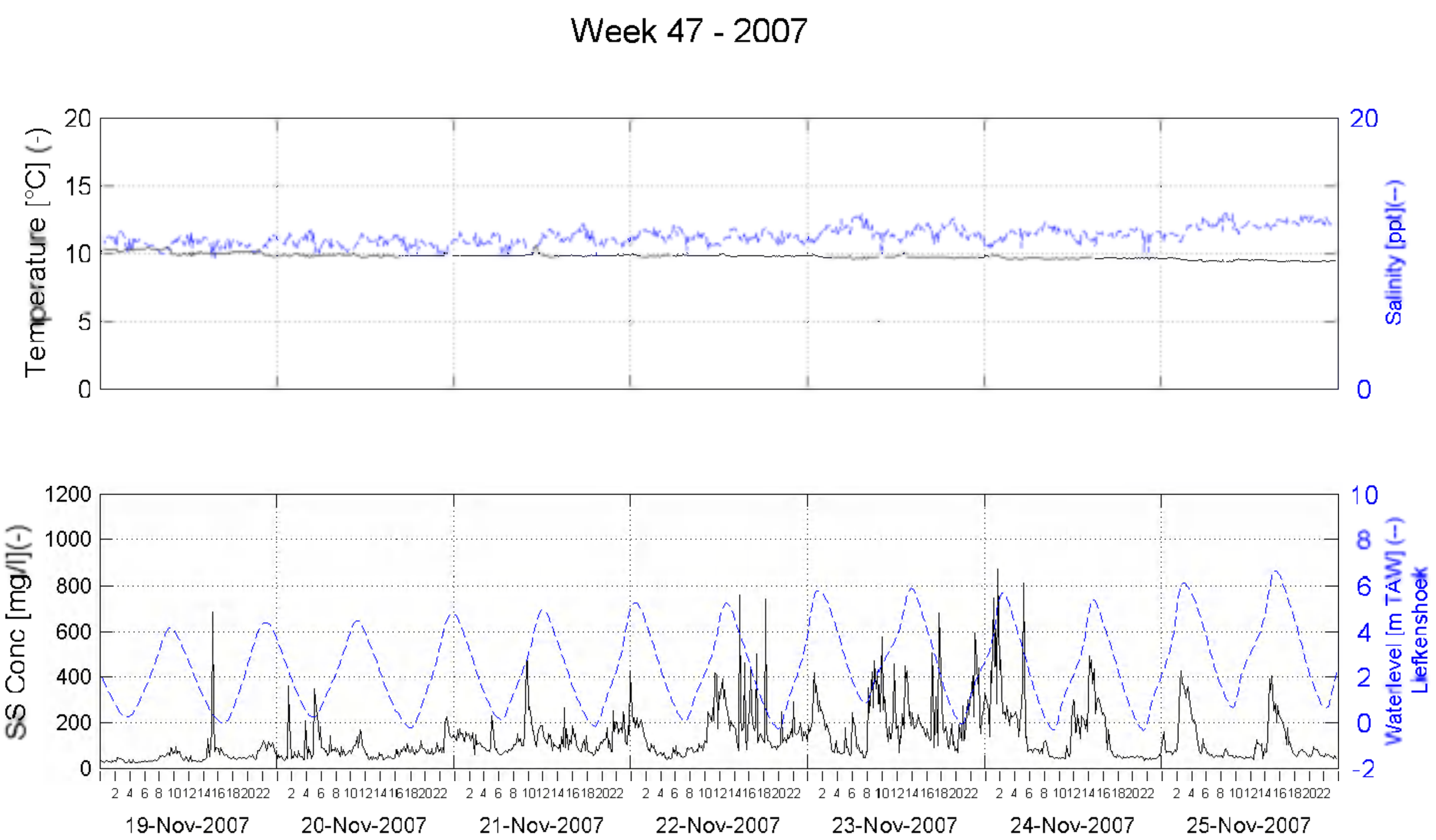
Week 46 - 2007





Week series of Salinity, Temperature, SS Concentration and Tide	Processed by: IMDC
Location: S-ENTRANCE BOTTOM 5.2m above bottom (-11.8m TAW)	In Association with: I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Processed by:

In Association with:

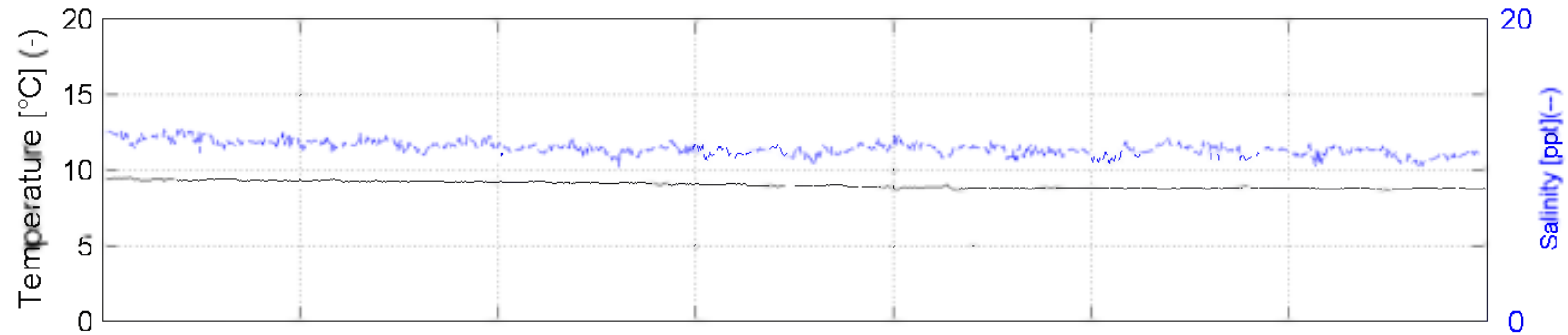
Location:

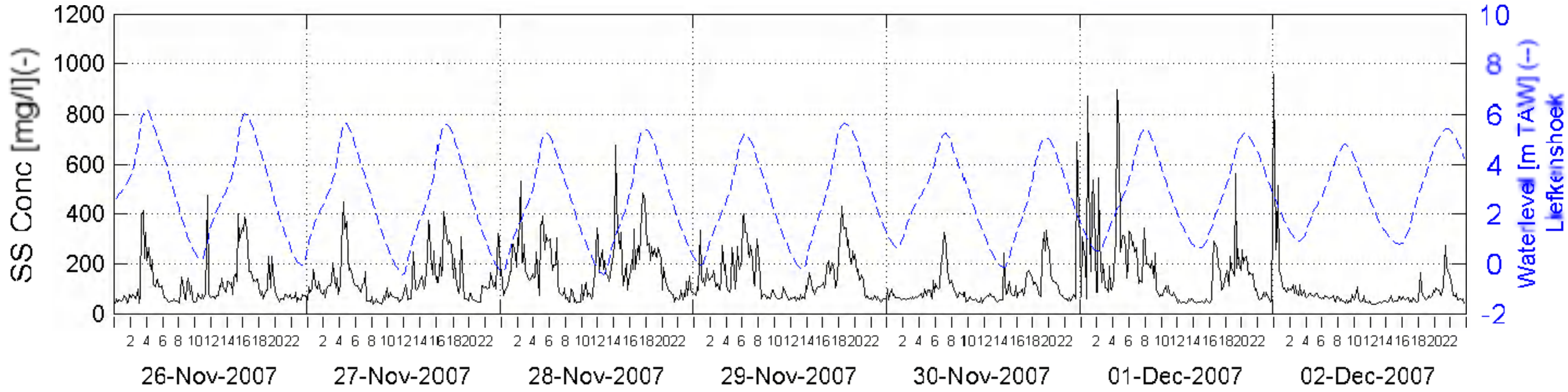
S-ENTRANCE BOTTOM 5.2m above bottom (-11.8m TAW)

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 48 - 2007





Week series of Salinity, Temperature, SS Concentration and Tide

Location:
S-ENTRANCE BOTTOM 5.2m above bottom (-11.8m TAW)

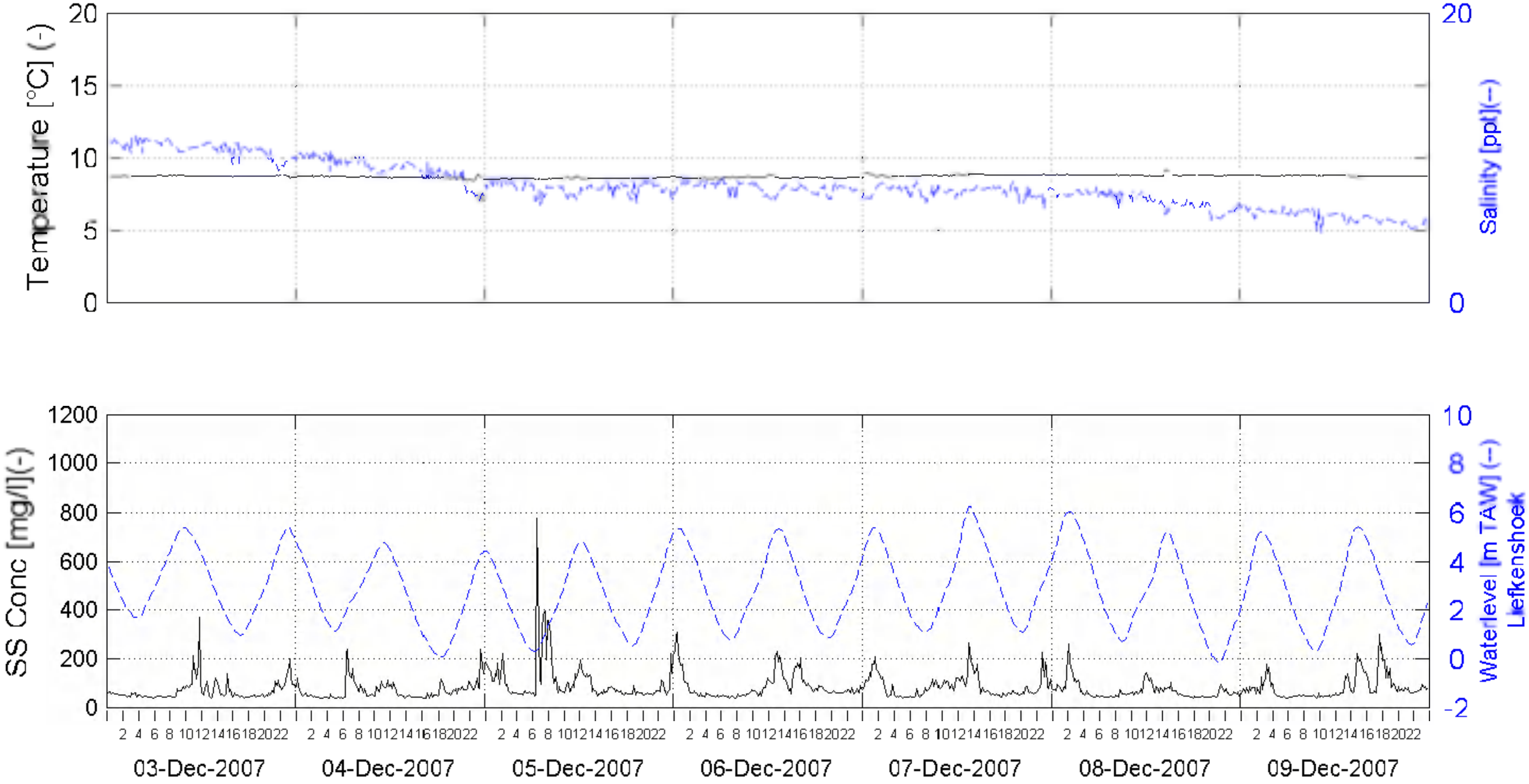
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 49 - 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:
S-ENTRANCE BOTTOM 5.2m above bottom (-11.8m TAW)

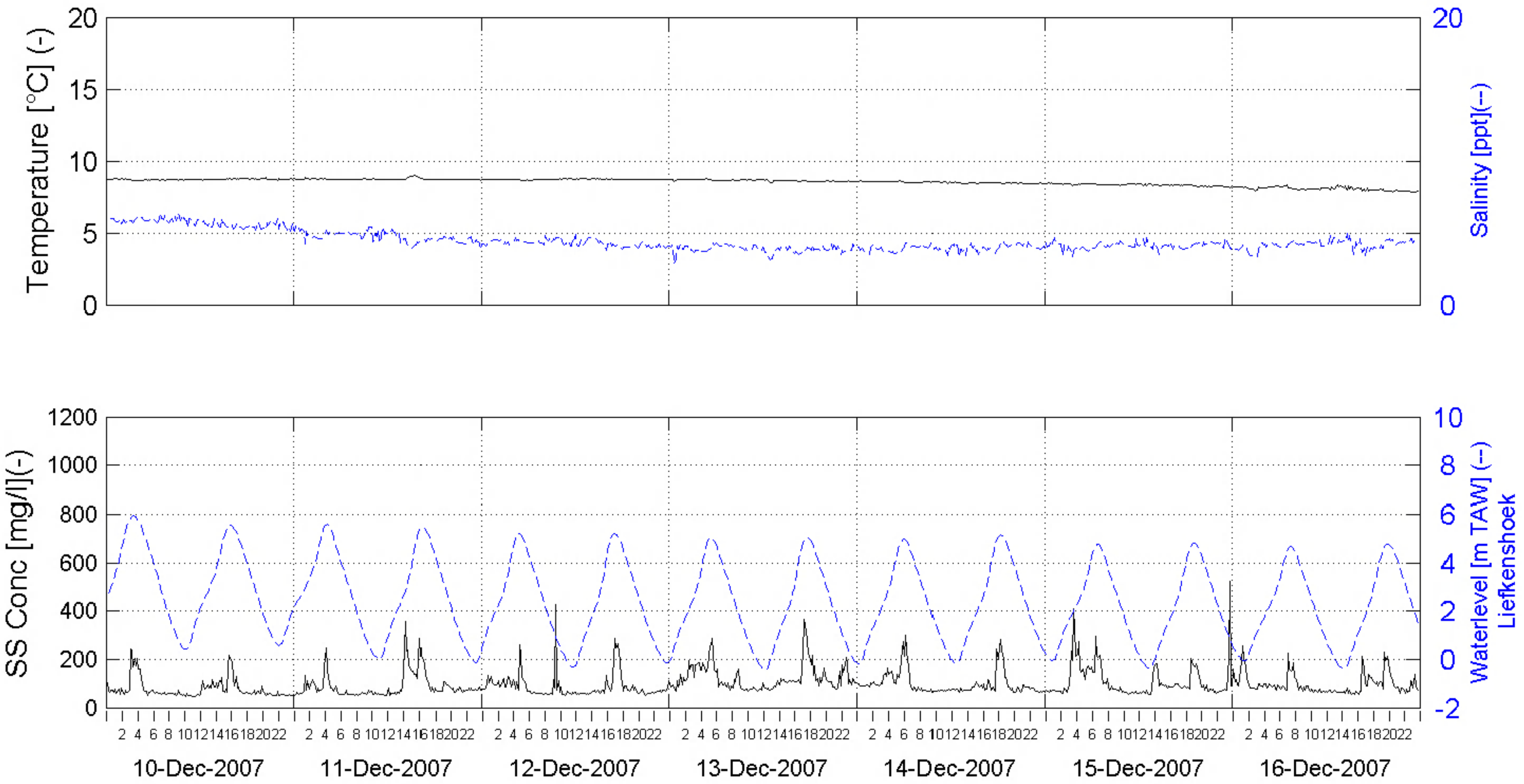
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 50 - 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:

S-ENTRANCE BOTTOM 5.2m above bottom (-11.8m TAW)

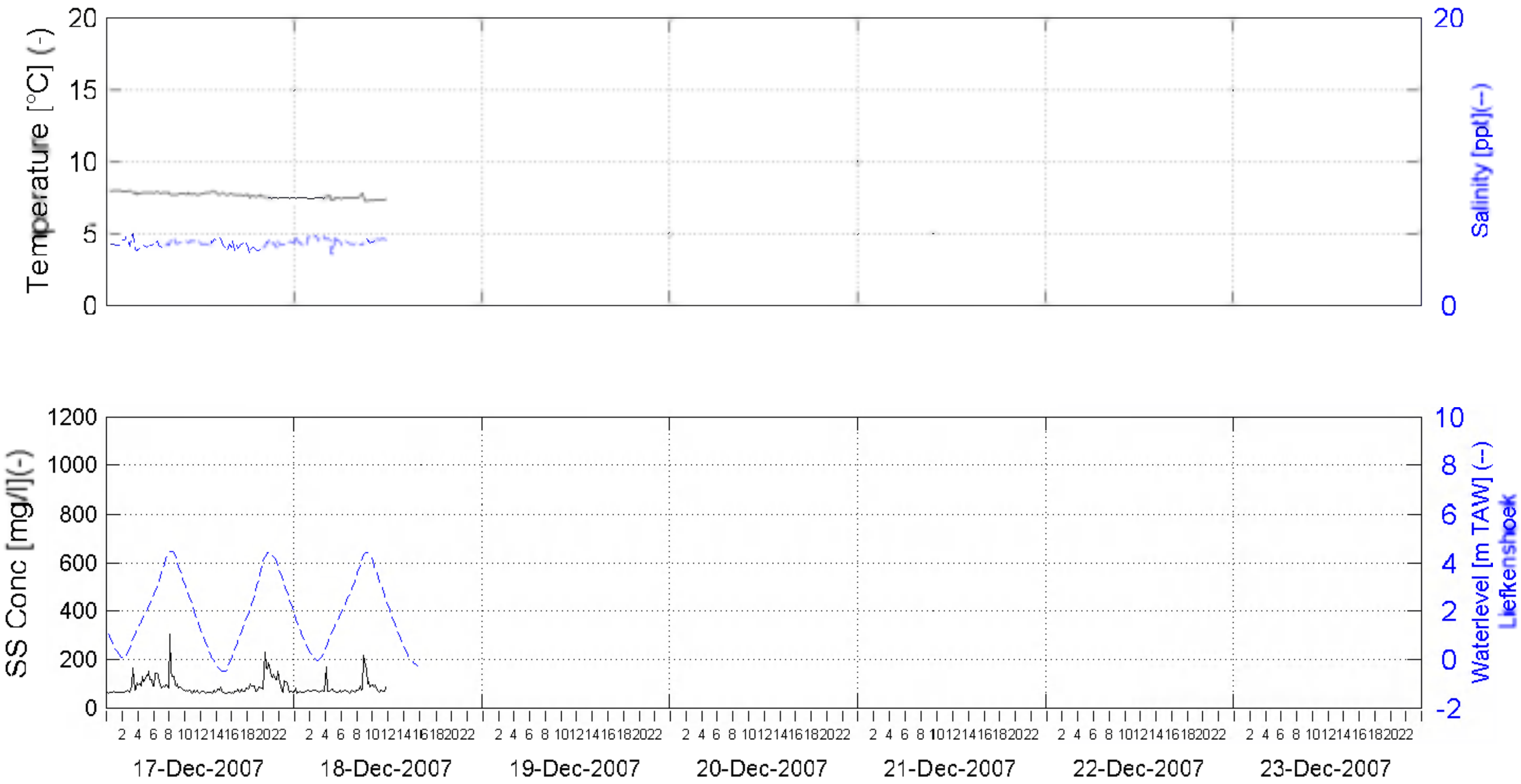
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 51 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Processed by:

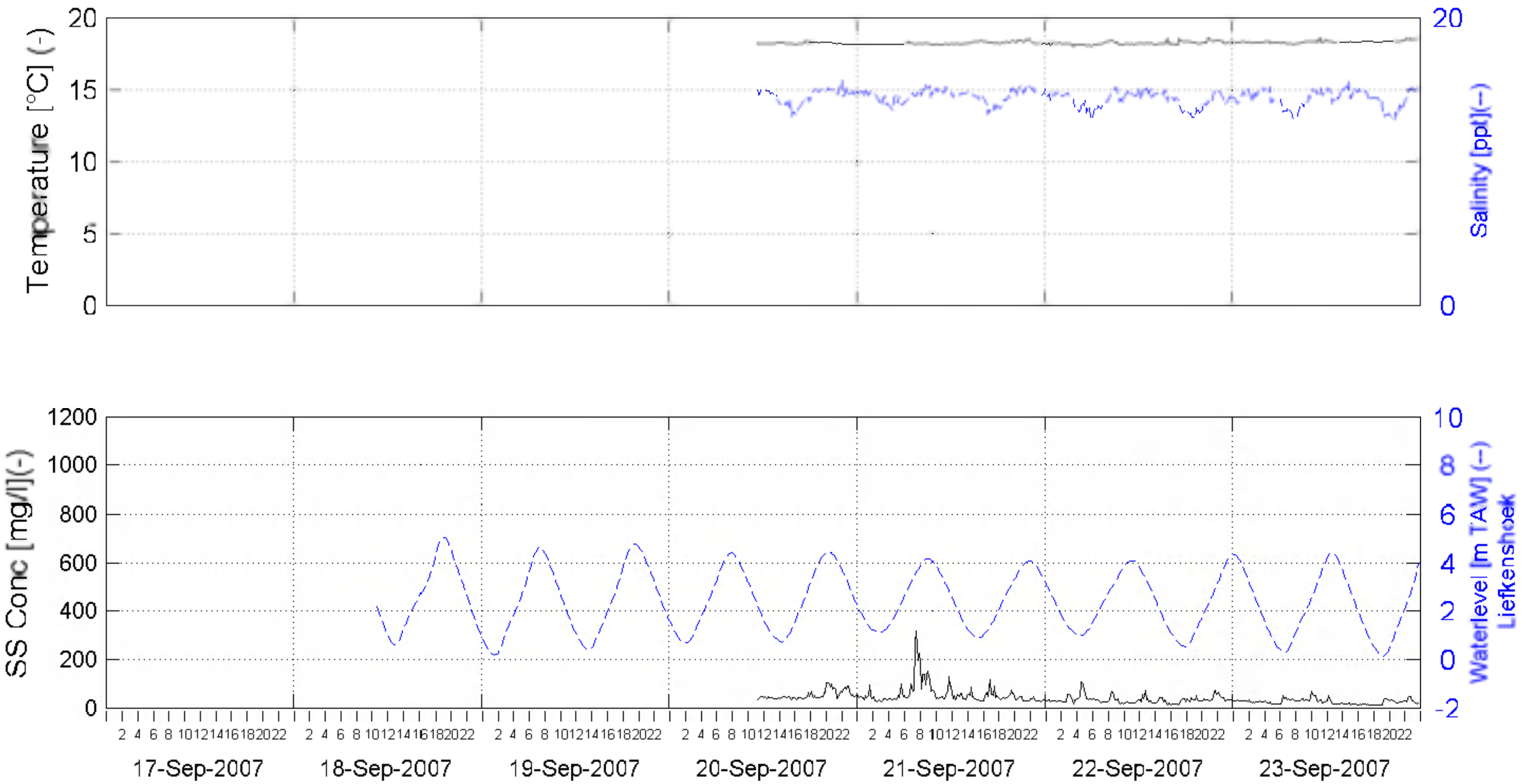
Location:
S-ENTRANCE BOTTOM 5.2m above bottom (-11.8m TAW)

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 38 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:
S-ENTRANCE TOP 14m above bottom (-3m TAW)

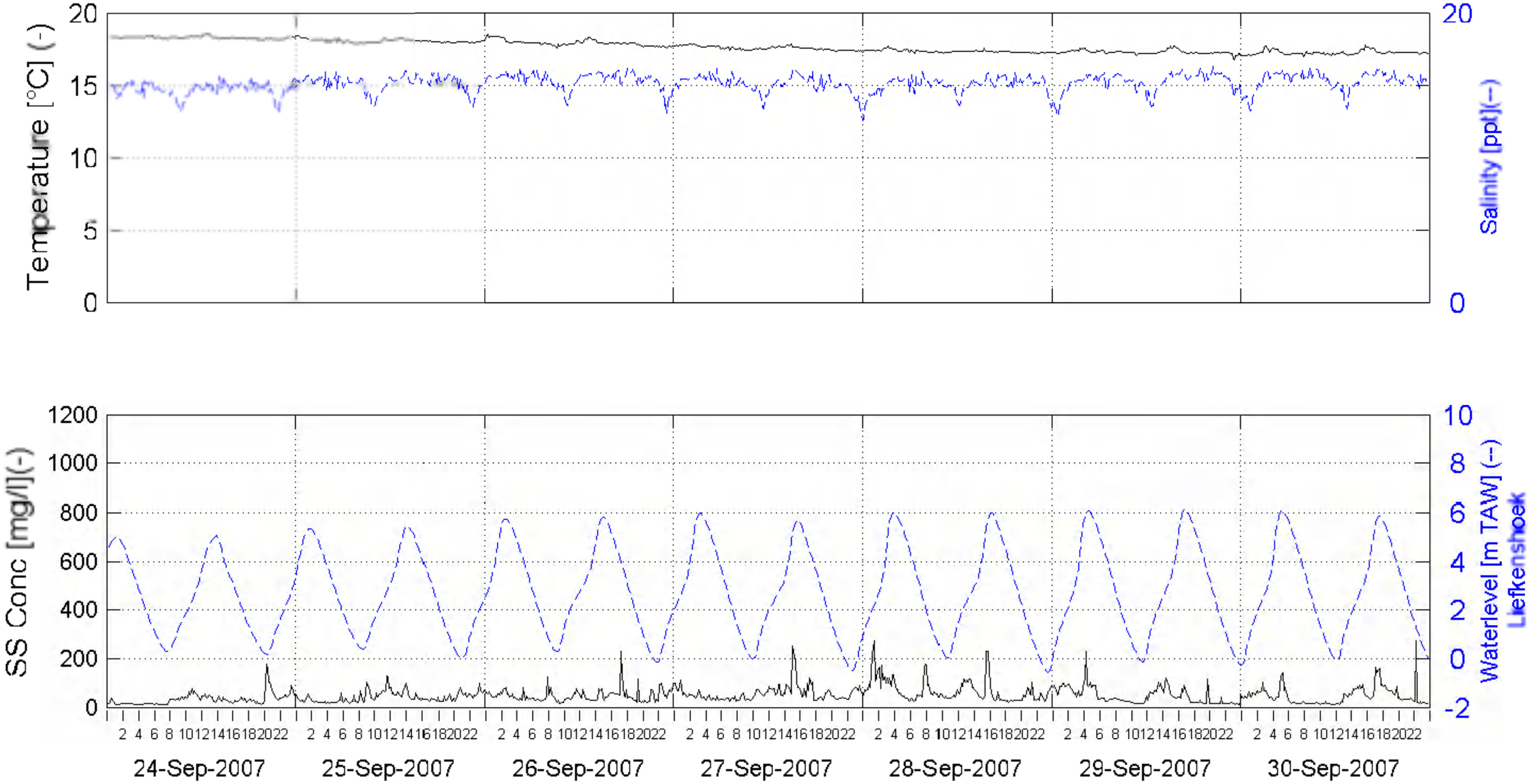
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 39 - 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:

S-ENTRANCE TOP 14m above bottom (-3m TAW)

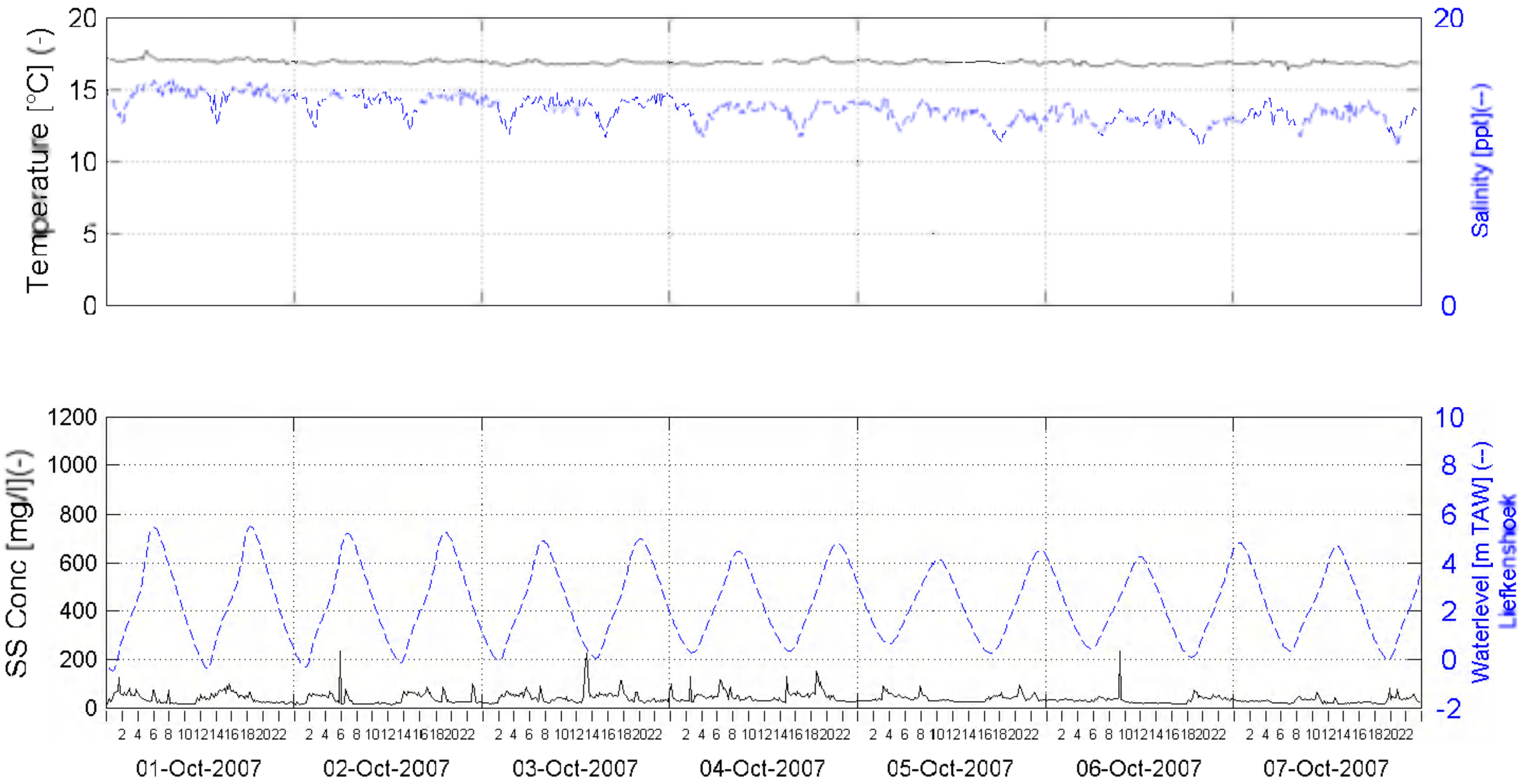
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 40 - 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Processed by:

Location:

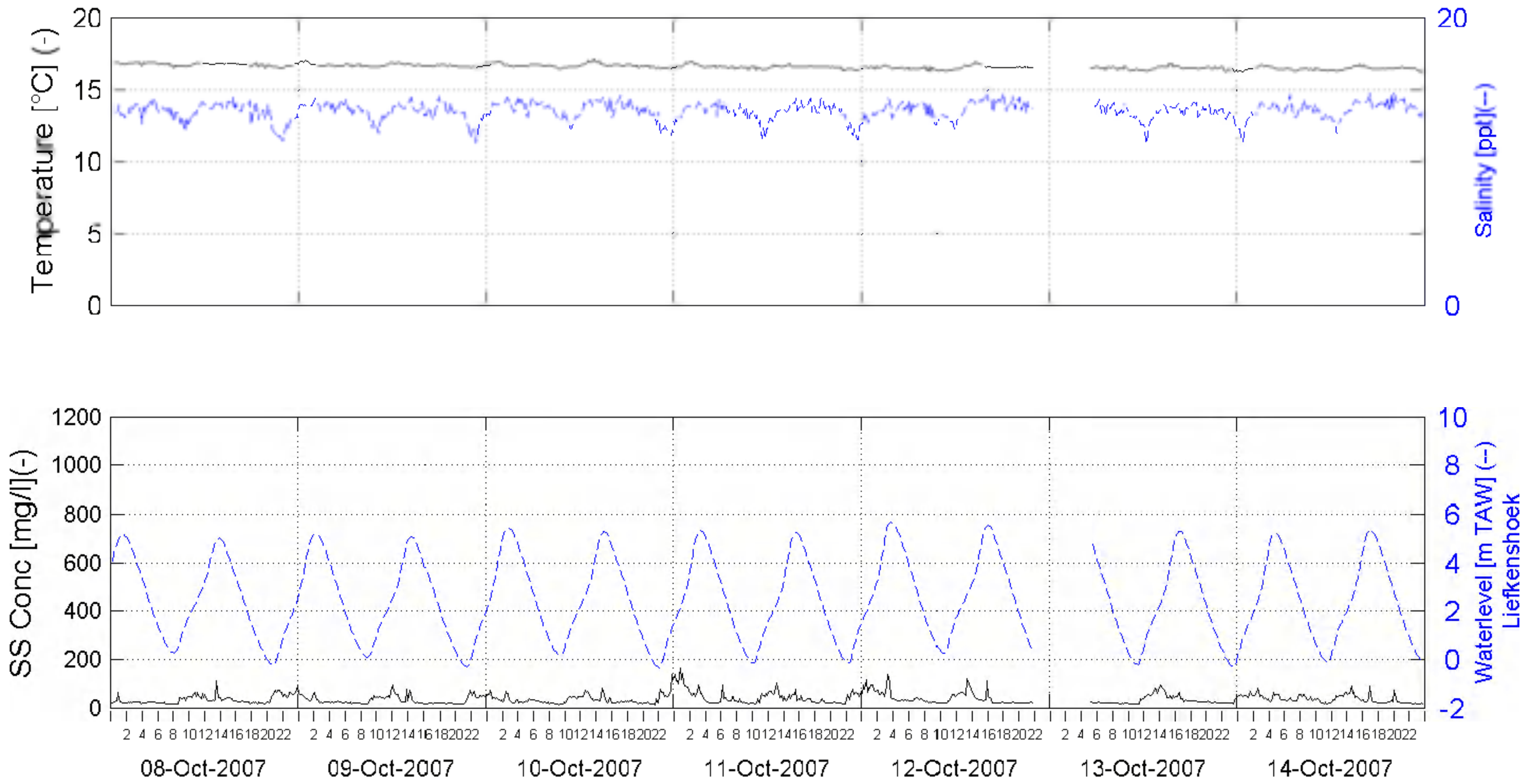
S-ENTRANCE TOP 14m above bottom (-3m TAW)

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 41 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Processed by:

Location:

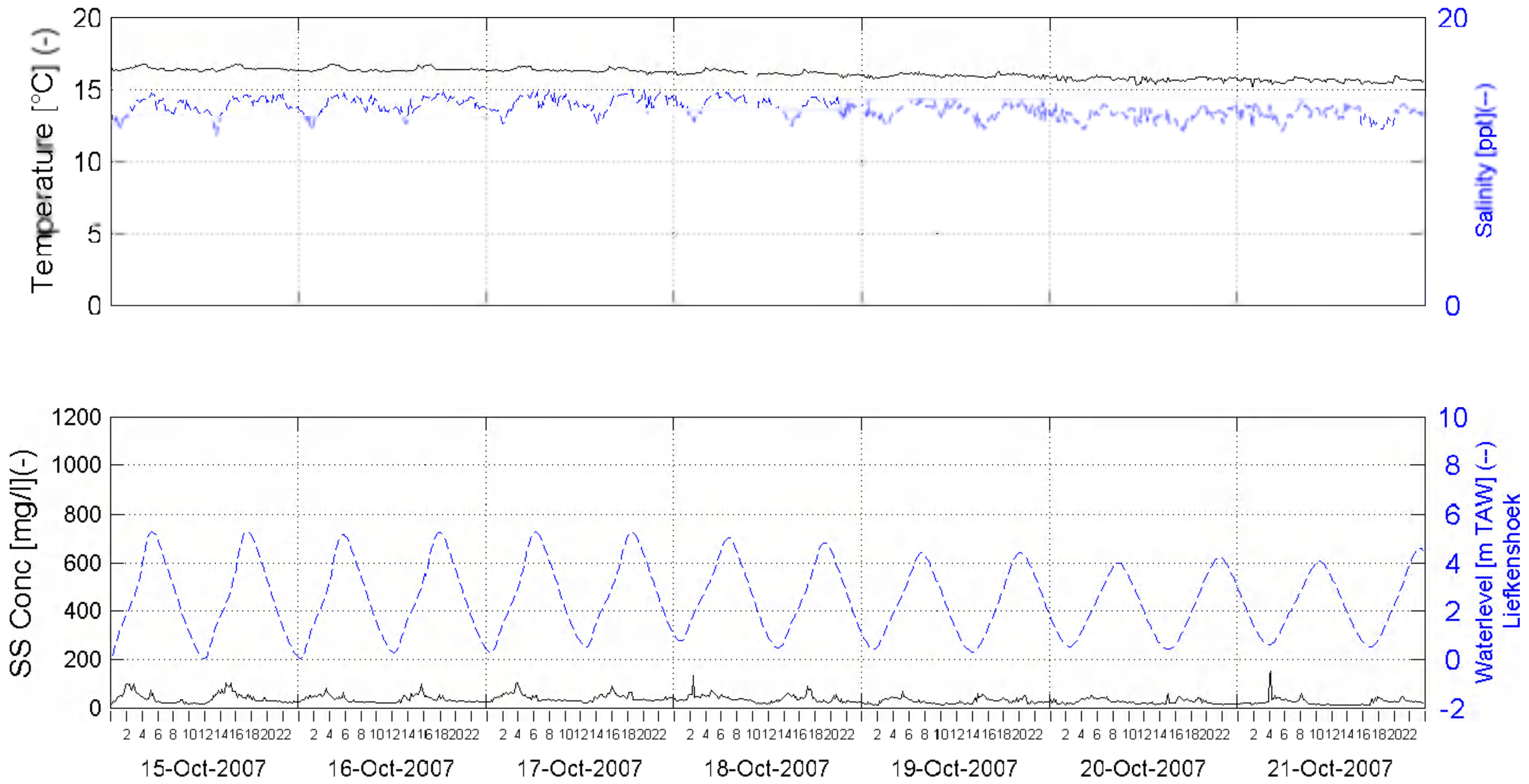
S-ENTRANCE TOP 14m above bottom (-3m TAW)

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 42 - 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:

S-ENTRANCE TOP 14m above bottom (-3m TAW)

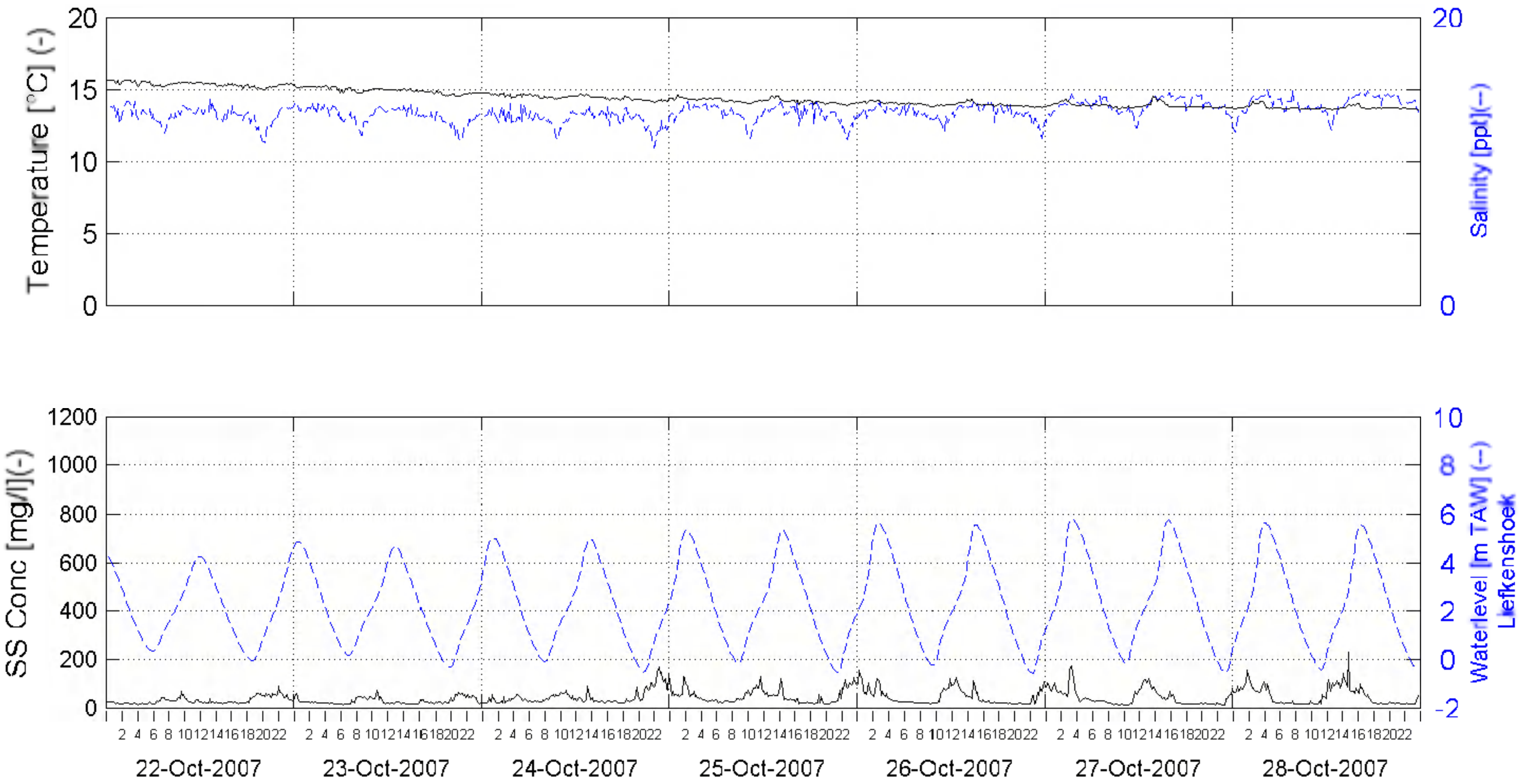
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 43 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:
S-ENTRANCE TOP 14m above bottom (-3m TAW)

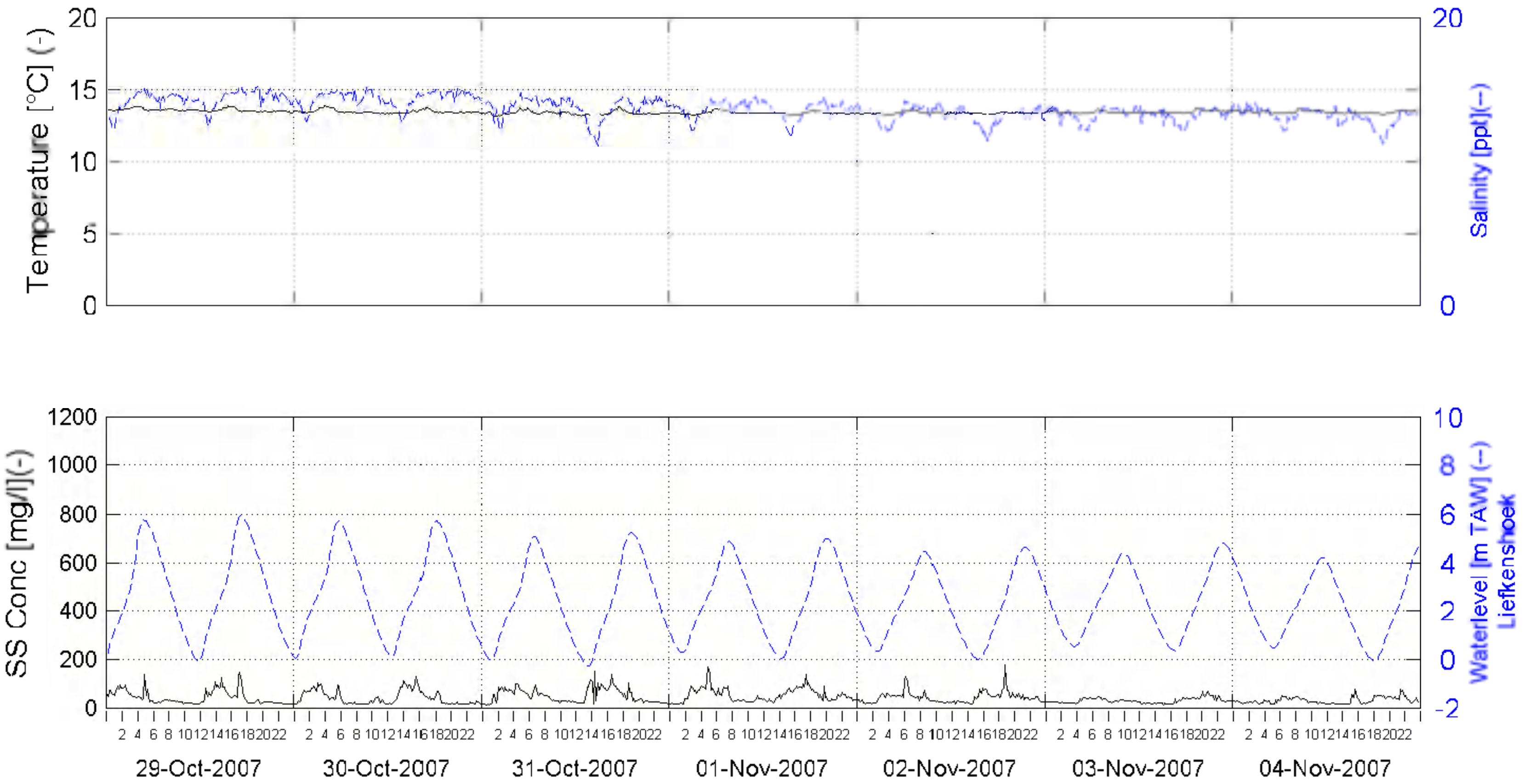
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 44 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Processed by:

In Association with:

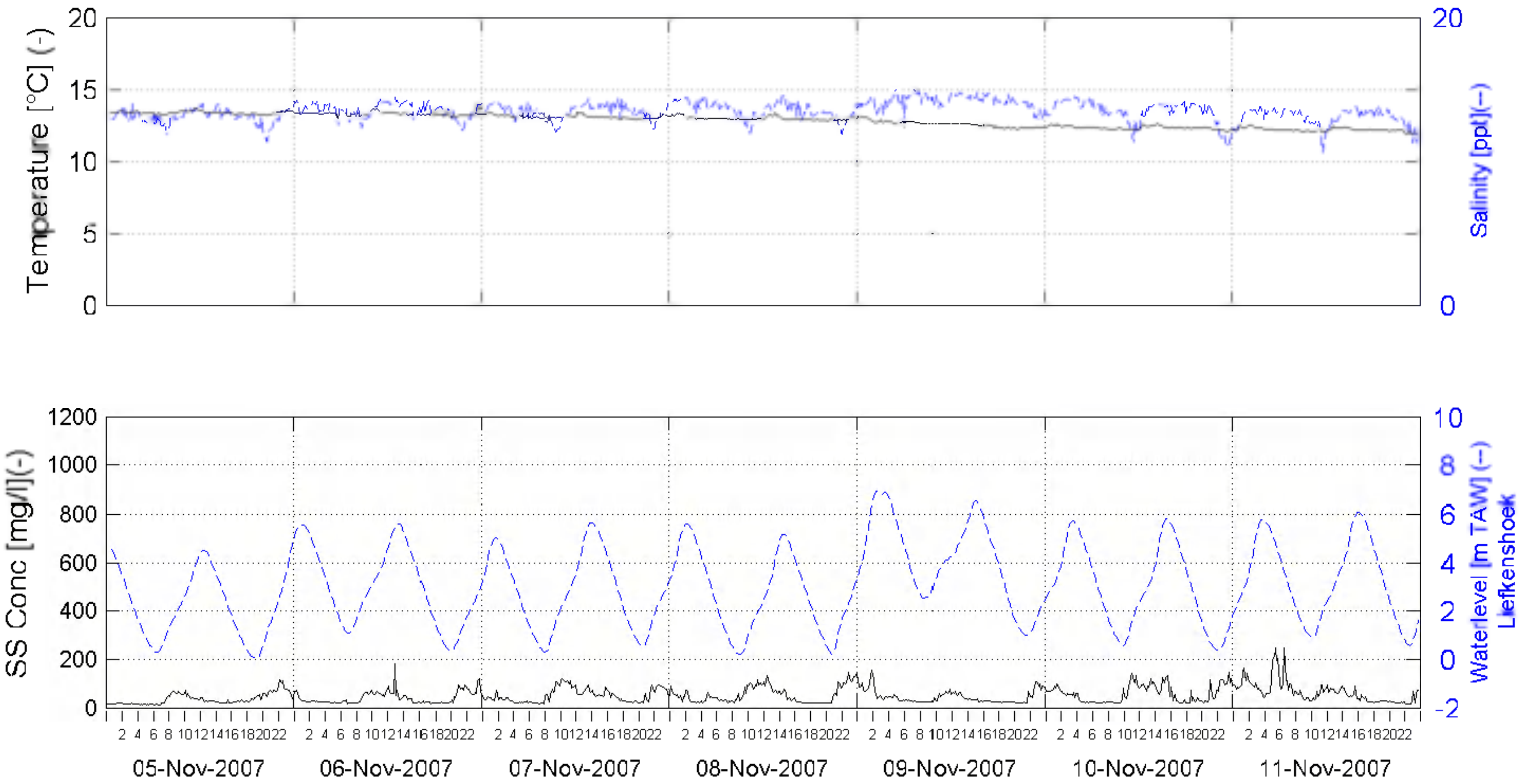
Location:

S-ENTRANCE TOP 14m above bottom (-3m TAW)

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 45 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Processed by:

Location:

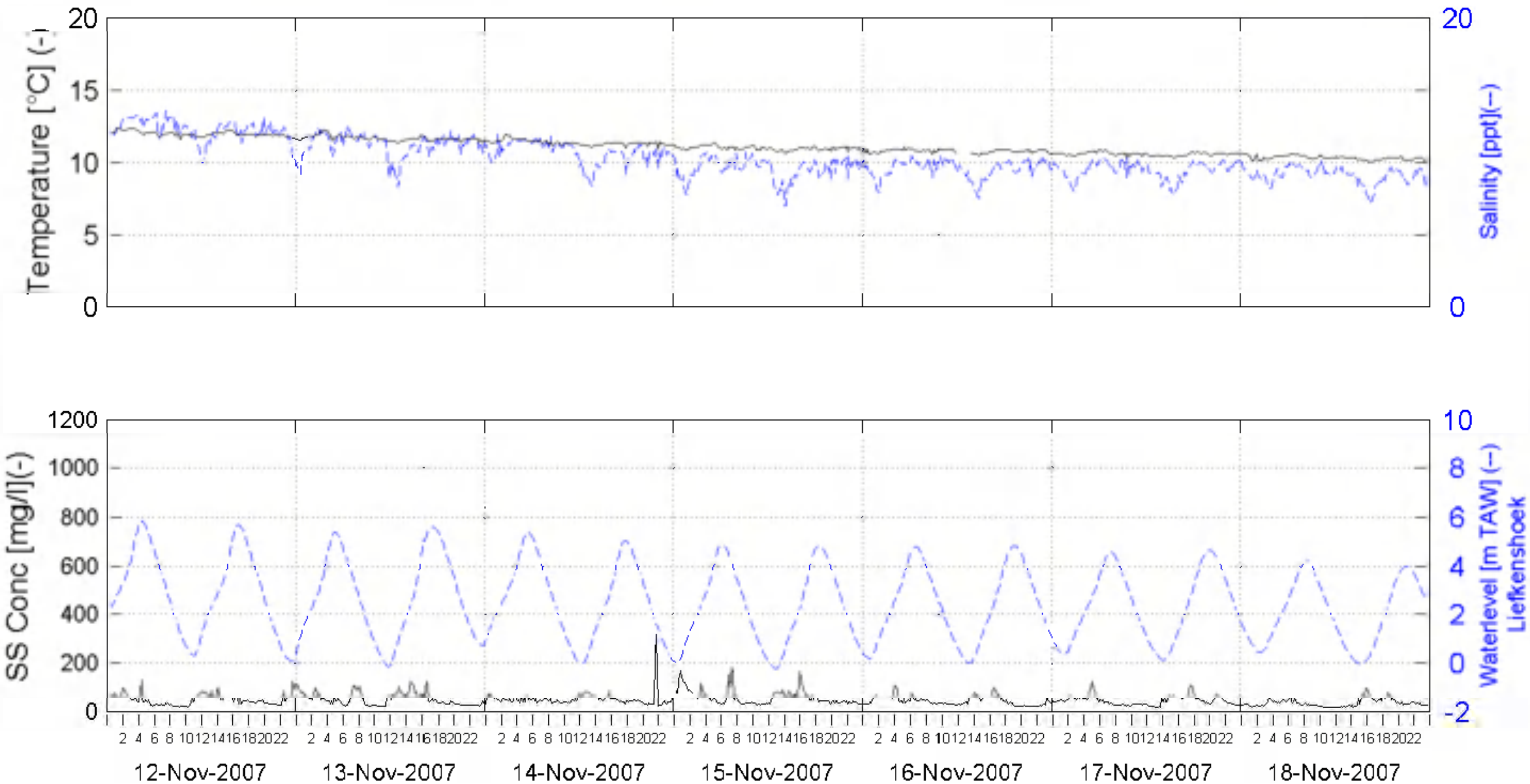
S-ENTRANCE TOP 14m above bottom (-3m TAW)

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 46 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:

S-ENTRANCE TOP 14m above bottom (-3m TAW)

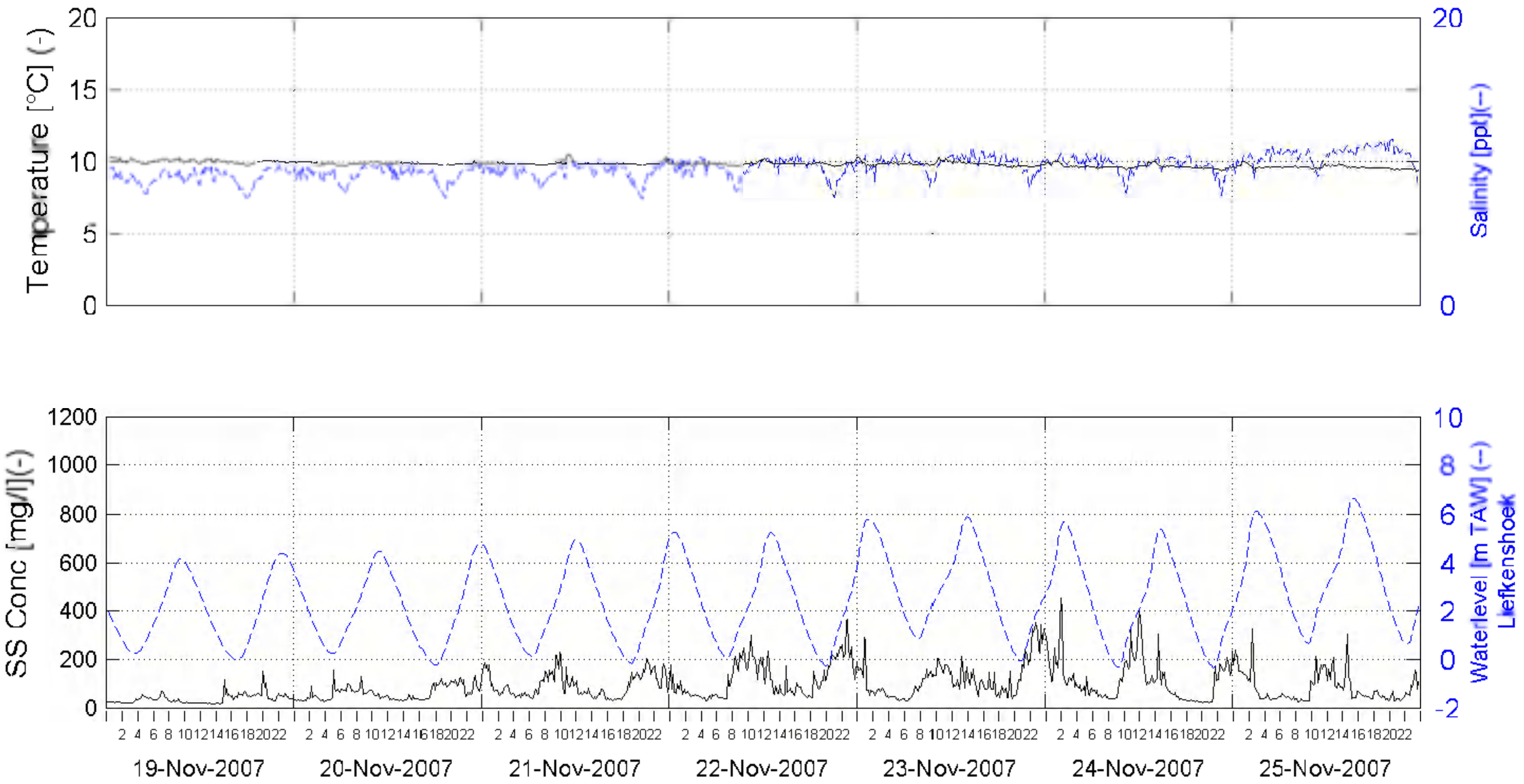
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 47 - 2007



Week series of Salinity, Temperature, SS Concentration and Tide

Location:

S-ENTRANCE TOP 14m above bottom (-3m TAW)

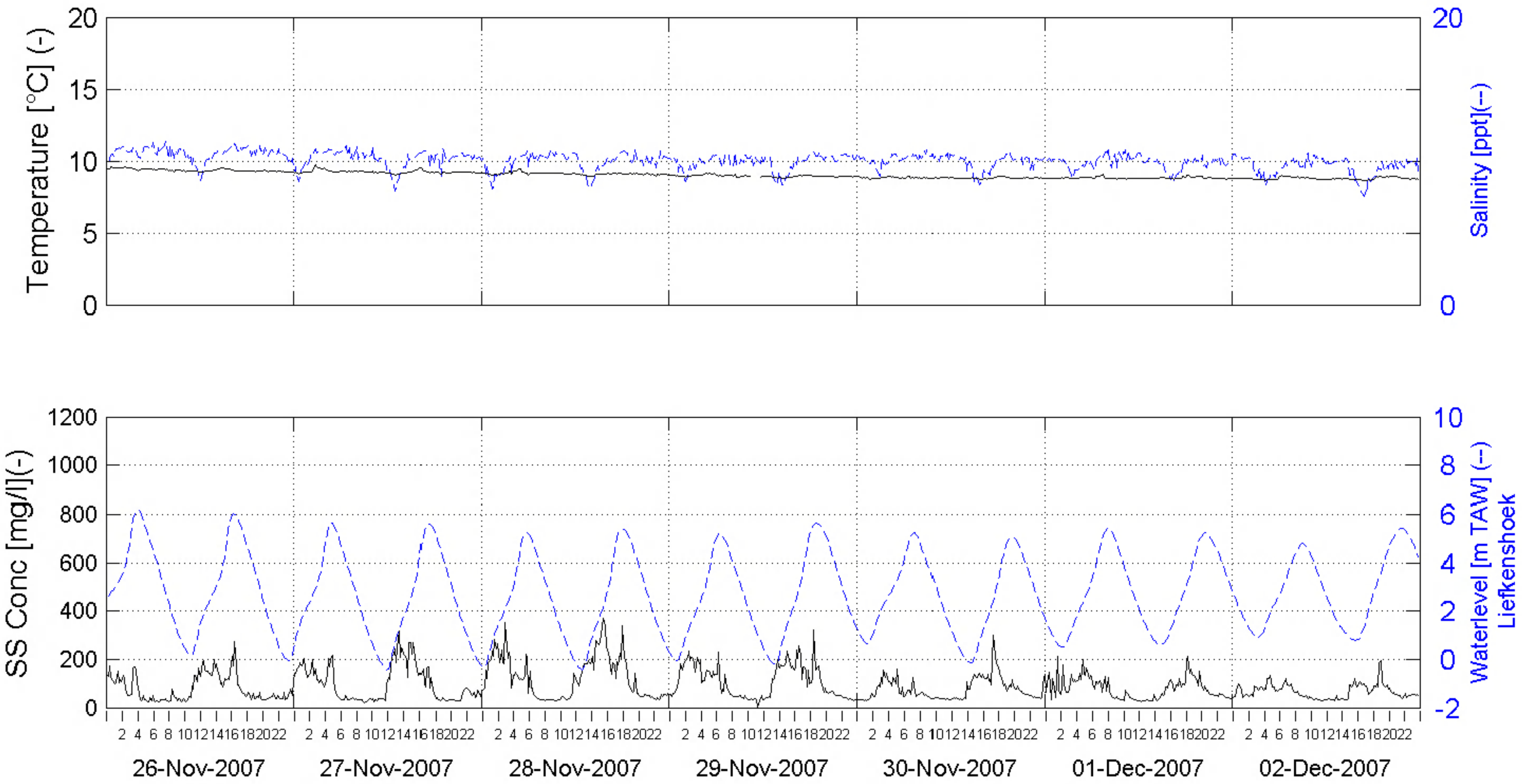
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 48 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:

S-ENTRANCE TOP 14m above bottom (-3m TAW)

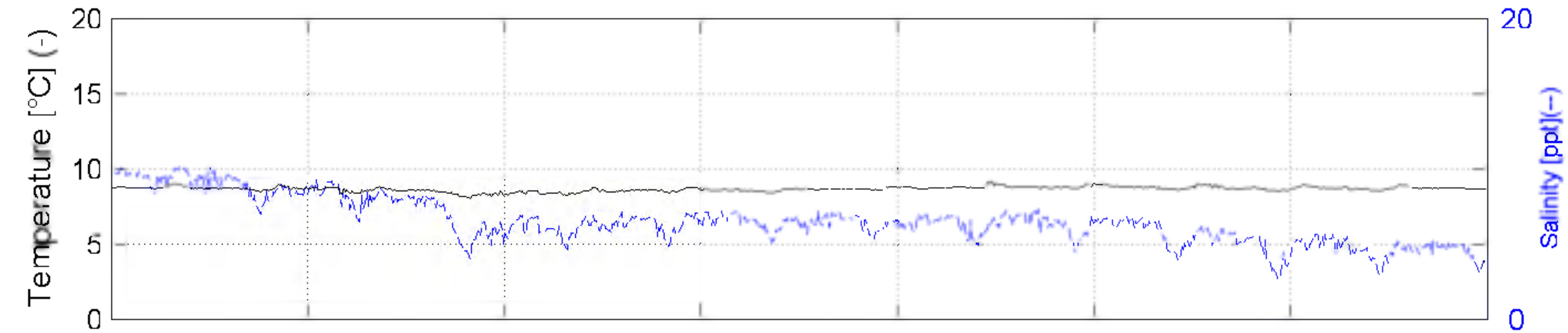
Processed by:

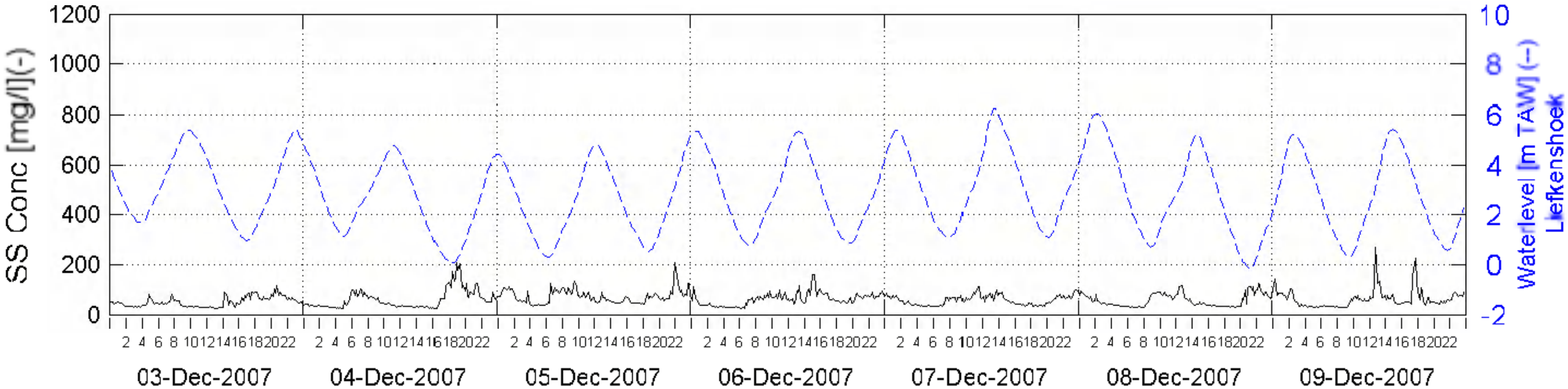
In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 49 - 2007





Week series of Salinity, Temperature,
SS Concentration and Tide

Processed by:

In Association with:

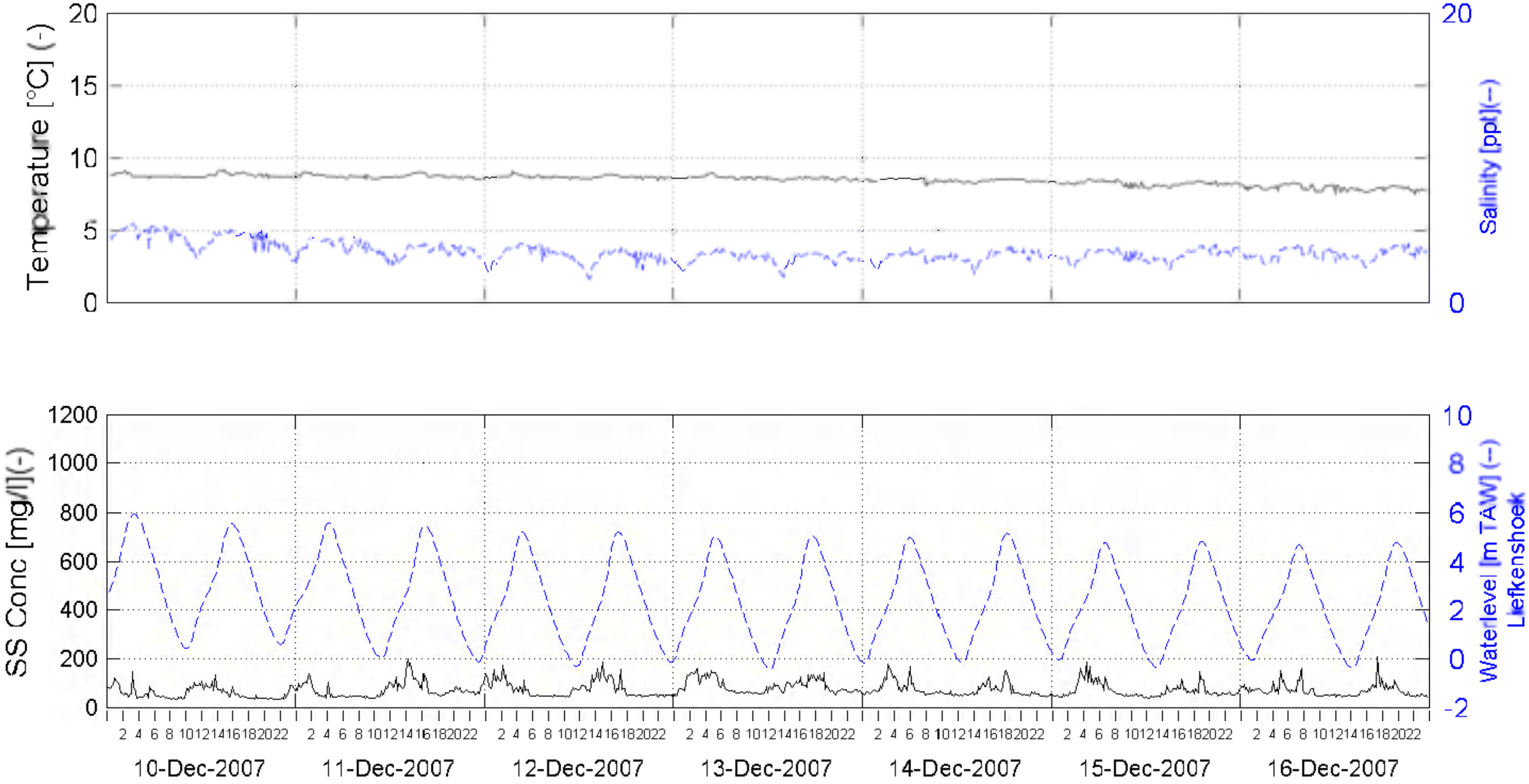
Location:

S-ENTRANCE TOP 14m above bottom (-3m TAW)

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 50 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:
S-ENTRANCE TOP 14m above bottom (-3m TAW)

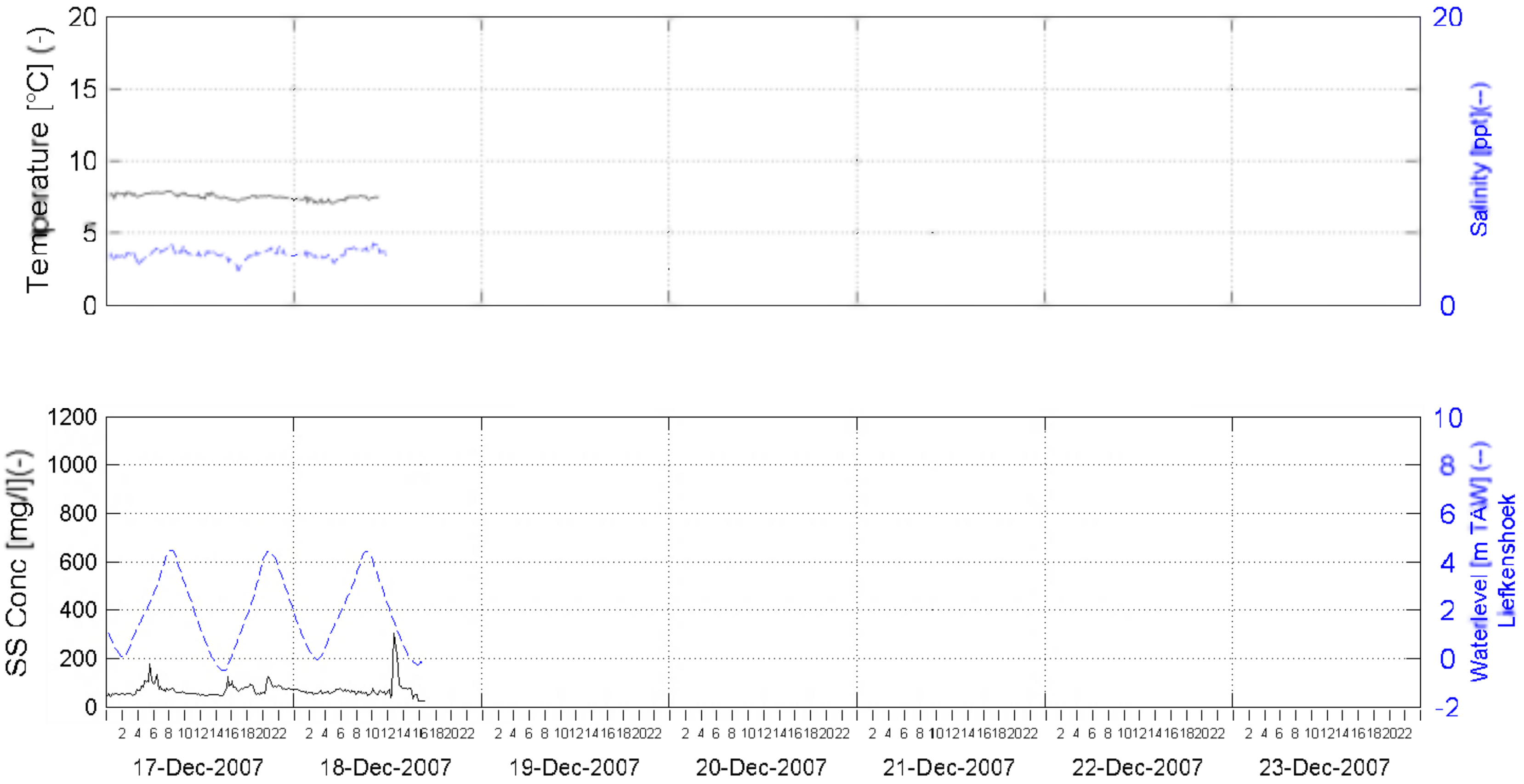
Processed by:

In Association with:

I/RA/11283/07.093/MSA

11283 - Long-term monitoring DGD - Autumn 2007

Week 51 - 2007



Week series of Salinity, Temperature,
SS Concentration and Tide

Location:

S-ENTRANCE TOP 14m above bottom (-3m TAW)

Processed by:

In Association with:

I/RA/11283/07.093/MSA

APPENDIX C.

WEEKSERIES, AVERAGE TIDE & TABLES

ARGUS ASM – IV & ALTUS (MET TIME)

C.1 CDW frame

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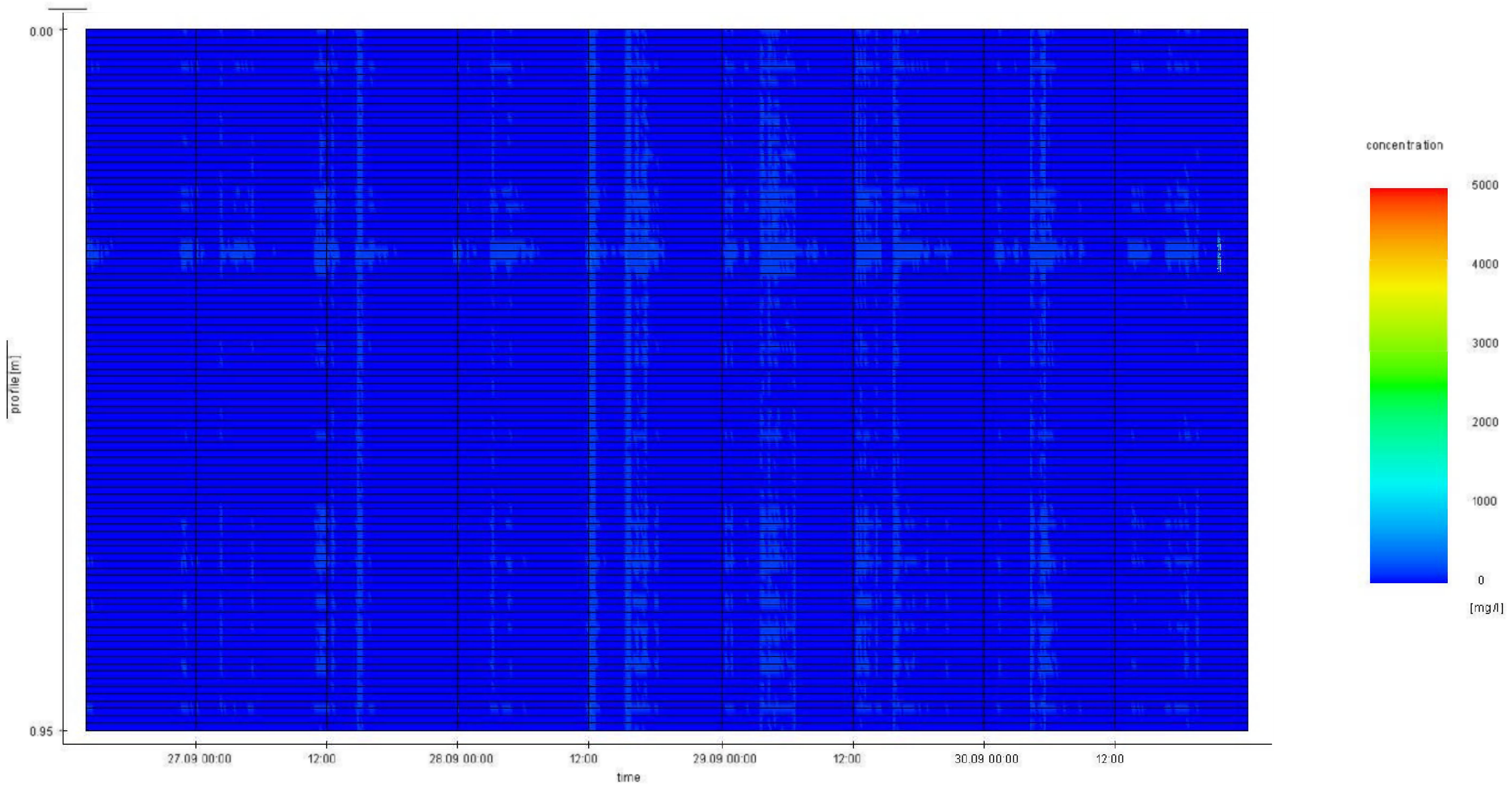
11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007

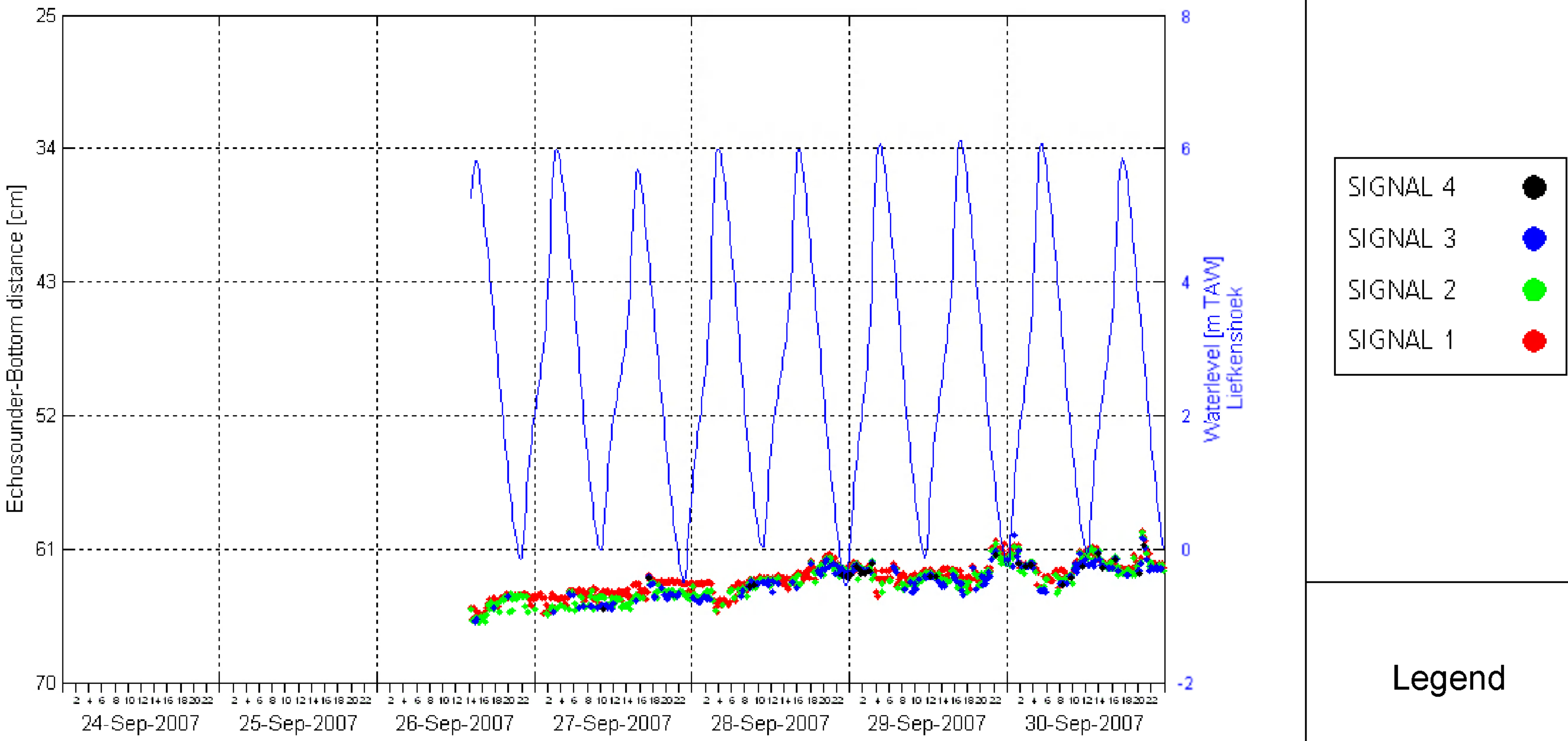


Time series suspended sediment concentration
ARGUS ASM-IV

Location: Deurganckdok CDW	Date: 26/09/2007 – 30/09/2007	*Data processed by:* IMDC *In association with:* wl | delft hydraulics, GEMS International

I/RA/11283/07.095/MSA

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Legend

Echosounder – bottom distance
Waterlevel [mTAW] at Liefkenshoek

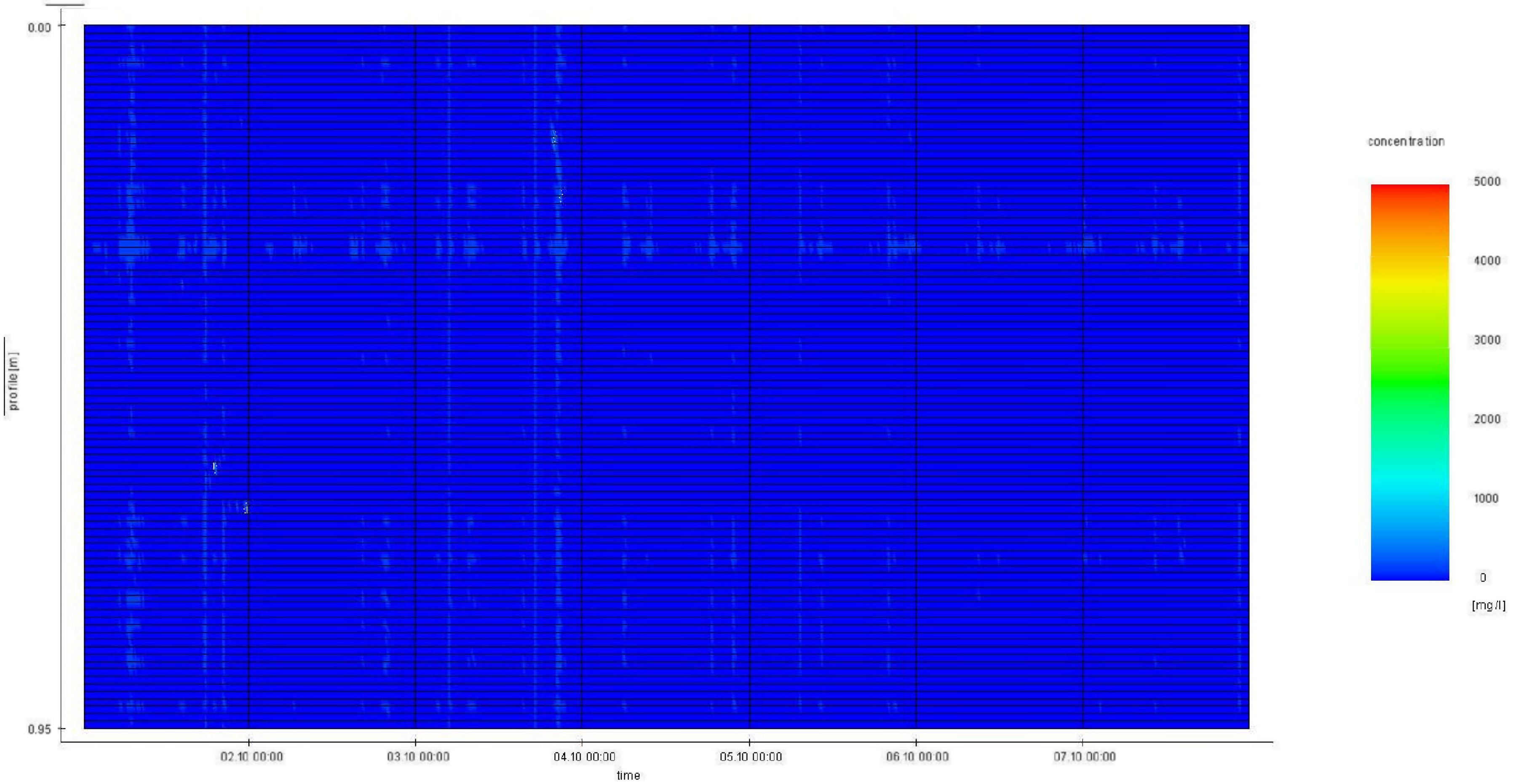
Location: Deurganckdok CDW	Date: 26/09/2007 – 30/09/2007

Data processed by:

In association with:

I/RA/11283/07.095/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Time series suspended sediment concentration
ARGUS ASM-IV

Location:
Deurganckdok CDW

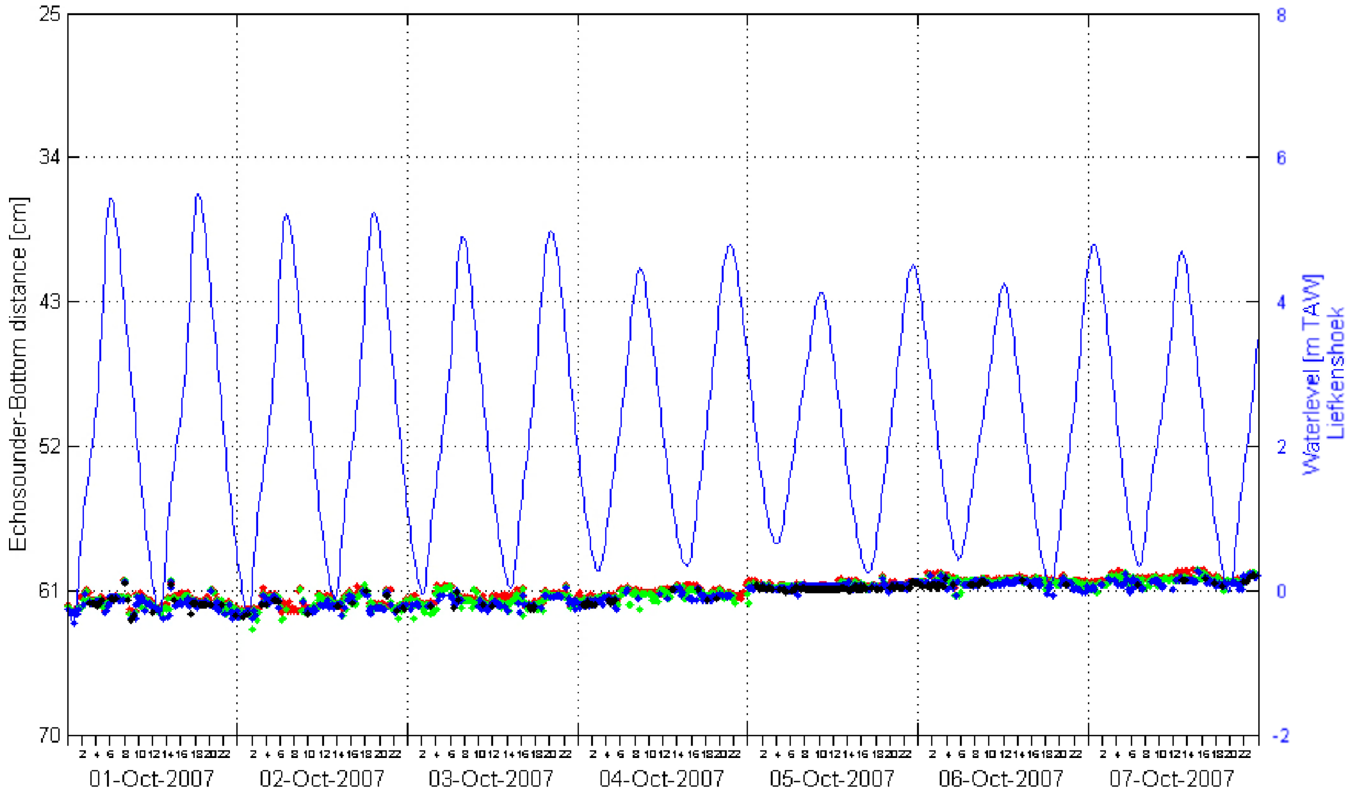
Date:
01/10/2007 – 07/10/2007

Data processed by:

In association with:

I/RA/11283/07.095/MSA

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



SIGNAL 4
SIGNAL 3
SIGNAL 2
SIGNAL 1

Legend

Echosounder – bottom distance
Waterlevel [mTAW] at Liefkenshoek

Data processed by:

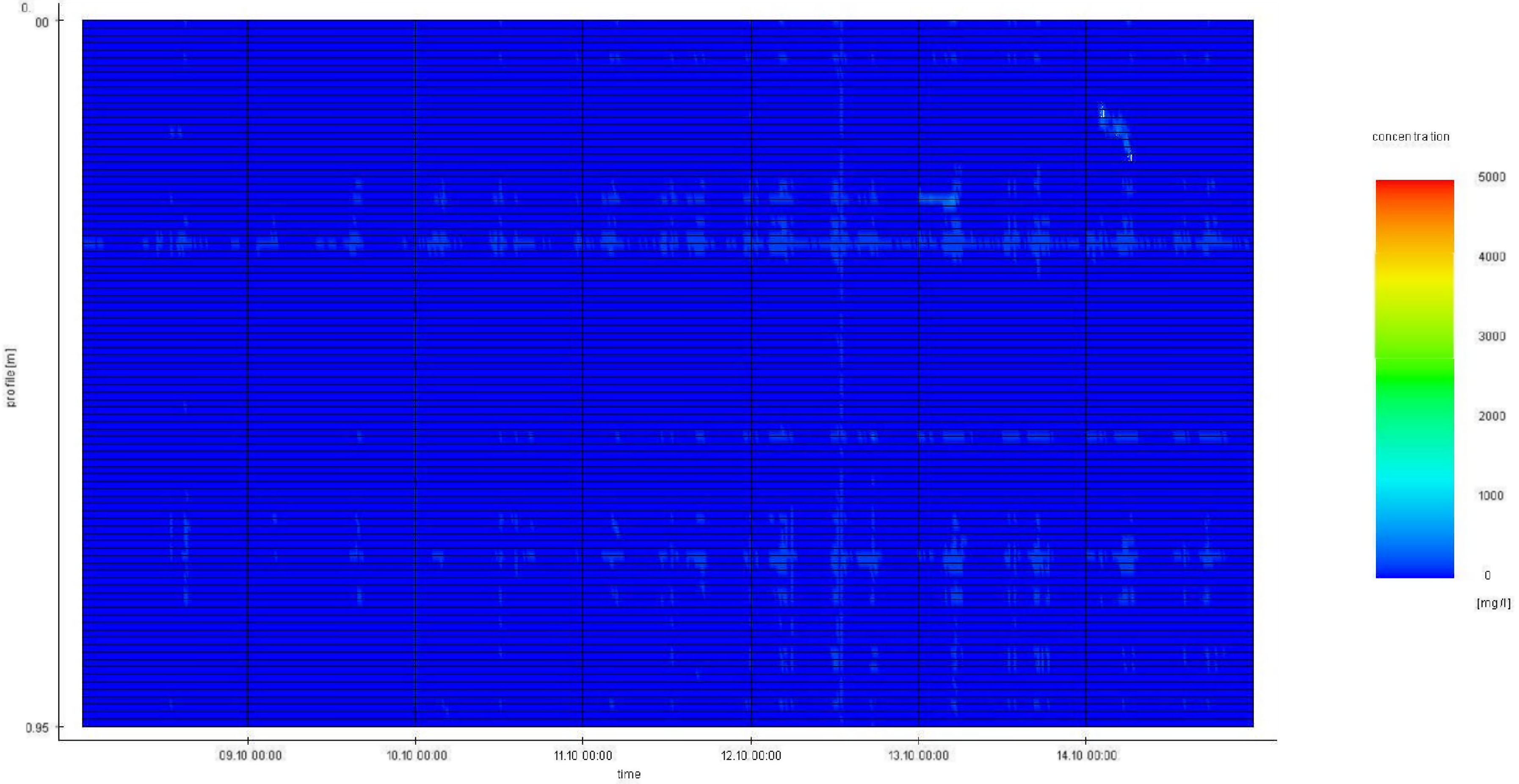
In association with:

I/RA/11283/07.095/MSA

Location:
Deurganckdok CDW

Date:
01/10/2007 – 07/10/2007

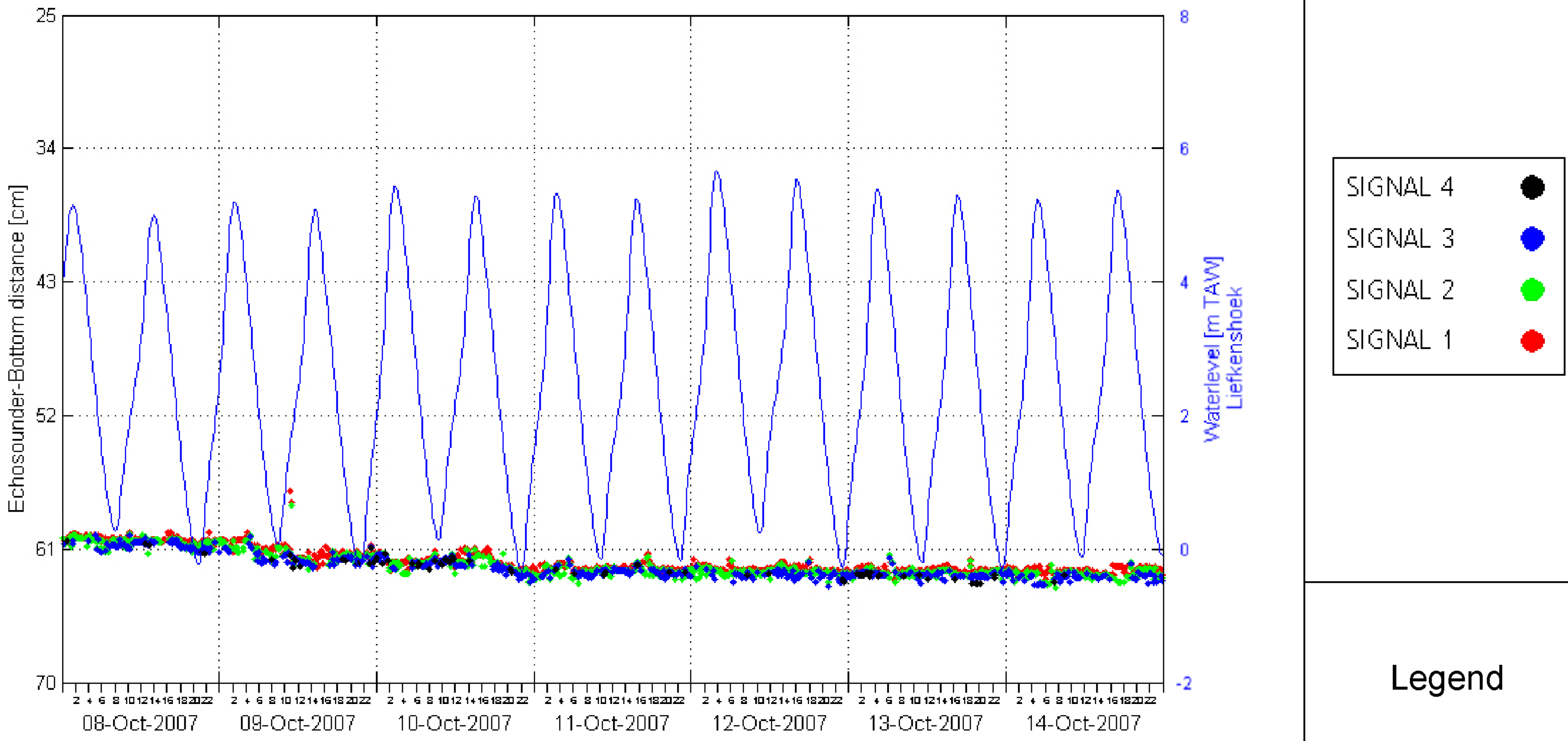
11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Time series suspended sediment concentration
ARGUS ASM-IV

Location: Deurganckdok CDW	Date: 08/10/2007 – 14/10/2007	*Data processed by:* IMDC *In association with:* wl | delft hydraulics, GEMS International *I/RA/11283/07.095/MSA*

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Legend

Echosounder – bottom distance
Waterlevel [mTAW] at Liefkenshoek

Location:
Deurganckdok CDW

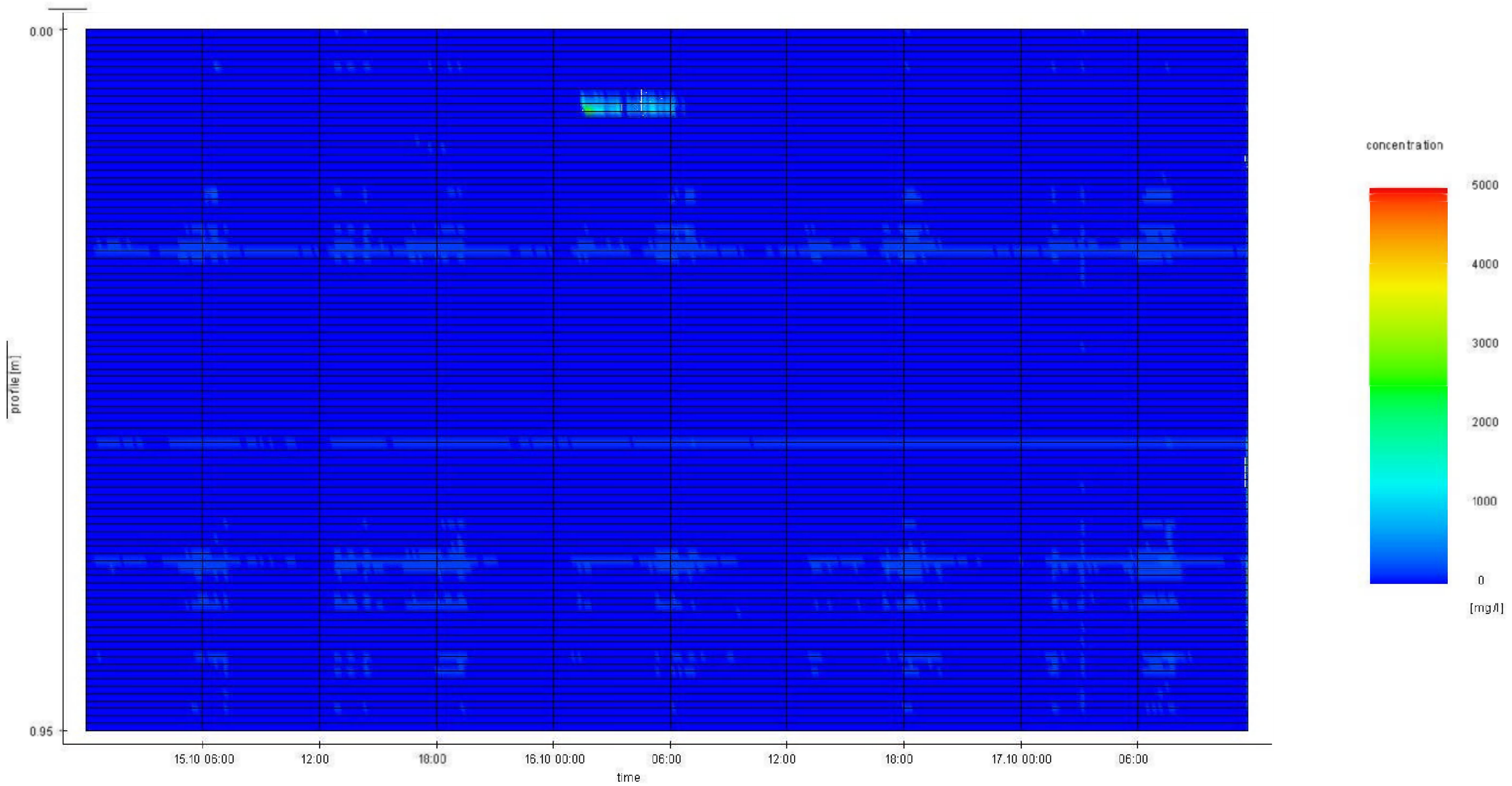
Date:
08/10/2007 – 14/10/2007

Data processed by:

In association with:

I/RA/11283/07.095/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Time series suspended sediment concentration
ARGUS ASM-IV

Location:
Deurganckdok CDW

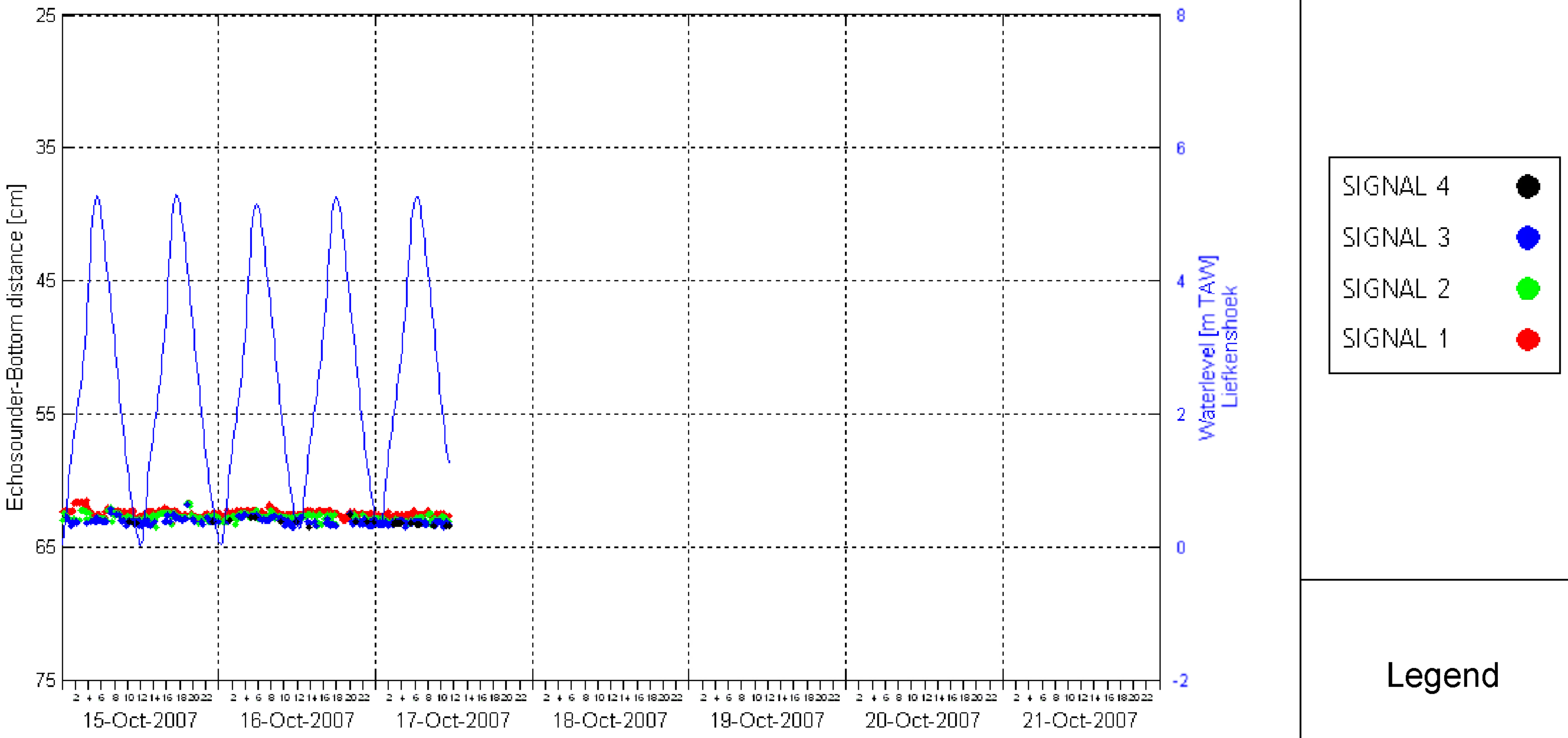
Date:
15/10/2007 – 17/10/2007

Data processed by:

In association with:

I/RA/11283/07.095/MSA

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Legend

Echosounder – bottom distance
Waterlevel [mTAW] at Liefkenshoek

Data processed by: IMDC

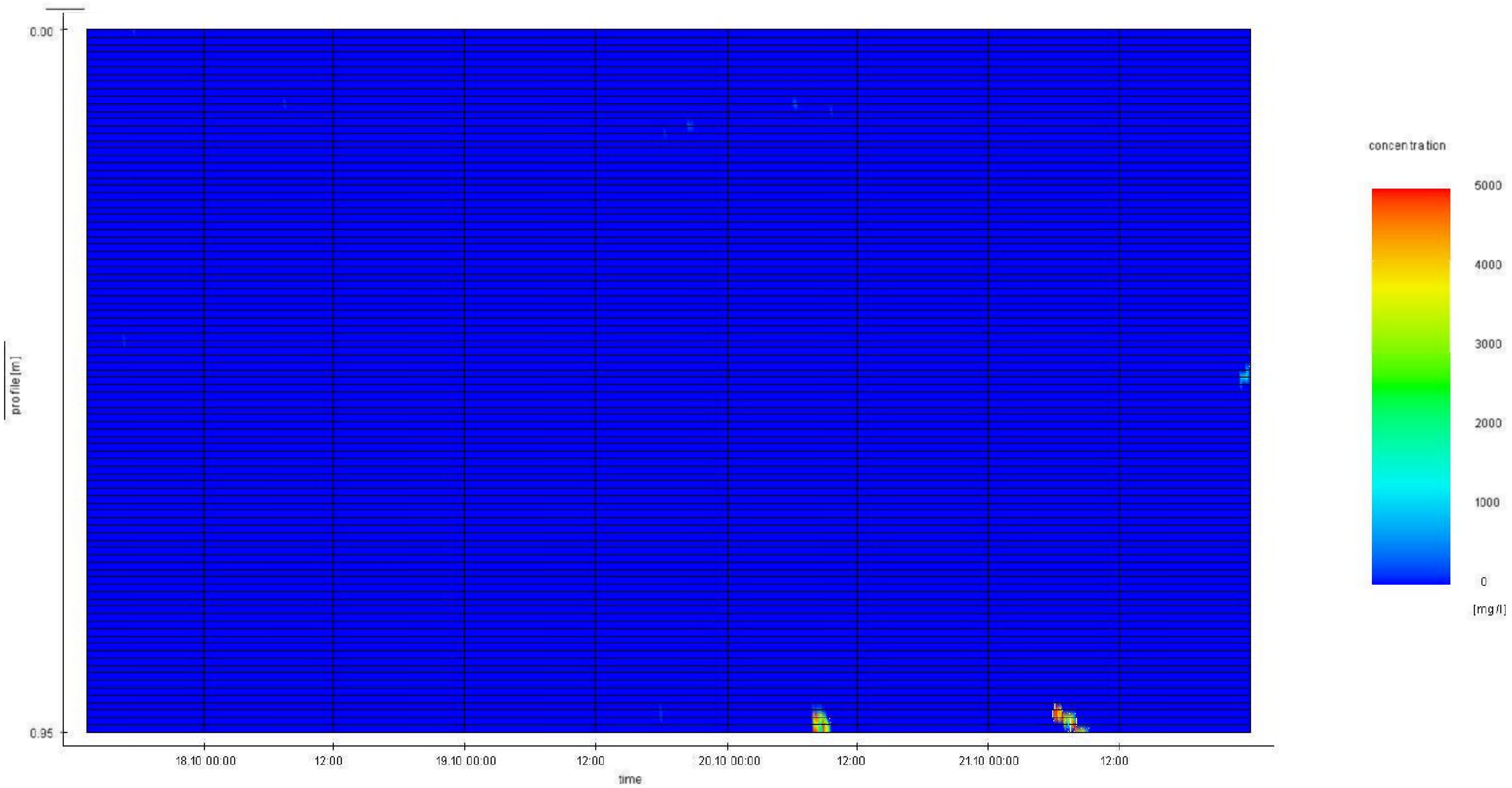
In association with: wl | delft hydraulics, GEMS International

Location:
Deurganckdok CDW

Date:
15/10/2007 – 17/10/2007

I/RA/11283/07.095/MSA

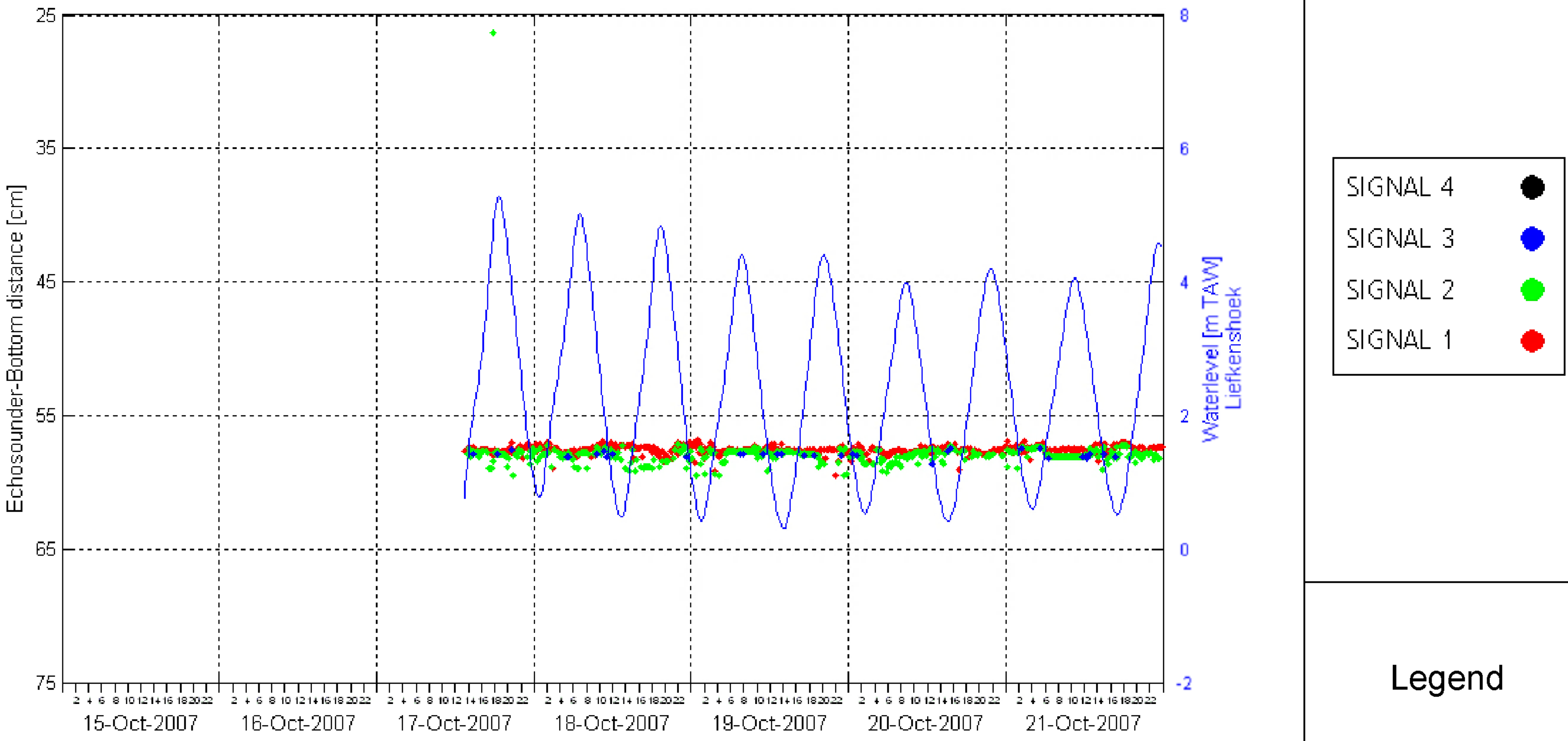
11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Time series suspended sediment concentration
ARGUS ASM-IV

Location:	Date:	
Deurganckdok CDW	17/10/2007 – 21/10/2007	Data processed by: IMDC In association with: wl | delft hydraulics, GEMS International I/RA/11283/07.095/MSA

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Legend

Echosounder – bottom distance
Waterlevel [mTAW] at Liefkenshoek

Location:
Deurganckdok CDW

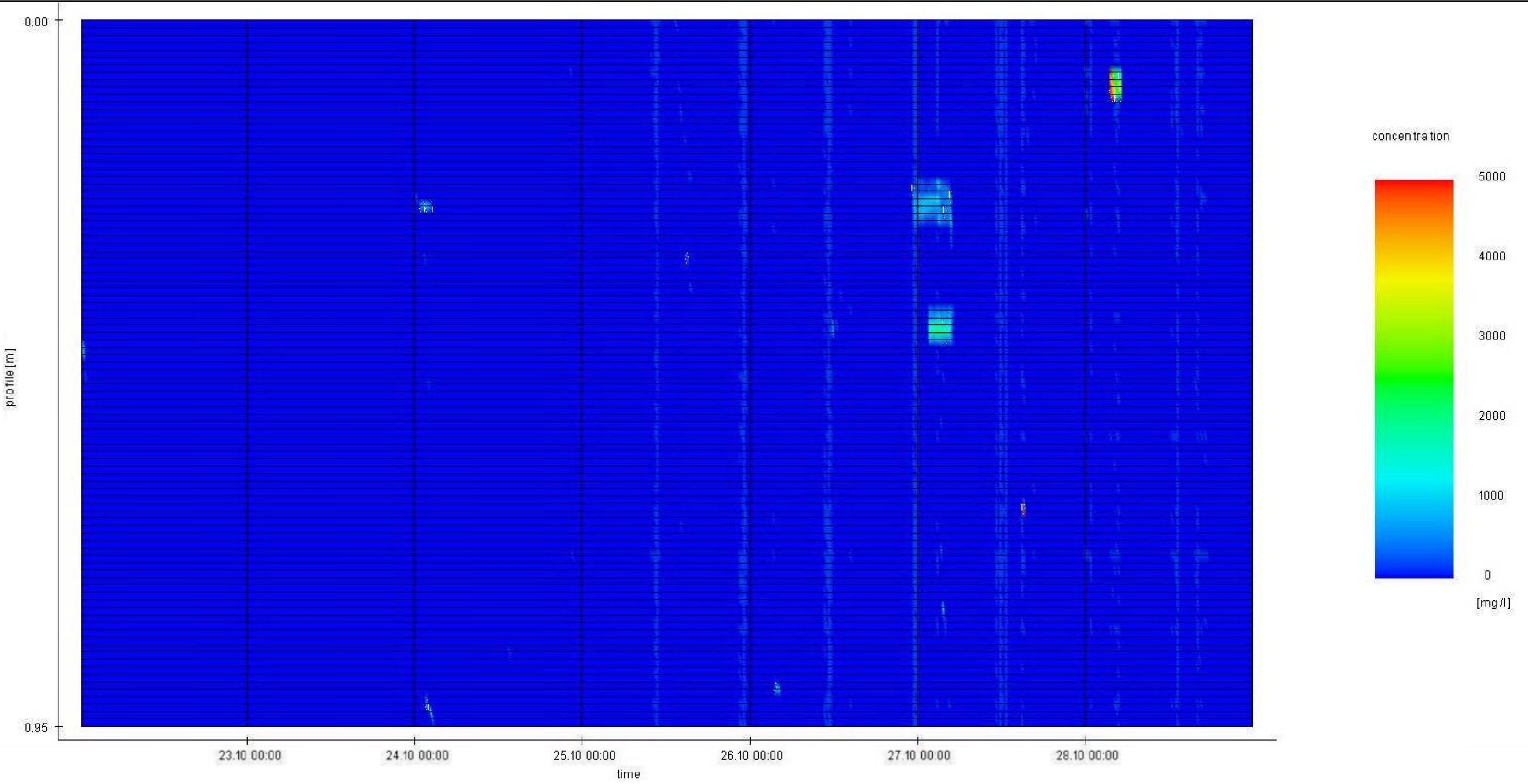
Date:
17/10/2007 – 21/10/2007

Data processed by:

In association with:

I/RA/11283/07.095/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Time series suspended sediment concentration
ARGUS ASM-IV

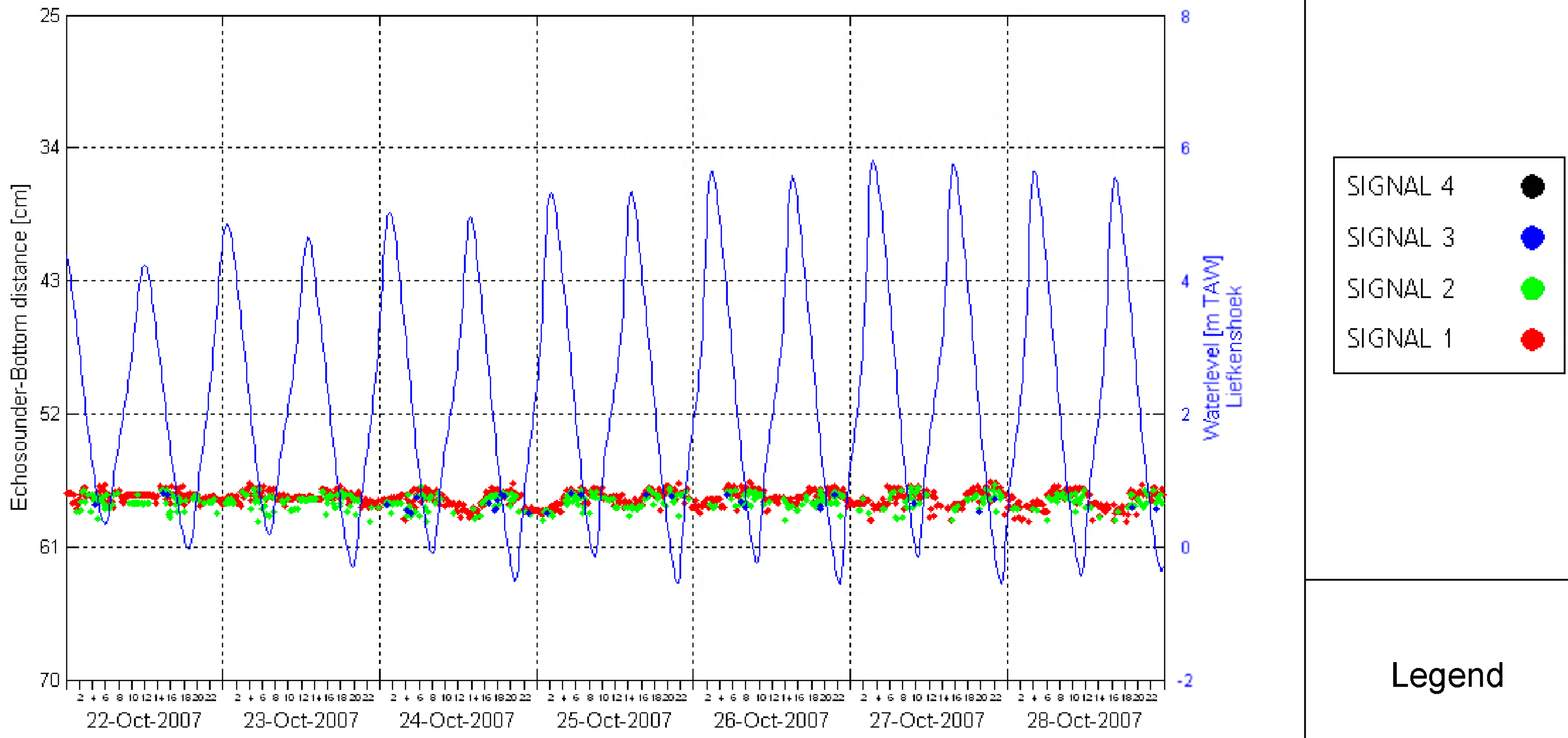
Location: Deurganckdok CDW	Date: 22/10/2007 – 28/10/2007

Data processed by: IMDC

In association with: wl | delft hydraulics, GEMS International

I/RA/11283/07.095/MSA

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Legend

Echosounder – bottom distance
Waterlevel [mTAW] at Liefkenshoek

Location:
Deurganckdok CDW

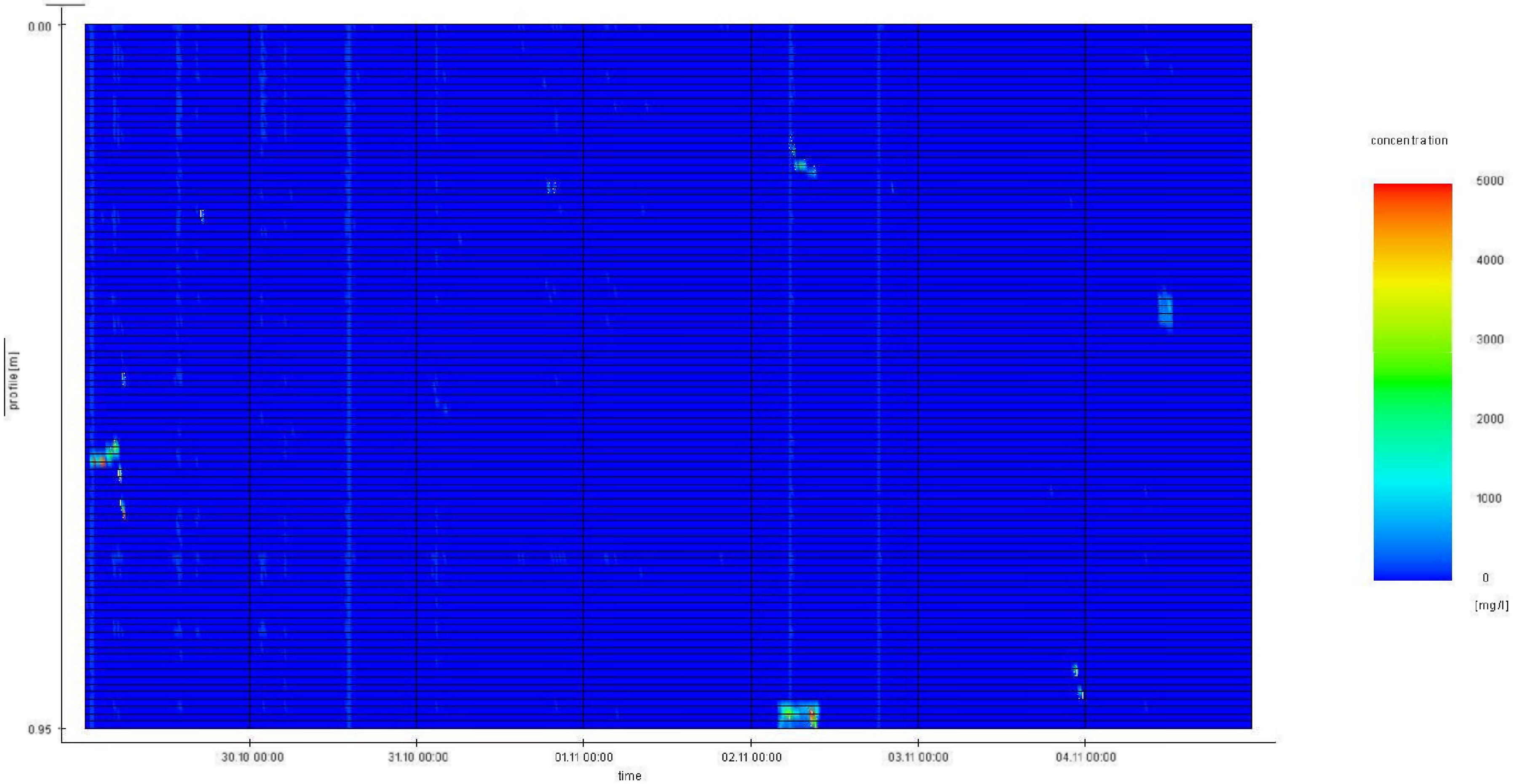
Date:
22/10/2007 – 28/10/2007

Data processed by:

In association with:

I/RA/11283/07.095/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Time series suspended sediment concentration
ARGUS ASM-IV

Location:
Deurganckdok CDW

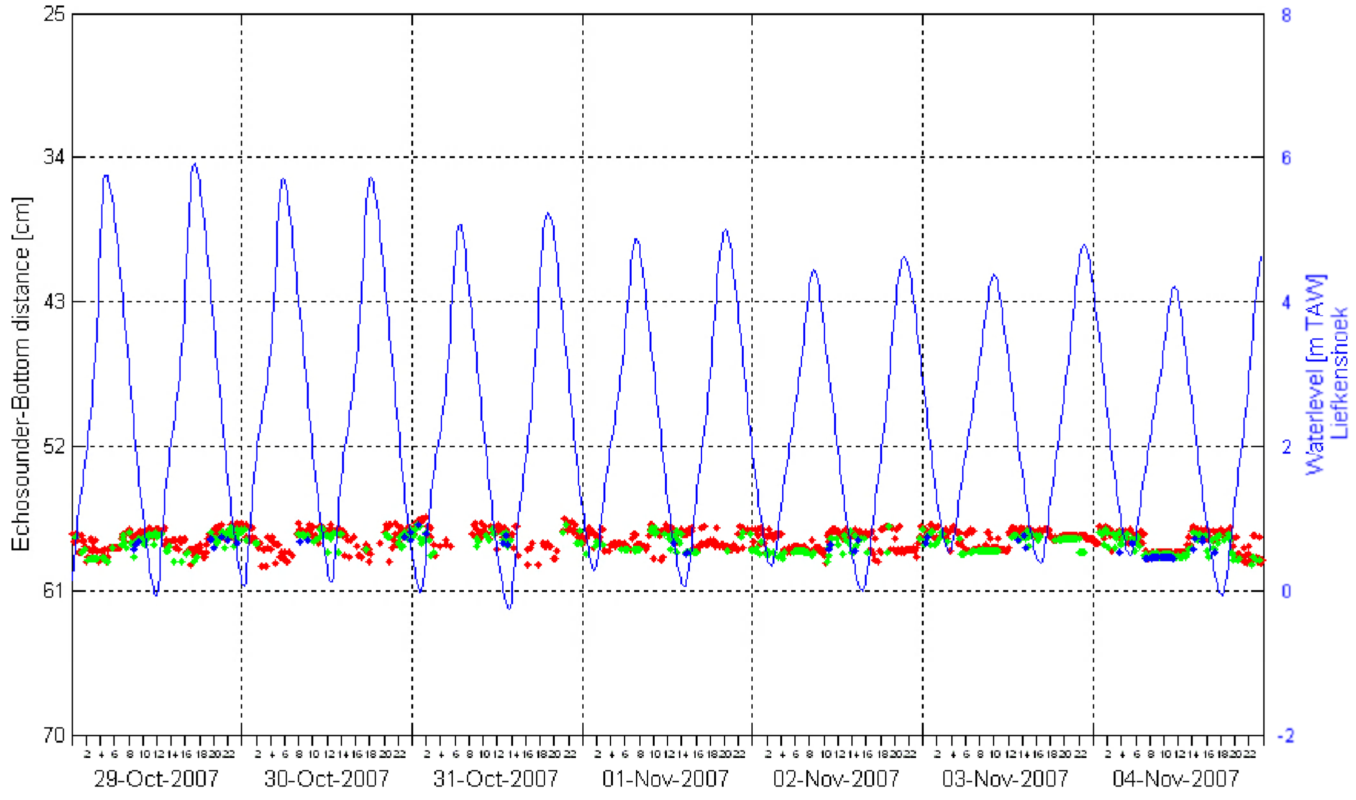
Date:
29/10/2007 – 04/11/2007

Data processed by:

In association with:

I/RA/11283/07.095/MSA

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Legend

Echosounder – bottom distance
Waterlevel [mTAW] at Liefkenshoek

Location:
Deurganckdok CDW

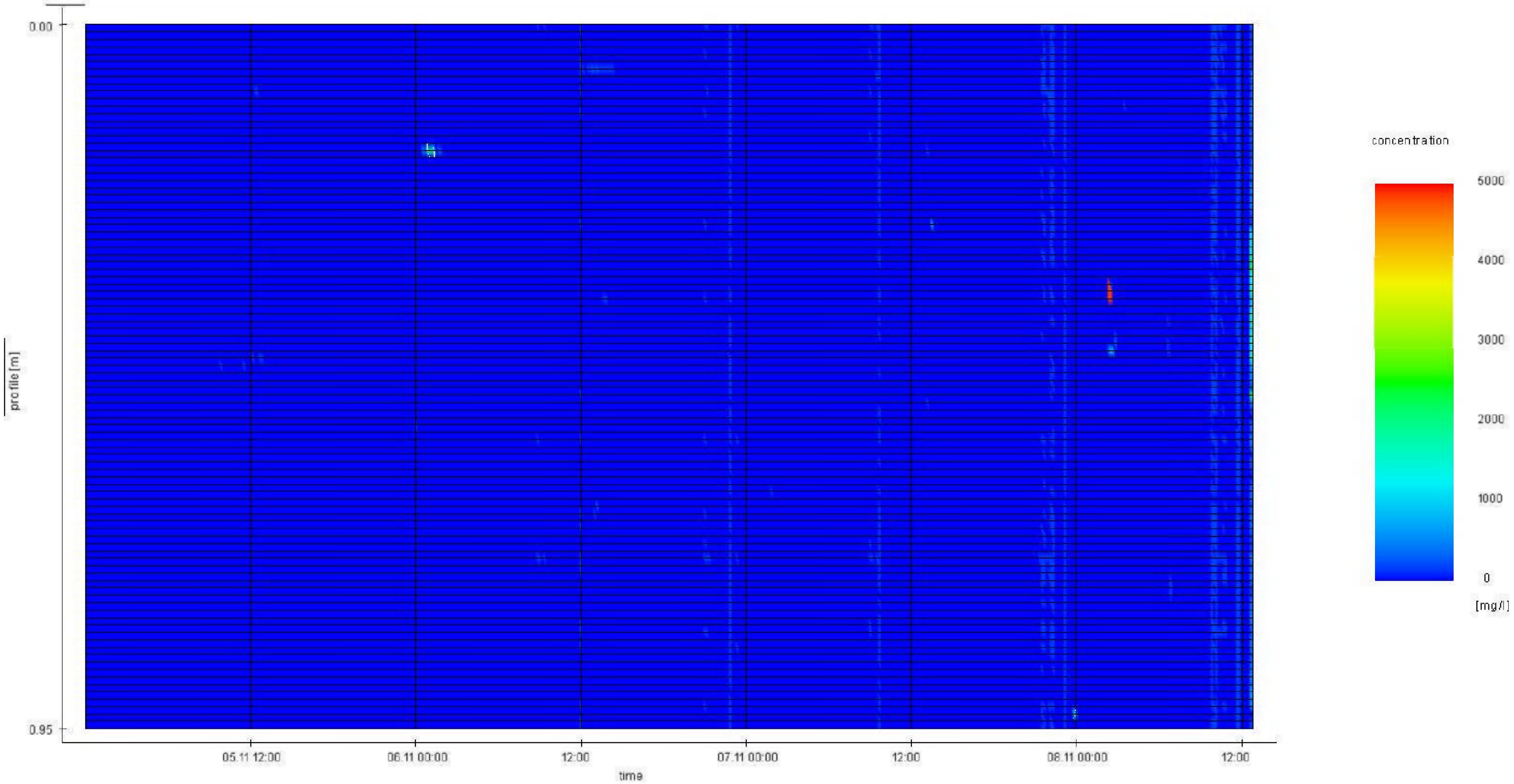
Date:
29/10/2007 – 04/11/2007

Data processed by:

In association with:

I/RA/11283/07.095/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Time series suspended sediment concentration
ARGUS ASM-IV

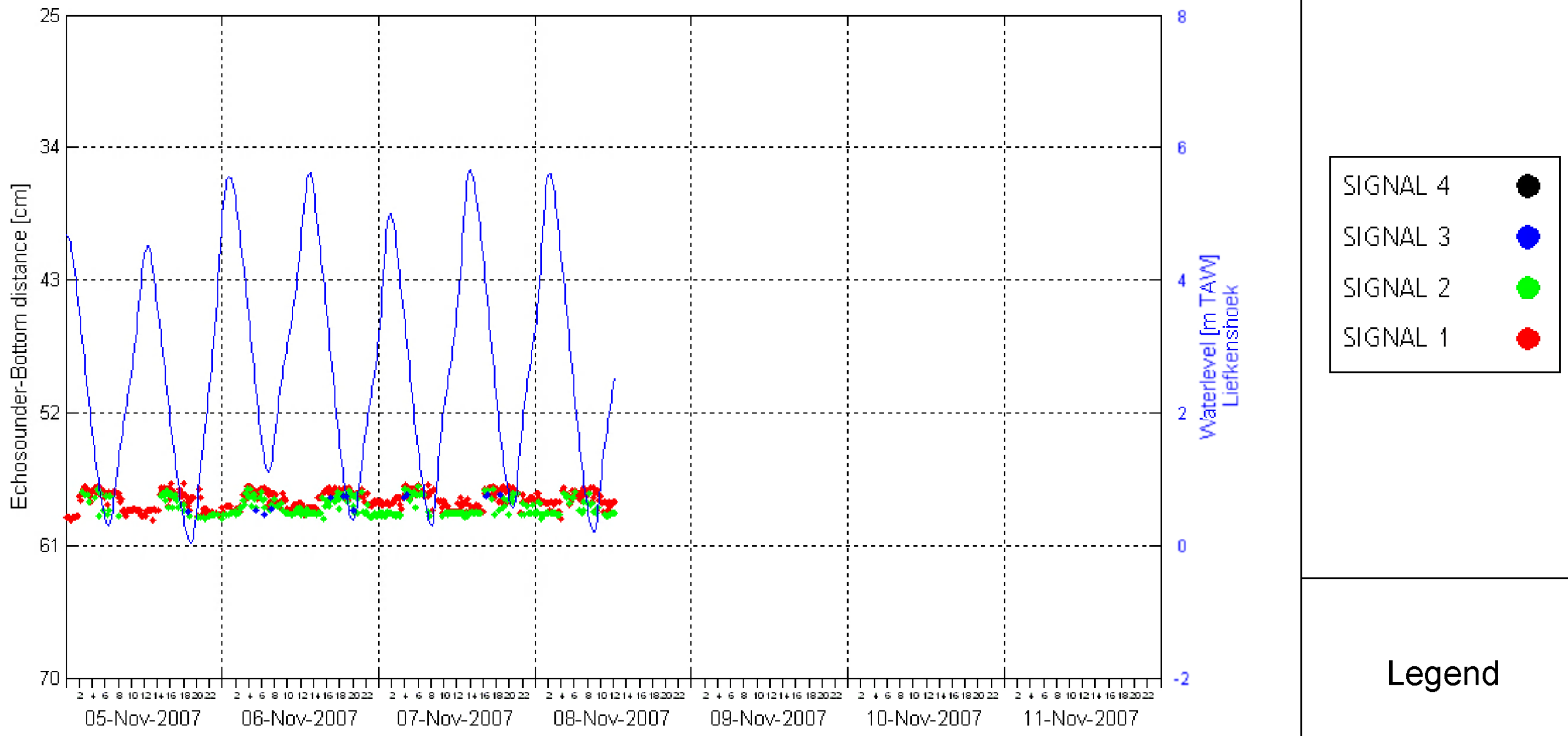
Location: Deurganckdok CDW	Date: 05/11/2007 – 08/11/2007

Data processed by: IMDC

In association with: WL | delft hydraulics, GEMS International

I/RA/11283/07.095/MSA

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Legend

Echosounder – bottom distance
Waterlevel [mTAW] at Liefkenshoek

Location:
Deurganckdok CDW

Date:
05/11/2007 – 08/11/2007

Data processed by:

In association with:

I/RA/11283/07.095/MSA

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<tr><td colspan="3">NO DATA</td></tr>
<tr><td colspan="2">Time series suspended sediment concentration
ARGUS ASM-IV</td><td rowspan="2">Data processed by:
In association with:
I/RA/11283/07.095/MSA</td></tr>
<tr><td>Location:
Deurganckdok CDW</td><td>Date:
08/11/2007 – 11/11/2007</td></tr>
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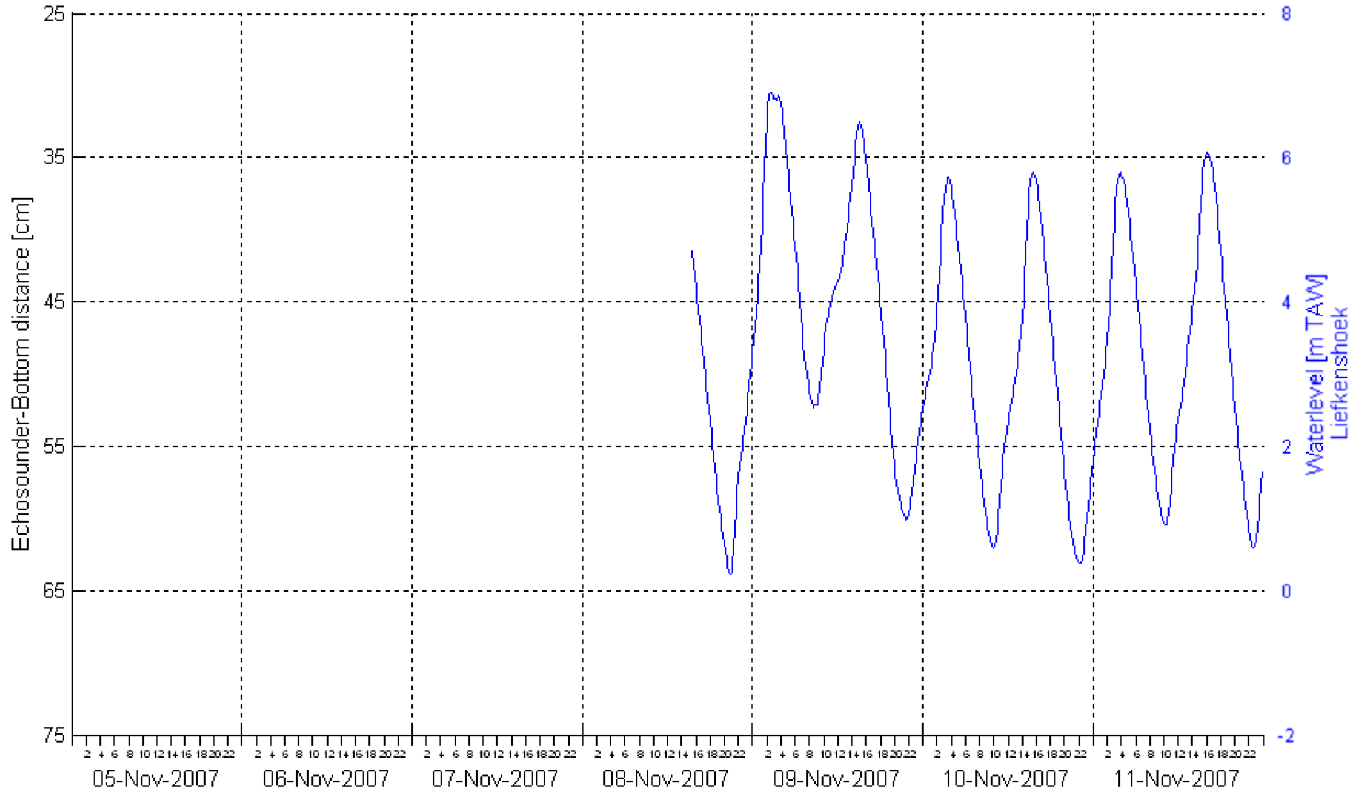
11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Legend

Echosounder – bottom distance
Waterlevel [mTAW] at Liefkenshoek

Location:
Deurganckdok CDW

Date:
08/11/2007 – 11/11/2007

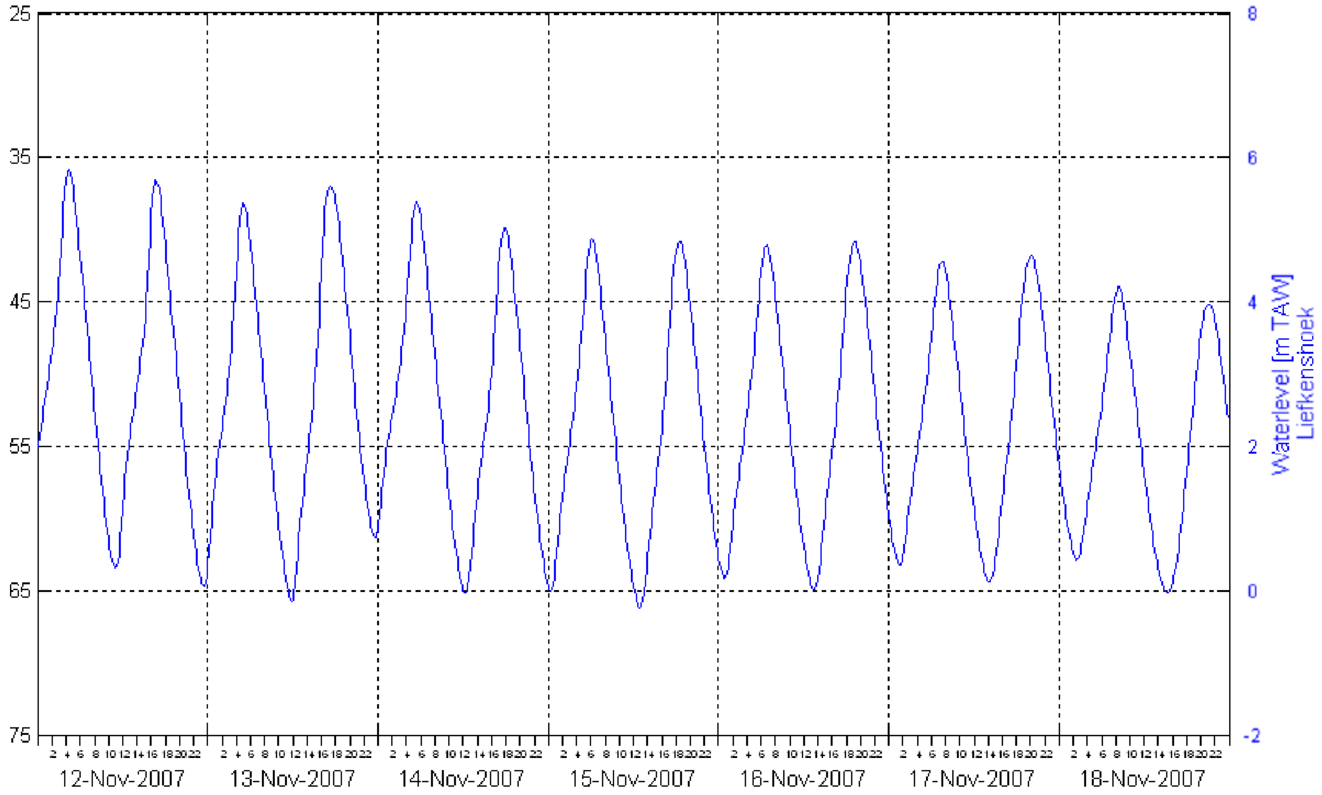
Data processed by: IMDC

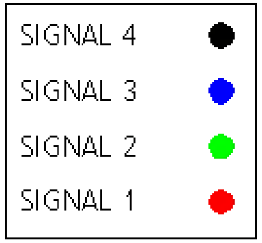
In association with: wl | delft hydraulics, GEMS International

I/RA/11283/07.095/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007		
NO DATA		
Time series suspended sediment concentration ARGUS ASM-IV		Data processed by: IMDC In association with: wl | delft hydraulics, GEMS International I/RA/11283/07.095/MSA
Location: Deurganckdok CDW	Date: 12/11/2007 – 18/11/2007	

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007





Legend

Echosounder – bottom distance
Waterlevel [mTAW] at Liefkenshoek

Location:
Deurganckdok CDW

Date:
12/11/2007 – 18/11/2007

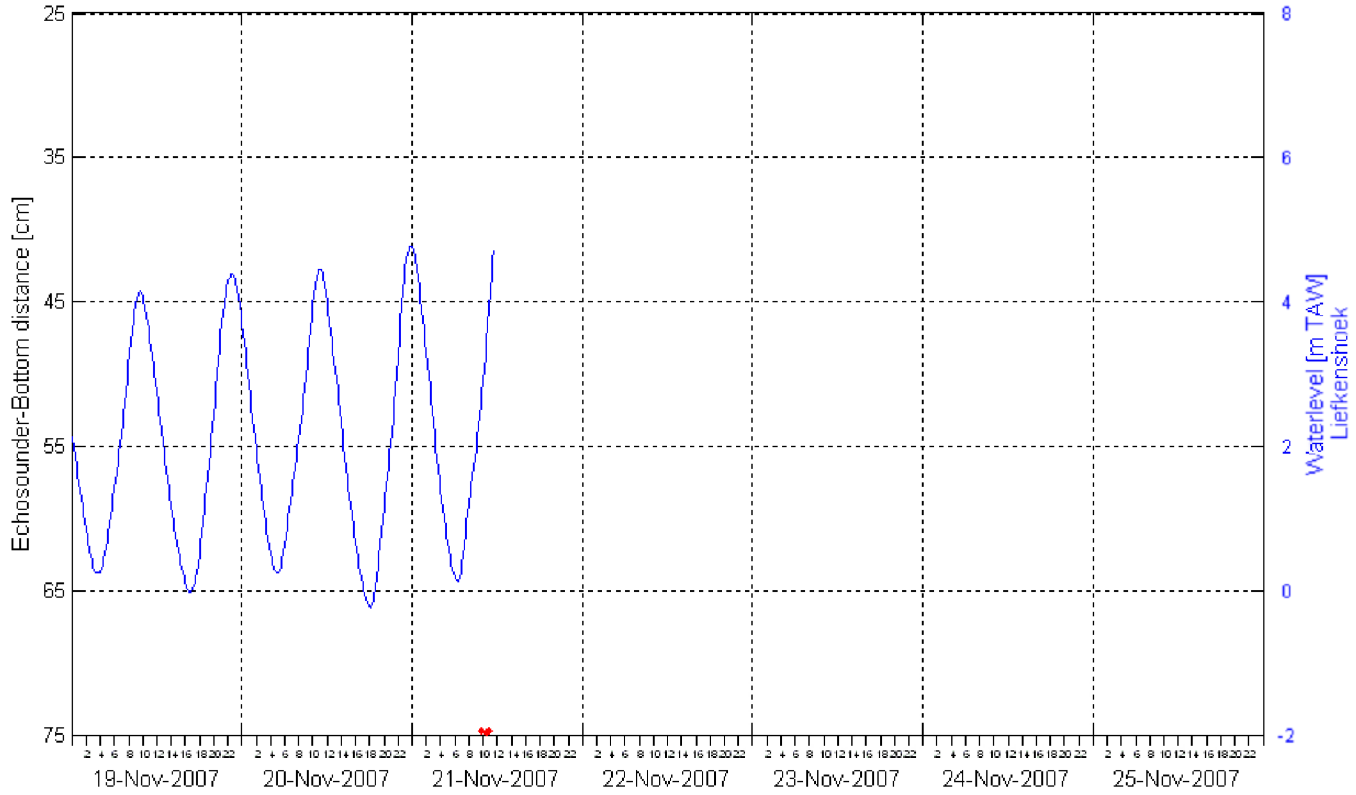
Data processed by:

In association with:

I/RA/11283/07.095/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007		
NO DATA		
Time series suspended sediment concentration ARGUS ASM-IV		*Data processed by:* *In association with:*
Location: Deurganckdok CDW	Date: 19/11/2007 – 21/11/2007	*I/RA/11283/07.095/MSA*

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Legend

Echosounder – bottom distance
Waterlevel [mTAW] at Liefkenshoek

Location:
Deurganckdok CDW

Date:
19/11/2007 – 21/11/2007

Data processed by:

In association with:

I/RA/11283/07.095/MSA

<table>
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<tr><td colspan="3">NO DATA</td></tr>
<tr><td colspan="2">Time series suspended sediment concentration
ARGUS ASM-IV</td><td rowspan="2">Data processed by:
In association with: wl | delft hydraulics GEMS International
I/RA/11283/07.095/MSA</td></tr>
<tr><td>Location:
Deurganckdok CDW</td><td>Date:
21/11/2007 – 25/11/2007</td></tr>
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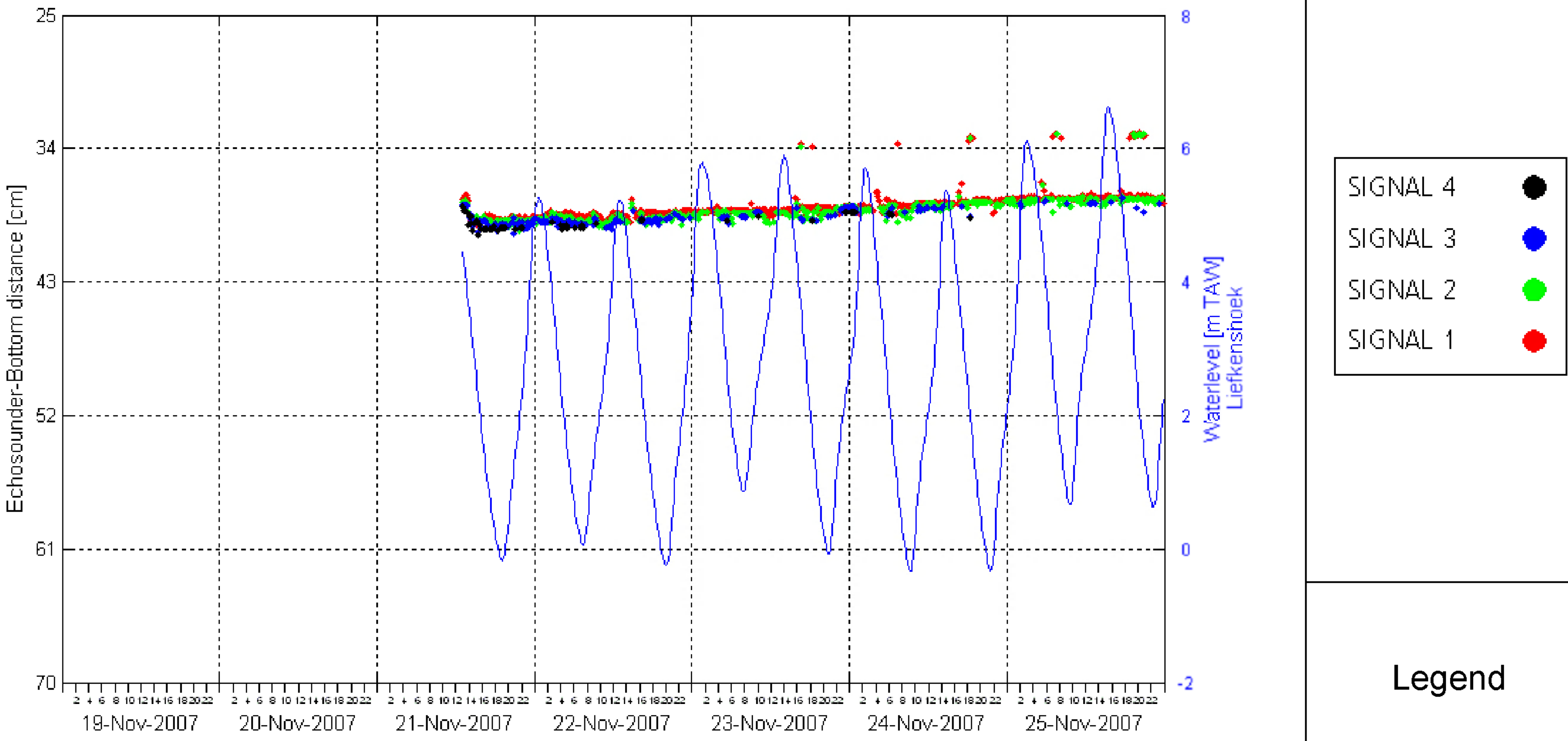
11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Echosounder – bottom distance
Waterlevel [mTAW] at Liefkenshoek

Location:
Deurganckdok CDW

Date:
21/11/2007 – 25/11/2007

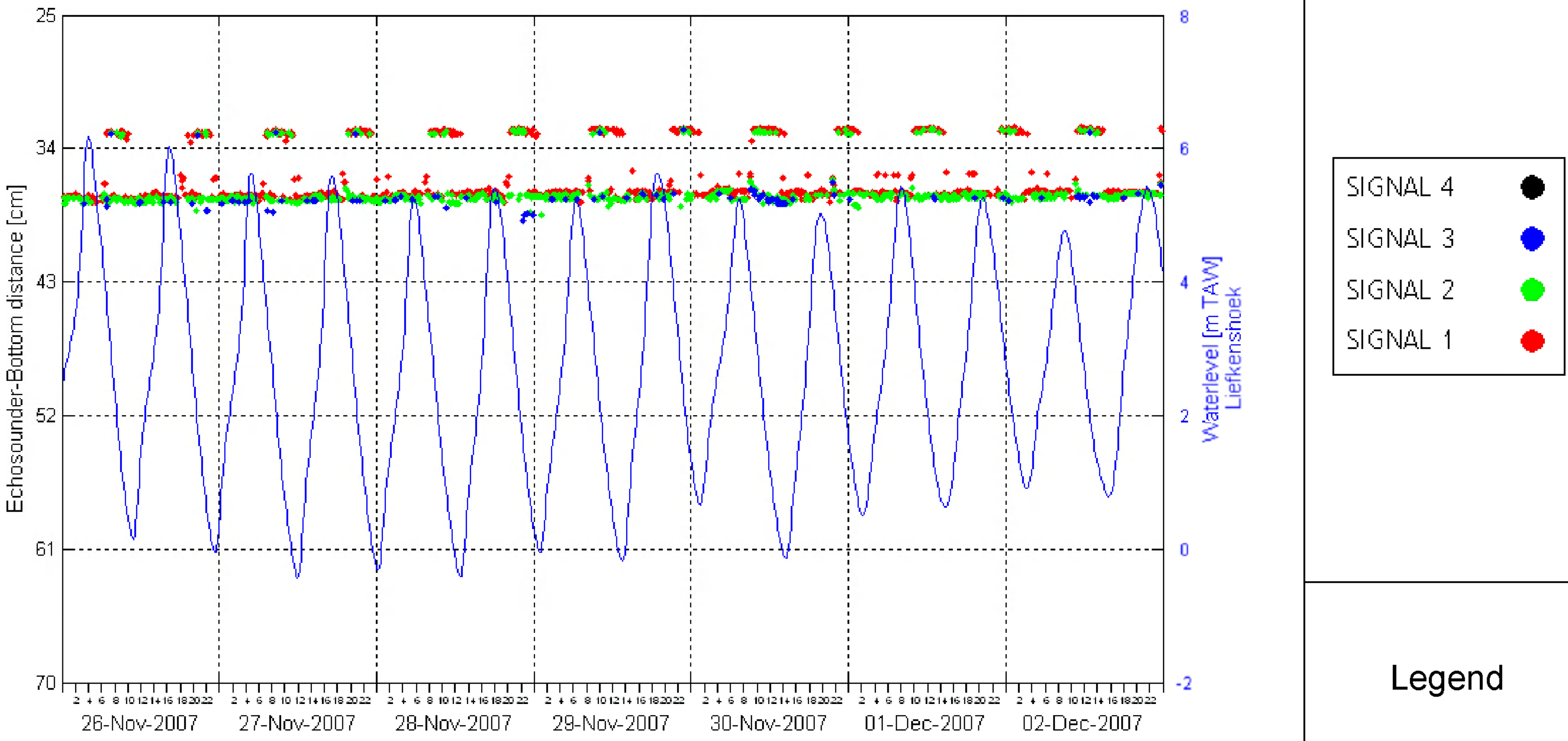
Data processed by:

In association with:

I/RA/11283/07.095/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007		
NO DATA		
Time series suspended sediment concentration ARGUS ASM-IV		Data processed by: IMDC In association with: WL | delft hydraulics, GEMS International I/RA/11283/07.095/MSA
Location: Deurganckdok CDW	Date: 26/11/2007 – 02/12/2007	

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Legend

Echosounder – bottom distance
Waterlevel [mTAW] at Liefkenshoek

Location:
Deurganckdok CDW

Date:
26/11/2007 – 02/12/2007

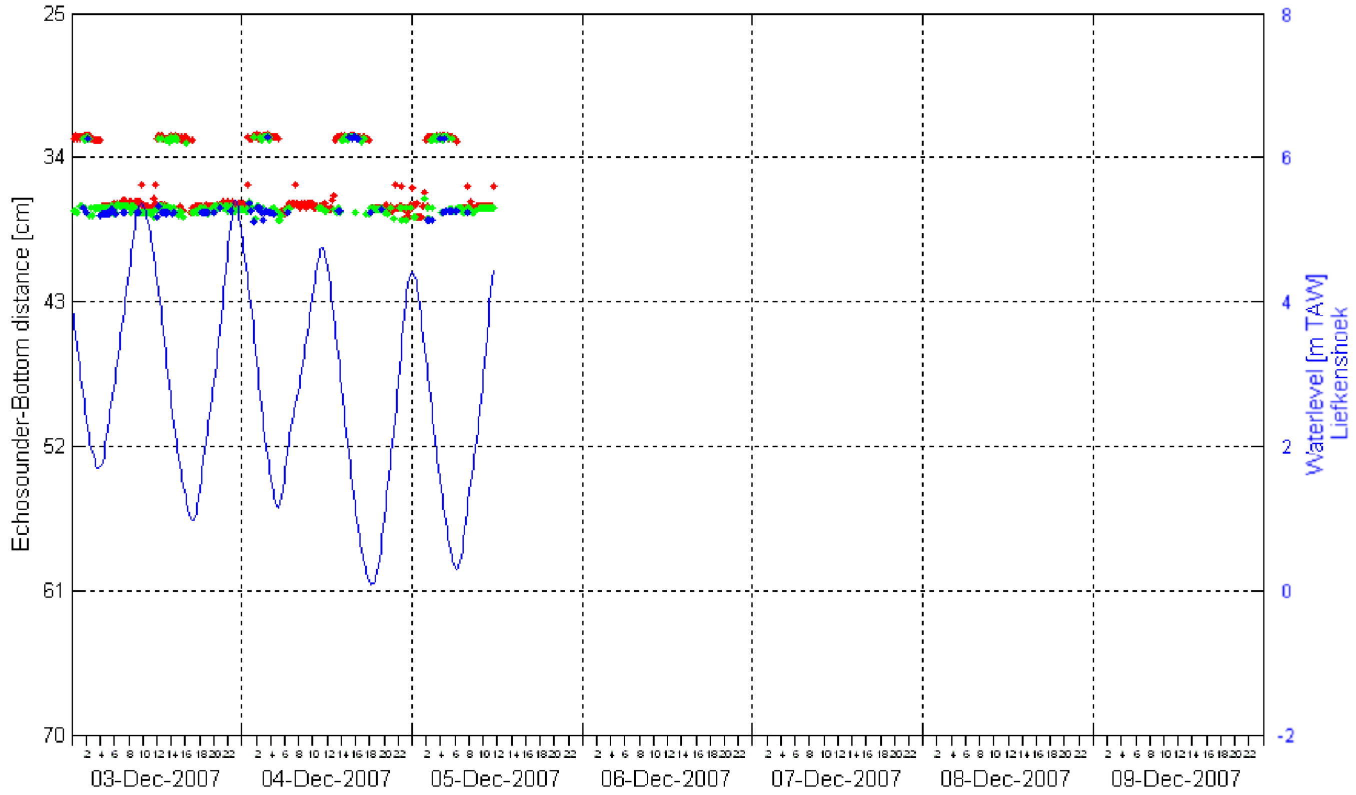
Data processed by:

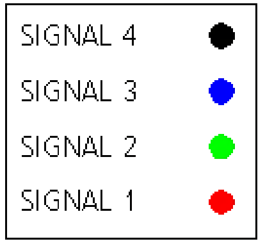
In association with:

I/RA/11283/07.095/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007		
NO DATA		
Time series suspended sediment concentration ARGUS ASM-IV		*Data processed by:*
Location: Deurganckdok CDW	Date: 02/12/2007 – 05/12/2007	*In association with:* *I/RA/11283/07.095/MSA*

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007





Legend

Echosounder – bottom distance
Waterlevel [mTAW] at Liefkenshoek

Location: Deurganckdok CDW	Date: 02/12/2007 – 05/12/2007

Data processed by: IMDC

In association with: WL | delft hydraulics, GEMS International

I/RA/11283/07.095/MSA

ARGUS Mean SS Concentration [mg/l] per tidal phase in layers of 10 cm (*except first column 6 cm) [distances given in cm above bottom]													
Date	***Tide no.***	***Phase***	***Tidal diff [m]***	***123-118***	***117-108***	***107-98***	***97-88***	***87-78***	***77-68***	***67-58***	***57-48***	***47-38***	***37-28***
20070926	1	ebb	0	1492.5	1604.3	1902.3	2258.1	1944.8	1900.2	2003.7	2442	2277.5	1795
20070927	1	flood	20.1	70.2	68.1	130.9	177.3	92.6	105.4	105.6	173.6	159.4	133.3
20070927	2	ebb	6	46.8	33.3	58.6	73.8	31.8	30	28.3	58.3	51.2	42.4
20070927	2	flood	5.6	89.6	75.2	98.9	113.9	72.8	72.1	70.2	100.1	92.4	84.8
20070927	3	ebb	6.2	38.8	25.1	49.5	65.4	23.6	22.4	21.3	49	43.5	34.1
20070928	3	flood	6.4	66.5	52.2	76	92.4	49	47.6	45.9	77.5	69.7	60.1
20070928	4	ebb	5.9	57.9	45.4	71.1	86.4	42.4	40.5	38.4	70	63.2	53
20070928	4	flood	6	110	98.7	118.9	136.9	94.9	91.3	90.3	120.4	113.6	104.3
20070928	5	ebb	6.5	52.4	41.6	67.3	86.5	41.5	37.9	37.3	66.6	60.4	50.7
20070929	5	flood	6.6	92	78.2	102.1	117	74	71.3	71	102.9	95.1	85.3
20070929	6	ebb	6.2	78.9	63.5	88.7	104.6	60.5	58.7	58	90.8	83.2	73.9
20070929	6	flood	6.2	104.2	89.9	108.5	126.1	86	84	83.8	115.3	106.9	96.9
20070929	7	ebb	6.3	55.5	42.5	63.5	79.5	40.6	38.3	37.9	69.8	63.5	51.9
20070930	7	flood	6.3	77.8	65	83.8	100.7	61.1	58.9	59.6	90	81.8	71.2
20070930	8	ebb	6.1	61.2	49.8	68.9	85.3	45.4	42.9	43.9	74.8	68.6	57.2
20070930	8	flood	5.9	74.9	61.1	81.6	97.8	57.9	55.7	57.7	88.2	79.8	68.9
20071001	9	ebb	6.3	43.8	32.9	51.3	75.8	29.3	27.8	27.8	55.4	50.8	39.9
20071001	9	flood	5.9	53.6	42.6	61.3	77.5	39	37.7	38.1	67.3	59.7	48.2
20071001	10	ebb	5.8	66.2	54.1	73.8	89	50.1	47.3	48.9	78.4	73.1	62
20071001	10	flood	5.8	76.4	64	81.8	100.4	59.3	57.3	63.2	91.4	81.4	69.8
20071002	11	ebb	5.8	42.8	34.3	51.8	67.8	29.1	27.7	41	57	49.1	38.5
20071002	11	flood	5.5	43.4	31.1	51.4	66.9	28	27	23.4	54.4	49.3	38.3
20071002	12	ebb	5.3	36.2	25.7	46.6	60.6	21.6	20.4	16.5	48.1	43.7	32.3
20071002	12	flood	5.3	59.2	47	67.8	82.3	41.9	41	36.7	70	65.2	52.5
20071003	13	ebb	5.3	40.3	32	50.5	65.1	26.9	25.1	21.8	51.2	47.6	38.3
20071003	13	flood	4.9	58.8	47	66.9	82.3	41.8	40.7	37.5	70.4	64.6	53.2
20071003	14	ebb	4.9	40	29.9	49.9	64.4	24.6	23.1	19.4	51	47.7	36.4
20071003	14	flood	4.9	68.4	63.4	83.3	92.6	53.1	51.5	47.6	79.2	73.7	63.2
20071004	15	ebb	4.7	42.6	29.5	53	67.6	29.2	27.6	23.1	54	49.8	39.5
20071004	15	flood	4.2	45.2	30.5	50.3	68.1	29.3	29.1	26.2	54	50.3	39.4
20071004	16	ebb	4.1	27.5	16.3	35	51.6	17.7	15.7	14	36.8	34.1	24.9
20071004	16	flood	4.4	51.2	36.5	56.6	76.3	35.7	35.4	32	61.6	57.3	46.4
20071005	17	ebb	4.1	26.3	16.1	34.2	52.7	16.8	16.4	14.1	36.4	33.7	24.3

ARGUS Mean SS Concentration [mg/l] per tidal phase in layers of 10 cm (*except first column 6 cm) [distances given in cm above bottom]													
Date	*Tide no.*	*Phase*	*Tidal diff [m]*	*123-118*	*117-108*	*107-98*	*97-88*	*87-78*	*77-68*	*67-58*	*57-48*	*47-38*	*37-28*
20071005	17	flood	3.5	34.7	22.6	41.5	61.1	21.9	21.9	19.9	44.6	41	32.2
20071005	18	ebb	3.9	14.9	6.9	20.8	39.8	6.3	6.8	5	21.4	18.9	12.1
20071005	18	flood	4.2	46.2	33.2	51.7	75.1	31.2	31.1	28.9	57.6	52.8	42.6
20071006	19	ebb	4.1	19.2	8.9	24.4	45.3	8.5	9	7.1	25.5	22.9	15.7
20071006	19	flood	3.8	36.4	23.4	42.5	64.5	22.3	21.5	19.9	47	41.9	31.6
20071006	20	ebb	4.1	12.2	3.7	17.7	36	3.7	4.5	2.9	19.6	16.4	10
20071007	20	flood	4.7	33	19.2	38.3	60.6	17.8	17	16.5	48.3	38.9	28.7
20071007	21	ebb	4.4	20.2	10.1	27.5	47.2	10	9.8	9.2	34	27.1	18.1
20071007	21	flood	4.3	35.6	21.9	42.7	64.5	21.1	20.4	21.8	60.4	43.3	31.9
20071007	22	ebb	4.7	21	11	27.7	47.3	9.9	10	10.2	38.7	26.5	17.5
20071008	22	flood	5.2	34.1	21	41	61.3	18.9	18.4	19.4	53.4	40.7	28.4
20071008	23	ebb	4.8	18.2	7.5	26.2	43.8	6.2	6	6.3	32.8	24.7	13.8
20071008	23	flood	4.7	36.3	26.5	44.1	63.4	20.5	20.2	21.6	61.7	42.7	30.5
20071008	24	ebb	5.2	27.7	13.8	33.8	55.1	14.2	13.9	16.2	49.7	38.1	23
20071009	24	flood	5.4	28.3	14.3	33	54.7	13.2	12.6	14.7	47.2	35.5	23.6
20071009	25	ebb	5.1	24.6	12.5	31.3	52.2	11.2	11.6	13.2	44.6	34.1	22.4
20071009	25	flood	4.9	31.8	16.8	39.1	60.4	16	15.5	20.3	62.6	43.1	27.8
20071009	26	ebb	5.4	26.7	13.5	34.8	53.8	13.2	13	18.6	46.2	39.1	24.2
20071010	26	flood	5.7	42.6	26	48.7	69.9	24	23.8	29.4	64.9	50.6	35.9
20071010	27	ebb	5.2	34.2	19.1	42.7	62.3	17.9	17.9	21.7	51.9	41.8	31.3
20071010	27	flood	5.1	51.1	33.1	57.2	80	31.3	30.4	37.9	84.9	59.5	45.2
20071010	28	ebb	5.6	24.6	9.9	32.6	54	9.7	9.1	15.9	51.8	35.3	23.5
20071011	28	flood	5.6	49.8	32.4	56.5	79.4	31.4	29.7	37.9	72.8	58.3	45.2
20071011	29	ebb	5.5	40.6	23.4	47.8	71.6	21.8	20.1	28.2	67.7	51.9	38.8
20071011	29	flood	5.4	61.4	41.5	66.2	90.9	41.6	40.1	48.4	91.1	71.3	56.9
20071011	30	ebb	5.4	40.1	22.8	47.6	74.1	23.1	20.2	30.2	72	53.6	40.6
20071012	30	flood	5.8	64.7	45.1	69.5	95.2	43.5	40.7	52.5	97.9	75.4	59.6
20071012	31	ebb	5.4	48.8	30.1	58.6	85.7	29.8	28	40.8	88.5	64.3	48
20071012	31	flood	5.3	69.1	49.6	75.1	104.7	48.2	46.1	59.3	108.2	82.4	67.6
20071012	32	ebb	5.8	36.5	18.3	47.2	73.8	18.5	16.9	31.5	77.7	53.4	39.4
20071013	32	flood	5.6	53.2	32.5	91.7	86.6	32.6	30.5	44.6	86.8	65.6	50.4
20071013	33	ebb	5.6	47.9	28.7	59.8	87.5	30.3	27	41.3	78.7	64	50.5
20071013	33	flood	5.5	57.9	37.2	54.9	92.2	37	34.4	49.8	85.3	69.7	56.3
20071013	34	ebb	5.6	40.3	23.7	42.4	80.5	23.9	20.7	35.1	73.5	57.2	45.4

ARGUS Mean SS Concentration [mg/l] per tidal phase in layers of 10 cm (*except first column 6 cm) [distances given in cm above bottom]													
Date	***Tide no.***	***Phase***	***Tidal diff [m]***	***123-118***	***117-108***	***107-98***	***97-88***	***87-78***	***77-68***	***67-58***	***57-48***	***47-38***	***37-28***
20071014	34	flood	5.5	49	69.4	48.1	86.7	29.6	26.1	42.4	83.7	64	49
20071014	35	ebb	5.4	43.2	28.1	53	81.3	23.9	21.8	36.2	78.3	58.5	43.5
20071014	35	flood	5.4	52.6	30.1	51.1	89.3	31.2	28.4	46.4	89.9	66.6	52.3
20071014	36	ebb	5.4	37.8	18.5	38.5	75	17.7	15.8	31.5	72.3	53.9	40.2
20071015	36	flood	5.3	40.8	20.9	41.6	79.8	20.8	18.3	36.8	83.3	58.3	42.9
20071015	37	ebb	5.2	40.9	20.3	42.9	83.3	20.1	17.4	37	81.1	62	47.1
20071015	37	flood	5.2	55.1	36.9	57.9	96.1	33.3	29.4	51.7	109	75.4	58.8
20071016	38	ebb	5.2	37.4	16.6	37.4	78.3	17	14.2	34.6	81.8	59.8	45.6
20071016	38	flood	5.1	42.1	171.8	42.5	83.6	22.2	19.2	41.5	83.5	63.1	49
20071016	39	ebb	4.9	28.6	20.5	34	75	13.1	10.5	31.1	71.7	52.3	41.9
20071016	39	flood	4.9	43.8	23.7	47.5	89.5	25	21.7	45.6	91.2	66.9	52.7
20071017	40	ebb	4.9	32.4	14	36.3	78.3	15.5	13.1	35.6	80.2	57.3	47.2
20071017	40	flood	5	46.5	25.7	49.9	93.6	26.2	23.2	49.8	100	72.8	60.6
20071017	41	ebb	19.4	50.4	36.8	69.1	121.7	33	29.5	141.3	173.3	128.7	78.4
20071017	41	flood	19.6	149.9	131.6	120.8	178.7	183.6	221.2	387.9	283.4	240.2	246
20071018	42	ebb	4.4	19.6	12.1	6.8	5.8	5.7	6.1	5.5	13.5	7.3	8.3
20071018	42	flood	4.2	20.9	13.5	7.2	5.5	5.6	6	5.2	15.2	7.3	8.8
20071018	43	ebb	4.5	11.9	5.9	2.1	1.7	1.6	1.8	1.4	6.8	2.4	2.9
20071018	43	flood	4.3	29.8	20.7	12	10	10.9	10.9	9.8	22.3	12.2	13.1
20071019	44	ebb	4.3	11.2	3.4	1.3	0.5	0.8	0.8	0.5	4.8	1.1	1.1
20071019	44	flood	3.9	21.9	15	8.5	7	7.8	7.6	6.5	17.1	8.3	9.3
20071019	45	ebb	4.1	9.9	4.3	1.3	0.7	1.6	1.3	0.7	4.9	1.6	1.7
20071019	45	flood	4.1	30	22.2	12.1	10.2	10.3	10.9	9.7	23.1	13.3	16
20071020	46	ebb	3.8	8.5	6.3	2.6	0.7	0.9	0.9	0.7	4.9	1.6	1.7
20071020	46	flood	3.5	19.3	14	7.1	4.9	5.8	5.7	5.5	14.4	7.2	186.6
20071020	47	ebb	3.6	7.6	4.4	1.8	1.2	1.5	1.5	1.1	4.8	1.9	85.3
20071020	47	flood	3.8	17.8	12.5	5.6	4	4.4	4.8	3.5	14.5	5.9	6.1
20071021	48	ebb	3.6	6.5	3.7	1.5	1.2	1.1	1.1	1	5.5	1.7	1.5
20071021	48	flood	3.4	15.9	10.6	6.4	5.3	5.4	5.6	5.4	13.2	6.5	270.1
20071021	49	ebb	3.6	3.3	1.7	0.5	0.3	0.4	0.6	0.2	3.5	0.4	0.3
20071021	49	flood	4.1	13.4	8.4	3.2	2.2	2.1	14.2	2.2	9.5	3.9	2.9
20071022	50	ebb	4.2	4.5	1.2	0.2	0.2	16.3	10.7	4	2.9	0.3	0.3
20071022	50	flood	3.9	11.3	6.4	2.3	1.9	1.7	2.1	1.3	8	2.7	1.7
20071022	51	ebb	4.2	9.5	5.5	2.7	2.3	2.2	2.4	2.3	7.2	3	3.1

ARGUS Mean SS Concentration [mg/l] per tidal phase in layers of 10 cm (*except first column 6 cm) [distances given in cm above bottom]													
Date	***Tide no.***	***Phase***	***Tidal diff [m]***	***123-118***	***117-108***	***107-98***	***97-88***	***87-78***	***77-68***	***67-58***	***57-48***	***47-38***	***37-28***
20071023	51	flood	4.8	26	19.9	10.9	9.7	10.3	10.2	9.6	21.9	13.5	11.7
20071023	52	ebb	4.6	8.8	4.9	1.8	1.5	1.5	1.2	1	5.7	2.1	1.2
20071023	52	flood	4.4	27	19.2	11.1	8.9	8.9	9.4	8.1	22	12.9	10.5
20071023	53	ebb	4.9	10.9	6.3	2.3	1.8	1.9	2.1	2.2	7.2	3.4	2.2
20071024	53	flood	5.3	29.8	24	37.2	12.8	12.4	12.7	11.4	25.6	15.7	25.6
20071024	54	ebb	5	15.7	10.4	8.9	4.2	3.9	5.3	3.9	12.1	5.3	16.1
20071024	54	flood	5	43.6	35.9	25	21.8	23	22.5	22.1	38.4	28.6	24.9
20071024	55	ebb	5.5	18.4	12.4	5.2	4.6	4.9	4.9	4.9	14.5	7.9	6.6
20071025	55	flood	5.8	54.2	46.8	34.2	31.9	32.9	35.5	32.7	49.1	38	35.4
20071025	56	ebb	5.4	33.5	26.9	16.4	14	14.4	14.5	14.3	29.4	20	16.1
20071025	56	flood	5.4	78.4	70.3	53.8	51.7	52	52.1	50.9	68.8	56.9	53.9
20071025	57	ebb	5.8	21.7	14	8.2	7.9	5.9	4.7	4.6	15.9	8.2	5.5
20071026	57	flood	6.1	75.5	69.3	55	52.8	52.9	52.8	51.5	69.5	58.4	54.9
20071026	58	ebb	5.8	38.3	31	20.4	18.9	18.5	18.2	20.8	34	23.8	30.2
20071026	58	flood	5.8	90.1	82.7	67.8	65.9	72.5	65.9	66	83.9	72.9	70.4
20071026	59	ebb	6.1	32.1	24.8	14.1	12.5	12.6	12.2	12.4	27	17.8	13.2
20071027	59	flood	6.3	83.4	75.9	247.1	140.2	297.1	58.9	58	76	74.1	61.2
20071027	60	ebb	5.9	54.5	47.2	62.5	54.5	113.5	33	33.4	52.5	44.6	37
20071027	60	flood	5.8	100.9	93.7	78.4	77.6	77.9	75	77.7	107.7	81.7	79.3
20071027	61	ebb	6.3	40.9	32.8	23.1	22	21.6	20.8	23.1	37.7	28.6	22.9
20071028	61	flood	6.2	77.1	373.2	58.1	56.8	56.4	54.6	65.2	71.9	61.8	57.9
20071028	62	ebb	6.1	47.5	133.7	29.7	28.4	27.2	28.3	29.3	45.7	35.8	31.3
20071028	62	flood	5.9	91.8	83.6	70.2	68.9	68.1	66.9	68	85.9	74.6	69.9
20071028	63	ebb	5.9	49.3	41.7	33.6	31.8	30.1	30.8	33.5	48.8	38.6	34
20071029	63	flood	6	83.4	74.1	62.1	64.9	61.7	59.9	332.1	77.5	67	62.8
20071029	64	ebb	5.8	50.4	41.7	31.1	29.3	28.6	30.9	58	64.7	36.8	30.4
20071029	64	flood	6	86.7	78.2	65.5	71.1	65.2	63.7	61.5	83	70.8	65.5
20071030	65	ebb	5.8	44.1	36.6	27.7	25.8	25.1	26	25.2	43.4	34.1	28.8
20071030	65	flood	5.6	76.3	69.1	56.7	55.1	53.9	53.3	52.9	71.3	60.8	57
20071030	66	ebb	5.5	35.7	28.2	20	18.8	17.7	20.8	17.9	35.2	25.3	20.4
20071030	66	flood	5.6	89.9	82.4	69.6	67.6	67.2	66.5	65.7	86.4	74.9	71
20071031	67	ebb	5.7	38.5	30.7	21.7	19.4	18.6	18.7	18.7	36.4	27.1	21.9
20071031	67	flood	5.1	69.7	61.9	50.9	51.1	48	52.5	47.4	67	56	50.8
20071031	68	ebb	5.3	38.4	30.3	21.1	19.9	18.5	19.1	20	36.6	27.1	21.5

ARGUS Mean SS Concentration [mg/l] per tidal phase in layers of 10 cm (*except first column 6 cm) [distances given in cm above bottom]													
Date	***Tide no.***	***Phase***	***Tidal diff [m]***	***123-118***	***117-108***	***107-98***	***97-88***	***87-78***	***77-68***	***67-58***	***57-48***	***47-38***	***37-28***
20071031	68	flood	5.5	76.2	68.3	62.7	55	53	52	51.9	73	61.2	54.9
20071101	69	ebb	4.9	46.8	40.5	32	29	29.5	30.2	30.4	47.7	38	33.4
20071101	69	flood	4.6	72.6	64.6	52.4	52.2	52.2	49.8	50.3	69.2	60.3	53.2
20071101	70	ebb	4.8	30	26	16.9	16.7	14.9	15	15.4	30.8	21.9	17.3
20071101	70	flood	4.9	62.1	54.3	44.1	43.3	42.8	41.6	42	60.3	50.6	45.2
20071102	71	ebb	4.6	27.7	20.5	12.6	11.6	11.8	11.8	12.6	26	18.3	13.5
20071102	71	flood	4	55.3	48.9	94.1	37.7	37.6	36.8	37.1	53.8	44.4	356.3
20071102	72	ebb	4.4	19.7	13.4	13.8	7.3	7.6	7.1	7.6	17.1	11.6	83.2
20071102	72	flood	4.6	56.7	50.4	40.6	38.2	37.9	38.4	38.1	55.1	45	41
20071103	73	ebb	4.1	18.5	13.7	8.7	8	8.3	8.2	8.9	17.6	12.2	9
20071103	73	flood	3.8	31.5	25.3	18.7	17.7	17.2	17.5	17.6	31.3	23.1	19.1
20071103	74	ebb	4	10.8	6.4	3.4	3.5	3.1	3.3	3.6	9.5	5.1	3.4
20071103	74	flood	4.4	25.7	19.8	14.7	12.6	11.8	11.4	13.2	25	16.8	24.8
20071104	75	ebb	4.3	11.1	7.5	4.9	3.7	4.1	3.6	4.3	10.9	6.4	12.1
20071104	75	flood	3.7	25.4	17.2	11.8	11	45.8	10.3	11.2	20.9	14	11.8
20071104	76	ebb	4.3	7.2	4.6	1.7	1.8	26.6	1.4	1.6	6.3	2.4	1.7
20071105	76	flood	4.7	22.9	16.6	10.9	9.3	9	10.1	9.2	21.1	14	9.3
20071105	77	ebb	4.4	10.2	5.7	2.4	2	2.3	2.1	2.6	9.4	4.2	2.4
20071105	77	flood	4.2	18.7	12.8	5.9	5.7	5.8	6.9	5.6	15.6	8.5	4.8
20071105	78	ebb	4.5	22.8	16.5	9.9	9.3	9.6	8	9.5	20.3	12.3	8.6
20071106	78	flood	5.5	33.1	25	29.9	16.3	15.5	16.2	16.3	30.3	21	16.7
20071106	79	ebb	4.4	18.2	12.1	17.7	5.9	6.4	6	8	17.7	10.5	7.3
20071106	79	flood	4.5	46.1	47.2	30.5	29.2	29.2	27.8	31.4	46.1	35.7	31
20071106	80	ebb	5.2	19	15.8	4.6	3.9	4.4	3.8	4.6	17.5	8.1	3.2
20071107	80	flood	4.6	60.9	53.8	42.4	41.2	41.3	40.2	42.8	60.1	48.6	43
20071107	81	ebb	4.7	21.8	15.9	6.7	5.6	4.7	5	6.7	19	11	5.1
20071107	81	flood	5.3	55.6	48.4	35.6	36.7	33.4	34.6	35.1	52.1	42.1	34.9
20071107	82	ebb	5.1	27.2	22	11.2	9.6	9.1	8.9	11.2	26.3	16.5	10.2
20071108	82	flood	5	66.7	61.2	46.2	45.7	45.5	44.3	46.1	64.5	54.1	53
20071108	83	ebb	5.4	28.6	23.5	11.9	23	66.2	9.5	11.1	26.8	19.1	10.3

ALTUS Echosounder bottom distance [cm]

Date	Tide no.	Phase	Signal 1	Signal 2	Signal 3	Signal 4
20070926	1	flood	65.14	65.72	65.92	-
20070926	1	ebb	64.07	64.11	-	-
20070927	2	flood	64.32	-	-	-
20070927	2	ebb	64.15	64.23	-	-
20070927	3	flood	64.07	64.23	-	-
20070927	3	ebb	63.29	63.86	-	-
20070928	4	flood	64.93	-	-	-
20070928	4	ebb	62.88	63	-	-
20070928	5	flood	63.29	63.37	-	-
20070928	5	ebb	62.34	62.67	-	-
20070929	6	flood	63.95	-	-	-
20070929	6	ebb	62.46	63	-	-
20070929	7	flood	63.29	63.41	-	-
20070929	7	ebb	60.69	61.56	-	-
20070930	8	flood	63.62	63.7	63.82	-
20070930	8	ebb	61.35	61.64	61.72	-
20070930	9	flood	62.34	62.55	-	-
20071001	9	ebb	62.26	62.3	62.34	-
20071001	10	flood	61.6	61.68	61.8	-
20071001	10	ebb	62.09	62.09	62.13	-
20071001	11	flood	61.64	61.68	61.76	-
20071002	11	ebb	62.22	62.26	62.42	-
20071002	12	flood	62.13	-	-	-
20071002	12	ebb	61.76	61.93	62.09	-
20071002	13	flood	61.76	62.13	-	-
20071003	13	ebb	61.93	62.09	-	-
20071003	14	flood	61.56	62.05	-	-
20071003	14	ebb	61.39	62.01	62.3	-
20071003	15	flood	61.19	61.23	-	-
20071004	15	ebb	61.52	61.6	61.76	-
20071004	16	flood	61.1	61.19	61.52	-
20071004	16	ebb	60.65	61.52	-	-
20071004	17	flood	61.15	61.35	61.39	-
20071005	17	ebb	60.77	60.81	60.9	-
20071005	18	flood	60.65	60.77	60.77	60.94
20071005	18	ebb	60.73	60.77	60.81	60.9
20071005	19	flood	60.49	60.49	60.49	60.49
20071006	19	ebb	60.24	60.28	61.27	-
20071006	20	flood	60.32	60.36	60.57	-
20071006	20	ebb	60.24	60.77	61.23	-
20071007	21	flood	60.65	60.69	60.9	-
20071007	21	ebb	60.24	60.32	60.73	-

ALTUS Echosounder bottom distance [cm]						
Date	**Tide no.**	**Phase**	**Signal 1**	**Signal 2**	**Signal 3**	**Signal 4**
20071007	22	flood	60.2	60.28	60.32	-
20071007	22	ebb	60.36	60.36	-	-
20071008	23	flood	60.2	60.86	-	-
20071008	23	ebb	60.28	60.4	60.77	-
20071008	24	flood	60.36	60.57	60.69	-
20071008	24	ebb	60.65	61.06	-	-
20071009	25	flood	60.4	60.45	-	-
20071009	25	ebb	60.9	61.89	-	-
20071009	26	flood	61.8	62.01	62.22	-
20071009	26	ebb	61.56	61.72	61.89	62.01
20071010	27	flood	62.26	62.26	62.3	-
20071010	27	ebb	61.84	61.89	61.89	-
20071010	28	flood	61.06	61.64	-	-
20071010	28	ebb	62.59	62.67	62.92	-
20071011	29	flood	62.3	62.34	62.46	-
20071011	29	ebb	62.3	62.46	-	-
20071011	30	flood	62.13	62.46	-	-
20071011	30	ebb	62.55	62.59	62.67	-
20071012	31	flood	62.38	62.38	-	-
20071012	31	ebb	62.5	-	-	-
20071012	32	flood	62.34	62.38	62.92	-
20071012	32	ebb	62.55	62.88	63.2	-
20071013	33	flood	62.59	62.63	62.75	-
20071013	33	ebb	62.46	62.67	62.67	62.79
20071013	34	flood	62.67	62.75	62.83	-
20071013	34	ebb	62.38	63	-	-
20071014	35	flood	62.42	62.59	63.45	-
20071014	35	ebb	62.46	62.92	62.96	-
20071014	36	flood	62.13	-	-	-
20071014	36	ebb	62.38	62.71	62.83	-
20071015	37	flood	62.63	62.83	63.08	-
20071015	37	ebb	62.71	62.92	63	-
20071015	38	flood	62.46	62.67	62.88	-
20071016	38	ebb	62.46	63.08	-	-
20071016	39	flood	62.34	62.42	62.59	-
20071016	39	ebb	62.63	63.04	63.16	-
20071016	40	flood	62.46	62.59	-	-
20071017	40	ebb	62.63	63.16	-	-
20071017	41	flood	62.59	63.08	63.12	-
20071017	41	ebb	57.89	58.1	-	-
20071017	42	flood	57.69	57.89	-	-
20071018	42	ebb	57.15	-	-	-

ALTUS Echosounder bottom distance [cm]

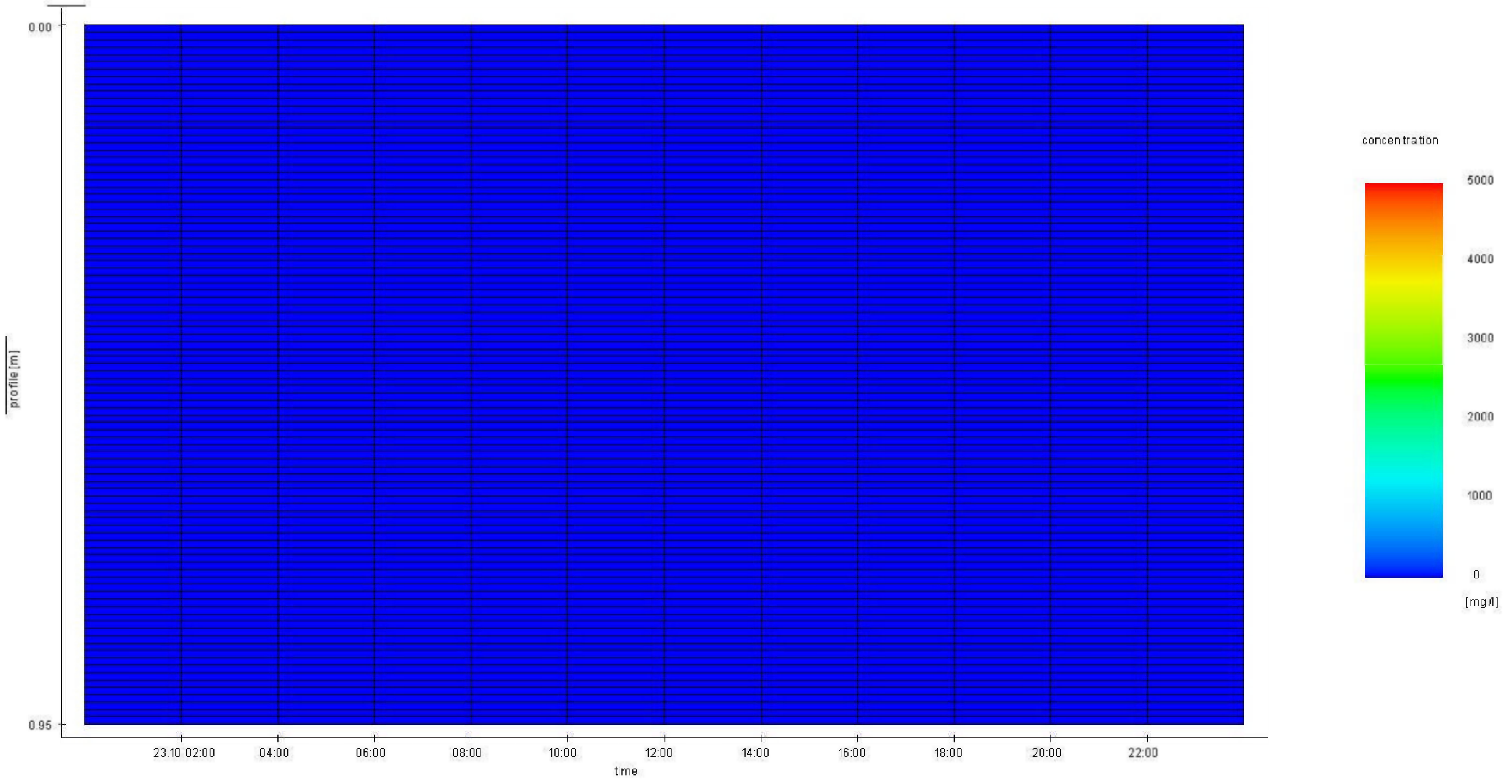
Date	Tide no.	Phase	Signal 1	Signal 2	Signal 3	Signal 4
20071018	43	flood	57.73	58.92	-	-
20071018	43	ebb	57.44	57.81	-	-
20071018	44	flood	58.1	58.84	-	-
20071019	44	ebb	57.4	58.67	-	-
20071019	45	flood	57.64	57.73	57.89	-
20071019	45	ebb	57.6	57.69	57.85	-
20071019	46	flood	58.3	58.55	-	-
20071020	46	ebb	57.6	58.1	-	-
20071020	47	flood	57.77	58.14	-	-
20071020	47	ebb	57.6	57.93	-	-
20071020	48	flood	57.89	58.06	-	-
20071021	48	ebb	57.4	57.44	-	-
20071021	49	flood	57.52	58.1	-	-
20071021	49	ebb	57.31	57.89	58.1	-
20071021	50	flood	57.44	58.02	-	-
20071022	50	ebb	57.85	58.02	-	-
20071022	51	flood	57.52	58.14	-	-
20071022	51	ebb	58.18	58.63	-	-
20071023	52	flood	57.81	58.06	-	-
20071023	52	ebb	57.19	-	-	-
20071023	53	flood	57.73	57.85	-	-
20071023	53	ebb	57.36	57.56	-	-
20071024	54	flood	57.81	58.14	-	-
20071024	54	ebb	57.31	57.6	-	-
20071024	55	flood	59.04	-	-	-
20071024	55	ebb	57.85	-	-	-
20071025	56	flood	58.63	58.72	-	-
20071025	56	ebb	57.48	57.6	-	-
20071025	57	flood	58.3	-	-	-
20071025	57	ebb	57.4	57.48	-	-
20071026	58	flood	57.77	-	-	-
20071026	58	ebb	57.64	57.77	-	-
20071026	59	flood	58.02	-	-	-
20071026	59	ebb	58.02	58.06	-	-
20071027	60	flood	59.25	-	-	-
20071027	60	ebb	57.03	57.19	-	-
20071027	61	flood	58.34	59.21	-	-
20071027	61	ebb	57.19	57.77	-	-
20071028	62	flood	58.18	-	-	-
20071028	62	ebb	56.98	57.85	-	-
20071028	63	flood	58.18	-	-	-
20071028	63	ebb	57.4	57.48	-	-

ALTUS Echosounder bottom distance [cm]						
Date	Tide no.	Phase	Signal 1	Signal 2	Signal 3	Signal 4
20071029	64	flood	58.8	58.92	-	-
20071029	64	ebb	57.48	-	-	-
20071029	65	flood	58.43	-	-	-
20071030	65	ebb	56.9	57.31	-	-
20071030	66	flood	58.59	-	-	-
20071030	66	ebb	56.94	57.73	-	-
20071030	67	flood	58.43	-	-	-
20071031	67	ebb	56.61	56.86	56.94	-
20071031	68	flood	-	-	-	-
20071031	68	ebb	57.4	58.22	-	-
20071031	69	flood	58.26	-	-	-
20071101	69	ebb	57.31	-	-	-
20071101	70	flood	57.52	58.47	-	-
20071101	70	ebb	57.19	57.48	-	-
20071101	71	flood	58.22	-	-	-
20071102	71	ebb	57.23	58.76	-	-
20071102	72	flood	57.89	58.8	-	-
20071102	72	ebb	57.6	57.73	-	-
20071102	73	flood	58.43	-	-	-
20071103	73	ebb	57.44	-	-	-
20071103	74	flood	58.39	58.51	-	-
20071103	74	ebb	57.23	57.6	-	-
20071103	75	flood	57.6	58.63	-	-
20071104	75	ebb	57.44	57.52	-	-
20071104	76	flood	58.72	58.84	59	-
20071104	76	ebb	57.19	-	-	-
20071104	77	flood	59.33	-	-	-
20071105	77	ebb	57.48	57.64	-	-
20071105	78	flood	59	-	-	-
20071105	78	ebb	58.06	-	-	-
20071106	79	flood	58.39	58.92	-	-
20071106	79	ebb	57.31	-	-	-
20071106	80	flood	58.47	58.84	-	-
20071106	80	ebb	57.31	57.69	-	-
20071107	81	flood	58.22	58.8	-	-
20071107	81	ebb	56.94	-	-	-
20071107	82	flood	57.89	59	-	-
20071107	82	ebb	57.27	57.73	-	-
20071108	83	flood	58.14	58.84	-	-
20071108	83	ebb	58.06	58.14	-	-
20071122	84	flood	38.7	39.07	-	-
20071122	84	ebb	38.53	38.86	39.03	39.15

ALTUS Echosounder bottom distance [cm]						
Date	**Tide no.**	**Phase**	**Signal 1**	**Signal 2**	**Signal 3**	**Signal 4**
20071122	85	flood	38.53	38.74	-	-
20071122	85	ebb	38.41	38.7	-	-
20071123	86	flood	38.33	-	-	-
20071123	86	ebb	38.2	38.37	38.58	-
20071123	87	flood	38.24	-	-	-
20071123	87	ebb	38	38.24	38.53	-
20071124	88	flood	37.79	38.16	-	-
20071124	88	ebb	37.92	-	-	-
20071124	89	flood	37.55	37.83	-	-
20071124	89	ebb	37.55	37.63	-	-
20071125	90	flood	37.3	37.79	-	-
20071125	90	ebb	37.34	37.92	-	-
20071125	91	flood	37.17	37.63	-	-
20071125	91	ebb	37.3	37.46	-	-
20071126	92	flood	37.3	37.59	-	-
20071126	92	ebb	37.3	-	-	-
20071126	93	flood	37.26	-	-	-
20071126	93	ebb	36.1	37.38	-	-
20071127	94	flood	37.17	37.26	-	-
20071127	94	ebb	37.38	-	-	-
20071127	95	flood	37.17	37.46	-	-
20071127	95	ebb	36.06	37.34	-	-
20071128	96	flood	37.13	37.22	37.46	-
20071128	96	ebb	33.02	37.67	-	-
20071128	97	flood	37.05	37.34	-	-
20071129	97	ebb	32.97	37.26	-	-
20071129	98	flood	36.89	37.13	-	-
20071129	98	ebb	32.97	-	-	-
20071129	99	flood	37.26	-	-	-
20071130	99	ebb	32.93	-	-	-
20071130	100	flood	36.8	37.38	-	-
20071130	100	ebb	32.97	37.46	37.67	-
20071130	101	flood	36.84	-	-	-
20071201	101	ebb	36.84	-	-	-
20071201	102	flood	37.01	37.09	-	-
20071201	102	ebb	37.05	37.17	-	-
20071201	103	flood	37.01	37.05	-	-
20071202	103	ebb	37.42	-	-	-
20071202	104	flood	37.01	37.34	-	-
20071202	104	ebb	36.93	37.38	-	-
20071202	105	flood	36.97	37.05	-	-
20071203	105	ebb	37.09	37.13	-	-

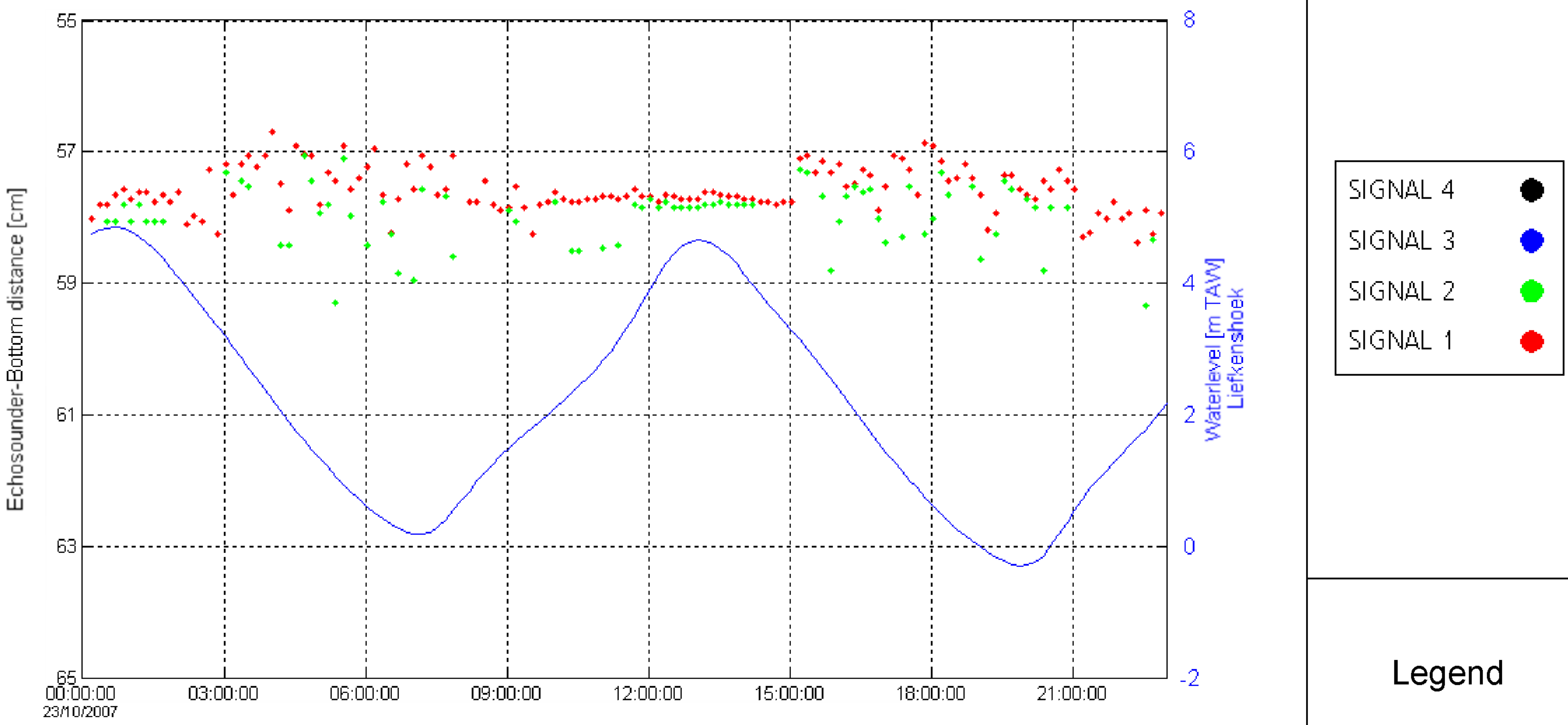
ALTUS Echosounder bottom distance [cm]						
Date	**Tide no.**	**Phase**	**Signal 1**	**Signal 2**	**Signal 3**	**Signal 4**
20071203	106	flood	36.76	37.38	-	-
20071203	106	ebb	32.93	-	-	-
20071203	107	flood	36.8	37.34	-	-
20071204	107	ebb	32.77	37.46	-	-
20071204	108	flood	37.05	37.09	-	-
20071204	108	ebb	32.89	37.5	-	-
20071204	109	flood	36.93	37.13	-	-
20071205	109	ebb	32.85	37.26	37.3	-

11283 Accretion Deurganckok - Near bed continuous monitoring – Autumn 2007



Time series suspended sediment concentration ARGUS ASM-IV		*Data processed by:*
Location: Deurganckdok CDW	Date: Avg Tide 23/10 – 24/10	*In association with:* *I/RA/11283/07.093/MSA*

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Legend

Echosounder – bottom distance
Waterlevel [mTAW] at Liefkenshoek

Location:
Deurganckdok CDW

Date:
Avg Tide 23/10 – 24/10

Data processed by:

In association with:

I/RA/11283/07.093/MSA

C.2 Sill frame

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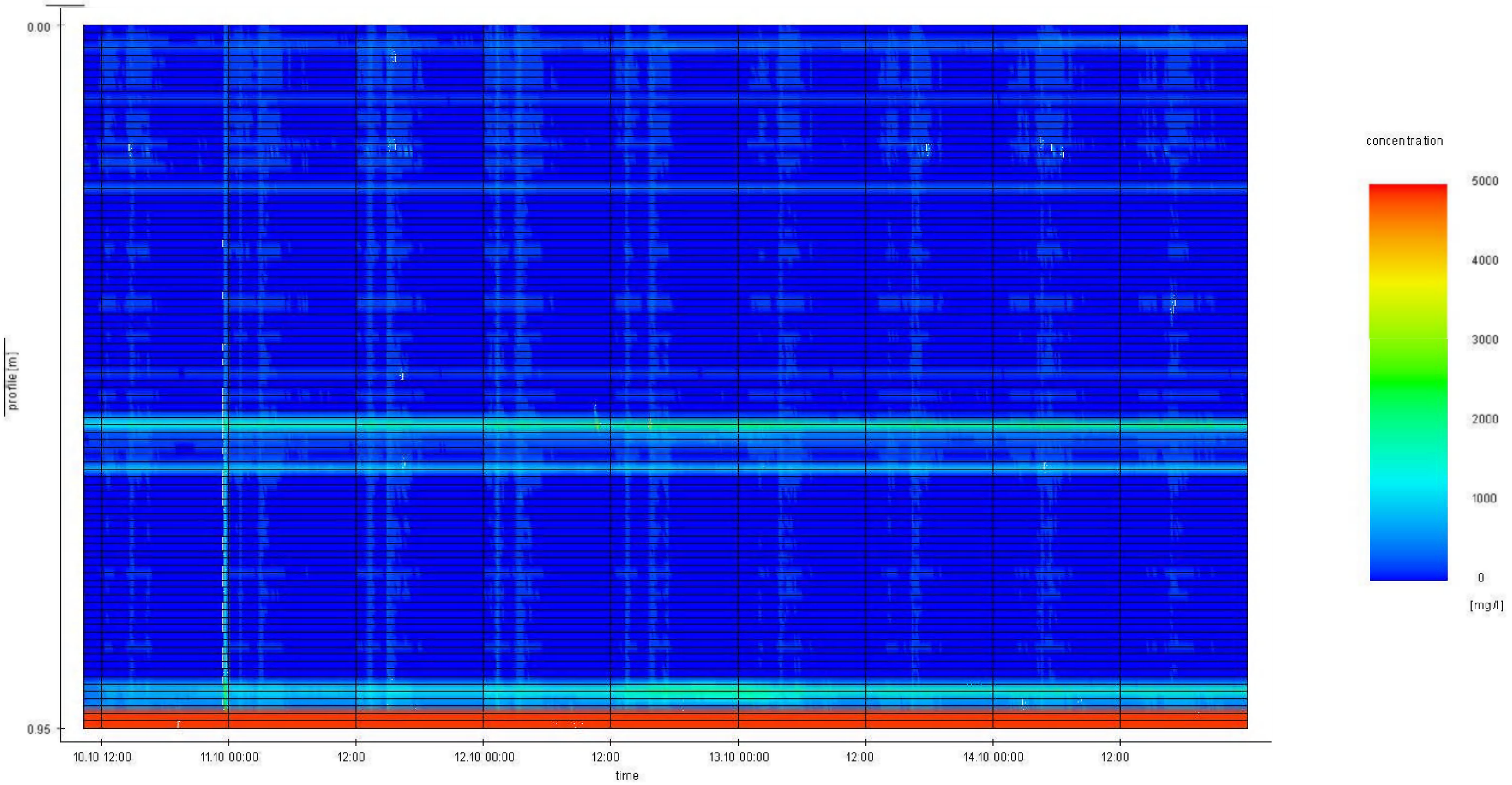
11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Time series suspended sediment concentration
ARGUS ASM-IV

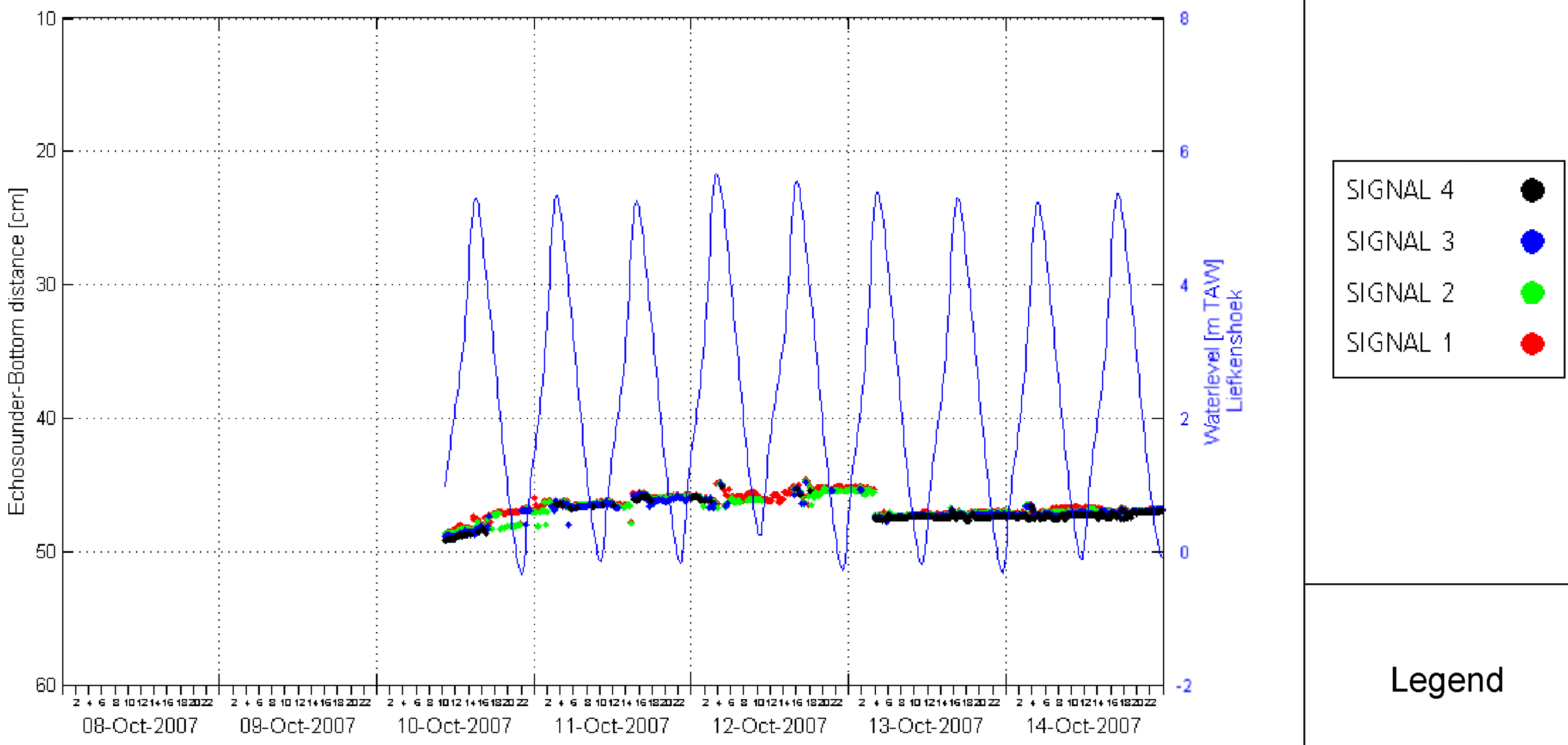
Location: Deurganckdok Sill	Date: 10/10/2007 – 14/10/2007

Data processed by: IMDC

In association with: WL | delft hydraulics, GEMS International

I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Legend

Echosounder – bottom distance
Waterlevel [mTAW] at Liefkenshoek

Location:
Deurganckdok Sill

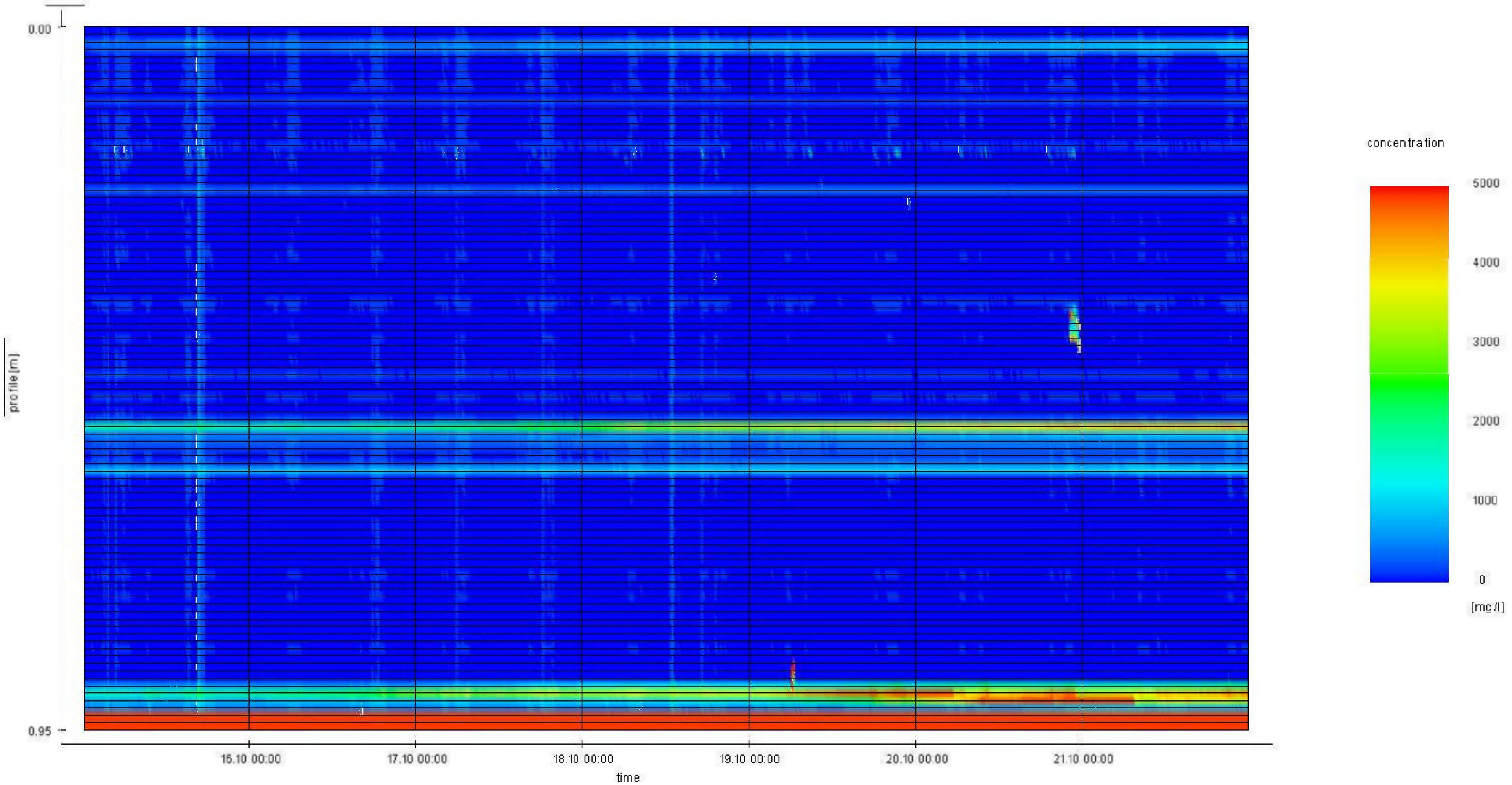
Date:
10/10/2007 – 14/10/2007

Data processed by:

In association with:

I/RA/11283/07.093/MSA

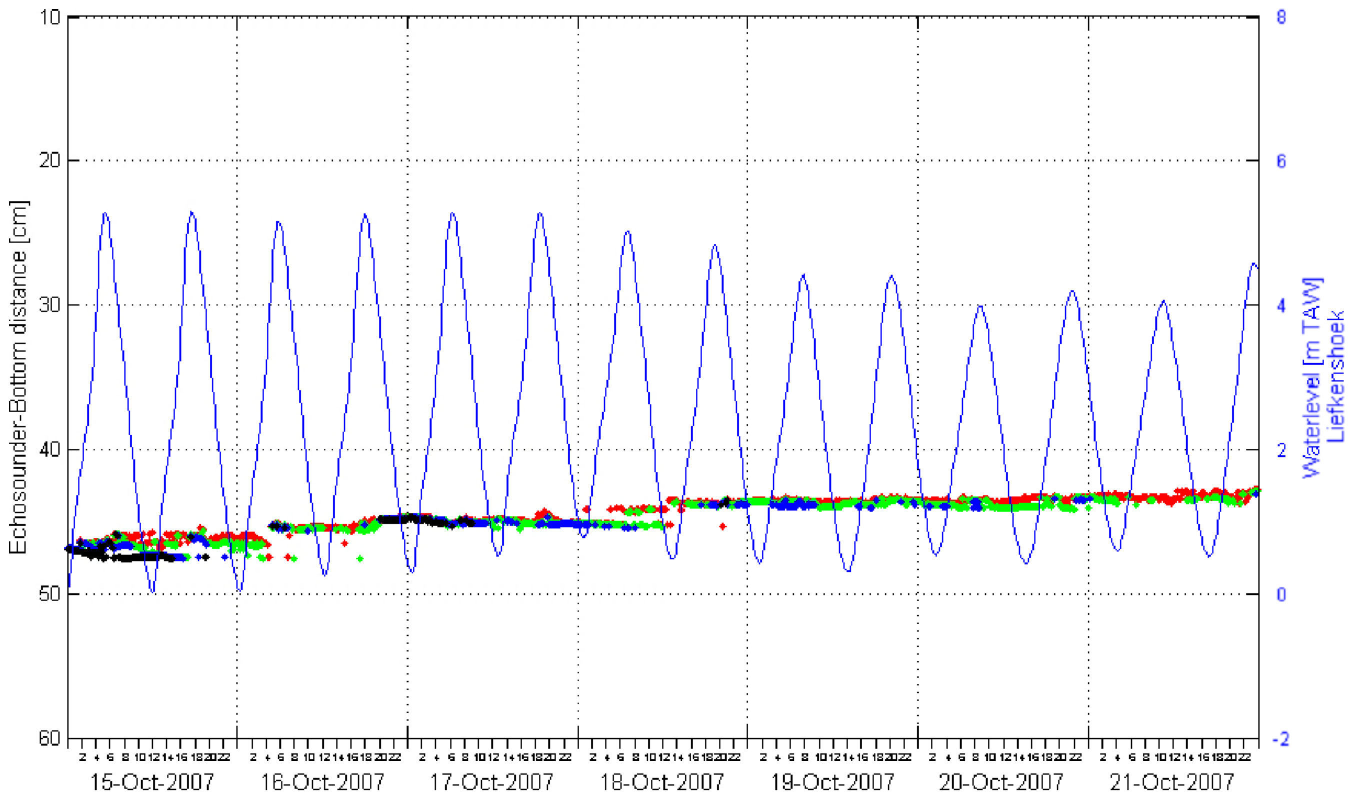
11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Time series suspended sediment concentration
ARGUS ASM-IV

Location:	Date:	
Deurganckdok Sill	15/10/2007 – 21/10/2007	*Data processed by:* IMDC *In association with:* wl | delft hydraulics; GEMS International *I/RA/11283/07.093/MSA*

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



SIGNAL 4
SIGNAL 3
SIGNAL 2
SIGNAL 1

Legend

Echosounder – bottom distance
Waterlevel [mTAW] at Liefkenshoek

Location:
Deurganckdok Sill

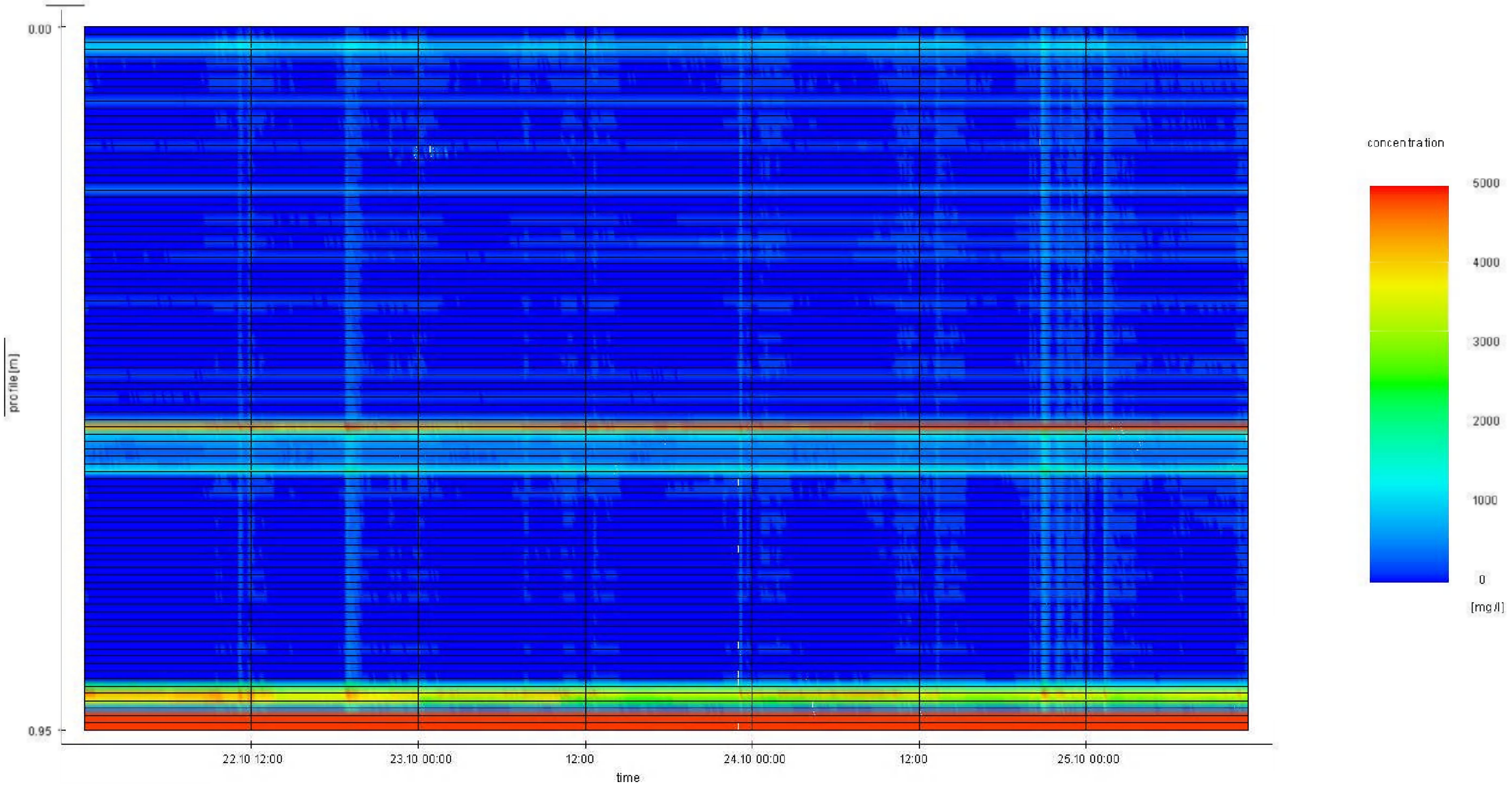
Date:
15/10/2007 – 21/10/2007

Data processed by: IMDC

In association with: wl | delft hydraulics, GEMS International

I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Time series suspended sediment concentration
ARGUS ASM-IV

Location:
Deurganckdok Sill

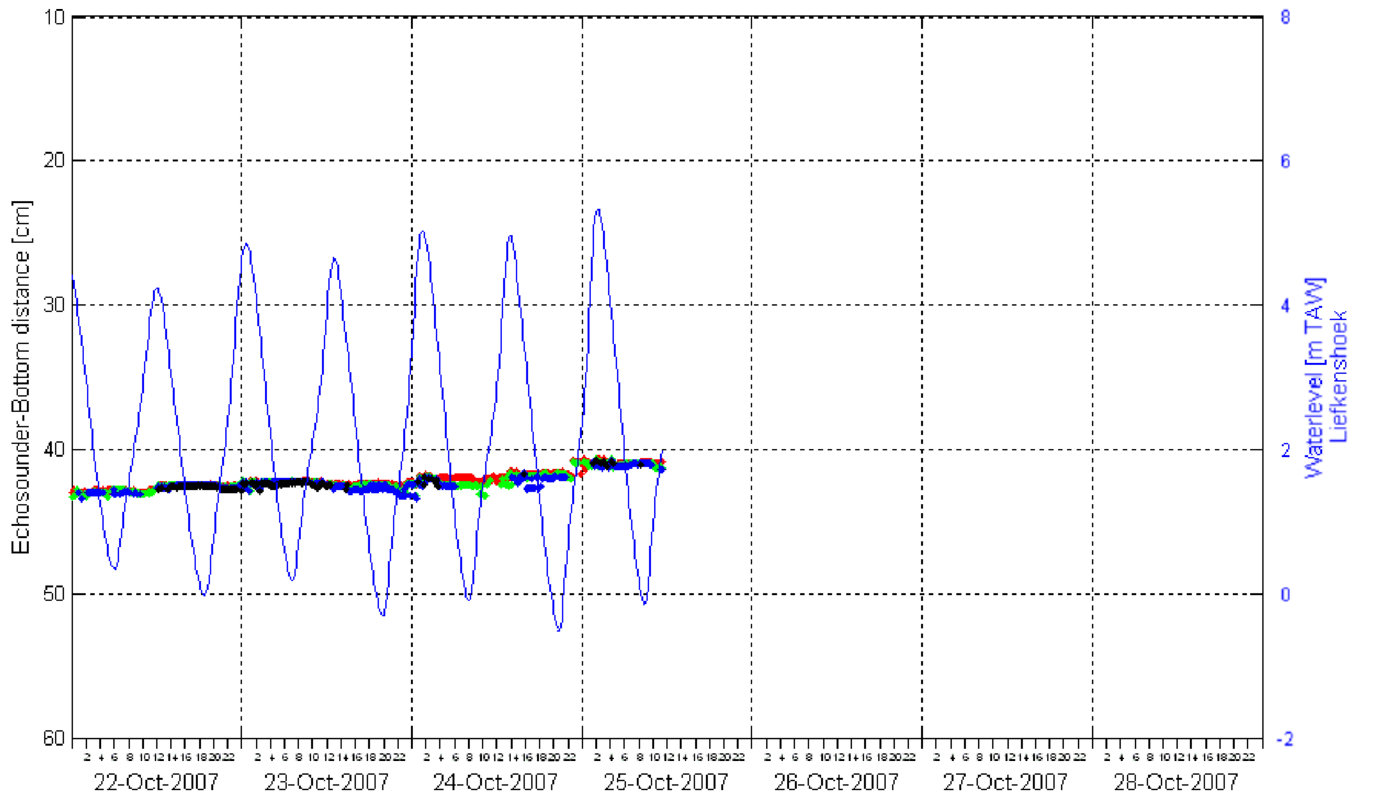
Date:
22/10/2007 – 25/10/2007

Data processed by:

In association with:

I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Legend

Echosounder – bottom distance
Waterlevel [mTAW] at Liefkenshoek

Location:
Deurganckdok Sill

Date:
22/10/2007 – 25/10/2007

Data processed by: IMDC

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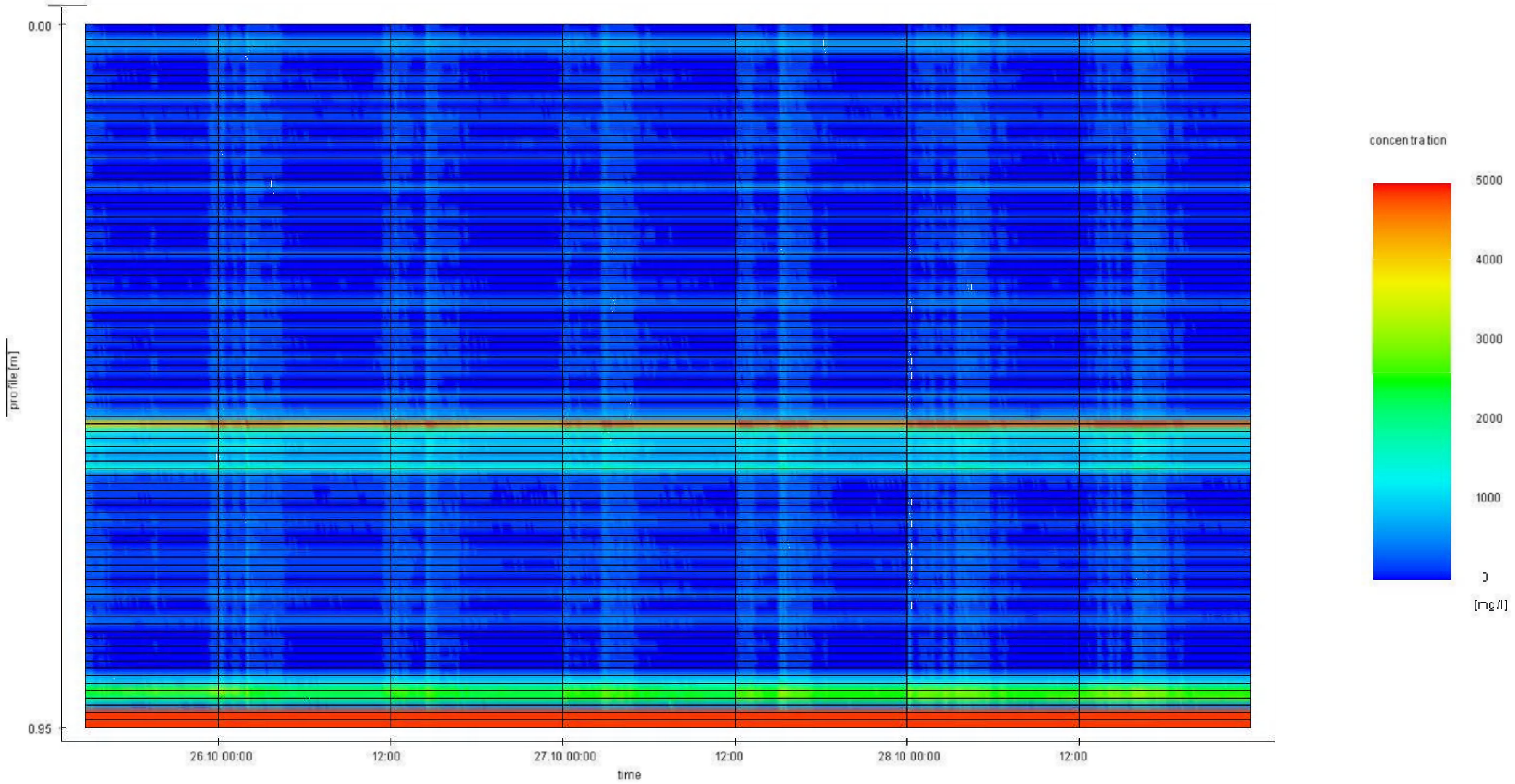


Time series suspended sediment concentration
ARGUS ASM-IV

Location:
Deurganckdok Sill

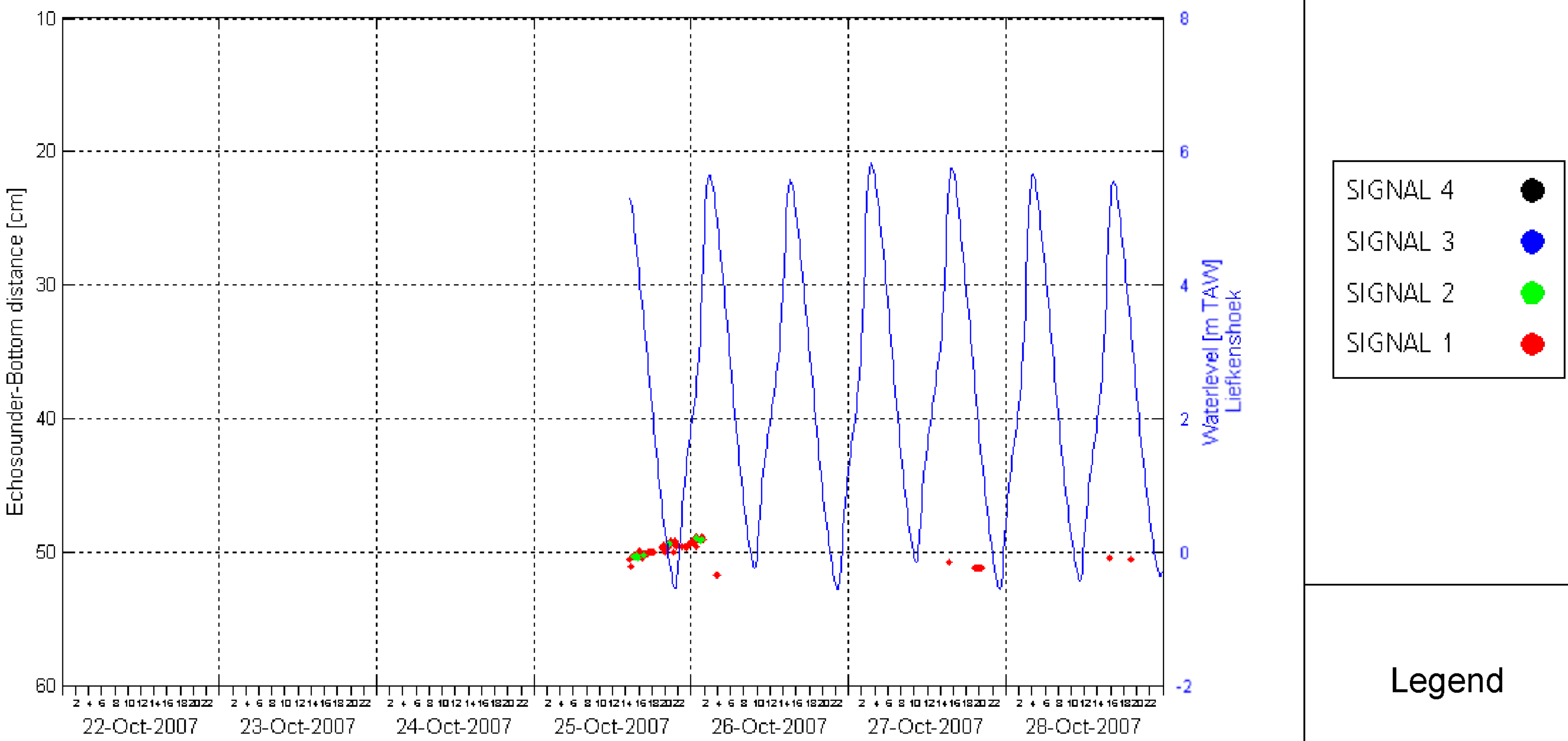
Date:
25/10/2007 – 28/10/2007

Data processed by:

In association with:

I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Legend

Echosounder – bottom distance
Waterlevel [mTAW] at Liefkenshoek

Location:
Deurganckdok Sill

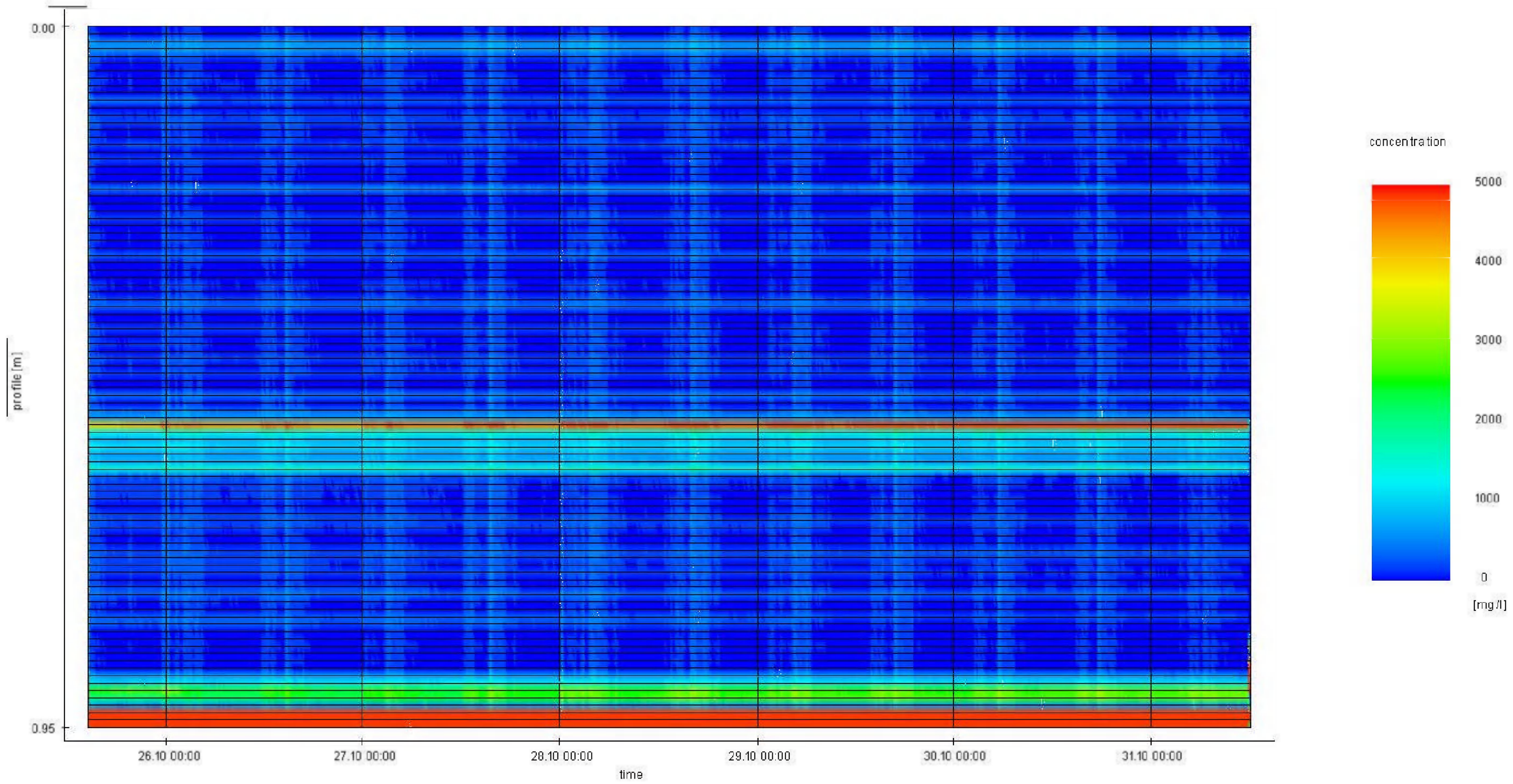
Date:
25/10/2007 – 28/10/2007

Data processed by: IMDC

In association with: WL | delft hydraulics, GEMS International

I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007

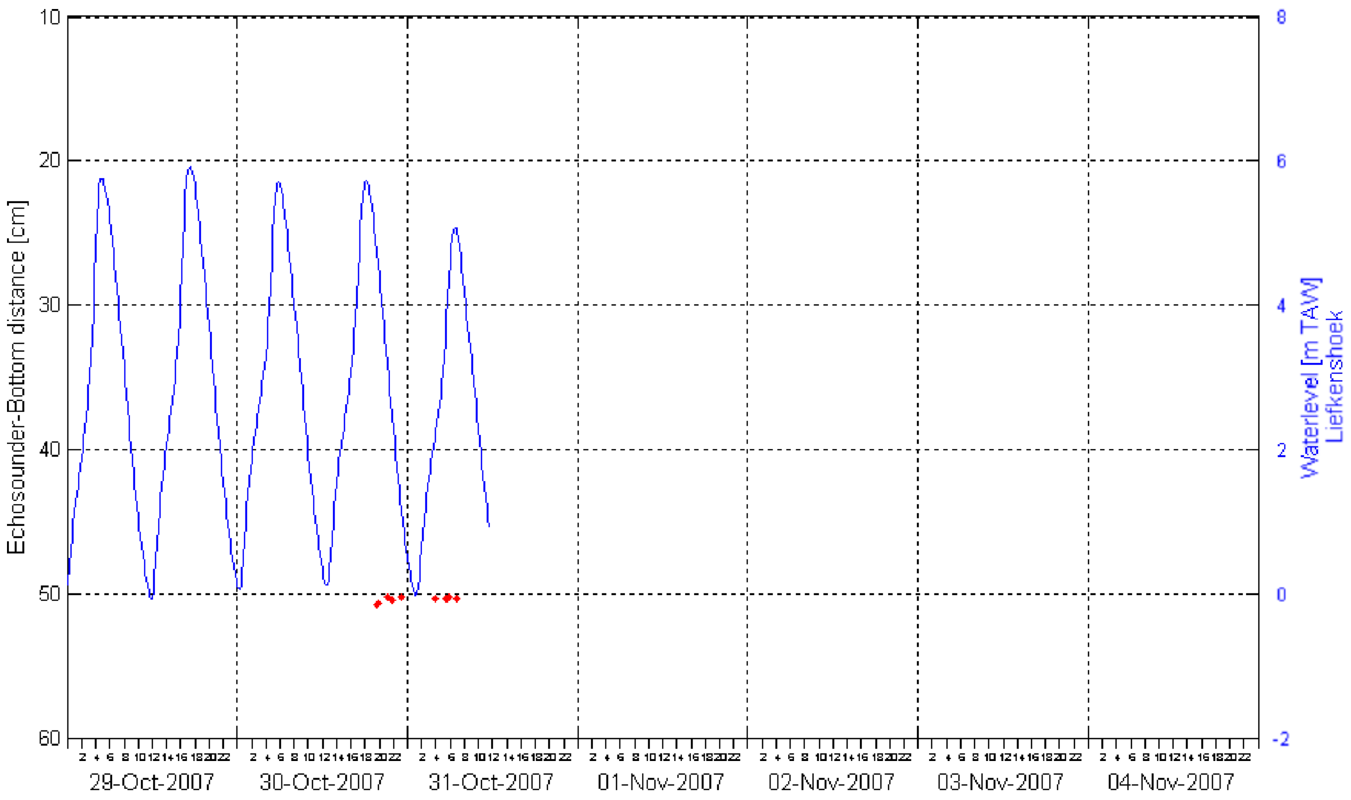


Time series suspended sediment concentration
ARGUS ASM-IV

Location: Deurganckdok Sill	Date: 28/10/2007 – 31/10/2007	*Data processed by:* IMDC *In association with:* wl | delft hydraulics, GEMS International

I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Legend

Echosounder – bottom distance
Waterlevel [mTAW] at Liefkenshoek

Location:
Deurganckdok Sill

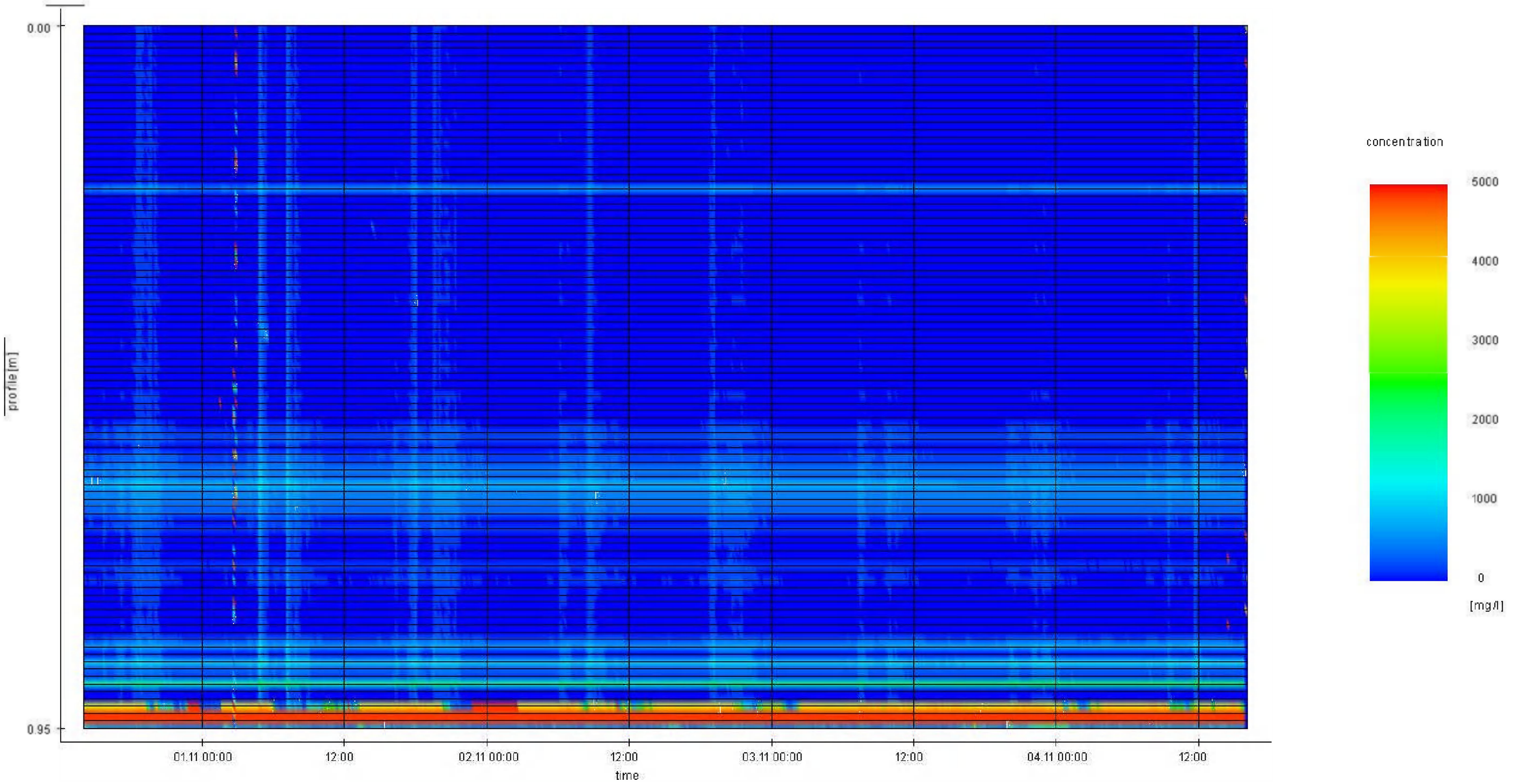
Date:
28/10/2007 – 31/10/2007

Data processed by:

In association with:

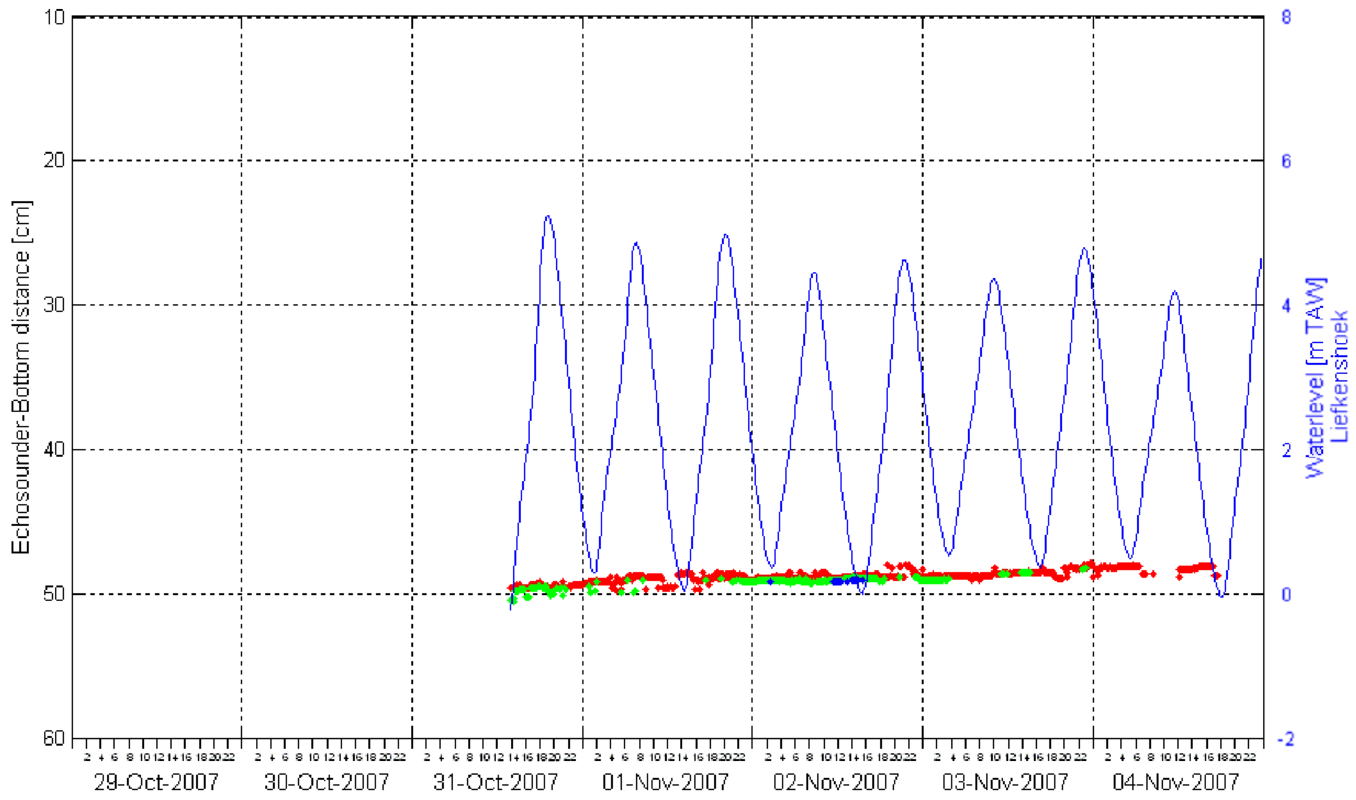
I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Time series suspended sediment concentration ARGUS ASM-IV		*Data processed by:* IMDC
Location: Deurganckdok Sill	Date: 31/10/2007 – 04/11/2007	*In association with:* wl | delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Legend

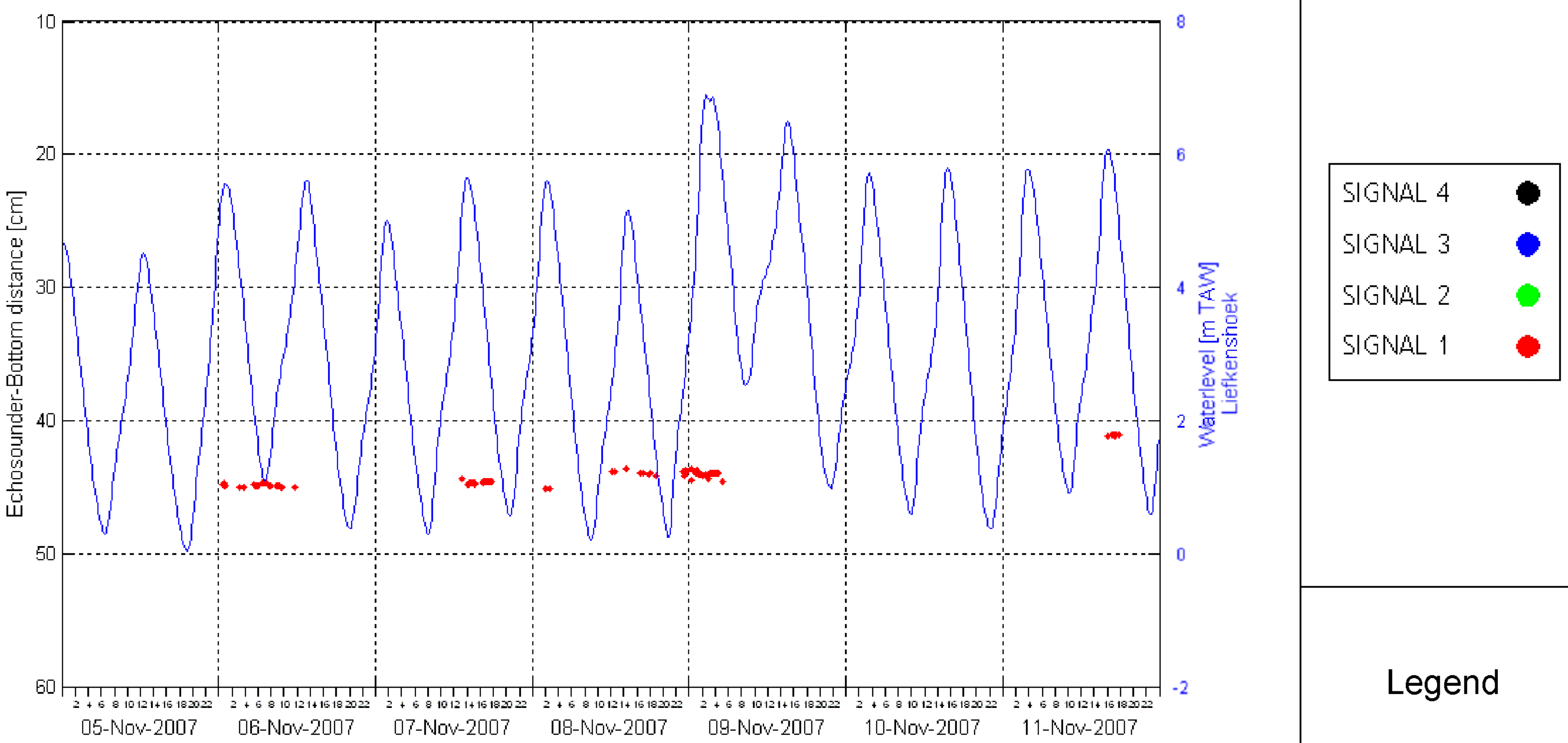
Echosounder – bottom distance
Waterlevel [mTAW] at Liefkenshoek

Location: Deurganckdok Sill	Date: 31/10/2007 – 04/11/2007	Data processed by: IMDC In association with: WL | delft hydraulics, GEMS International

I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007		
NO DATA		
Time series suspended sediment concentration ARGUS ASM-IV		*Data processed by:*
Location: Deurganckdok Sill	Date: 05/11/2007 – 11/11/2007	*In association with:* *I/RA/11283/07.093/MSA*

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Legend

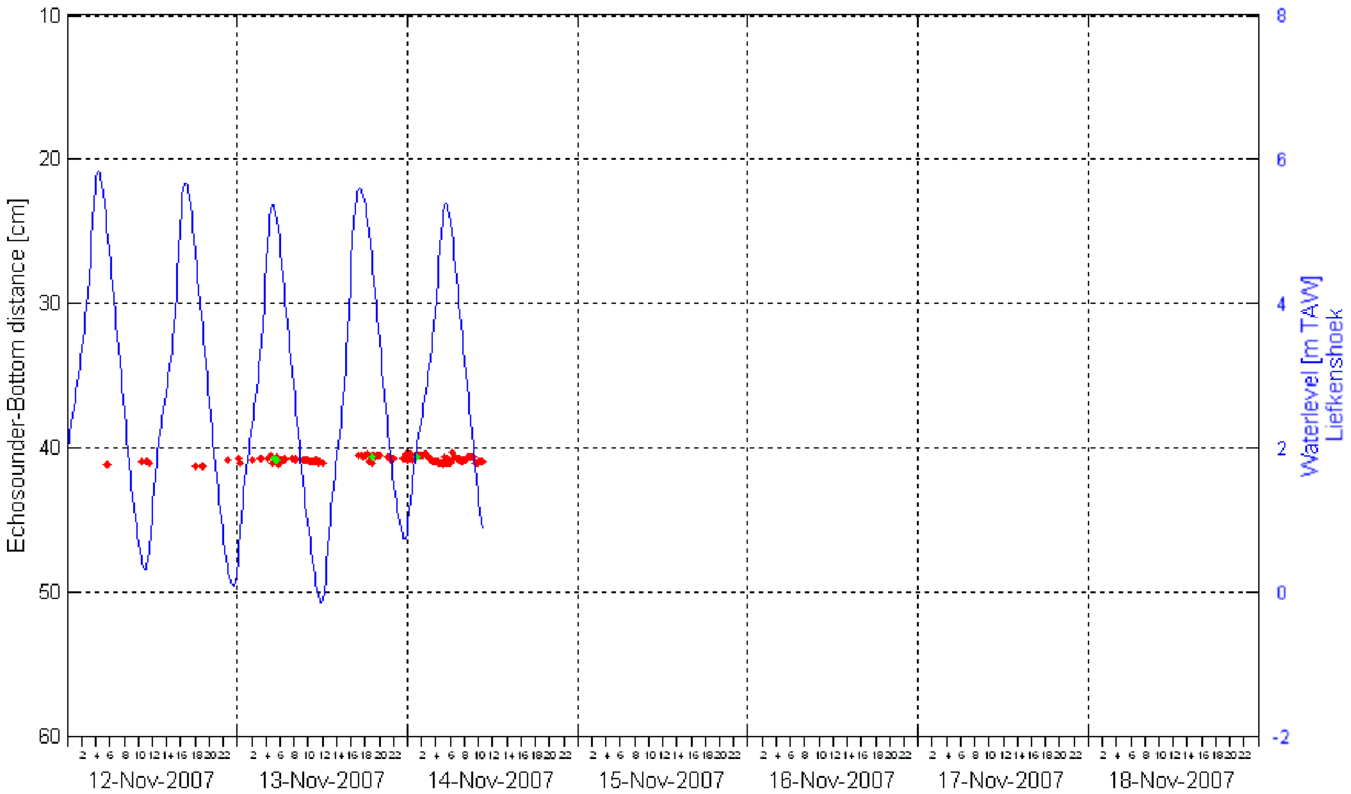
Echosounder – bottom distance
Waterlevel [mTAW] at Liefkenshoek

Location:	Date:	Data processed by:
Deurganckdok Sill	05/11/2007 – 11/11/2007	In association with:

I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007		
NO DATA		
Time series suspended sediment concentration ARGUS ASM-IV		*Data processed by:* IMDC *In association with:* wl | delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*
Location: Deurganckdok Sill	Date: 12/11/2007 – 14/11/2007	

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



SIGNAL 4	●
SIGNAL 3	●
SIGNAL 2	●
SIGNAL 1	●

Legend

Echosounder – bottom distance
Waterlevel [mTAW] at Liefkenshoek

Location:
Deurganckdok Sill

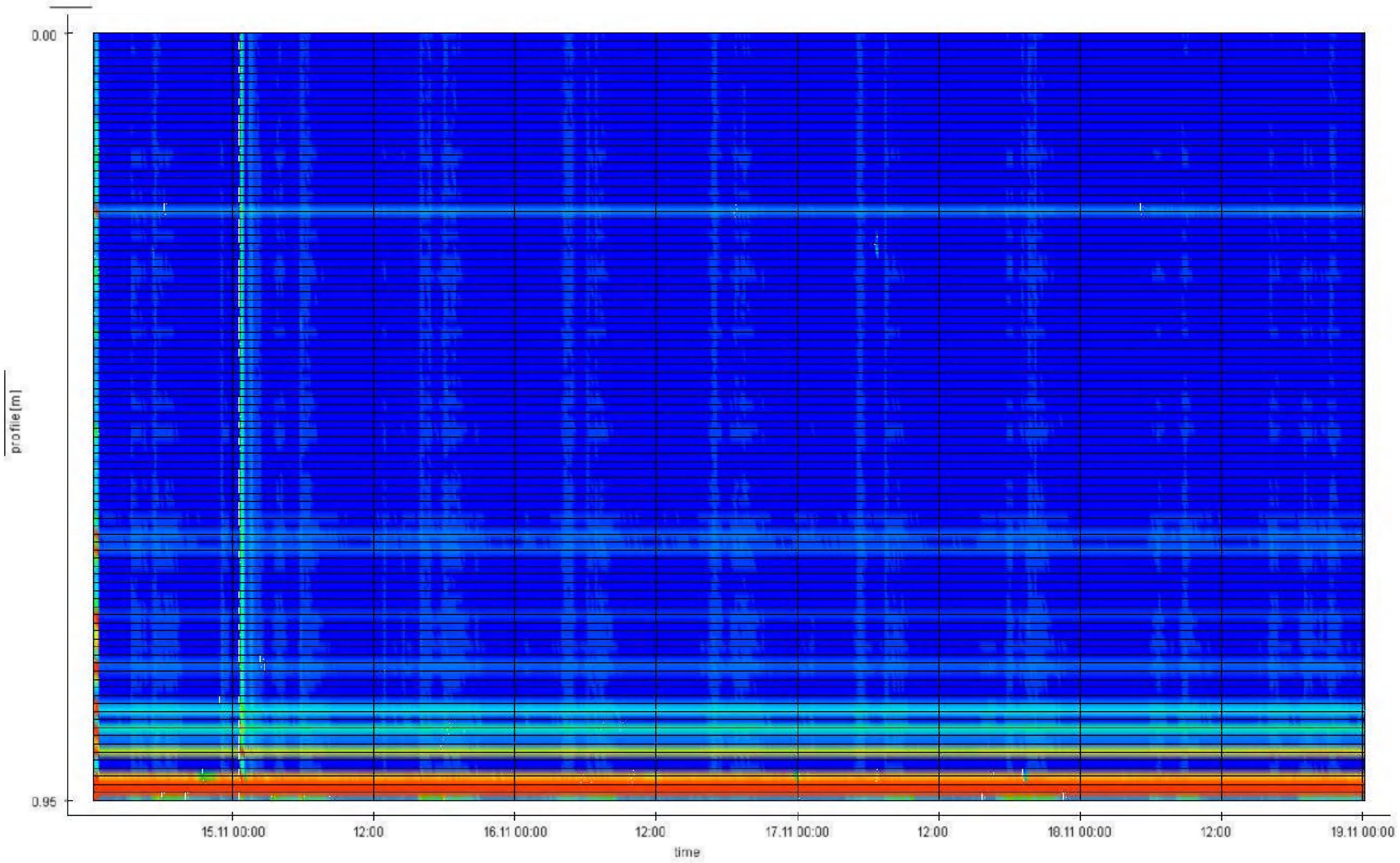
Date:
12/11/2007 – 14/11/2007

Data processed by:

In association with:

I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Time series suspended sediment concentration
ARGUS ASM-IV

Location:
Deurganckdok Sill

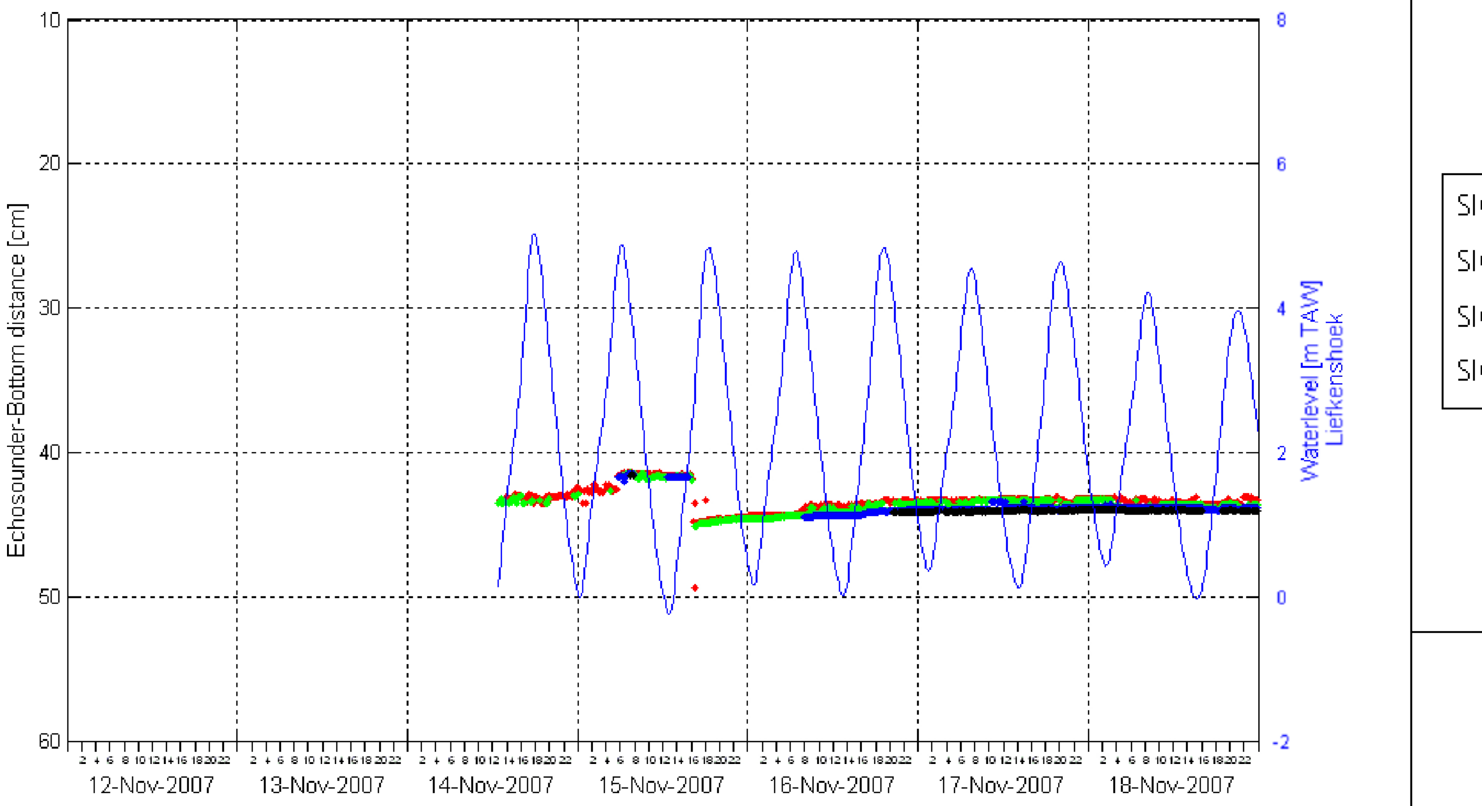
Date:
14/11/2007 – 18/11/2007

Data processed by:

In association with:

I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Legend

Echosounder – bottom distance
Waterlevel [mTAW] at Liefkenshoek

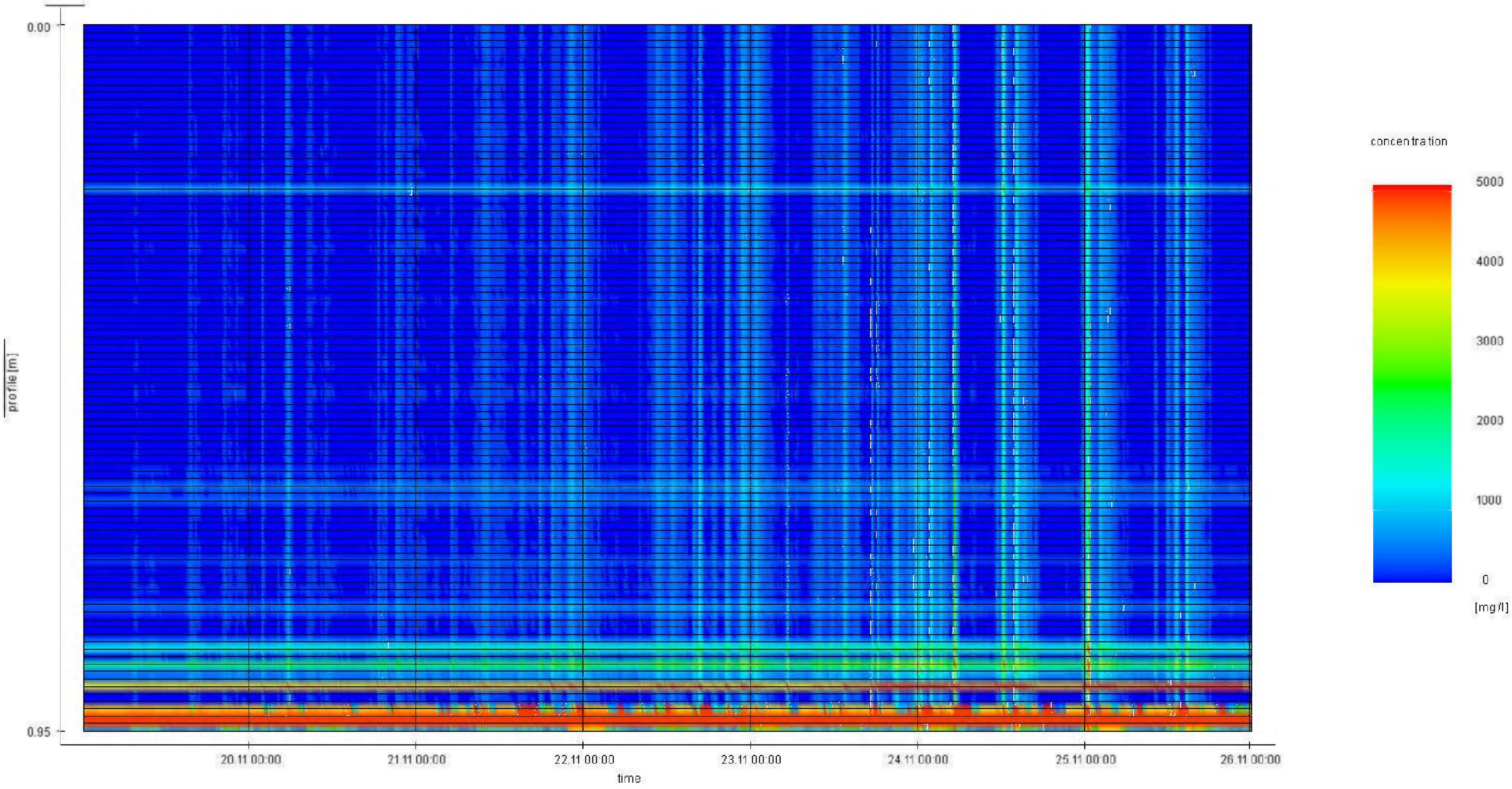
Location:	Date:
Deurganckdok Sill	14/11/2007 – 18/11/2007

Data processed by: IMDC

In association with: WL | delft hydraulics, GEMS International

I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Time series suspended sediment concentration
ARGUS ASM-IV

Location:
Deurganckdok Sill

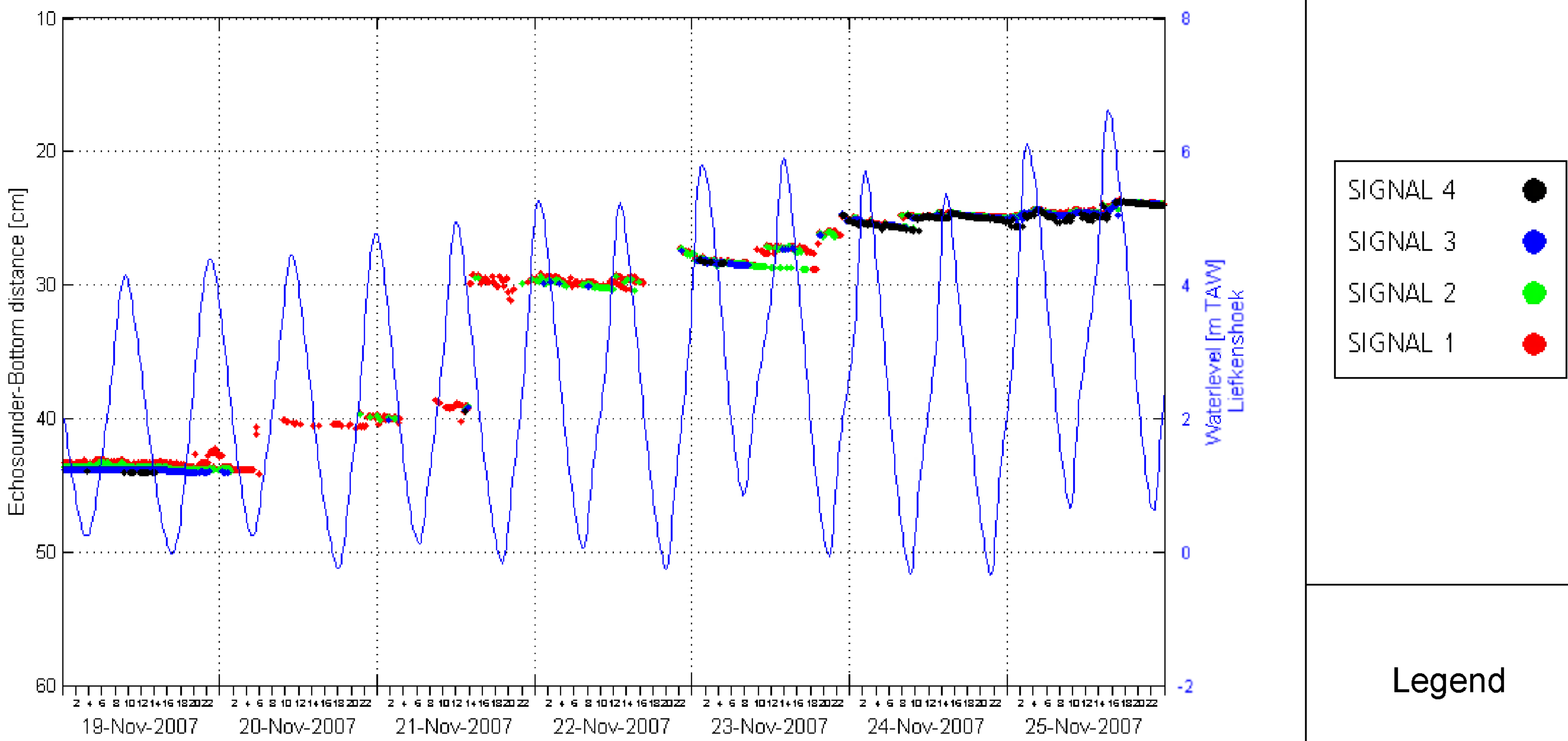
Date:
19/11/2007 – 25/11/2007

Data processed by: IMDC

In association with: wL | delft hydraulics, GEMS International

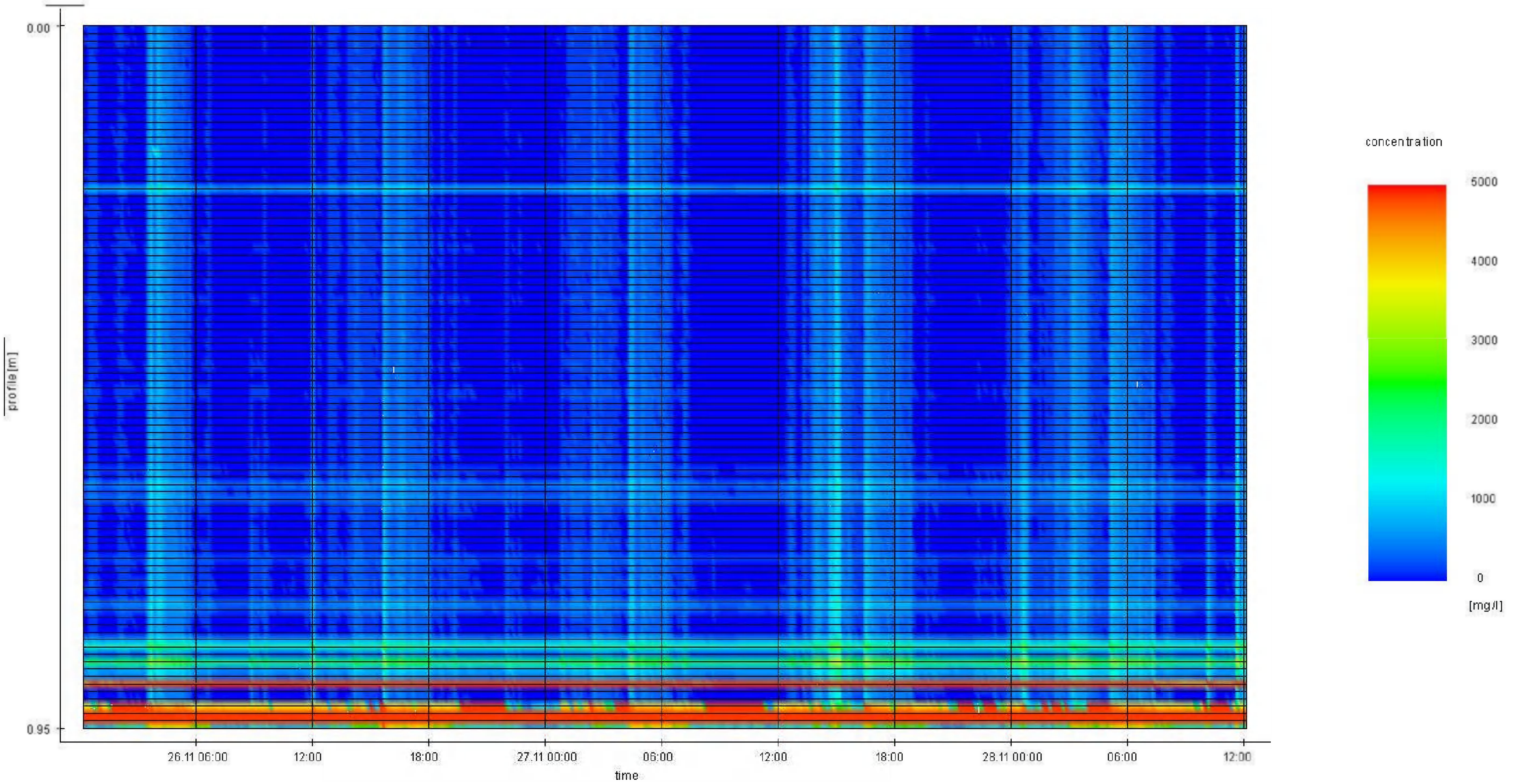
I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Echosounder – bottom distance Waterlevel [mTAW] at Liefkenshoek	*Data processed by:* IMDC
Location: Deurganckdok Sill Date: 19/11/2007 – 25/11/2007	*In association with:* wl | delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Time series suspended sediment concentration
ARGUS ASM-IV

Location:
Deurganckdok Sill

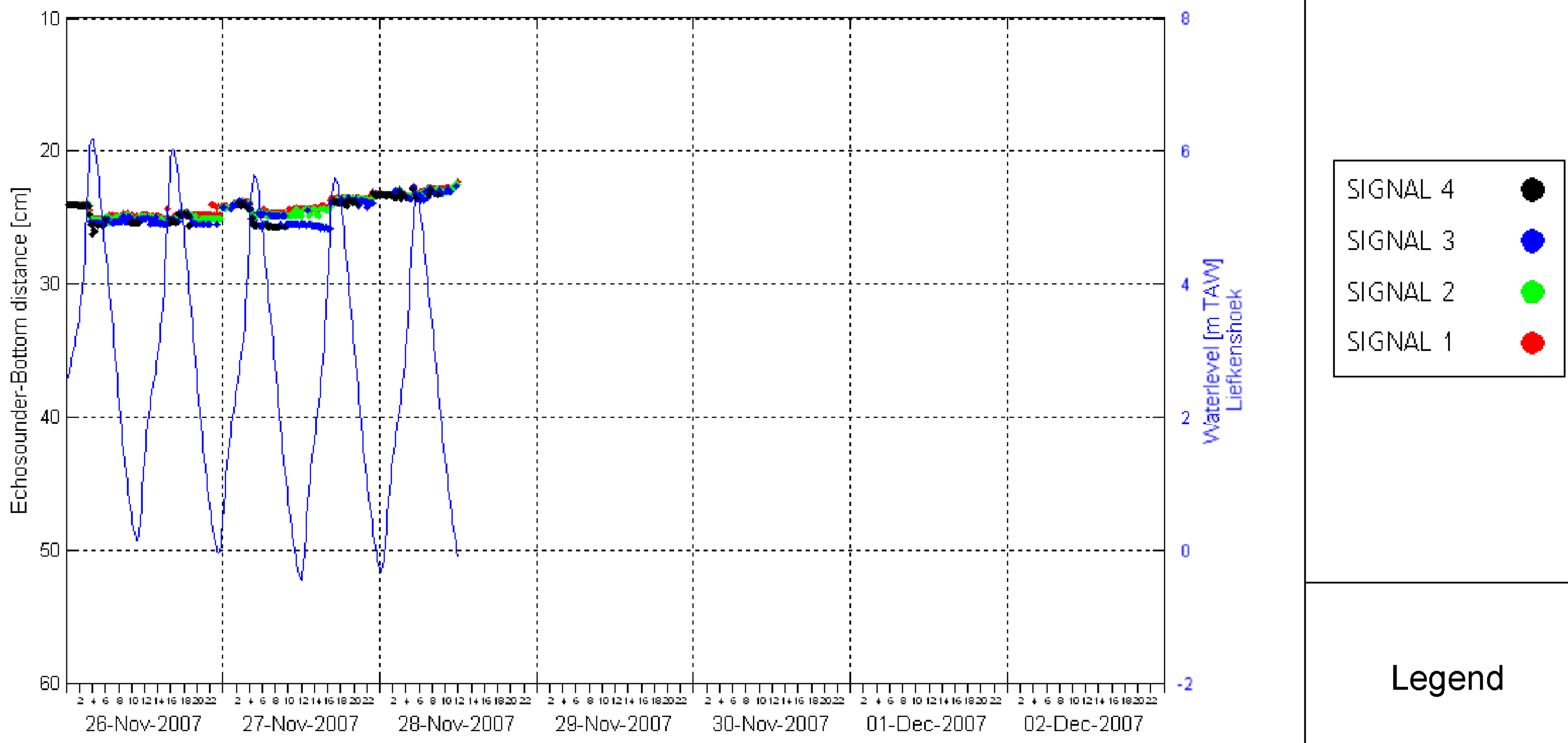
Date:
26/11/2007 – 28/11/2007

Data processed by: IMDC

In association with: WL | delft hydraulics, GEMS International

I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Legend

Echosounder – bottom distance
Waterlevel [mTAW] at Liefkenshoek

Location:
Deurganckdok Sill

Date:
26/11/2007 – 28/11/2007

Data processed by:

In association with:

I/RA/11283/07.093/MSA

ARGUS Mean SS Concentration [mg/l] per tidal phase in layers of 10 cm (*except first column 6 cm) [distances given in cm above bottom]

Date	Tide no.	Phase	Tidal diff [m]	128-123	122-113	112-103	102-93	92-83	82-73	72-63	62-53	52-43	42-33
20071010	1	flood	9.1	174.9	137.8	136.7	67.6	84.5	311.6	225.6	70	66	1782.2
20071010	1	ebb	5.6	144.4	104.4	104.6	41.9	58.9	309.5	203	45.9	43.4	1799.7
20071011	2	flood	5.6	220.4	183.1	178.6	116.9	136.5	407.5	308.6	154.3	160	1909.8
20071011	2	ebb	5.5	161.2	120.5	117.8	55.1	75.9	349	224.3	58.7	58	1834
20071011	3	flood	5.4	215	172.4	172.8	104	122.5	400.4	271.6	104.7	101.9	1872
20071011	3	ebb	5.4	144.7	112.2	110.6	47.9	68.9	342.6	218.7	53.6	51.4	1837.4
20071012	4	flood	5.8	225.8	191.7	176.5	122.1	143.8	418.6	293.2	122	120.5	1895.6
20071012	4	ebb	5.4	153.5	119.3	109.2	52.8	73.1	368.4	229.5	56.4	55.6	1870.6
20071012	5	flood	5.3	210.4	159.5	137.4	89.8	111.2	398.4	277.9	92.3	90.2	1956.9
20071012	5	ebb	5.7	188.5	104.3	86.1	39.8	60.3	377.6	255.8	46.5	46.9	2015.8
20071013	6	flood	5.6	185.3	130	108.3	59	81.4	392.8	275.5	62.2	63.5	2002.1
20071013	6	ebb	5.5	154.7	116.5	96.2	49.8	71.3	342.7	242	56.3	56.4	1907
20071013	7	flood	5.5	181.2	136.4	120.7	65.3	87.6	356.1	259.1	67.8	67	1898.6
20071013	7	ebb	5.6	149	108.1	98.9	43.3	65	333.5	228.8	46.4	46.6	1878.1
20071014	8	flood	5.5	183.3	129.7	118.5	60.3	82.7	355.3	247.2	62.5	63.1	1890.7
20071014	8	ebb	5.3	207.2	118.8	106.3	52	74	347.7	233.7	55.4	56	1878
20071014	9	flood	5.4	216	123.7	116.9	55.9	82.3	355.5	236.6	56.8	58	1882.3
20071014	9	ebb	5.4	191.3	115.2	102.3	51.5	69.6	340.3	230.7	53.5	55.5	1881.8
20071015	10	flood	5.3	220.5	138.6	134.3	74.8	94.5	352.1	261.1	78.6	81.8	1900
20071015	10	ebb	5.2	212.2	117.5	109.7	55.1	75	330.2	240.4	58.7	62.5	1909
20071015	11	flood	5.2	298.6	174.6	174.2	112.3	128.8	387	296	112.3	115.6	1960.4
20071016	11	ebb	5.2	196.5	98.1	91.3	39.6	55.3	316.4	222.9	40.5	43.7	1913.3
20071016	12	flood	5.1	211	106.6	101.4	44	61.1	327.6	233.6	42.2	45	1936.6
20071016	12	ebb	4.8	203.5	96.6	91.4	37.1	55.4	321.2	228.5	39.4	42.4	1959.5
20071016	13	flood	4.9	235.6	117.8	108	51.2	72.2	344	249.5	54.6	56.8	1991.9

ARGUS Mean SS Concentration [mg/l] per tidal phase in layers of 10 cm (*except first column 6 cm) [distances given in cm above bottom]													
Date	***Tide no.***	***Phase***	***Tidal diff [m]***	***128-123***	***122-113***	***112-103***	***102-93***	***92-83***	***82-73***	***72-63***	***62-53***	***52-43***	***42-33***
20071017	13	ebb	4.9	227.5	100.5	91.5	38.8	58.6	340.4	239.5	43.2	47.6	2028.9
20071017	14	flood	4.9	250.6	117.2	116.2	48.6	70.2	363.7	258.3	50.7	55.2	2075.7
20071017	14	ebb	4.7	235.2	98	95	36.1	56.3	362.9	248.4	40.5	44.6	2088.2
20071017	15	flood	4.8	273	117.7	114.5	55	74.9	401.4	274.8	56	59.9	2139.8
20071018	15	ebb	4.4	269.2	104.3	104.8	41.9	61	397.7	269.5	46.2	49.9	2152
20071018	16	flood	4.3	291.6	102.4	103.6	39.1	59.3	438.7	277.9	43	44.3	2183.9
20071018	16	ebb	4.5	310.7	115.8	118.3	55.2	75	472	298.7	58.9	62.9	2202.3
20071018	17	flood	4.4	335	127.3	128.7	65	86.1	498.8	316.5	68.3	73.6	2241
20071019	17	ebb	4.4	291.9	85.4	86.5	26	45.9	470.4	275.3	28.7	33	2220.5
20071019	18	flood	4	333	108.9	103.8	44.5	64.7	509.3	305.6	46.1	49.2	2398.5
20071019	18	ebb	4.1	317.5	87.2	95.9	28.9	46.3	513.1	292.2	30	35.4	2382.3
20071019	19	flood	4.1	331.3	105.3	104.8	45.2	63.8	544.5	310.9	43.4	46.9	2487.2
20071020	19	ebb	3.8	313.1	98.3	102.3	35.7	56.6	539	299.9	38.7	43.4	2572.2
20071020	20	flood	3.5	331.4	104.5	105.2	43.5	61.4	557.7	314.4	40.3	42.9	2607
20071020	20	ebb	3.6	317.6	85.4	91.1	29.8	49.7	559.3	307.2	28.5	31.7	2659.5
20071020	21	flood	3.8	348.6	107.1	103.8	47.9	65.4	589.5	330.5	44.2	44.1	2704.1
20071021	21	ebb	3.6	341.4	88.7	94.4	32.3	286	580.7	321.4	31.2	27.9	2656.4
20071021	22	flood	3.4	375.9	111.6	102.8	53.7	65.6	613.2	353	48.9	39	2587.3
20071021	22	ebb	3.6	357.9	89.6	85.8	36.7	45.6	605.9	347.7	35.6	26.8	2582.1
20071021	23	flood	4.1	392.6	106.6	97.3	57.1	60.6	633.6	360.8	52.9	38.2	2594.2
20071022	23	ebb	4.2	397.3	101.8	87	52.4	53.4	638.3	375.7	48.7	31.9	2589.1
20071022	24	flood	3.9	450.4	133	114.6	92.9	83.3	689.4	428.5	78.5	58.2	2621.2
20071022	24	ebb	4.3	432.8	118	101.5	77.8	64.2	661.8	402.3	62.5	43.7	2499
20071023	25	flood	4.8	502.6	194.5	179.3	167.6	152.2	775.9	498.9	161.7	138.4	2579.3
20071023	25	ebb	4.6	362.4	114.6	99.2	66.2	49.6	668.9	378.1	49.9	35.7	2434.5

ARGUS Mean SS Concentration [mg/l] per tidal phase in layers of 10 cm (*except first column 6 cm) [distances given in cm above bottom]

Date	*Tide no.*	*Phase*	*Tidal diff [m]*	*128-123*	*122-113*	*112-103*	*102-93*	*92-83*	*82-73*	*72-63*	*62-53*	*52-43*	*42-33*
20071023	26	flood	4.4	404.4	148.1	121.4	112.2	79.4	726.7	465	90.9	60.3	2472.3
20071023	26	ebb	4.9	328.9	115.1	95.8	91.9	49.7	687	405.8	56.6	36.8	2369.4
20071024	27	flood	5.3	396.4	159.8	132.1	150.9	93.9	737.1	466.6	105.5	75.2	2408.5
20071024	27	ebb	5.1	384.7	130.7	105.9	109.5	67.8	693.3	411.8	75.6	48.3	2438.7
20071024	28	flood	5	458.3	176.6	146.9	175.1	114.7	767.3	483	129.3	88.9	2479.6
20071024	28	ebb	5.4	394.1	151.7	127.2	140.1	94.2	752	439.4	101.4	74.3	2384.1
20071025	29	flood	5.8	549.8	287.9	258.8	294	240.5	894.1	602.3	255.8	224.1	2524.4
20071025	29	ebb	5.4	372.6	155.9	130.4	138	95.5	762	440.3	109.1	73.9	2390.2
20071026	30	flood	5.6	571	380.5	315.8	285.9	405.9	1048.8	970.9	472.7	401.7	2452.7
20071026	30	ebb	5.8	309.7	167.8	147	140.4	189.7	821.3	614.9	227.2	208.3	2237.2
20071026	31	flood	5.8	373.4	227.7	211.7	203.6	253.1	894.8	681.5	287.8	265.2	2315.7
20071026	31	ebb	6.1	306.1	150.8	143.9	131.5	179.1	819.3	601.6	210.3	189.6	2259.8
20071027	32	flood	6.4	381.1	224.4	212.7	202.8	249.9	893.4	673.5	274.9	253.2	2331.3
20071027	32	ebb	5.9	333.5	182.9	169.8	162.3	209.1	855.4	627	235.5	212.7	2298.9
20071027	33	flood	5.8	385.3	231.9	225.2	214.8	259.9	918	682.7	282.9	263.4	2360.8
20071027	33	ebb	6.3	317.2	164.6	155.3	145.8	192.9	846	599.1	216.1	195.2	2301.2
20071028	34	flood	6.2	393.4	241.4	227	225.2	269.4	936.9	686.6	305	285.3	2395
20071028	34	ebb	6	340.2	182.2	174.3	163	205.4	867.8	601.4	229.9	208.2	2324.1
20071028	35	flood	5.9	400.7	245.2	235.8	222.1	255.8	927	655.7	280.8	254.5	2393.3
20071028	35	ebb	5.9	341.7	184.5	172.6	153.5	192.4	867.3	595.3	224	201.8	2336.6
20071029	36	flood	6.1	383.3	225.6	209.3	191.7	231.9	909.6	631.9	258	236	2377
20071029	36	ebb	5.8	354.7	195	179.1	163.2	205.8	883.1	599	223.6	190.4	2342.5
20071029	37	flood	6	397	233.4	218	200	239.7	920.2	639	260	225.2	2384.6
20071030	37	ebb	5.8	329.9	164	152.6	134.7	178.5	857.8	563.4	195	159.2	2317.2
20071030	38	flood	5.6	373.6	206.9	194.4	177.3	217.3	901.4	605.6	236	200.1	2365.1

ARGUS Mean SS Concentration [mg/l] per tidal phase in layers of 10 cm (*except first column 6 cm) [distances given in cm above bottom]													
Date	***Tide no.***	***Phase***	***Tidal diff [m]***	***128-123***	***122-113***	***112-103***	***102-93***	***92-83***	***82-73***	***72-63***	***62-53***	***52-43***	***42-33***
20071030	38	ebb	5.5	331.7	165.2	157.7	136.6	178.1	863.8	565.1	195.5	162.9	2329.1
20071030	39	flood	5.6	386.8	218.4	206.7	188.4	225.9	911.5	616.3	239.3	208.5	2380.9
20071031	39	ebb	5.7	325.3	158.6	142.9	129.7	170.9	862.5	559.7	187.6	157.3	2336.8
20071031	40	flood	5.1	364.4	193.3	176.1	162.5	199.7	890.8	590.5	214.8	182.4	2365.9
20071031	40	ebb	17.2	352.5	177.3	149.1	148.4	191.9	868.7	570.6	200.9	215.1	2482
20071031	41	flood	17.6	69.6	71.6	163.3	93.1	76.1	151.2	624.4	299.9	255.1	2005.7
20071101	41	ebb	4.9	34.9	34.4	98.4	42.1	36.9	90.6	450.6	167.4	161.4	1610.6
20071101	42	flood	4.6	133.2	98.8	179	121.6	114.8	183	576	254.1	235.7	1773.6
20071101	42	ebb	4.8	23	23.3	91	32.1	26.4	68.2	444.2	160.6	152.7	1656.4
20071101	43	flood	5	66	66.3	138.8	76.7	69.7	114.7	499.1	219.6	204.6	1869.7
20071102	43	ebb	4.6	26.5	26.7	94.6	35.7	30.4	72.8	448.1	163.4	156.4	1782.8
20071102	44	flood	4	33.6	33.2	102.7	39.5	34	75.5	449.5	165.9	159.5	1823.6
20071102	44	ebb	4.5	21.7	20.1	90.1	27.5	24.1	63.8	439.5	154	148.8	1769.3
20071102	45	flood	4.6	53.9	54.6	126.3	62.6	55.8	100.3	480	199	186.7	1858.7
20071103	45	ebb	4.1	18	16.8	88.3	23.2	18.9	60	437.5	150.3	145.6	1692.7
20071103	46	flood	3.8	20.3	19.8	90.8	24.1	20.6	60.1	435.2	145.8	144.7	1837
20071103	46	ebb	4	12	10.8	82.7	15.2	12.1	51.8	425.3	137.4	143	1853.3
20071103	47	flood	4.4	20.9	21.2	95.5	26.1	21.2	63.2	432.6	152.2	158.7	1904.3
20071104	47	ebb	4.3	16.7	16	91.2	21.6	17.6	58.8	428.6	146.5	159	1841.7
20071104	48	flood	3.7	12.2	11	86.2	14.7	11.3	50.8	417.6	134	148.2	1818.3
20071114	48	ebb	16.7	85.9	125.1	245.8	139.5	107.8	174.3	626	406.1	482.6	2075.7
20071114	49	flood	5	65.7	67.9	137.7	84.3	65.6	78.9	195.4	120.6	362.4	2193.9
20071115	49	ebb	4.9	34.7	39.7	108.6	52.6	42.4	54.7	167.7	96.7	342.1	2167.7
20071115	50	flood	4.9	177	191.3	268.8	220.9	207.7	226.1	350.6	278.7	527.5	2342.9
20071115	50	ebb	5.1	33.1	37.3	105.6	46.5	35.1	46	158.6	86.7	333	2168

ARGUS Mean SS Concentration [mg/l] per tidal phase in layers of 10 cm (*except first column 6 cm) [distances given in cm above bottom]													
Date	***Tide no.***	***Phase***	***Tidal diff [m]***	***128-123***	***122-113***	***112-103***	***102-93***	***92-83***	***82-73***	***72-63***	***62-53***	***52-43***	***42-33***
20071115	51	flood	5.1	86.3	91.2	162.9	106.1	89	102	221.1	144.5	390.1	2260.9
20071116	51	ebb	4.6	36.3	39.2	109.4	50.9	38.5	51.4	164.5	91.1	336.4	2172.2
20071116	52	flood	4.6	64.8	70.4	141.2	82.9	65.1	79.3	194.4	120.1	365.1	2211.5
20071116	52	ebb	4.7	30.5	34.4	104.3	44.2	32.6	44.4	156.2	82.6	328.1	2167.5
20071116	53	flood	4.8	69.9	74.7	146.7	86.7	69.7	82.7	199.8	123.6	370.3	2168.8
20071117	53	ebb	4.4	36.1	39.9	113.6	52.6	38.2	52.1	165	91.3	337.4	2140
20071117	54	flood	4.2	56.2	58.9	132.3	76.9	55.9	70	183.4	108.6	354.2	2184.3
20071117	54	ebb	4.4	23.4	26.4	98.1	35.7	25.2	36.2	145.4	73.7	319.1	2181.9
20071117	55	flood	4.5	69.4	72.8	147.7	85.4	68.1	82.1	199.6	122.3	368.7	2253.2
20071118	55	ebb	4.2	31.5	33.9	107.1	43.7	32.4	44.8	156	83.1	330.5	2193.8
20071118	56	flood	3.7	28.4	31.3	104.6	39.9	29.3	39.5	150.1	76.4	320.8	2173.6
20071118	56	ebb	4.3	31	31.5	106.1	42.3	31.6	43.6	154.4	81.8	329.2	2190.8
20071118	57	flood	3.9	65.9	70.3	151.1	89.6	73.3	89.4	211	134	384.1	2253.6
20071119	57	ebb	3.8	25.4	25.3	100.7	35.8	24.9	37.3	145.9	72.8	320.6	2200.2
20071119	58	flood	3.9	30.8	31.7	108.7	41.4	30.3	40.9	151	78.5	325.2	2210.3
20071119	58	ebb	4.1	53.6	57.8	136.6	72.4	60.4	75.4	192.4	120.9	373.3	2231.8
20071119	59	flood	4.4	72.9	76.2	157.7	92.1	77.8	95.6	211.9	135.4	390.7	2294.1
20071120	59	ebb	4.1	48.1	52.7	136.3	78	71.3	93.6	221.5	151.1	412.4	2246.8
20071120	60	flood	4.2	120.5	126.4	213.3	152	136.5	153.6	277.9	208.5	476.2	2339.8
20071120	60	ebb	4.7	35	36.1	114.9	50.5	38.6	51.7	170.1	95.2	353	2245.1
20071120	61	flood	5	155.1	159.5	243.9	184.7	167.5	185.2	310.1	239.5	502.5	2316.9
20071121	61	ebb	4.6	78.9	82	168	108	94.2	114	239.1	165.6	427.8	2195.7
20071121	62	flood	4.8	183	188.6	274	211	190.6	205.9	327.9	250.8	509.8	2324.8
20071121	62	ebb	5.1	104.1	108.3	194	130.6	119.4	133.9	260.3	187.2	452.3	2313.1
20071122	63	flood	5.3	298.6	311.1	399.5	347	331.6	346.9	472.2	405.3	660.9	2505.6

ARGUS Mean SS Concentration [mg/l] per tidal phase in layers of 10 cm (*except first column 6 cm) [distances given in cm above bottom]

Date	*Tide no.*	*Phase*	*Tidal diff [m]*	*128-123*	*122-113*	*112-103*	*102-93*	*92-83*	*82-73*	*72-63*	*62-53*	*52-43*	*42-33*
20071122	63	ebb	5.2	78.2	81.7	165.1	100.4	90.2	102.6	226	152.6	418.1	2286.4
20071122	64	flood	5.1	260.4	267.7	347.8	286.4	269.5	278.7	396.9	323.1	577.9	2398.8
20071122	64	ebb	5.4	159.3	174.3	267.6	216.2	214.4	240.4	374.1	311.7	578.7	2414.6
20071123	65	flood	6.1	401.7	417.6	504.2	447.9	428.2	444.1	563.8	499.4	761.9	2557.4
20071123	65	ebb	4.9	105.4	110.7	200.3	139.6	130.4	149.9	280.4	213.3	483.5	2381
20071123	66	flood	5.1	287.8	296.2	380.5	322	302.8	316.8	439.3	373.8	634.9	2451.8
20071123	66	ebb	5.9	187.6	199.3	296.4	249.3	250	277.6	415.3	356.1	640.3	2516.9
20071124	67	flood	5.7	488.5	503.7	593.3	542	530.9	554.4	693.3	642.6	935.2	2757.2
20071124	67	ebb	6	220.5	228.7	313.8	267.2	261.4	286.2	420.9	362.6	639.7	2583.3
20071124	68	flood	5.6	390.2	394.7	469.2	417.8	405	420.5	552	495.6	772.9	2624.2
20071124	68	ebb	5.7	136.6	138.8	214.3	154.2	145.1	158.7	278.7	215.2	483.1	2303.7
20071125	69	flood	6.4	401.3	410.2	490	431.1	417.5	436.4	566.9	508.3	790.4	2704
20071125	69	ebb	5.4	127.5	127.6	205.3	144.7	132.1	143.7	262.7	193.5	458.9	2413.4
20071125	70	flood	5.9	349.3	358.1	436.8	377.3	360.4	368	487.2	416.4	678.2	2643.6
20071125	70	ebb	5.9	117.6	120.4	198.7	137	125.2	137.3	255.7	188.2	451.7	2412.7
20071126	71	flood	5.5	171.9	171.1	252.7	185.8	169.5	179.8	296.3	223.1	489	2446.4
20071126	71	ebb	6	122.4	127.1	207.4	150.2	141.3	157.7	282.8	221.3	494.3	2472.6
20071126	72	flood	5.8	222.1	226	304	249.6	236.1	252.3	378.8	313	586	2530.9
20071126	72	ebb	6	127.2	130.3	212.6	153.1	144.3	160.7	284.3	216.7	486	2482.4
20071127	73	flood	5.6	234.7	237.6	320.5	258.7	241.3	254.6	376.7	309.3	578.5	2486.6
20071127	73	ebb	6	104.8	105.7	182.8	122.2	114.2	126.5	246.6	179.3	447.3	2496.9
20071127	74	flood	5.9	383.3	392.3	476.7	417.2	405	422.9	556	505.3	784.5	2634.8
20071127	74	ebb	5.9	127	127.8	207.9	148.2	140.5	155.6	279.6	214.8	492	2481.8
20071128	75	flood	5.5	343.7	350.3	438	382.1	372.8	389.4	516.8	459.1	742.2	2705.8

ALTUS Echosounder bottom distance [cm]						
Date	Tide no.	Phase	Signal 1	Signal 2	Signal 3	Signal 4
20071010	1	flood	47.59	48.28	-	-
20071010	1	ebb	46.89	46.97	-	-
20071011	2	flood	46.15	46.23	46.23	46.35
20071011	2	ebb	46.35	46.44	46.48	-
20071011	3	flood	45.9	45.94	46.07	-
20071011	3	ebb	45.78	45.82	45.9	-
20071012	4	flood	46.19	46.27	46.35	-
20071012	4	ebb	45.86	46.11	-	-
20071012	5	flood	45.37	45.49	45.74	-
20071012	5	ebb	45.12	-	-	-
20071013	6	flood	47.3	47.3	47.38	47.46
20071013	6	ebb	47.18	47.22	47.26	47.34
20071013	7	flood	47.13	47.38	47.55	47.55
20071013	7	ebb	47.05	47.13	47.22	47.34
20071014	8	flood	47.13	47.13	47.26	47.42
20071014	8	ebb	46.77	46.93	47.09	47.22
20071014	9	flood	47.13	47.13	47.13	47.22
20071014	9	ebb	46.85	46.85	46.85	46.93
20071015	10	flood	46.64	46.72	46.72	47.59
20071015	10	ebb	45.82	47.34	47.38	-
20071015	11	flood	46.03	46.07	-	-
20071016	11	ebb	46.19	46.56	-	-
20071016	12	flood	45.12	45.12	45.25	-
20071016	12	ebb	45.33	45.49	-	-
20071016	13	flood	45.53	45.66	-	-
20071017	13	ebb	44.67	44.75	44.75	44.8
20071017	14	flood	45.08	45.12	45.29	-
20071017	14	ebb	44.8	44.8	44.88	-
20071017	15	flood	44.47	45.12	45.2	-
20071018	15	ebb	45.08	45.12	45.2	-
20071018	16	flood	44.26	45.33	-	-
20071018	16	ebb	43.56	-	-	-
20071018	17	flood	43.73	43.81	43.85	-
20071019	17	ebb	43.56	43.65	-	-
20071019	18	flood	43.65	43.77	43.93	-
20071019	18	ebb	43.6	43.73	-	-
20071019	19	flood	43.44	43.65	-	-
20071020	19	ebb	43.56	43.85	-	-
20071020	20	flood	43.48	43.56	44.06	-
20071020	20	ebb	43.56	43.97	-	-
20071020	21	flood	43.4	44.14	-	-
20071021	21	ebb	43.15	-	-	-

ALTUS Echosounder bottom distance [cm]

Date	Tide no.	Phase	Signal 1	Signal 2	Signal 3	Signal 4
20071021	22	flood	43.28	-	-	-
20071021	22	ebb	43.36	-	-	-
20071021	23	flood	42.95	43.03	-	-
20071022	23	ebb	42.74	42.82	-	-
20071022	24	flood	42.82	42.82	-	-
20071022	24	ebb	42.41	42.41	42.45	42.5
20071023	25	flood	42.21	42.25	42.25	42.37
20071023	25	ebb	42.21	42.21	42.25	42.33
20071023	26	flood	42.45	42.62	42.78	-
20071023	26	ebb	42.33	42.41	42.54	-
20071024	27	flood	42.17	42.29	42.33	-
20071024	27	ebb	41.92	42.41	-	-
20071024	28	flood	41.96	42.54	-	-
20071024	28	ebb	41.59	41.59	-	-
20071025	29	flood	41.06	41.1	41.18	-
20071025	29	ebb	40.85	40.94	41.02	-
20071026	30	flood	-	-	-	-
20071026	30	ebb	-	-	-	-
20071026	31	flood	-	-	-	-
20071026	31	ebb	-	-	-	-
20071027	32	flood	-	-	-	-
20071027	32	ebb	-	-	-	-
20071027	33	flood	-	-	-	-
20071027	33	ebb	-	-	-	-
20071028	34	flood	-	-	-	-
20071028	34	ebb	-	-	-	-
20071028	35	flood	-	-	-	-
20071028	35	ebb	-	-	-	-
20071029	36	flood	-	-	-	-
20071029	36	ebb	-	-	-	-
20071029	37	flood	-	-	-	-
20071030	37	ebb	-	-	-	-
20071030	38	flood	-	-	-	-
20071030	38	ebb	-	-	-	-
20071030	39	flood	-	-	-	-
20071031	39	ebb	-	-	-	-
20071031	40	flood	-	-	-	-
20071031	40	ebb	49.68	50.46	-	-
20071031	41	flood	49.48	49.48	-	-
20071101	41	ebb	49.15	-	-	-
20071101	42	flood	48.78	49.93	-	-
20071101	42	ebb	48.7	-	-	-

ALTUS Echosounder bottom distance [cm]

Date	Tide no.	Phase	Signal 1	Signal 2	Signal 3	Signal 4
20071101	43	flood	48.78	-	-	-
20071102	43	ebb	48.98	49.06	-	-
20071102	44	flood	48.98	49.27	-	-
20071102	44	ebb	48.78	48.94	49.1	-
20071102	45	flood	48.82	-	-	-
20071103	45	ebb	48.74	49.02	-	-
20071103	46	flood	48.78	-	-	-
20071103	46	ebb	48.49	-	-	-
20071103	47	flood	48.2	-	-	-
20071104	47	ebb	48.08	-	-	-
20071104	48	flood	-	-	-	-
20071104	48	ebb	-	-	-	-
20071104	49	flood	-	-	-	-
20071105	49	ebb	-	-	-	-
20071105	50	flood	-	-	-	-
20071105	50	ebb	-	-	-	-
20071106	51	flood	44.67	44.88	-	-
20071106	51	ebb	44.75	-	-	-
20071106	52	flood	-	-	-	-
20071106	52	ebb	-	-	-	-
20071107	53	flood	-	-	-	-
20071107	53	ebb	-	-	-	-
20071107	54	flood	-	-	-	-
20071107	54	ebb	-	-	-	-
20071108	55	flood	45.16	-	-	-
20071108	55	ebb	-	-	-	-
20071108	56	flood	43.65	-	-	-
20071108	56	ebb	-	-	-	-
20071109	57	flood	44.06	-	-	-
20071109	57	ebb	-	-	-	-
20071109	58	flood	-	-	-	-
20071109	58	ebb	-	-	-	-
20071110	59	flood	-	-	-	-
20071110	59	ebb	-	-	-	-
20071110	60	flood	-	-	-	-
20071110	60	ebb	-	-	-	-
20071111	61	flood	-	-	-	-
20071111	61	ebb	-	-	-	-
20071111	62	flood	-	-	-	-
20071111	62	ebb	-	-	-	-
20071112	63	flood	-	-	-	-
20071112	63	ebb	-	-	-	-

ALTUS Echosounder bottom distance [cm]

Date	Tide no.	Phase	Signal 1	Signal 2	Signal 3	Signal 4
20071112	64	flood	-	-	-	-
20071112	64	ebb	-	-	-	-
20071113	65	flood	40.57	-	-	-
20071113	65	ebb	41.02	-	-	-
20071113	66	flood	40.57	-	-	-
20071113	66	ebb	-	-	-	-
20071114	67	flood	40.61	-	-	-
20071114	67	ebb	43.6	43.65	-	-
20071114	68	flood	43.15	43.36	-	-
20071115	68	ebb	42.66	42.87	-	-
20071115	69	flood	41.63	41.76	-	-
20071115	69	ebb	41.63	41.72	41.76	-
20071115	70	flood	44.75	44.92	-	-
20071116	70	ebb	44.42	44.59	-	-
20071116	71	flood	44.34	44.42	-	-
20071116	71	ebb	43.73	44.18	44.34	-
20071116	72	flood	43.4	43.48	44.06	-
20071117	72	ebb	43.32	43.44	43.93	44.14
20071117	73	flood	43.4	43.77	43.97	44.14
20071117	73	ebb	43.32	43.4	43.89	44.06
20071117	74	flood	43.28	43.89	43.93	44.06
20071118	74	ebb	43.19	43.23	43.85	43.93
20071118	75	flood	43.4	43.89	43.89	44.06
20071118	75	ebb	43.6	43.6	43.85	44.02
20071118	76	flood	43.6	43.65	43.89	44.02
20071119	76	ebb	43.56	43.6	43.85	-
20071119	77	flood	43.23	43.6	43.85	44.02
20071119	77	ebb	43.36	43.77	43.93	-
20071119	78	flood	43.36	43.85	-	-
20071120	78	ebb	43.89	-	-	-
20071120	79	flood	-	-	-	-
20071120	79	ebb	40.48	-	-	-
20071120	80	flood	39.79	-	-	-
20071121	80	ebb	-	-	-	-
20071121	81	flood	-	-	-	-
20071121	81	ebb	29.44	-	-	-
20071122	82	flood	29.65	-	-	-
20071122	82	ebb	29.93	-	-	-
20071122	83	flood	29.36	-	-	-
20071122	83	ebb	-	-	-	-
20071123	84	flood	27.96	28.05	28.05	28.17
20071123	84	ebb	28.29	28.41	28.5	-

ALTUS Echosounder bottom distance [cm]

Date	Tide no.	Phase	Signal 1	Signal 2	Signal 3	Signal 4
20071123	85	flood	27.18	27.27	27.35	-
20071123	85	ebb	25.91	26.03	-	-
20071124	86	flood	25.34	25.34	25.38	25.38
20071124	86	ebb	24.72	24.72	24.76	24.8
20071124	87	flood	24.89	24.97	24.97	25.01
20071124	87	ebb	24.84	24.93	24.97	25.09
20071125	88	flood	24.68	24.68	24.68	24.72
20071125	88	ebb	24.52	24.6	24.76	24.89
20071125	89	flood	24.19	24.27	24.6	25.05
20071125	89	ebb	23.86	23.9	23.94	23.98
20071126	90	flood	24.84	24.93	25.34	25.5
20071126	90	ebb	24.89	25.05	25.25	25.42
20071126	91	flood	25.01	25.05	25.13	25.25
20071126	91	ebb	24.76	25.13	25.46	-
20071127	92	flood	25.17	25.42	25.42	25.5
20071127	92	ebb	24.31	24.56	25.58	-
20071127	93	flood	23.61	23.78	23.78	23.86
20071127	93	ebb	23.2	23.24	23.24	23.32
20071128	94	flood	23.08	23.16	23.24	23.61

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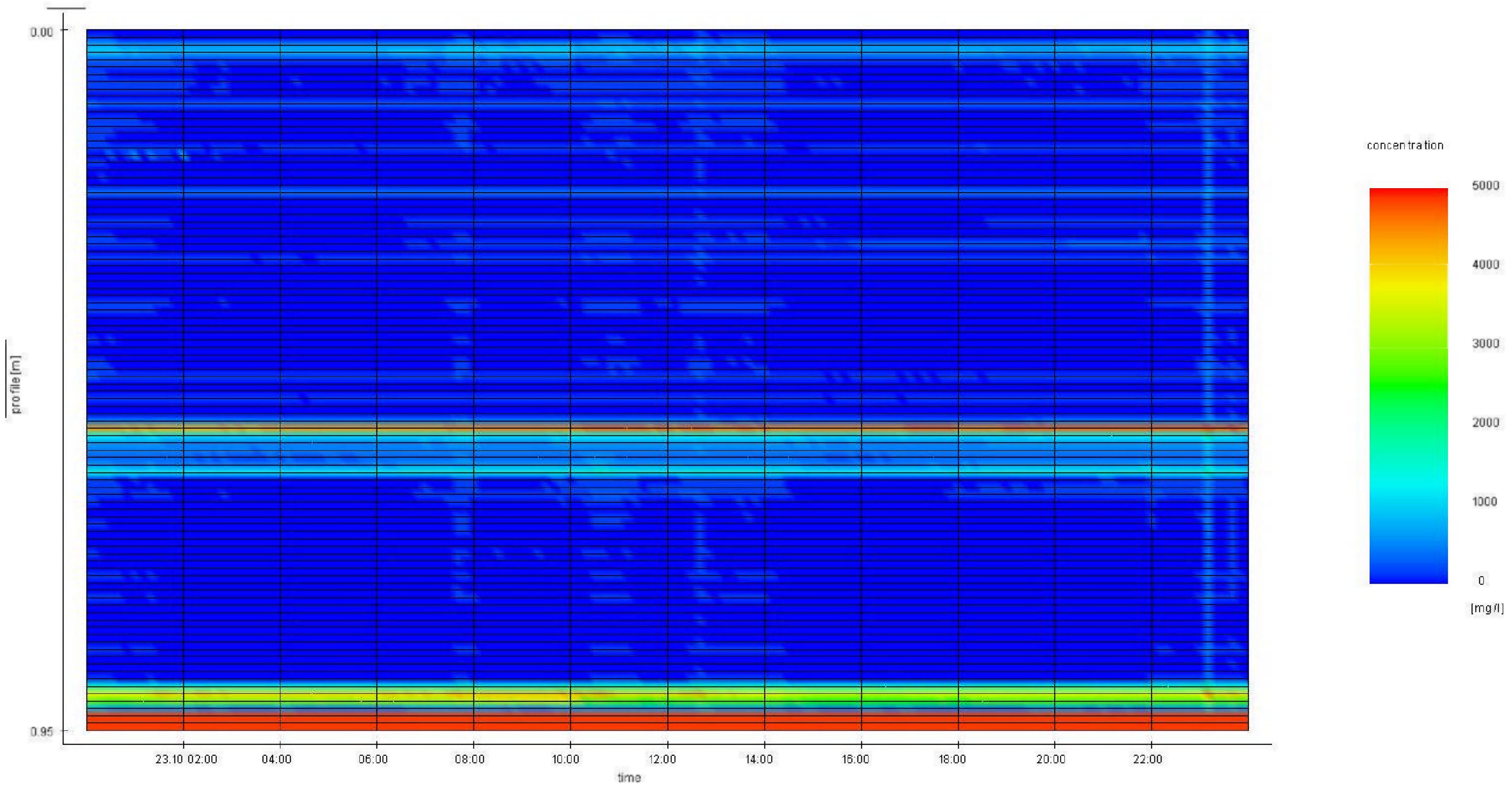
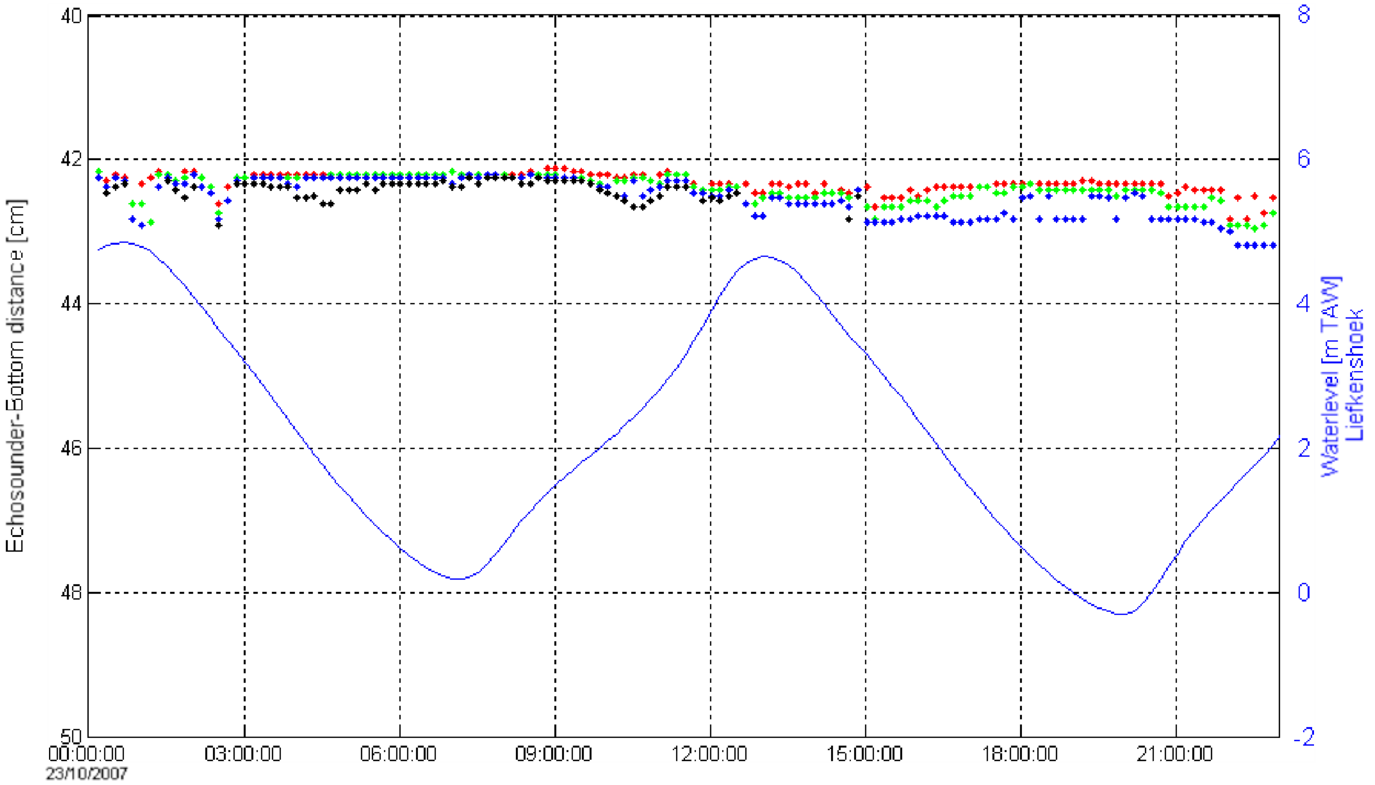
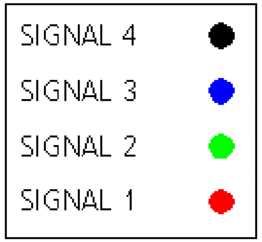
11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007



Time series suspended sediment concentration ARGUS ASM-IV		Data processed by: IMDC In association with: WL | delft hydraulics, GEMS International I/RA/11283/07.093/MSA
Location: Deurganckdok Sill	Date: Avg Tide 23/11 – 24/11	

11283 Accretion Deurganckdok - Near bed continuous monitoring – Autumn 2007





Legend

Echosounder – bottom distance
Waterlevel [mTAW] at Liefkenshoek

Location:
Deurganckdok Sill

Date:
Avg Tide 23/11 – 24/11

Data processed by:

In association with:

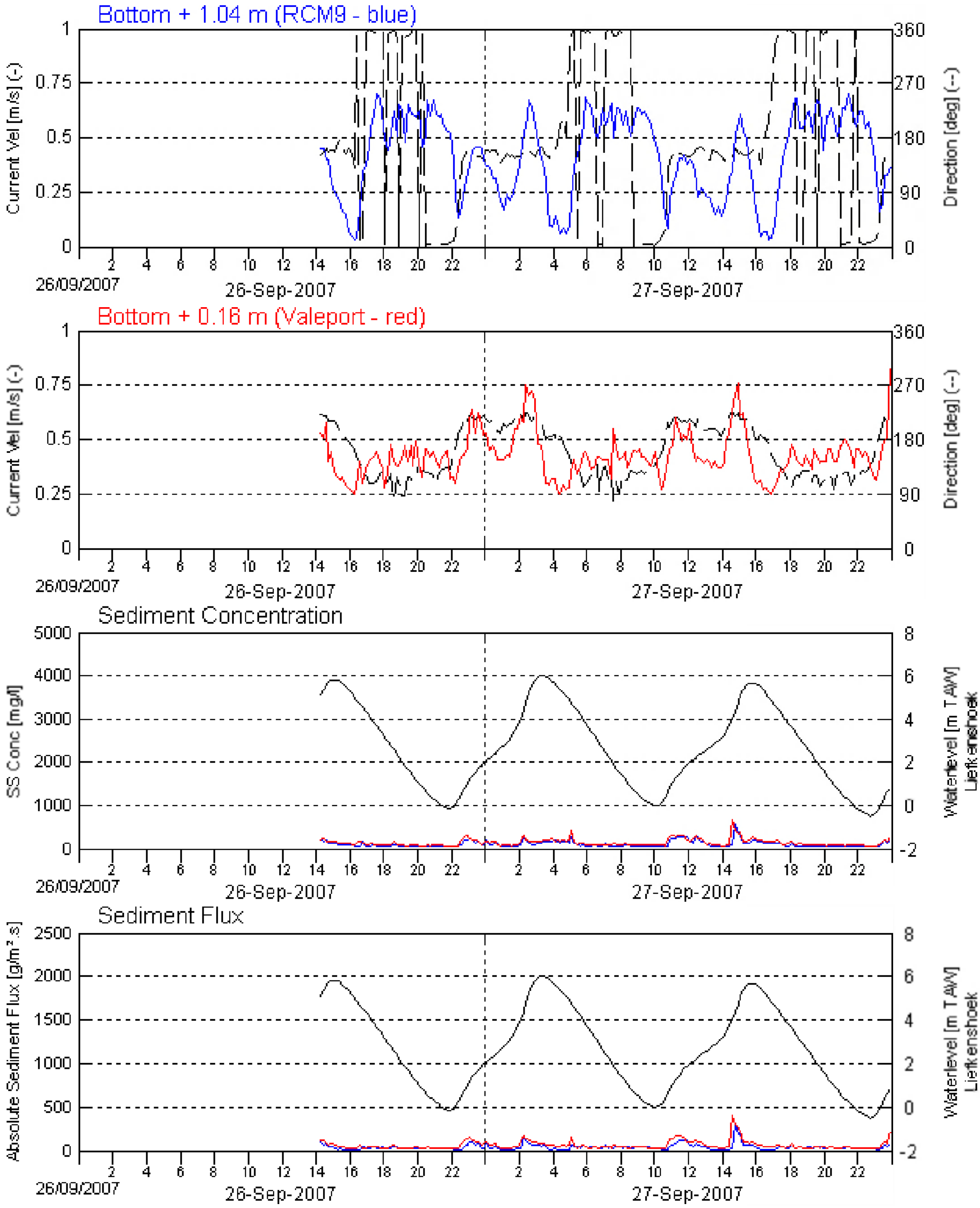
I/RA/11283/07.093/MSA

APPENDIX D.

TIMESERIES RCM9 & VALEPORT

D.1 CDW frame

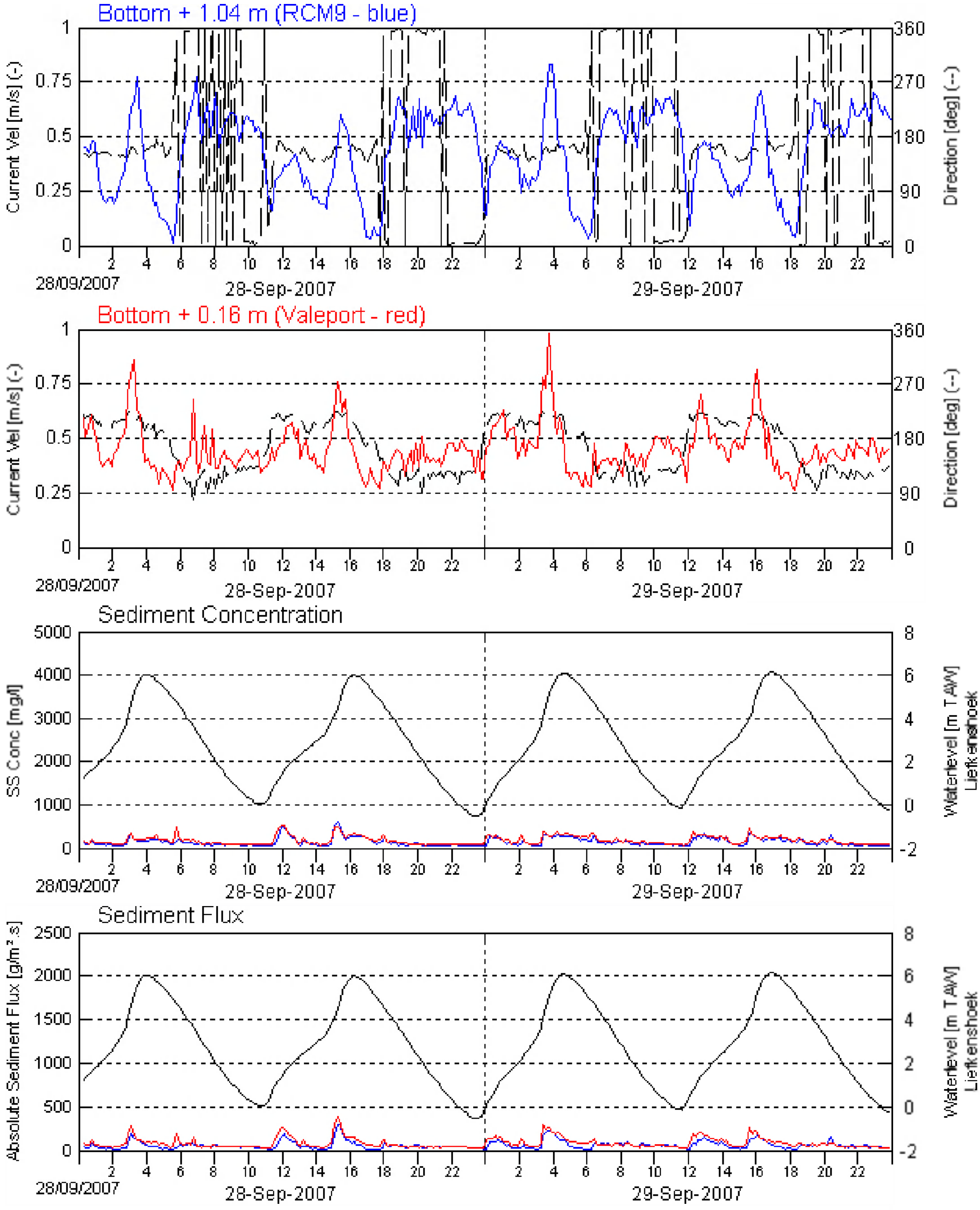
11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel

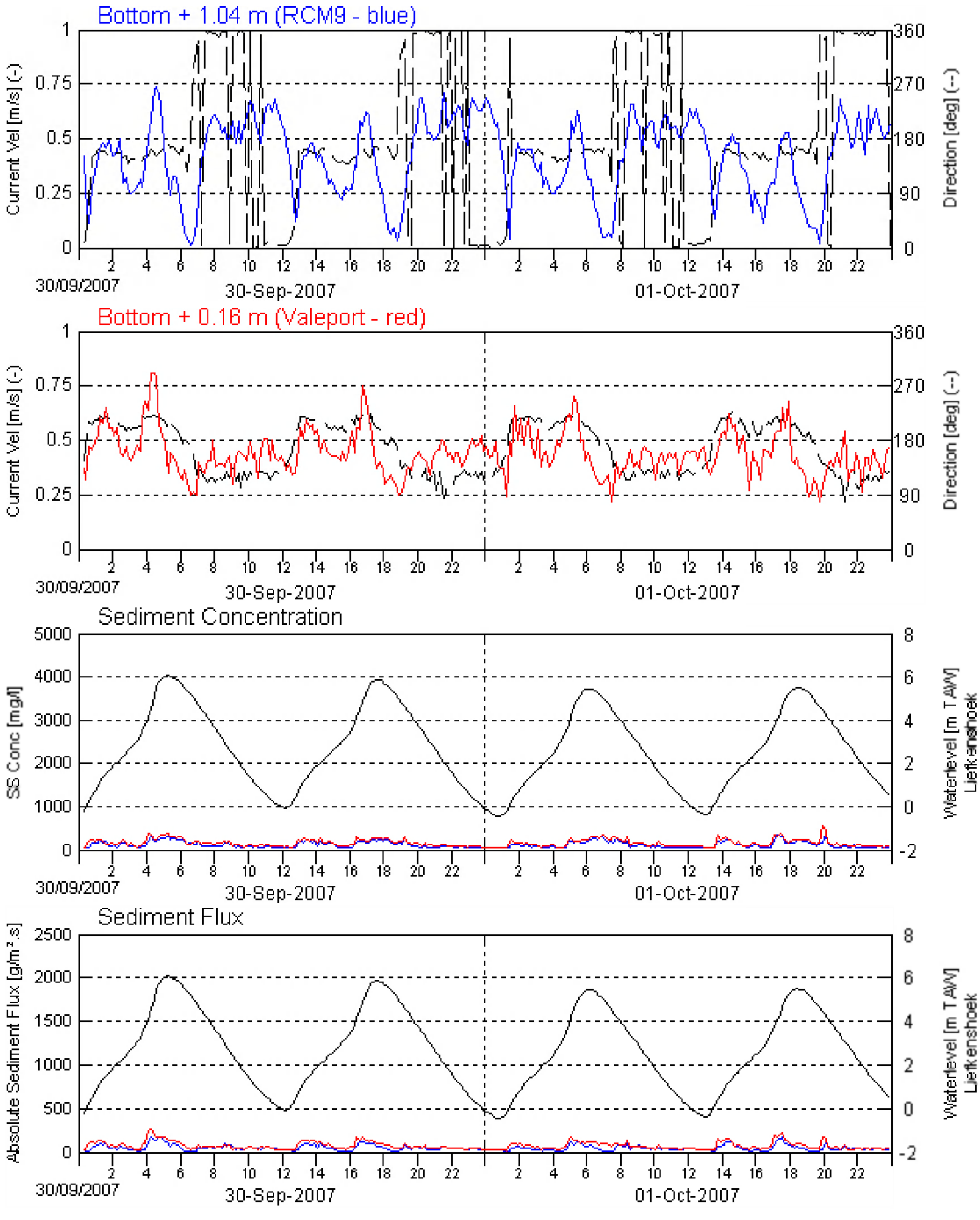
Location: Deurganckdok CDW	Date: 26/09/2007– 27/09/2007	*Data processed by:* IMDC *In association with:* wl delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



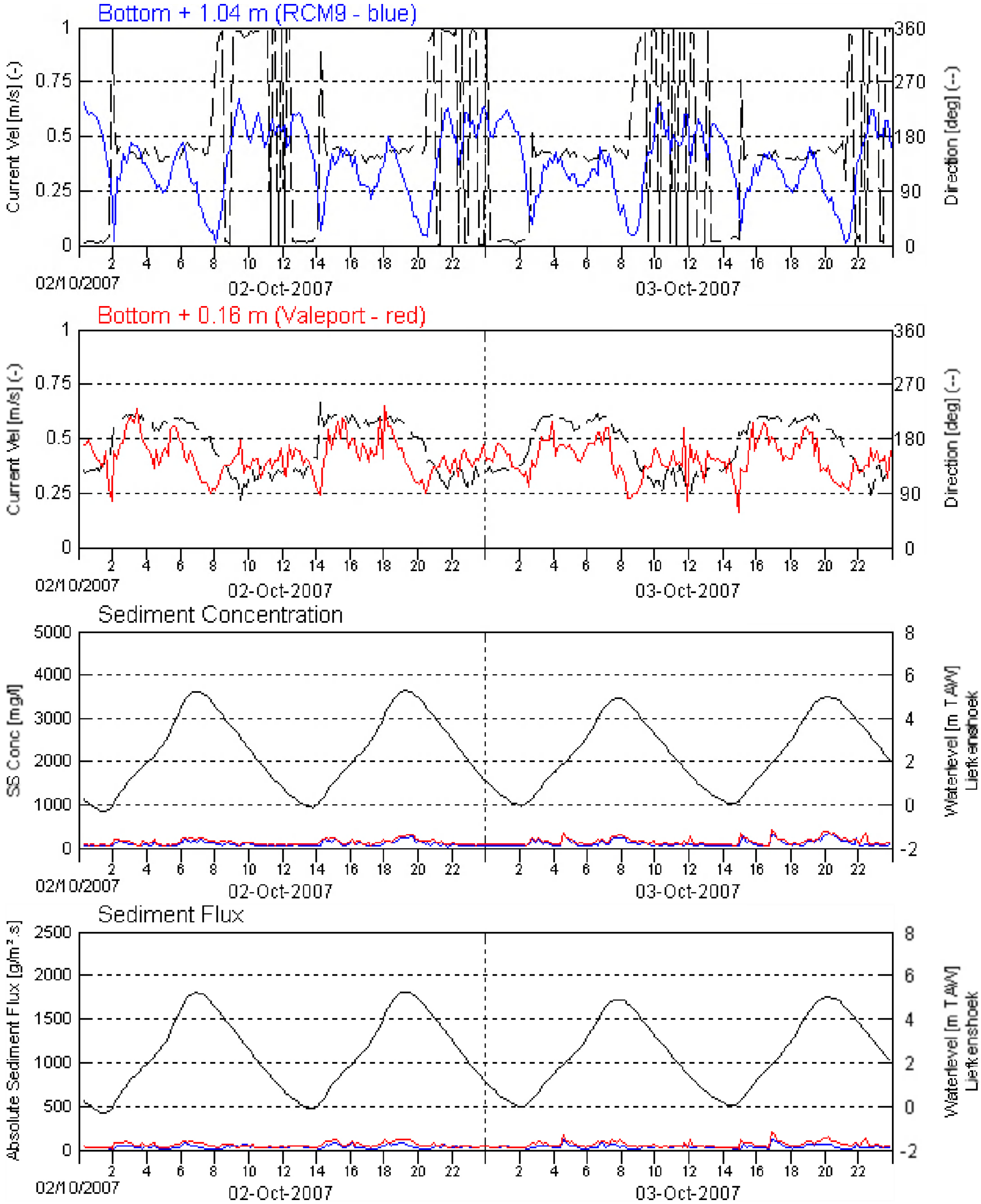
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by:
Location: Deurganckdok CDW	Date: 28/09/2007– 29/09/2007	In association with:
		I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



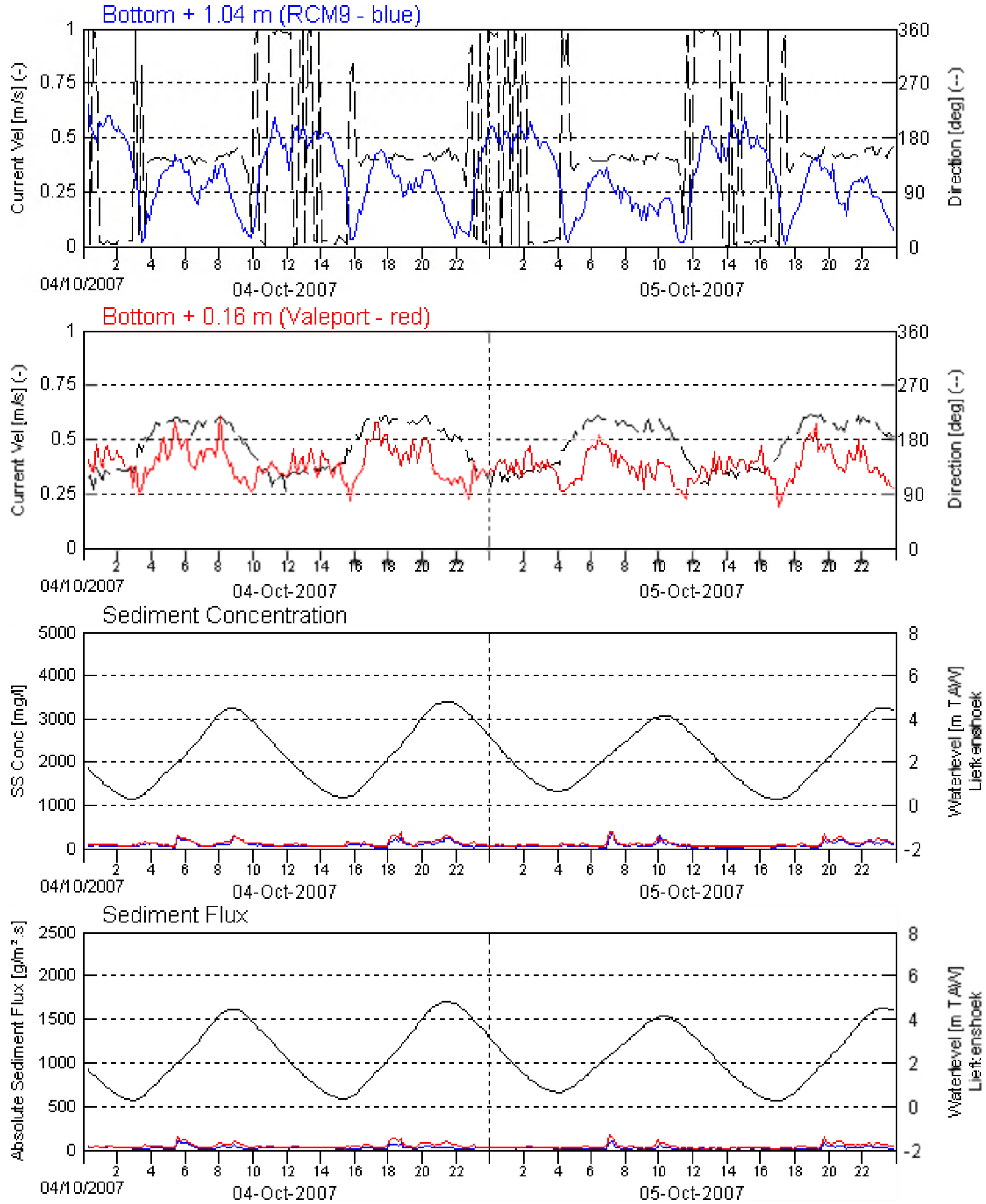
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok CDW	Date: 30/09/2007– 01/10/2007	In association with: WL delft hydraulics, GEMS International I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



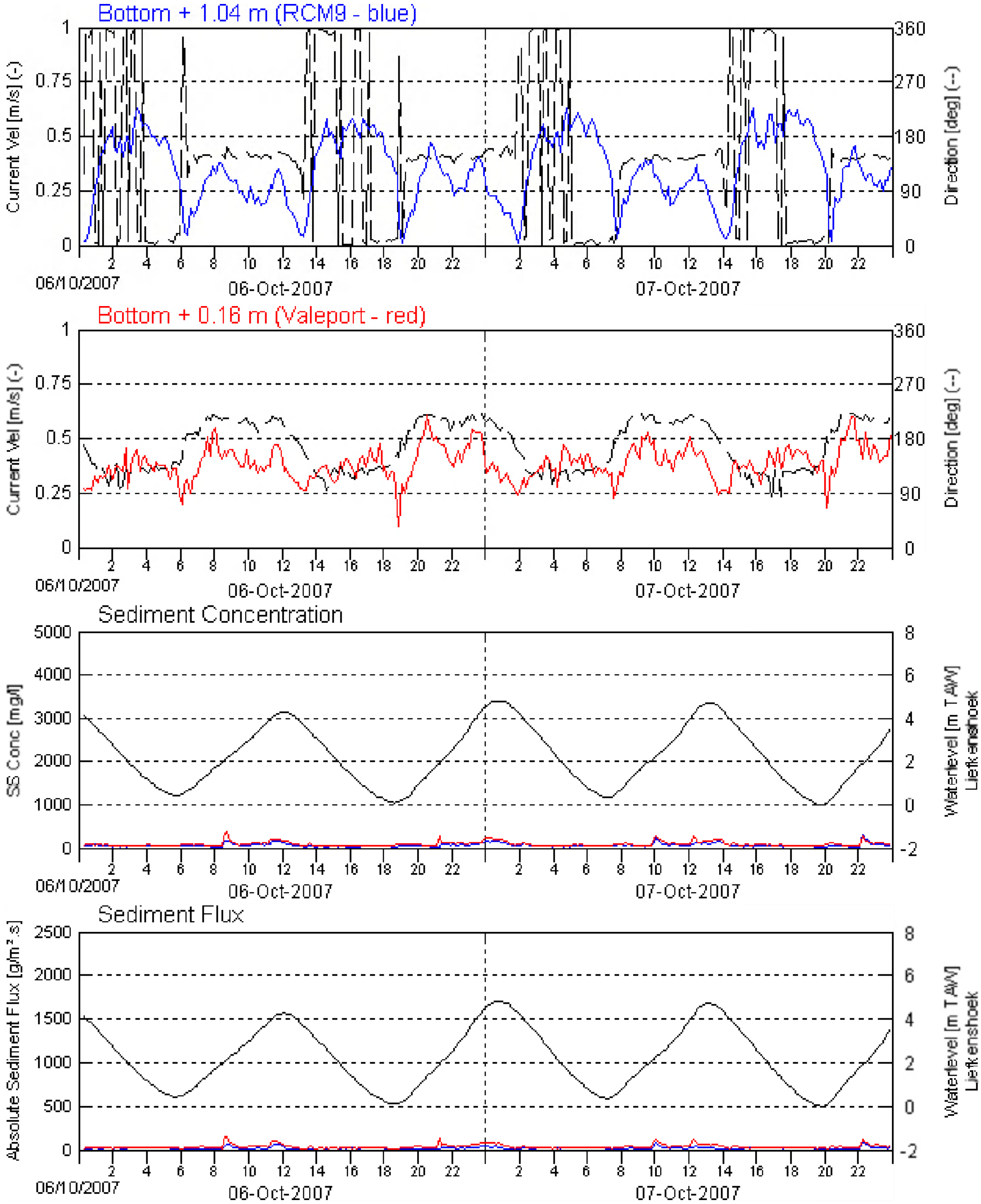
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok CDW	Date: 02/10/2007– 03/10/2007	In association with: WL delft hydraulics, GEMS International I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok CDW	Date: 04/10/2007– 05/10/2007	In association with: WL | delft hydraulics, GEMS International I/RA/11283/07.093/MSA

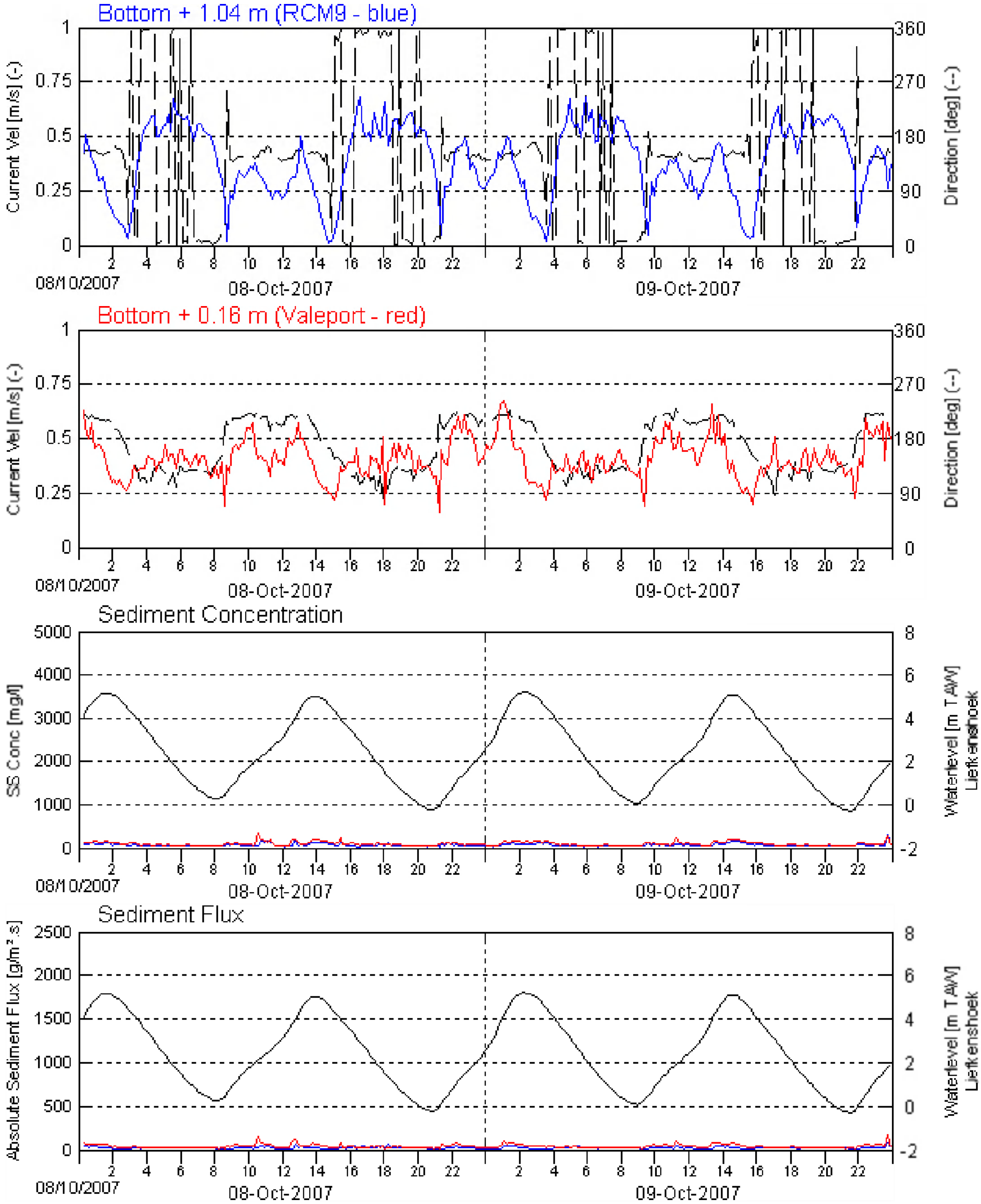
11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok CDW	Date: 06/10/2007– 07/10/2007	In association with: WL delft hydraulics, GEMS International

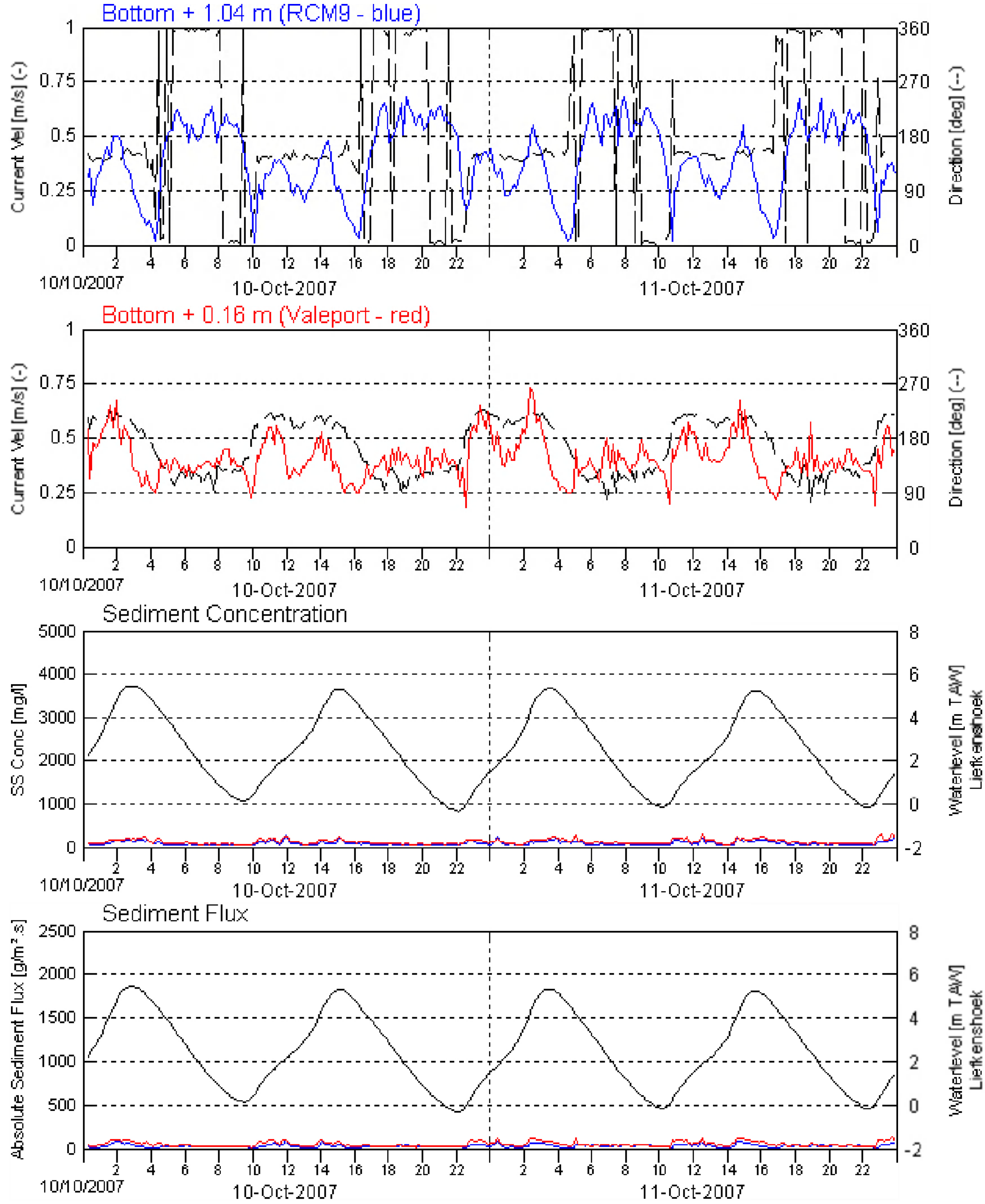
I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



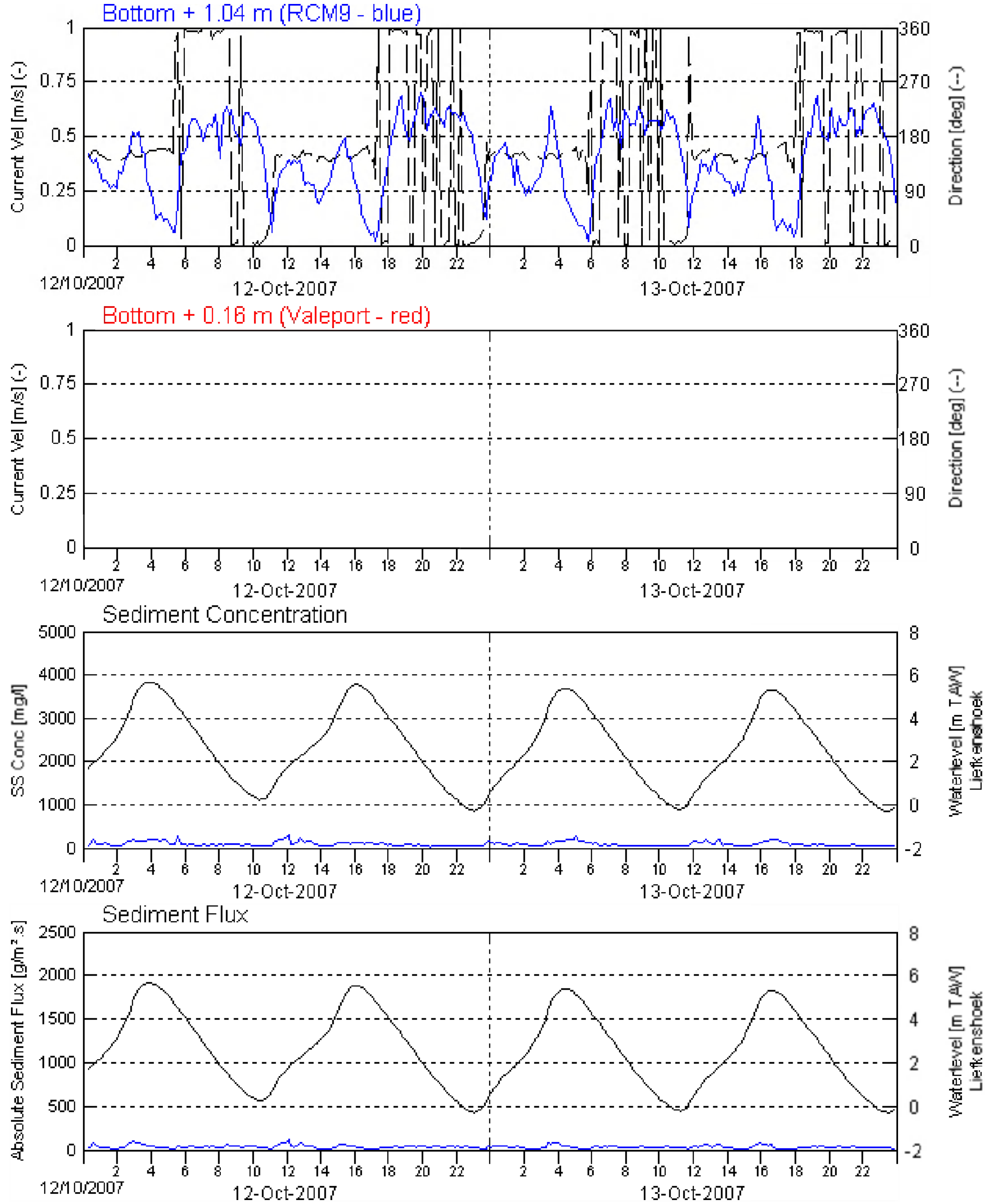
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok CDW	Date: 08/10/2007– 09/10/2007	In association with: WL delft hydraulics, GEMS International I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



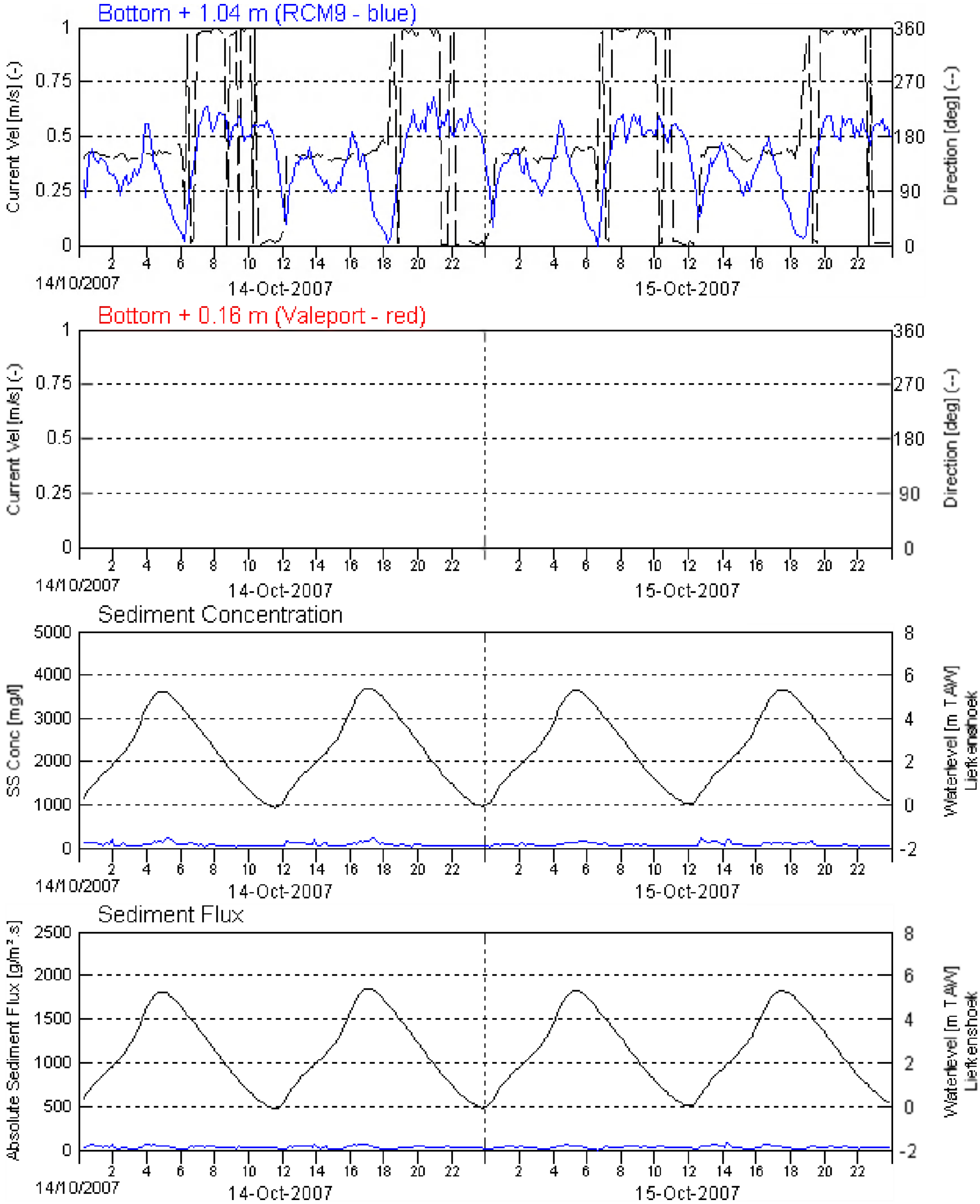
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok CDW	Date: 10/10/2007– 11/10/2007	In association with: WL delft hydraulics, GEMS International I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



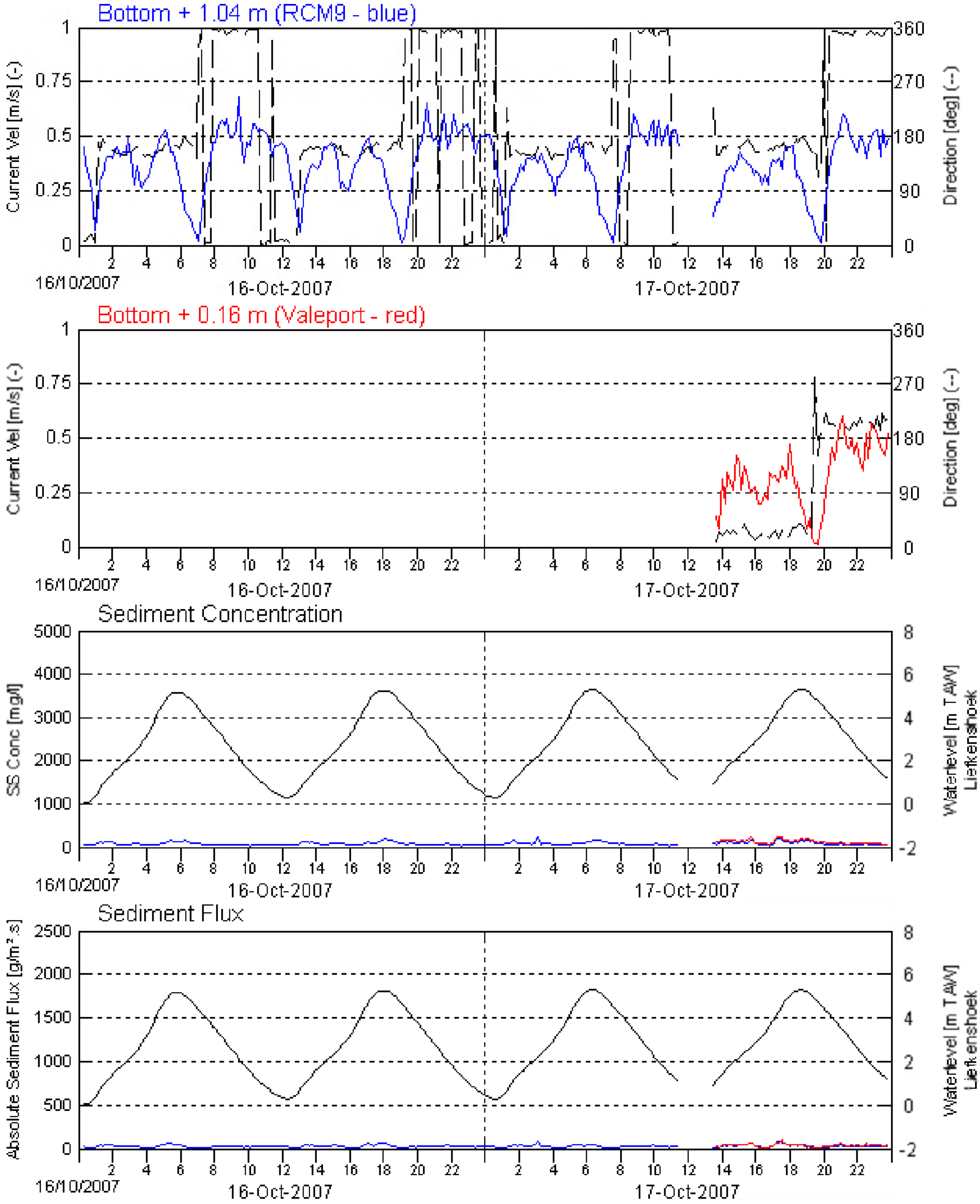
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		*Data processed by:* IMDC
Location: Deurganckdok CDW	Date: 12/10/2007– 13/10/2007	*In association with:* WL delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



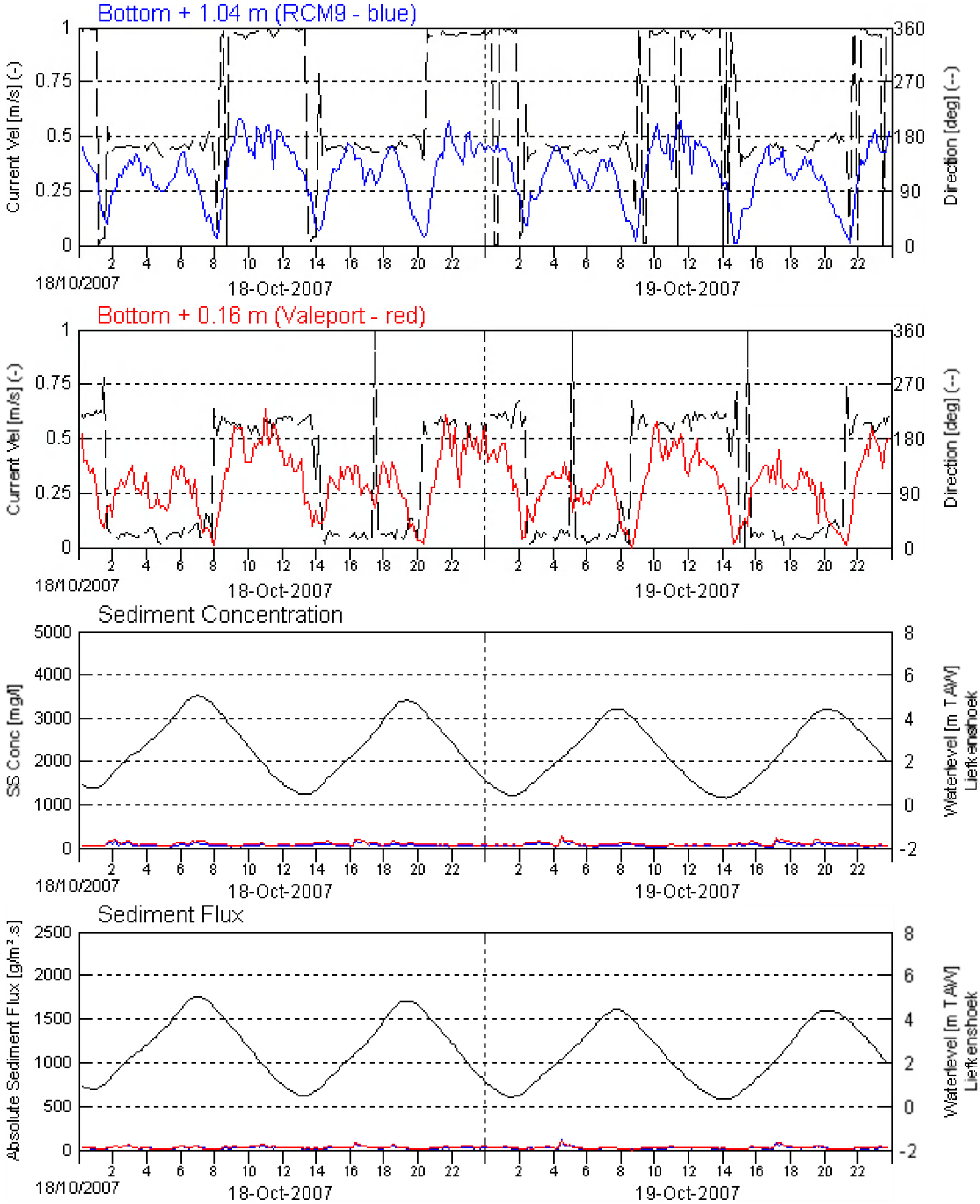
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok CDW	Date: 14/10/2007– 15/10/2007	In association with: WL delft hydraulics, GEMS International. I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



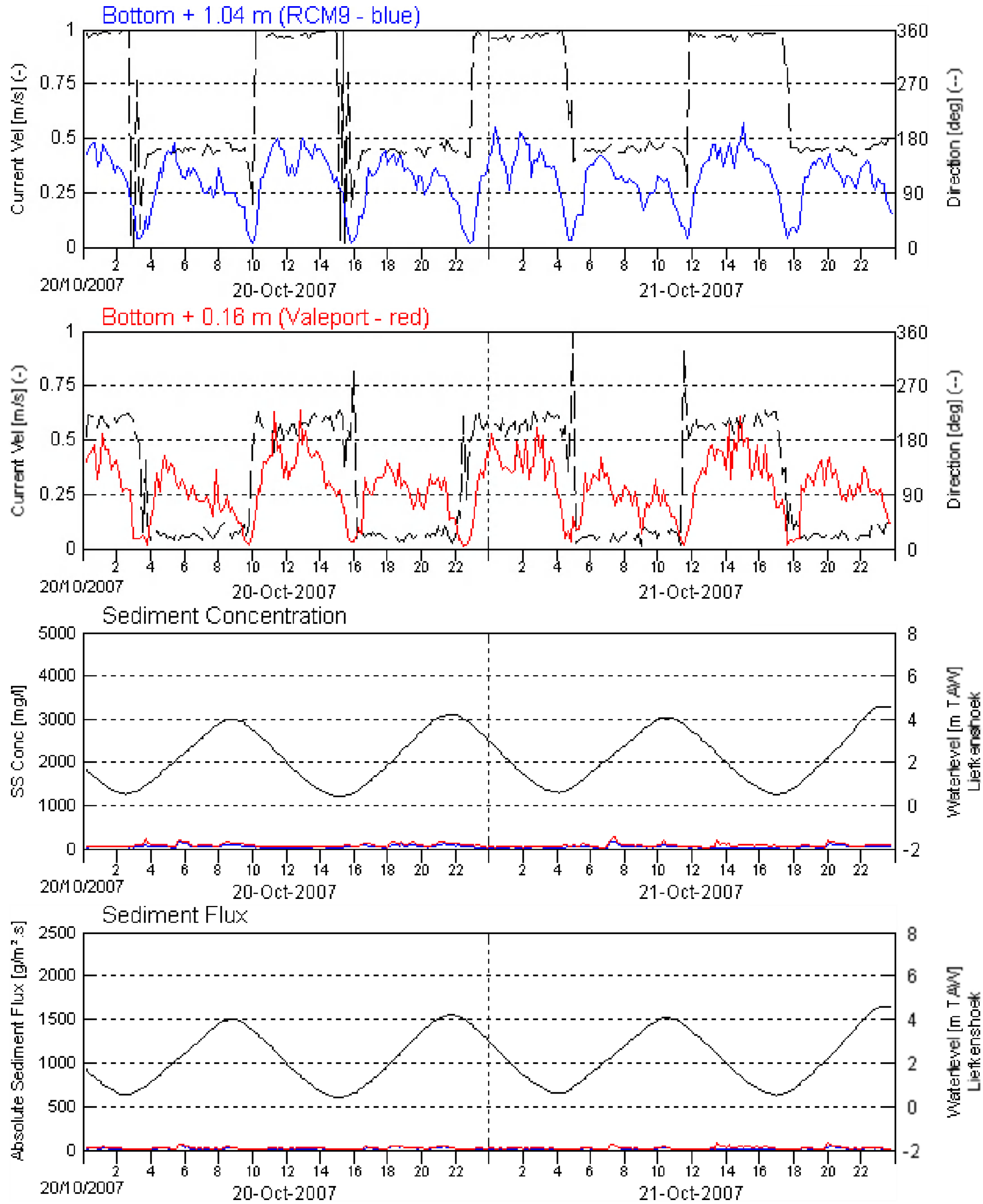
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok CDW	Date: 16/10/2007– 17/10/2007	In association with: WL delft hydraulics, GEMS International
		I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



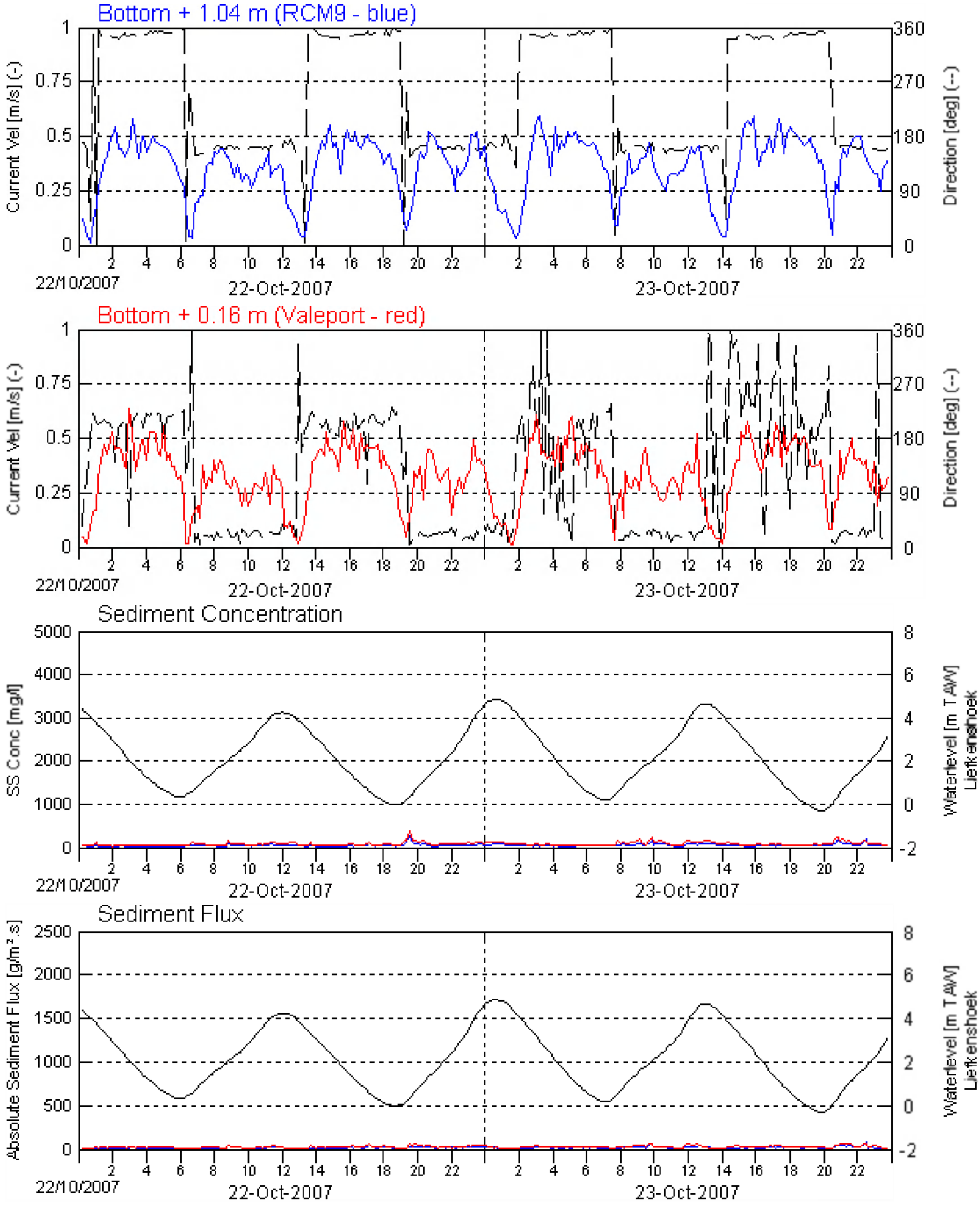
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		*Data processed by:* IMDC
Location: Deurganckdok CDW	Date: 18/10/2007– 19/10/2007	*In association with:* WL delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



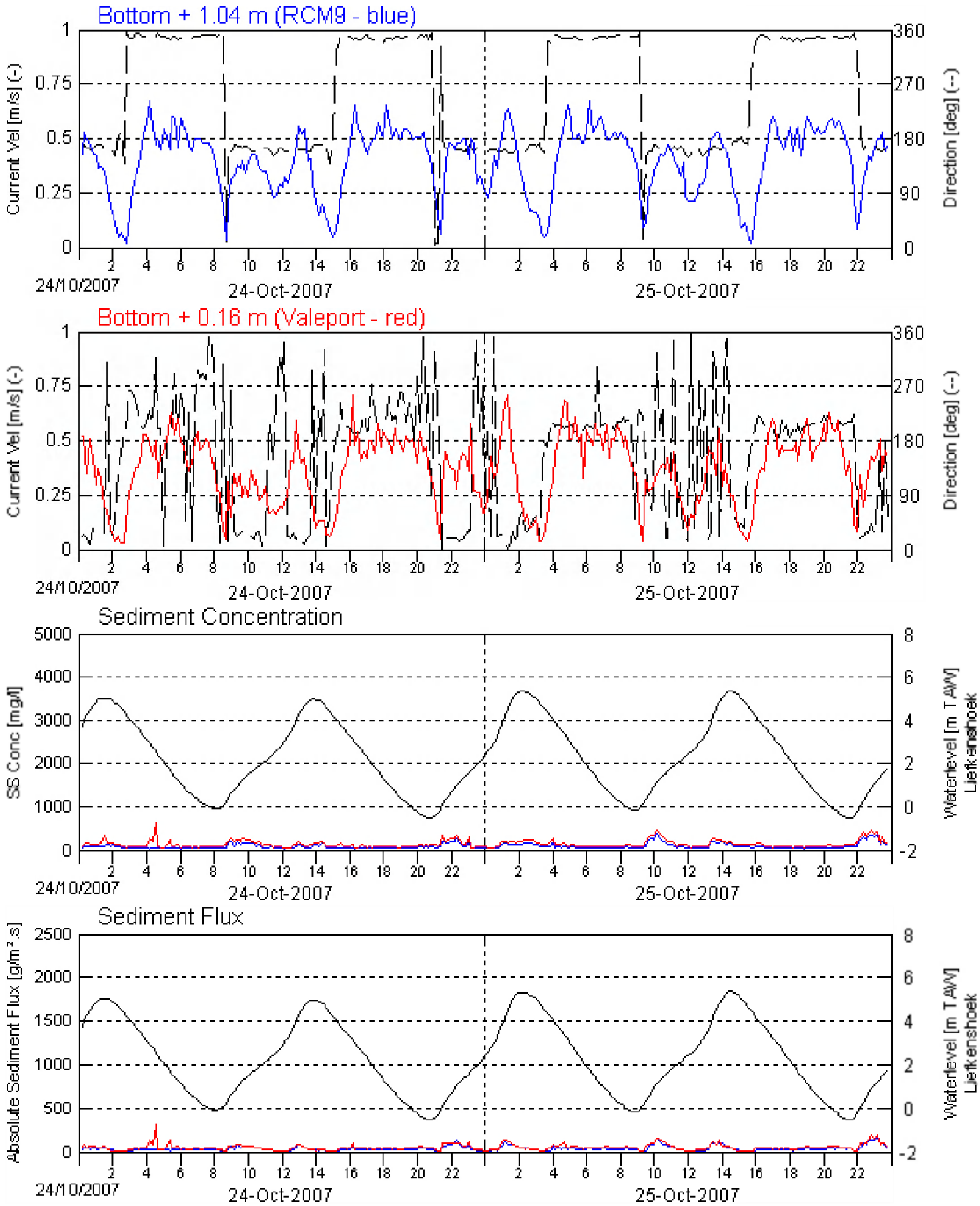
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok CDW	Date: 20/10/2007– 21/10/2007	In association with: wl delft hydraulics, GEMS International I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



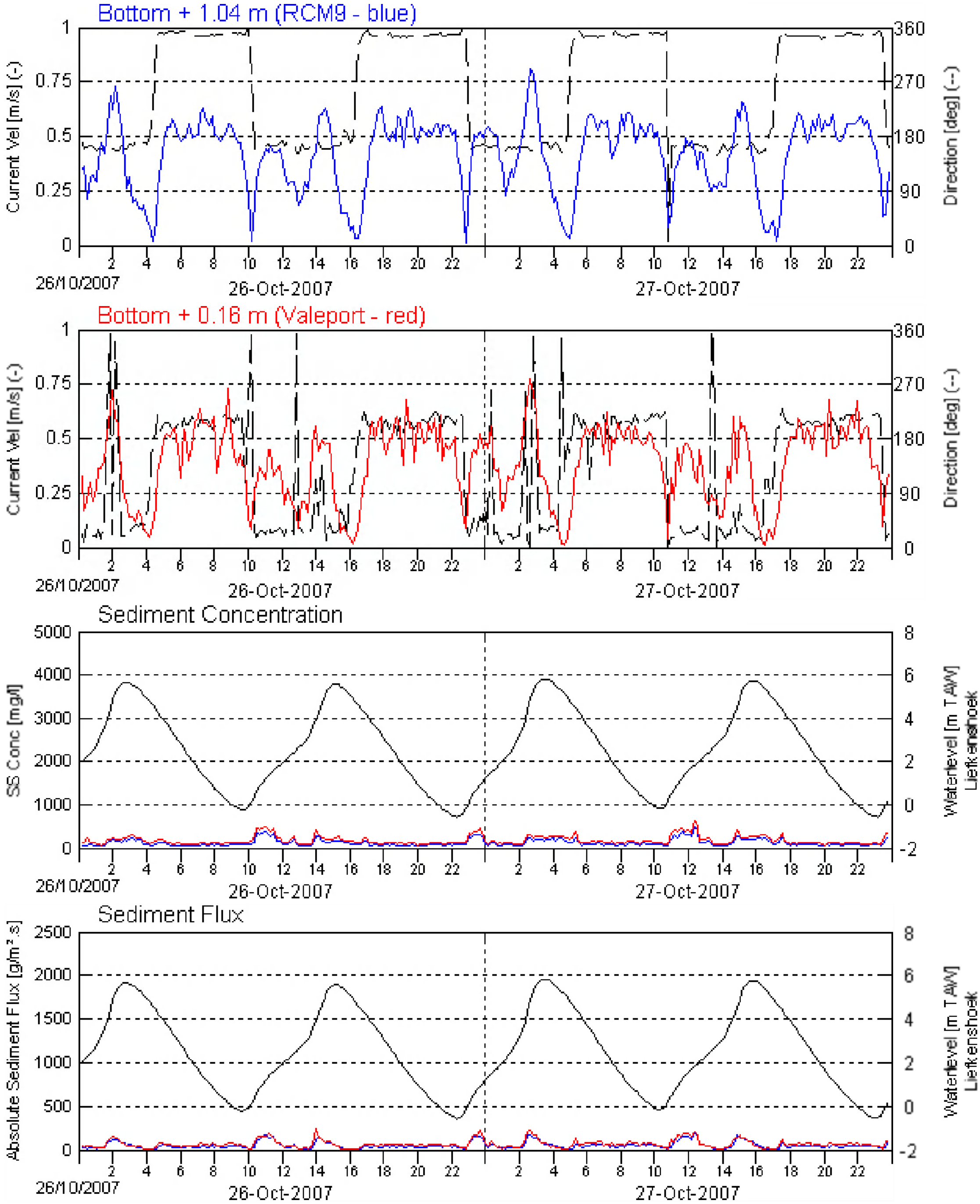
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by:
Location: Deurganckdok CDW	Date: 22/10/2007– 23/10/2007	In association with:
		I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



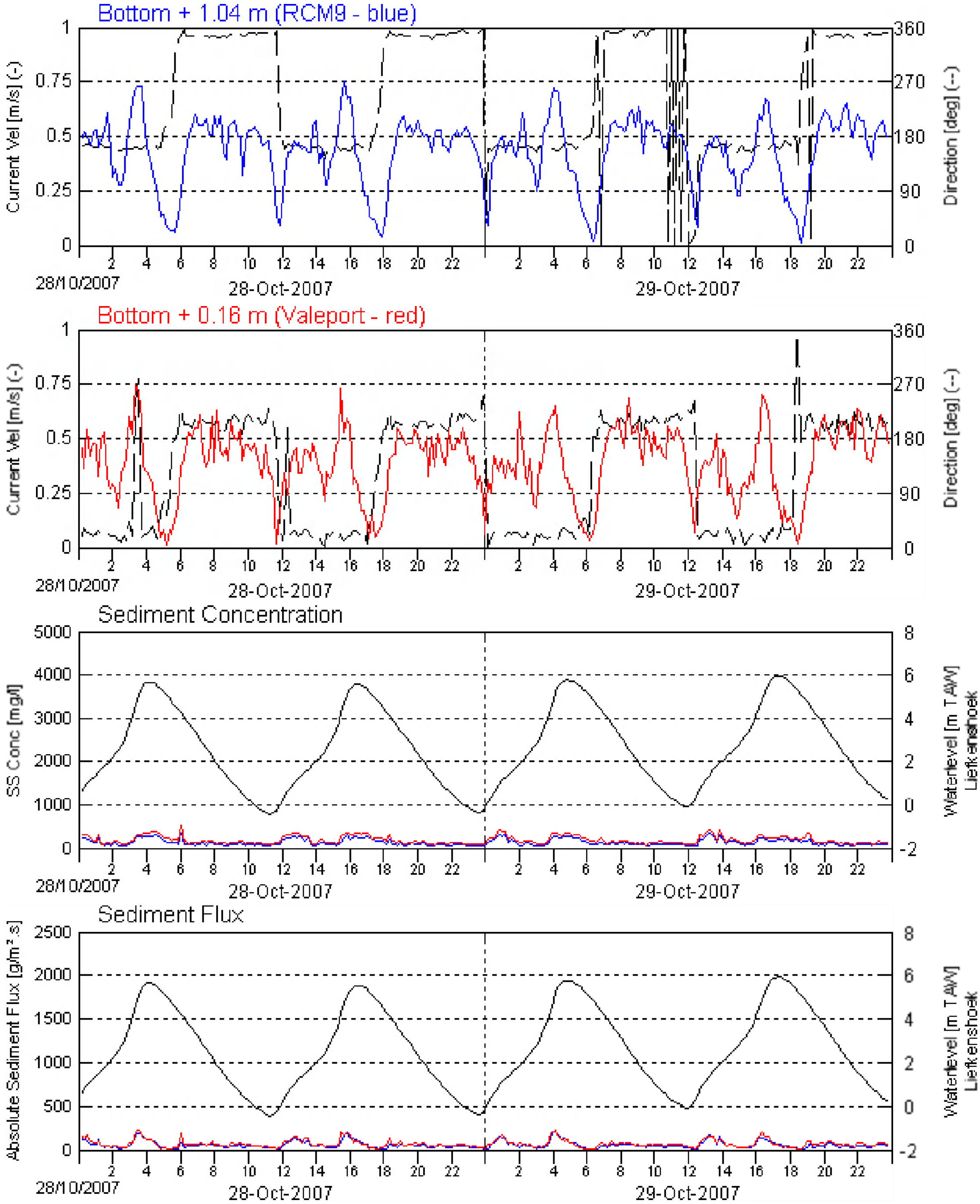
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		*Data processed by:* IMDC
Location: Deurganckdok CDW	Date: 24/10/2007– 25/10/2007	*In association with:* WL delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



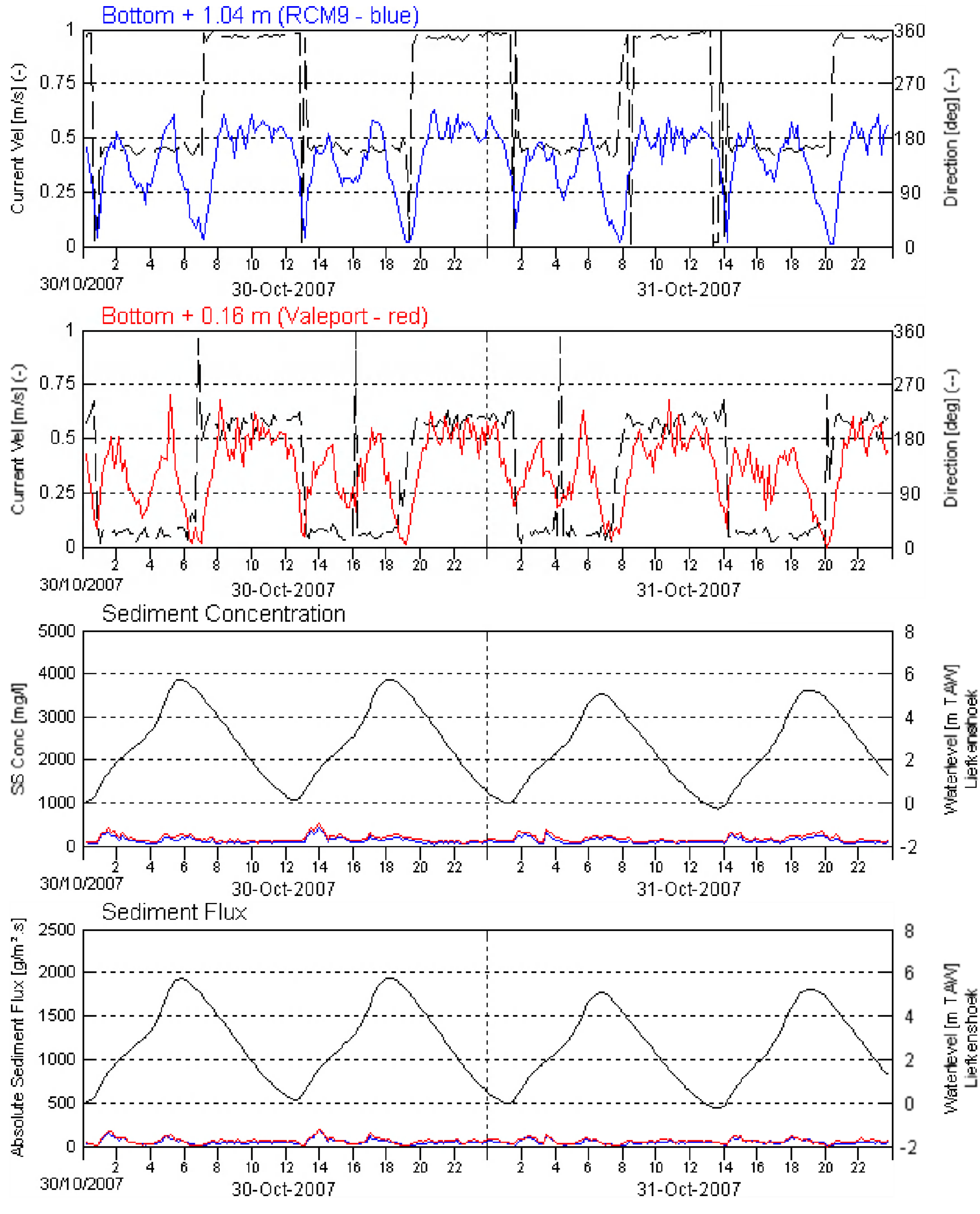
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok CDW	Date: 26/10/2007– 27/10/2007	In association with: WL delft hydraulics, GEMS International I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



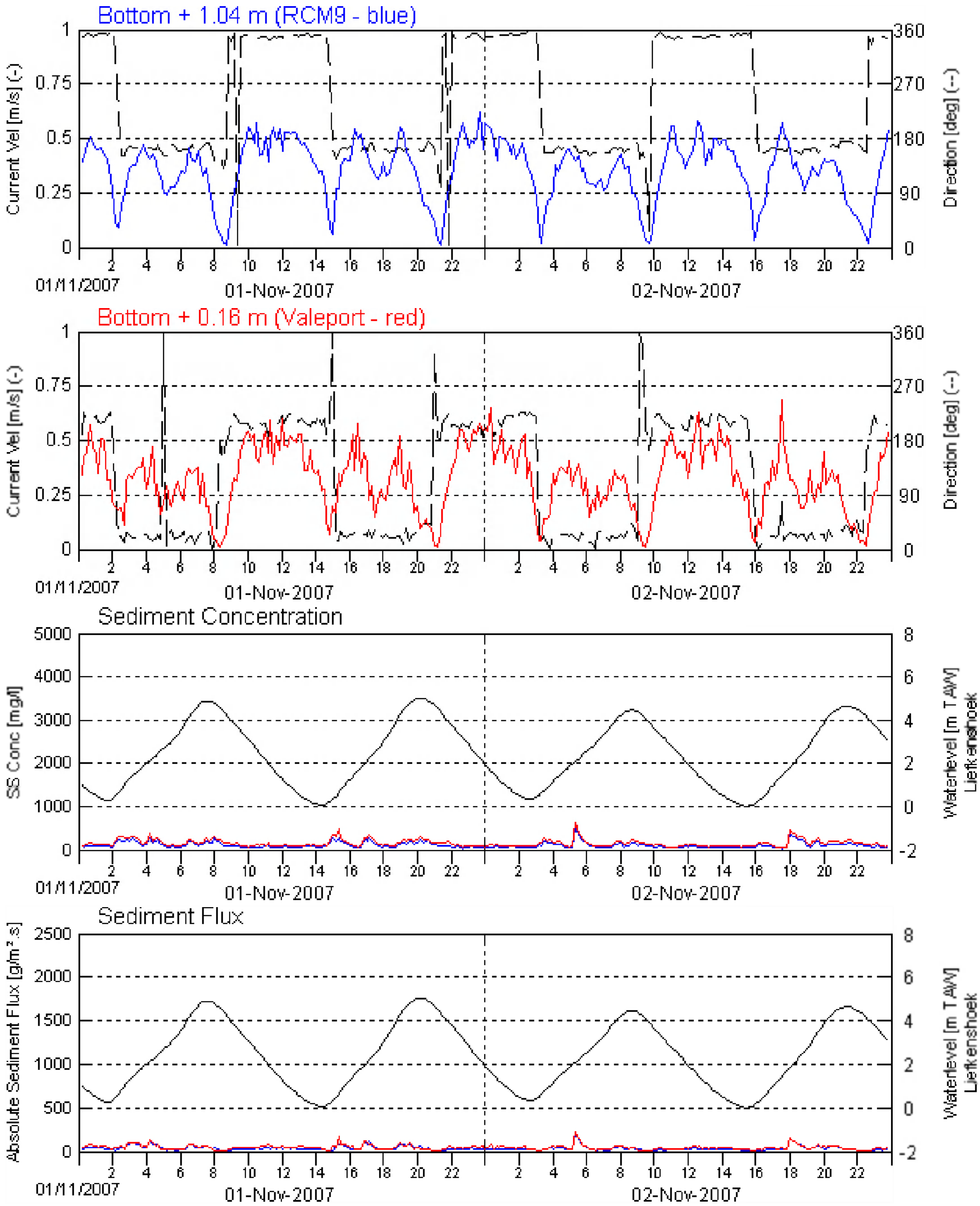
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		*Data processed by:* IMDC
Location: Deurganckdok CDW	Date: 28/10/2007– 29/10/2007	*In association with:* WL | delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



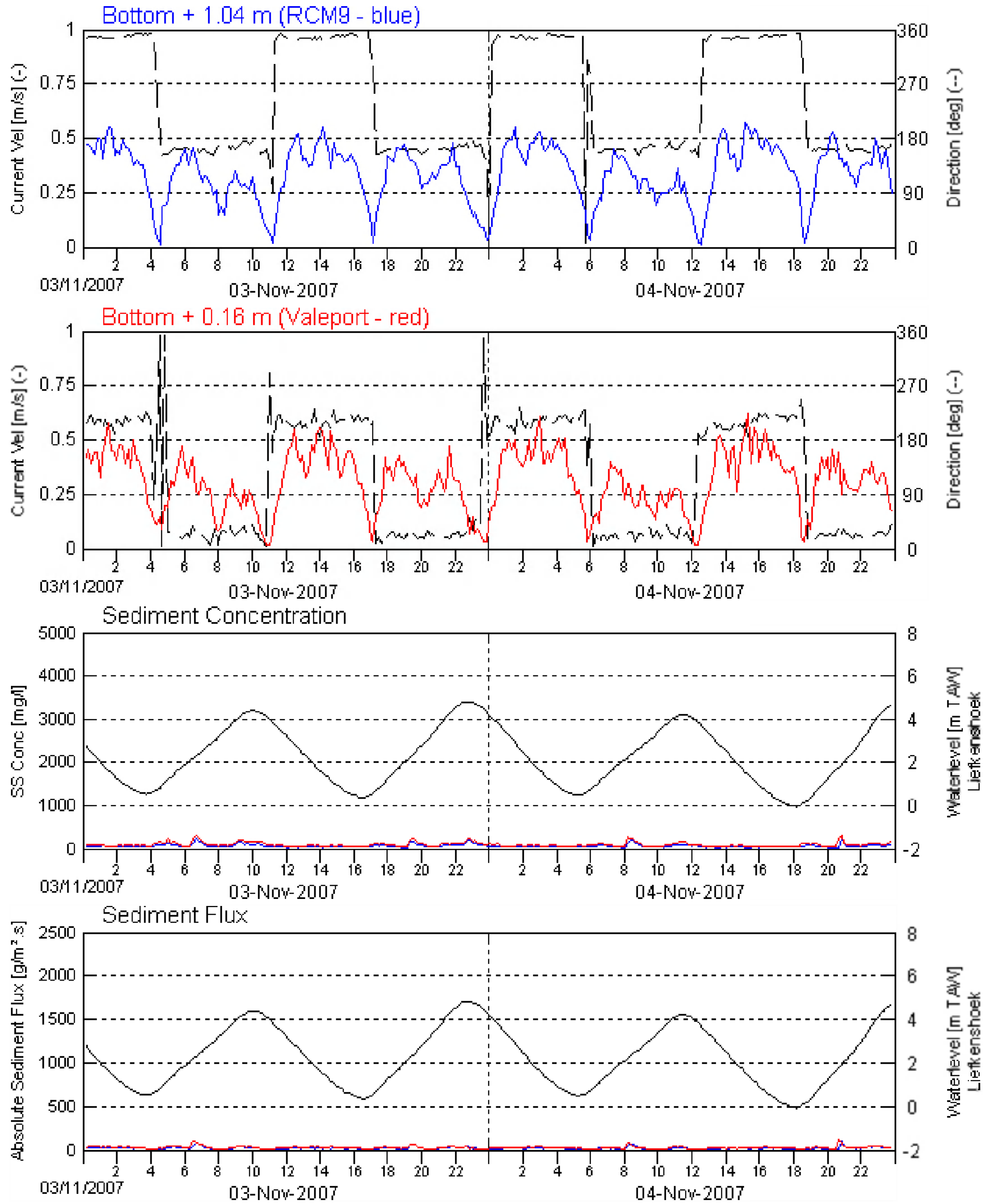
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok CDW	Date: 30/10/2007– 31/10/2007	In association with: WL delft hydraulics, GEMS International I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok CDW	Date: 01/11/2007– 02/11/2007	In association with: WL delft hydraulics, GEMS International I/RA/11283/07.093/MSA

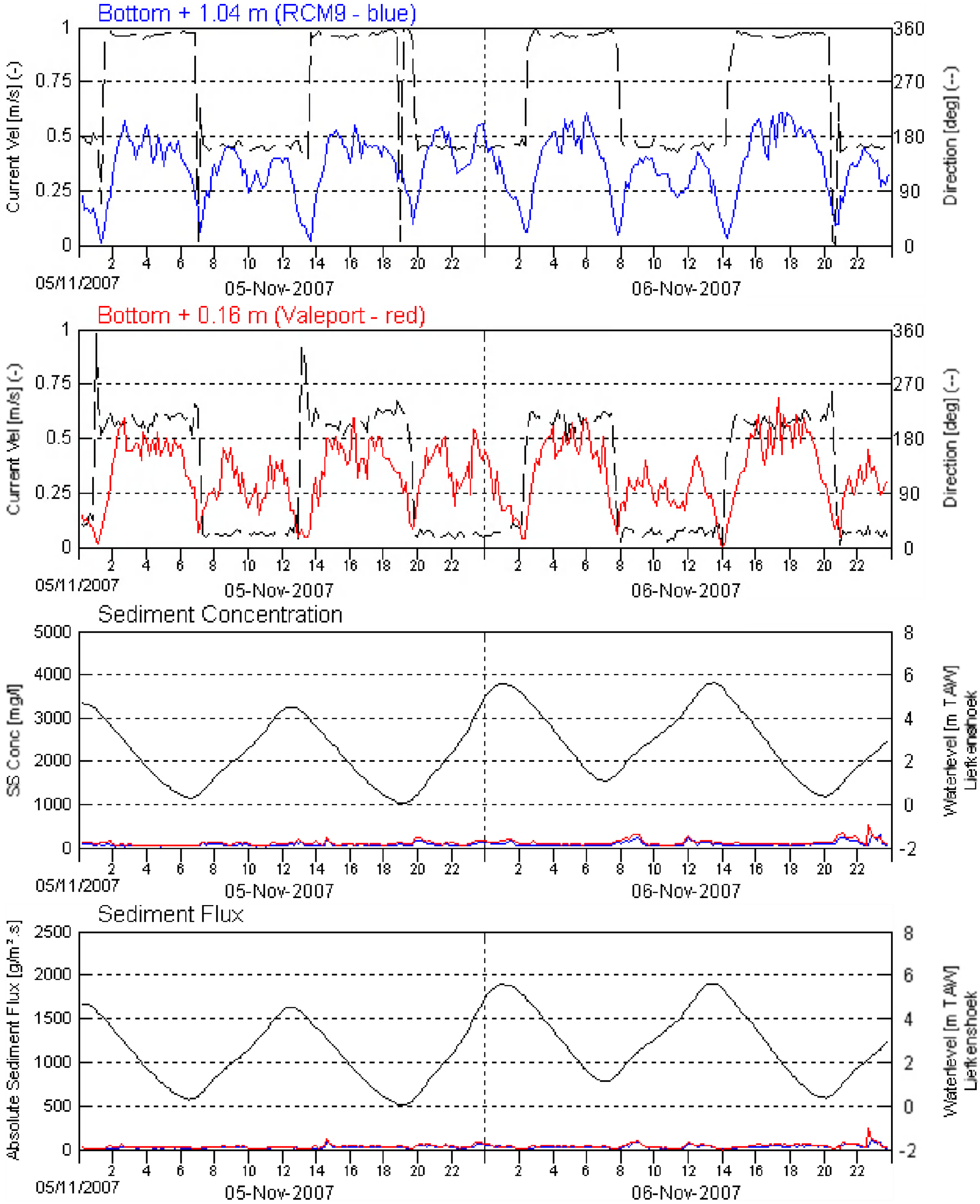
11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok CDW	Date: 03/11/2007– 04/11/2007	In association with: WL delft hydraulics, GEMS International

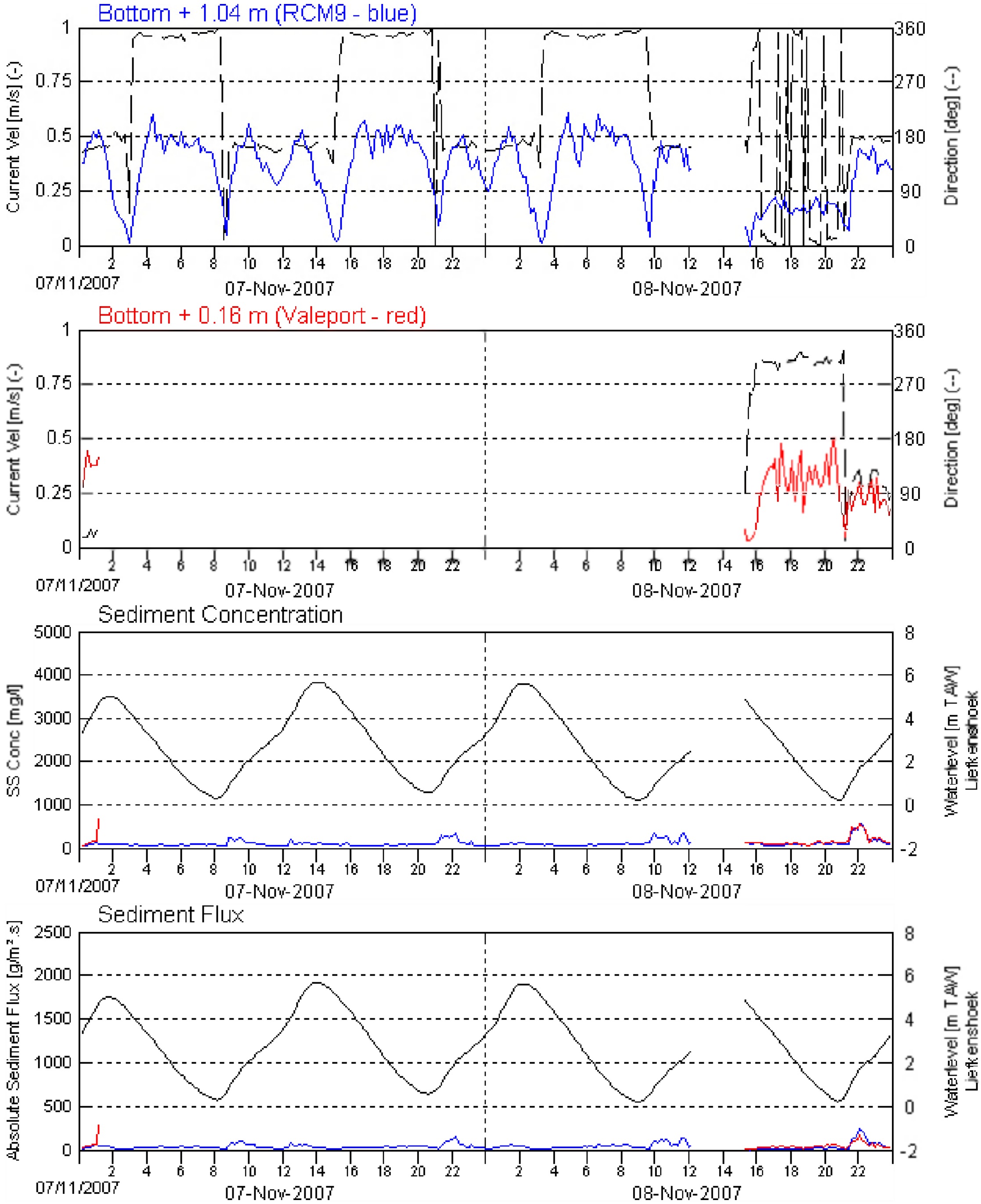
I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



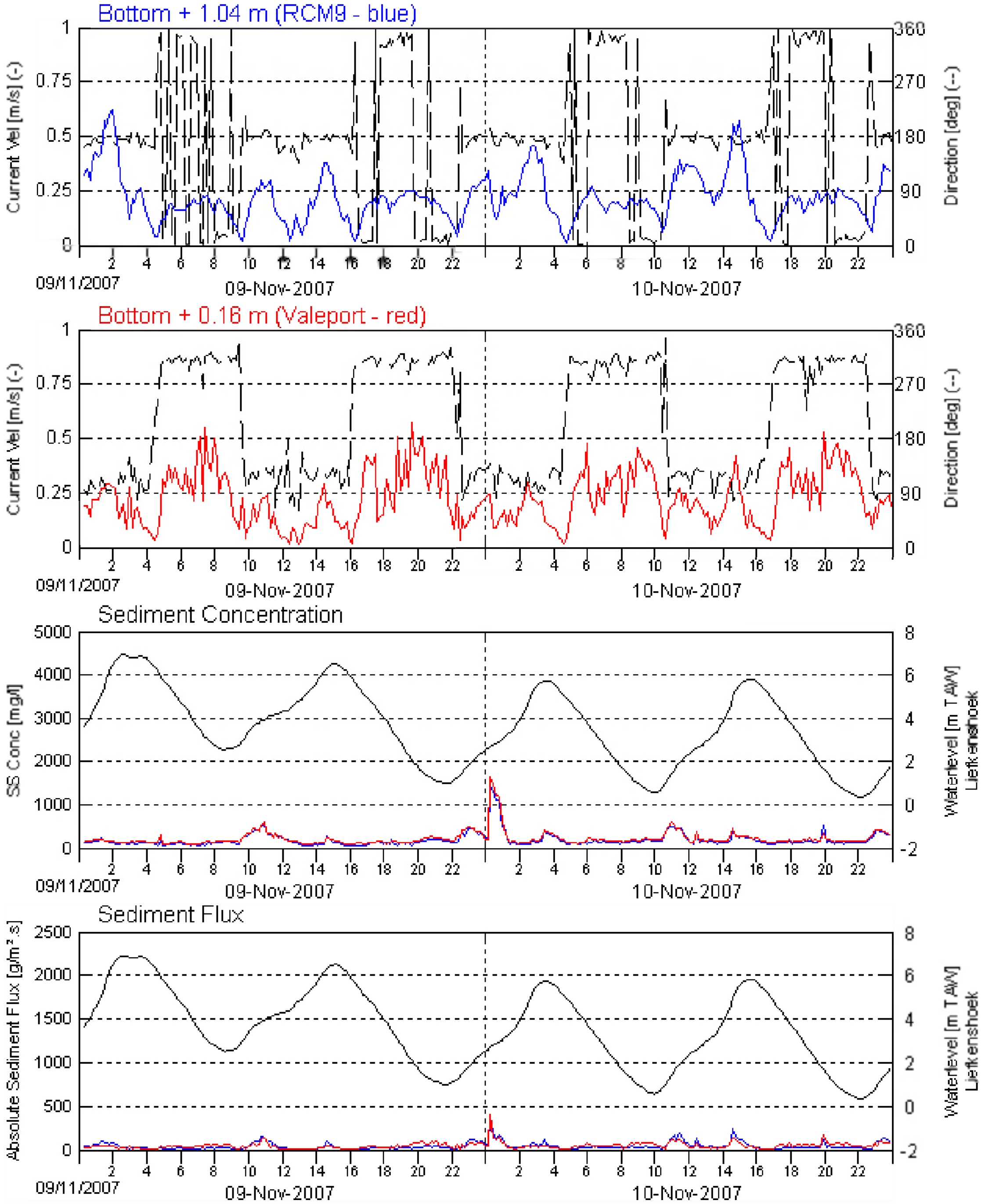
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel	*Data processed by:* IMDC
Location: Deurganckdok CDW / Date: 05/11/2007– 06/11/2007	*In association with:* WL delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



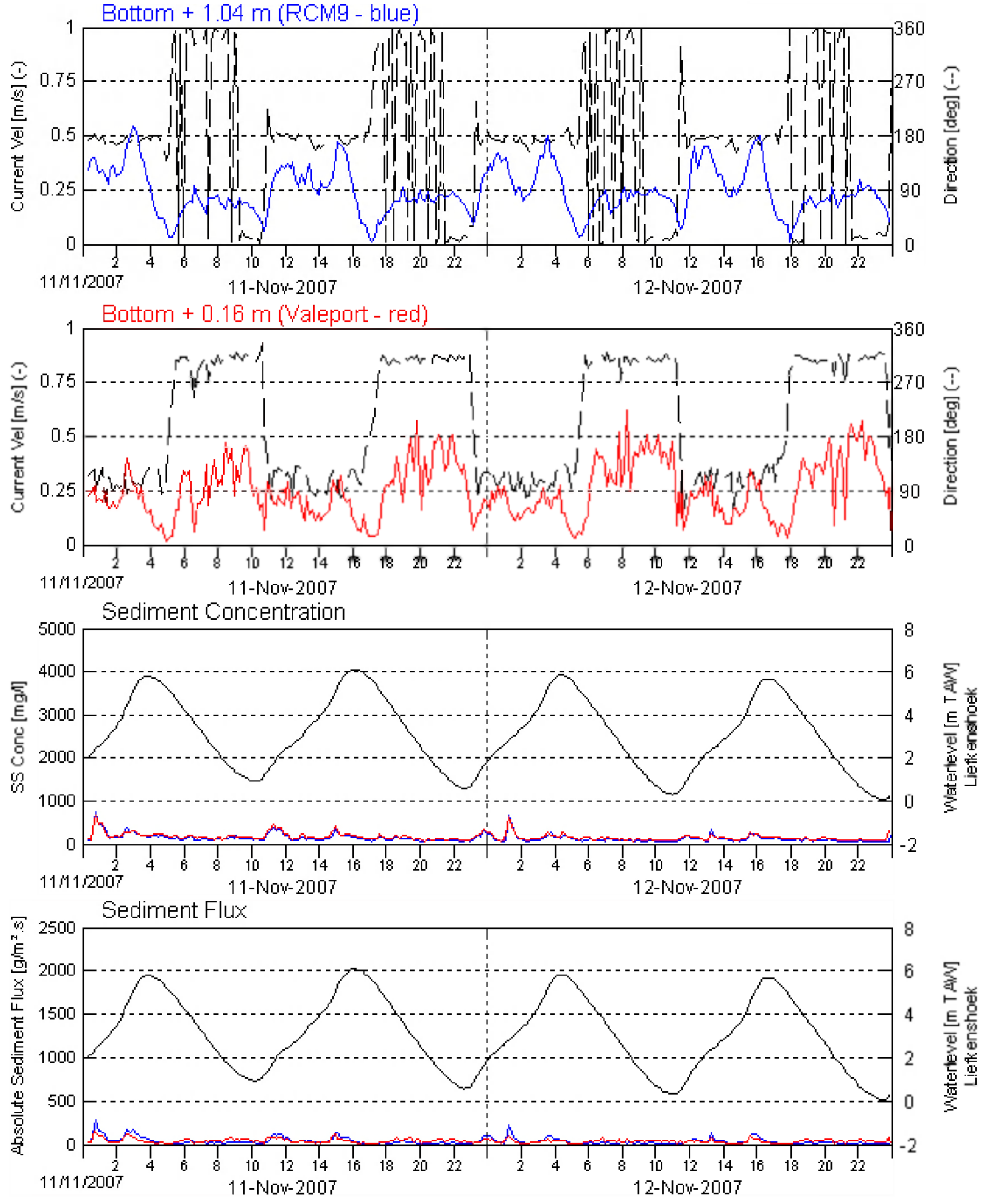
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok CDW	Date: 07/11/2007– 08/11/2007	In association with: WL delft hydraulics, GEMS International I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



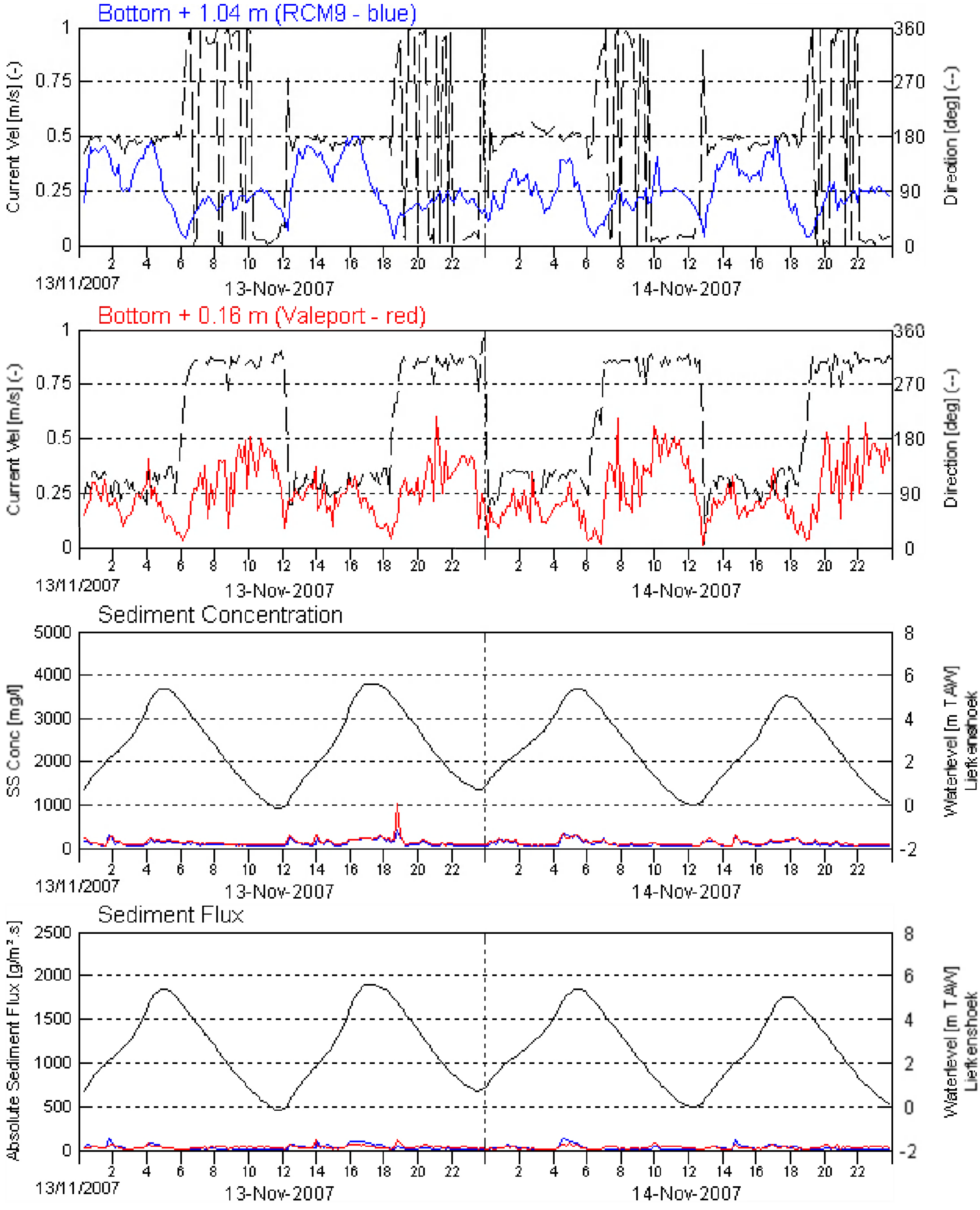
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok CDW	Date: 09/11/2007– 10/11/2007	In association with: WL delft hydraulics, GEMS International I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok CDW	Date: 11/11/2007– 12/11/2007	In association with: WL delft hydraulics, GEMS International
		I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel

Data processed by: IMDC

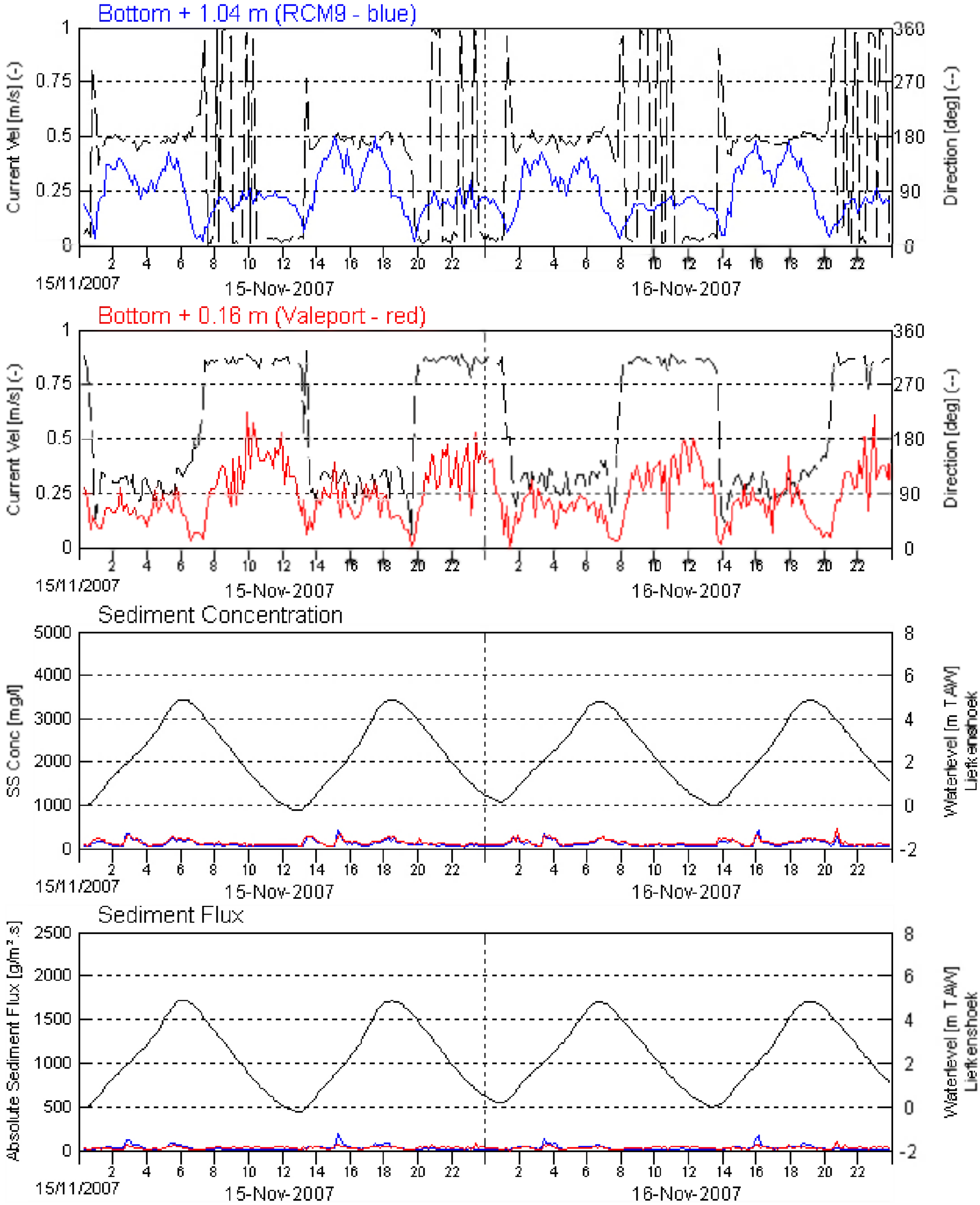
In association with: WL | delft hydraulics, GEMS International

Location: Deurganckdok CDW

Date: 13/11/2007– 14/11/2007

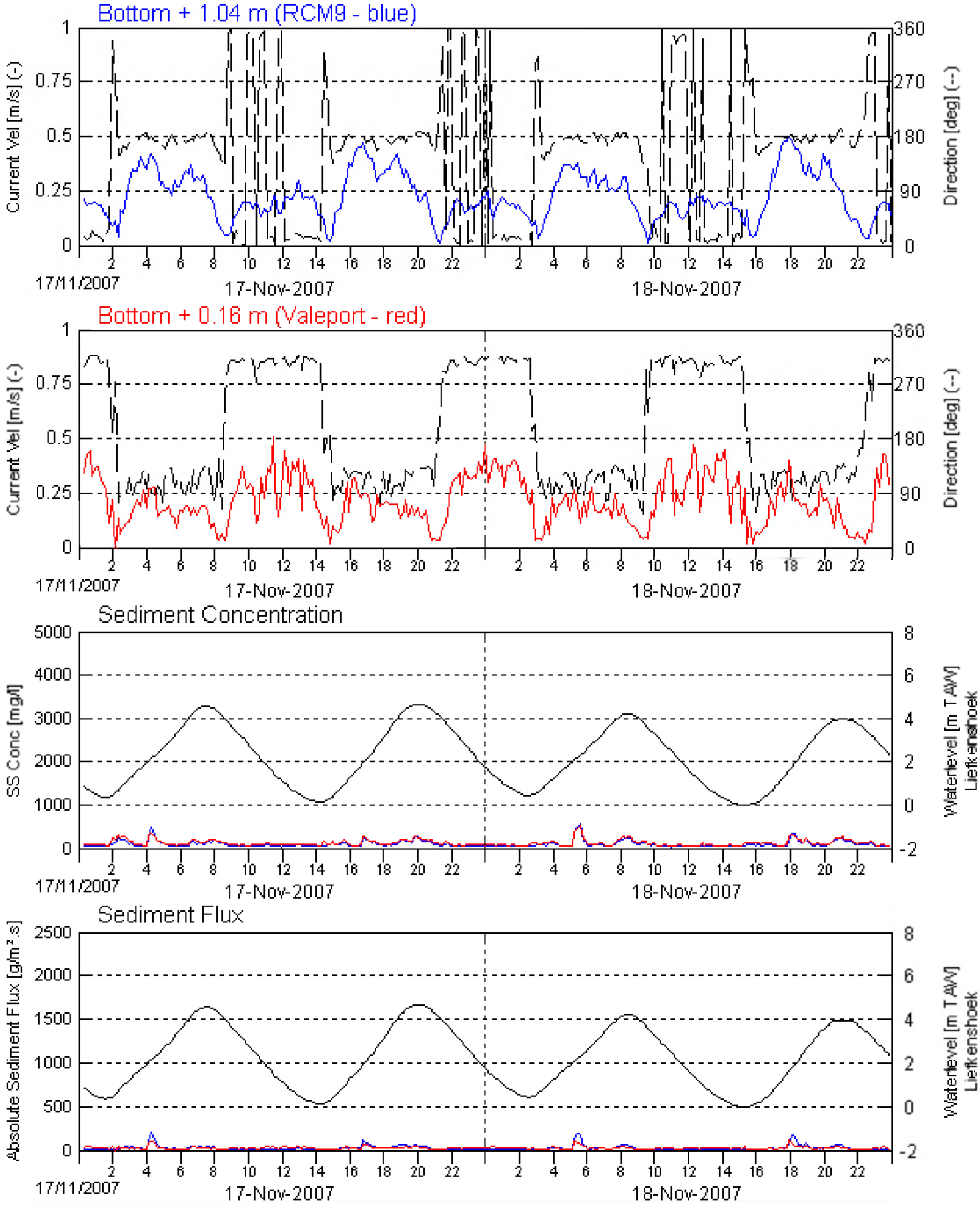
I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



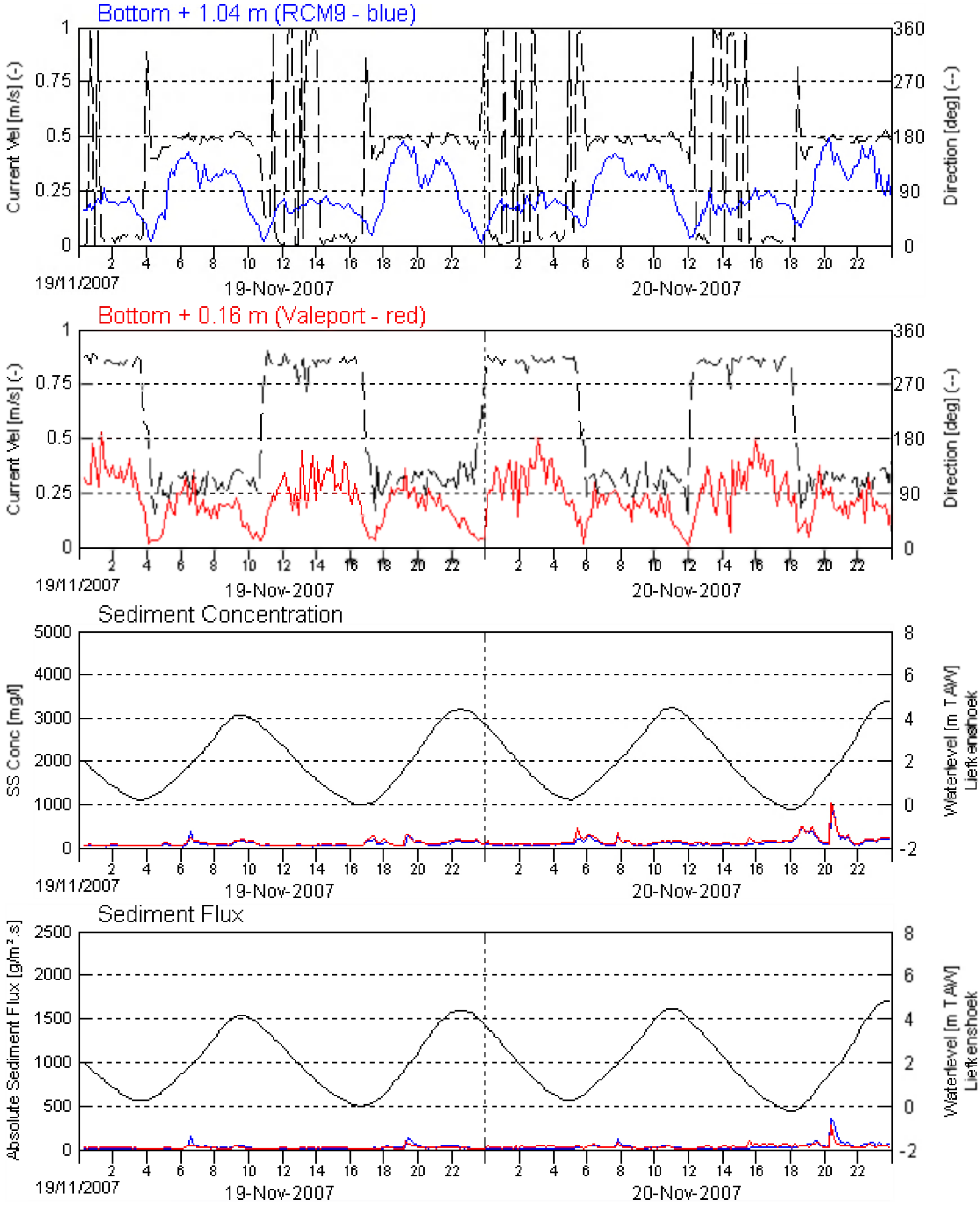
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		*Data processed by:* IMDC
Location: Deurganckdok CDW	Date: 15/11/2007– 16/11/2007	*In association with:* WL | delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



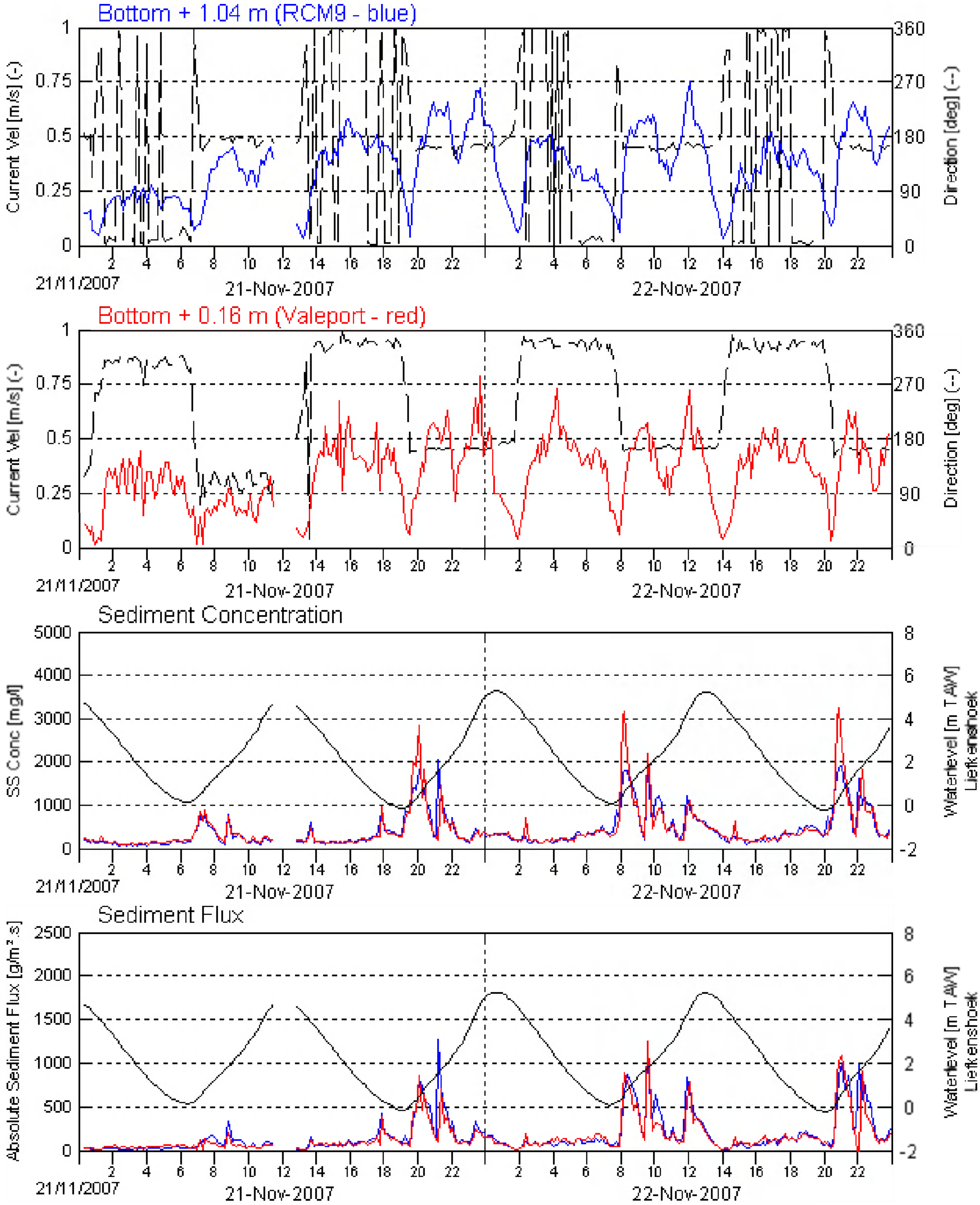
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		*Data processed by:* IMDC
Location: Deurganckdok CDW	Date: 17/11/2007– 18/11/2007	*In association with:* WL | delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



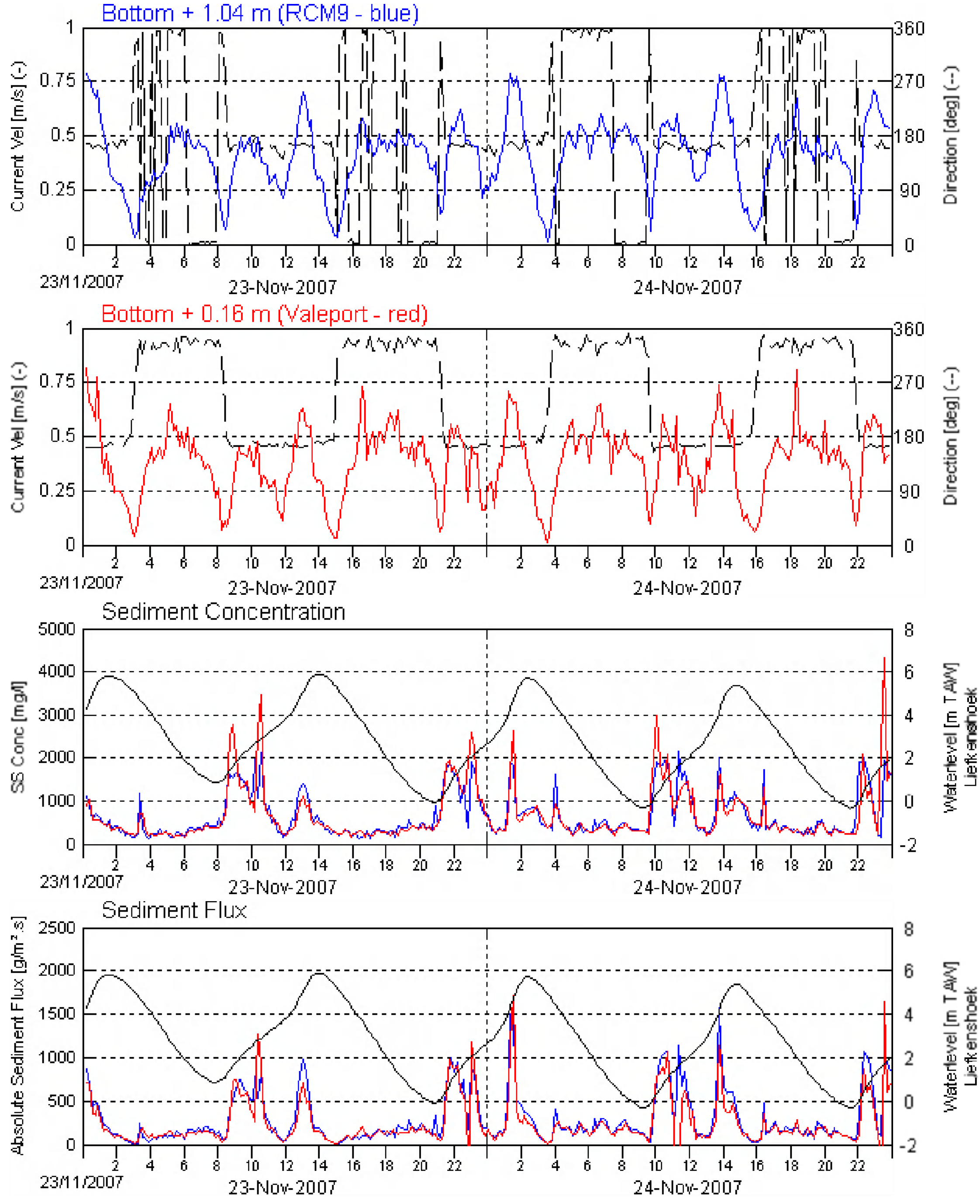
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok CDW	Date: 19/11/2007– 20/11/2007	In association with: WL delft hydraulics, GEMS International I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



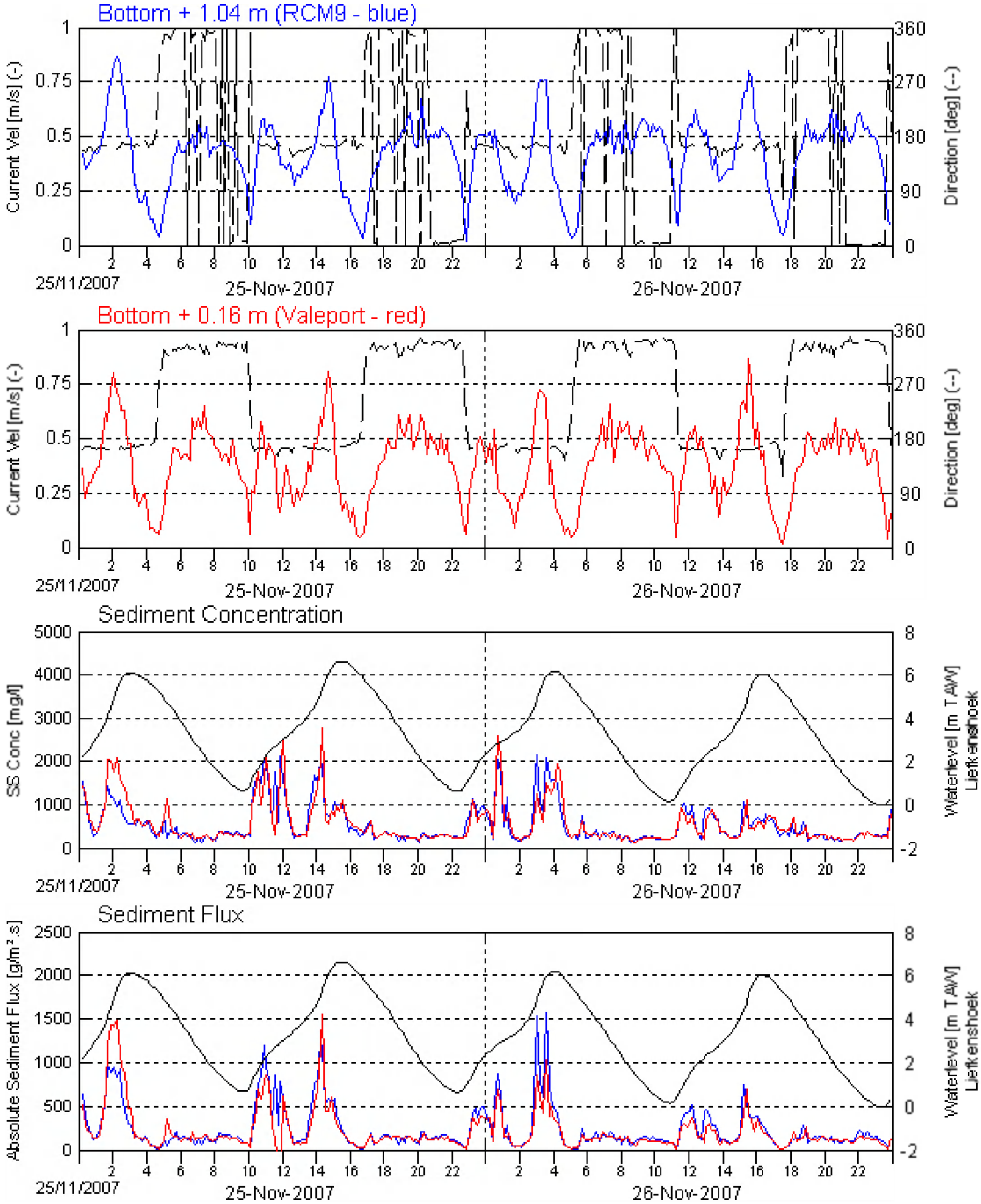
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok CDW	Date: 21/11/2007– 22/11/2007	In association with: WL | delft hydraulics, GEMS International
		I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



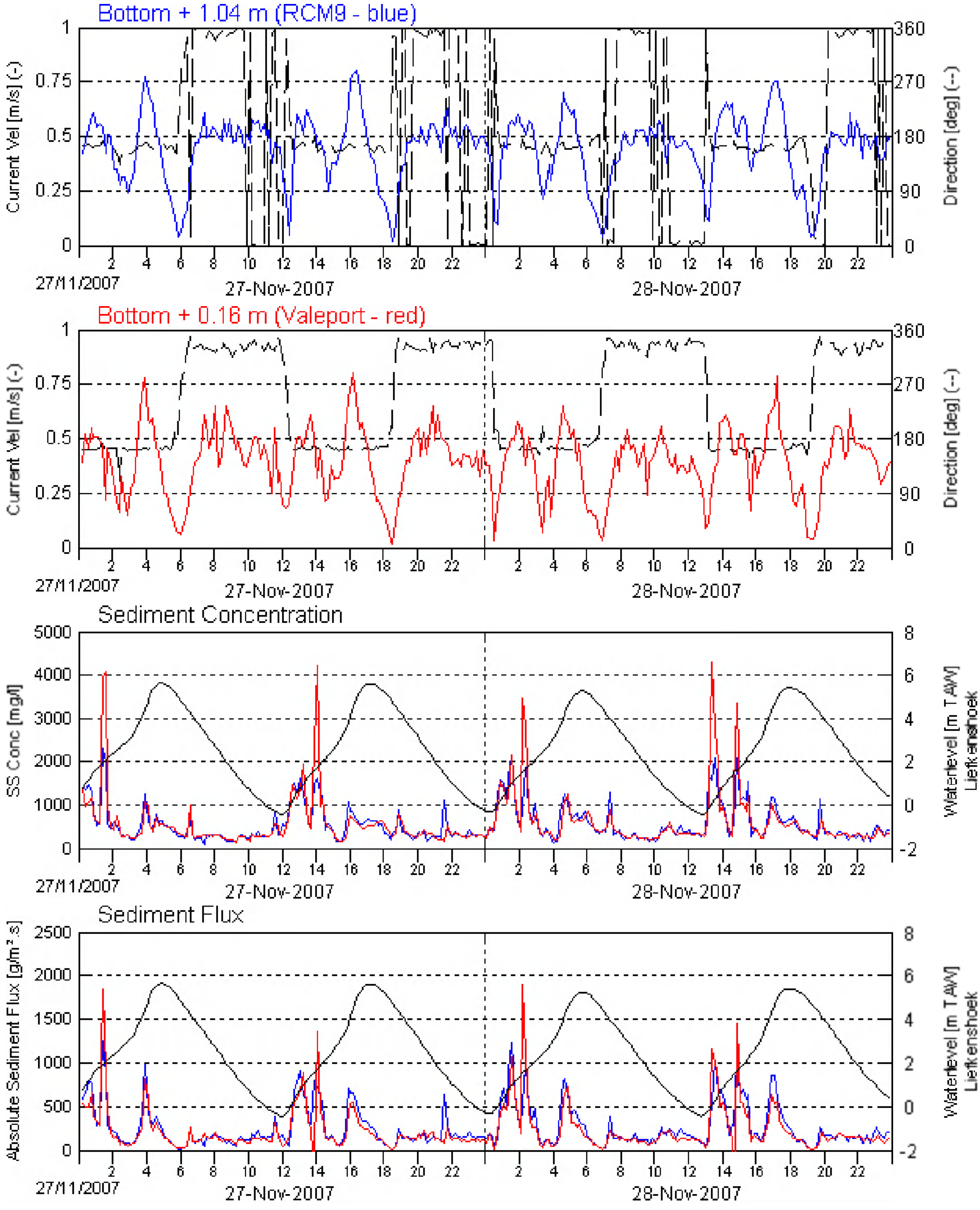
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok CDW	Date: 23/11/2007– 24/11/2007	In association with: WL | delft hydraulics, GEMS International I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



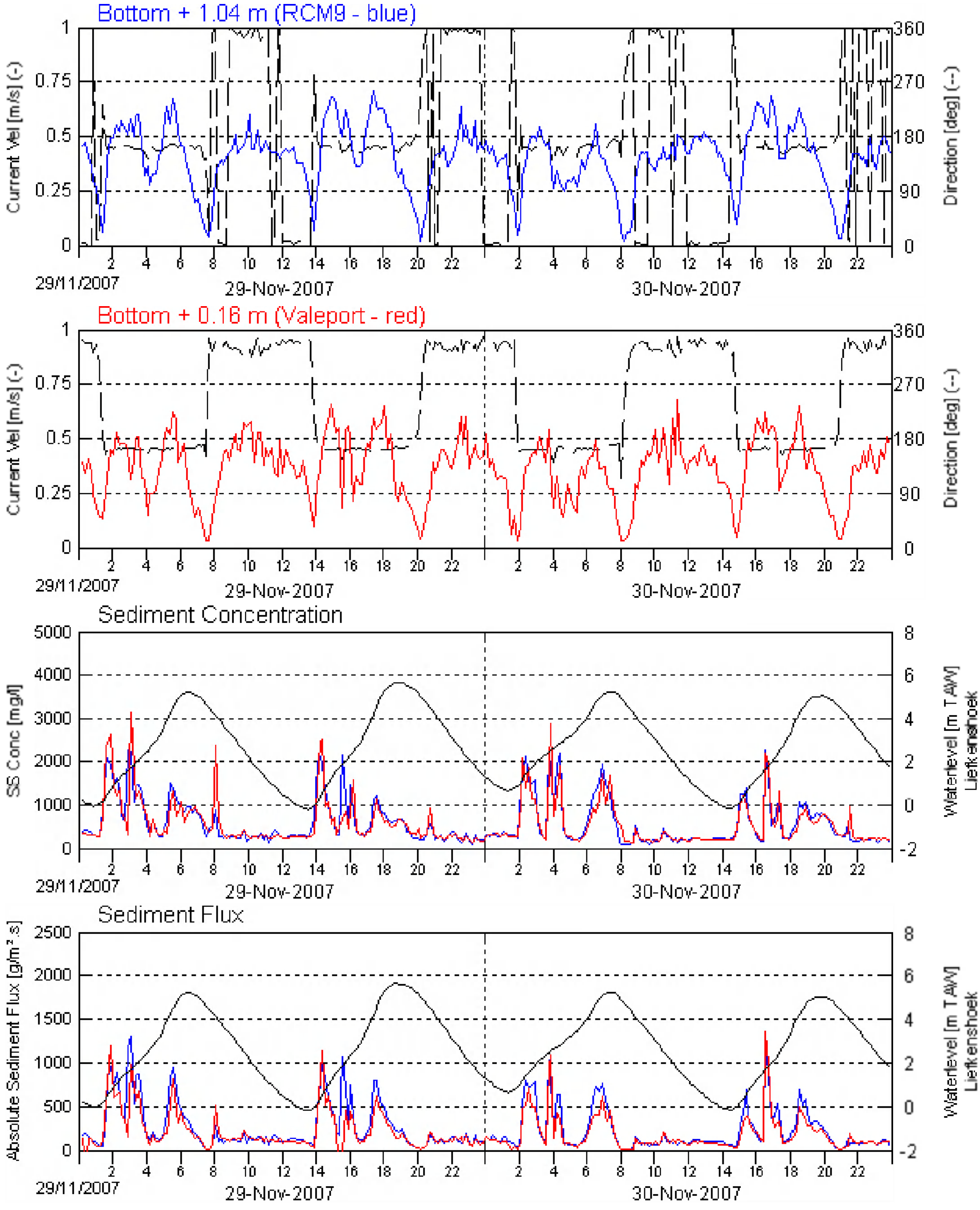
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok CDW	Date: 25/11/2007– 26/11/2007	In association with: WL delft hydraulics, GEMS International I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



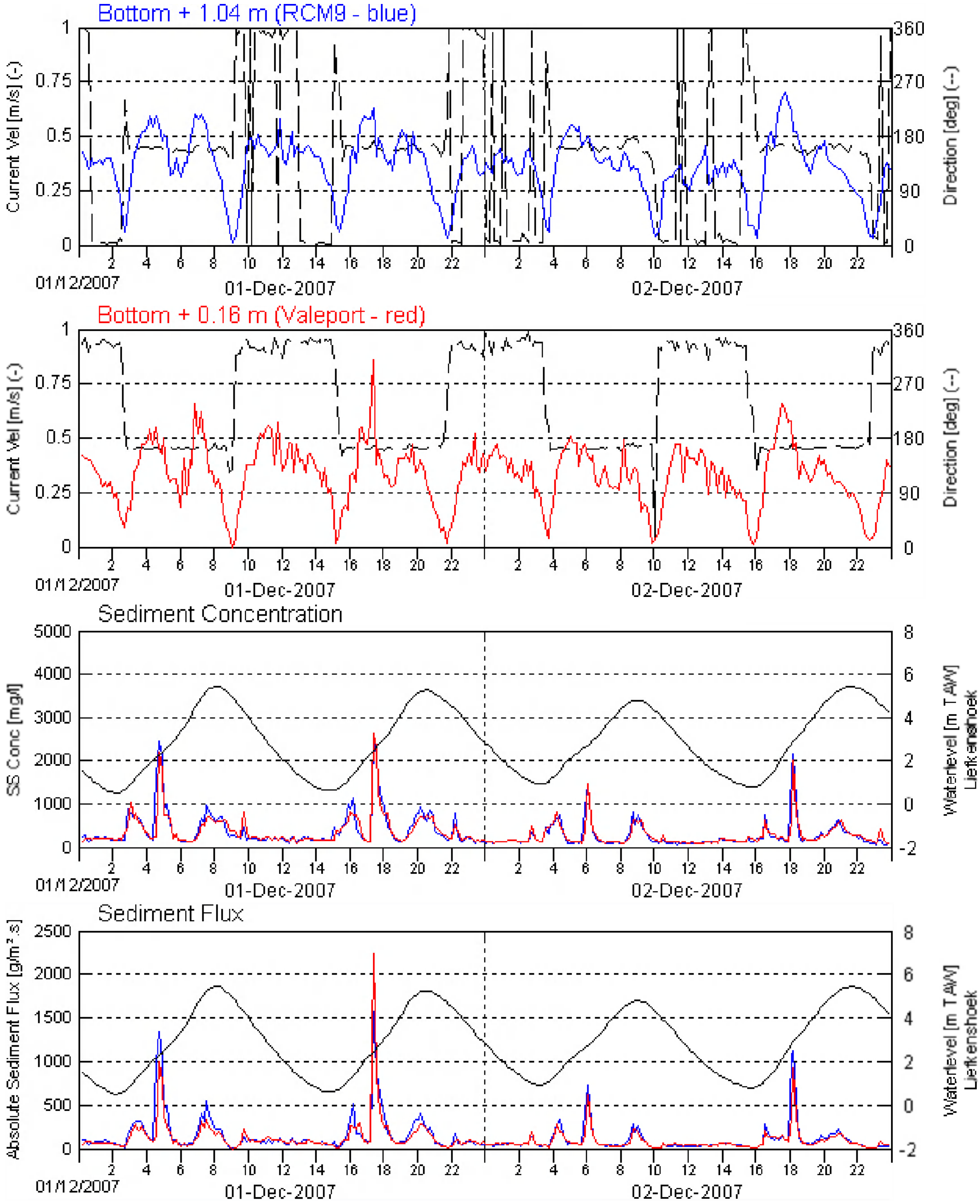
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		*Data processed by:* IMDC
Location: Deurganckdok CDW	Date: 27/11/2007– 28/11/2007	*In association with:* WL | delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



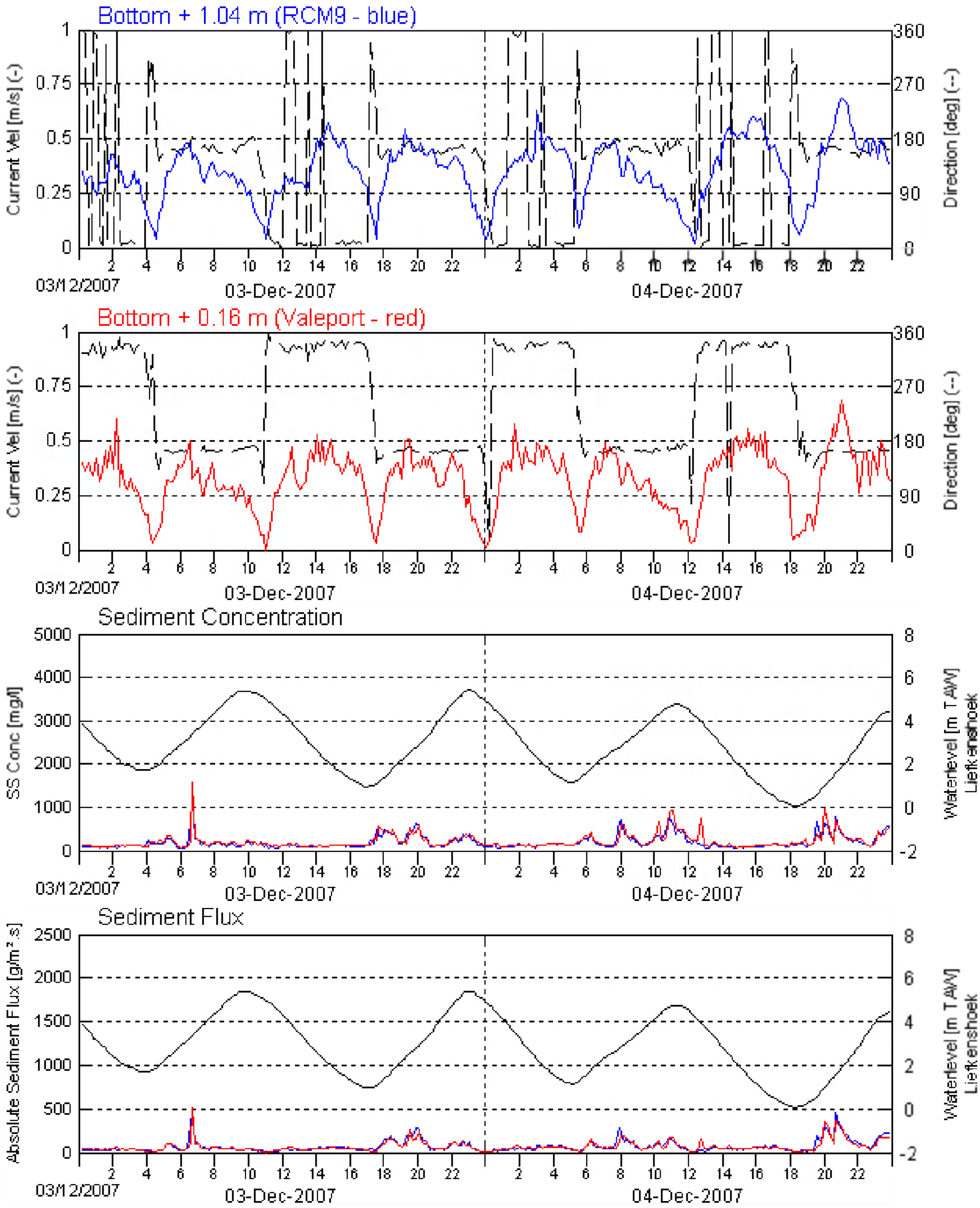
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok CDW	Date: 29/11/2007– 30/11/2007	In association with: WL delft hydraulics, GEMS International I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



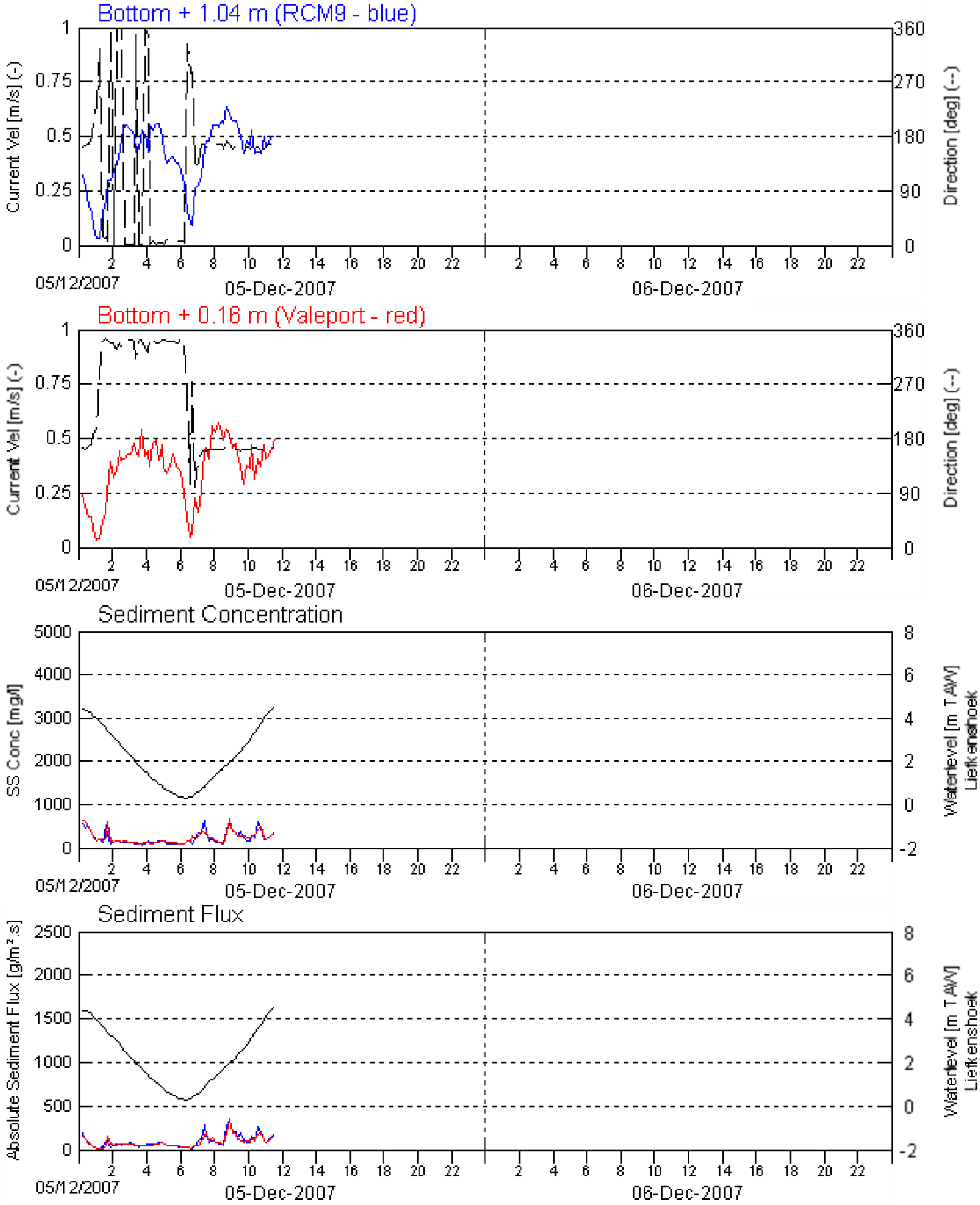
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok CDW	Date: 01/12/2007– 02/12/2007	In association with: WL delft hydraulics, GEMS International
		I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok CDW	Date: 03/12/2007– 04/12/2007	In association with: WL | delft hydraulics, GEMS International I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		*Data processed by:* IMDC
Location: Deurganckdok CDW	Date: 05/12/2007	*In association with:* WL delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

RCM9 & VALEPORT AVERAGES FOR EVERY TIDAL PHASE												
Date	Tide no.	Phase	Tidal Diff	UP Velocity (RCM9) Bottom +1.0m		DOWN Velocity (Valeport) Bottom +0.1m		SS Concentration [mg/l]		SS Flux [g/m²s]	
			[m]	Magnitude [m/s]	Direction [°]	Magnitude [m/s]	Direction [°]	UP (RCM9)	DOWN (Valeport)	UP (RCM9)	DOWN (Valeport)
20070926	1	flood	1	0.4	155.4	0.5	217.1	175.7	191	67.2	93.1
20070926	1	ebb	5.9	0.5	192.2	0.4	131.3	62.9	91.1	26.9	34
20070927	2	flood	6.1	0.4	141.3	0.5	208.4	117.3	146.8	46.7	77.6
20070927	2	ebb	6	0.5	202.1	0.4	136.3	93.8	126.7	34.6	46.8
20070927	3	flood	5.7	0.3	140.6	0.5	204.2	163.6	209.3	61.1	107.1
20070927	3	ebb	6.1	0.5	209.1	0.4	131.8	77.2	106.1	29.7	39.5
20070928	4	flood	6.5	0.4	138.6	0.5	207.7	116.4	150.7	49.9	85
20070928	4	ebb	6	0.4	180.3	0.4	137.5	107.9	149.3	42.1	58.8
20070928	5	flood	5.9	0.3	153.4	0.5	206.5	208.4	238.8	81.1	125.1
20070928	5	ebb	6.5	0.5	186.1	0.4	133.2	104.3	133.7	39.1	51.4
20070929	6	flood	6.6	0.4	139.9	0.5	208.8	162.3	205	78.5	117.8
20070929	6	ebb	6.2	0.5	180	0.4	137.9	136.9	172.3	53.4	65.9
20070929	7	flood	6.2	0.4	147	0.5	209.4	185.6	224.8	76.1	121.2
20070930	7	ebb	6.4	0.5	187.6	0.4	135.3	111.6	138.3	45.1	54.2
20070930	8	flood	6.3	0.4	141.7	0.5	208.7	148.3	191.9	66.6	105.4
20070930	8	ebb	6.1	0.5	189.4	0.4	137.1	114.5	147.1	44.1	57.6
20070930	9	flood	5.9	0.4	142	0.5	206.3	140.2	178.4	57.1	91.4
20071001	9	ebb	6.3	0.5	190.1	0.4	132.4	95	128.1	35.6	49.4
20071001	10	flood	5.9	0.4	146.2	0.5	206.7	102.4	140.8	42.6	72.1
20071001	10	ebb	5.8	0.4	186.3	0.4	137.7	123.3	164.4	41.8	60.7
20071001	11	flood	5.9	0.4	141.4	0.5	204.6	145.3	181.3	56.7	90
20071002	11	ebb	5.8	0.5	221.3	0.4	134.1	93.6	132.2	34.2	48.3
20071002	12	flood	5.5	0.3	151.1	0.5	204.7	90.3	133.2	31	60.6
20071002	12	ebb	5.3	0.4	206.8	0.4	133.6	81.1	114.5	31.1	41.5

RCM9 & VALEPORT AVERAGES FOR EVERY TIDAL PHASE

Date	Tide no.	Phase	Tidal Diff	UP Velocity (RCM9) Bottom +1.0m		DOWN Velocity (Valeport) Bottom +0.1m		SS Concentration [mg/l]		SS Flux [g/m²s]	
			[m]	Magnitude [m/s]	Direction [°]	Magnitude [m/s]	Direction [°]	UP (RCM9)	DOWN (Valeport)	UP (RCM9)	DOWN (Valeport)
20071002	13	flood	5.3	0.3	149.9	0.5	208.8	118.8	158.7	40.8	74.1
20071003	13	ebb	5.3	0.4	149.1	0.4	134.8	85.2	120.6	30.5	44.5
20071003	14	flood	4.9	0.3	138.9	0.4	204	120.9	155.6	37.8	68.8
20071003	14	ebb	4.8	0.4	178.9	0.4	130.2	87.5	124.6	30.7	45.2
20071003	15	flood	4.9	0.3	140.4	0.4	205.2	131.5	174.4	40.7	75.4
20071004	15	ebb	4.7	0.4	153.4	0.4	135.8	97.8	141.9	31.9	51.5
20071004	16	flood	4.2	0.3	144.1	0.4	200.7	93.2	122	27.1	51.9
20071004	16	ebb	4.1	0.4	171.3	0.4	137.5	70.3	97.3	22	34
20071004	17	flood	4.4	0.3	146.5	0.4	202.5	102.4	146.2	26.9	58.5
20071005	17	ebb	4.1	0.4	141.1	0.4	138.2	62.7	90.9	19.4	31.6
20071005	18	flood	3.5	0.2	159.8	0.4	201.5	84.3	114.5	18	43.7
20071005	18	ebb	3.9	0.4	157	0.4	137.6	44.3	63.6	15	22.3
20071005	19	flood	4.3	0.2	154.9	0.4	203.9	91.9	132.5	22.8	52
20071006	19	ebb	4.1	0.4	144.1	0.3	137.7	51.9	75.1	16.9	25
20071006	20	flood	3.8	0.3	153.6	0.4	203.2	77.6	115.1	20.4	45.9
20071006	20	ebb	4.2	0.4	161.5	0.4	136.2	41.3	61.5	15.7	21.6
20071007	21	flood	4.7	0.3	143.5	0.4	206.3	78.1	117.8	21.2	48.6
20071007	21	ebb	4.4	0.4	137.2	0.4	138.5	53	76.3	19.1	26.5
20071007	22	flood	4.4	0.3	128.6	0.4	204.9	79	114.8	21.5	47.5
20071007	22	ebb	4.7	0.4	157.4	0.4	134.3	55.1	81.7	19.3	28.6
20071008	23	flood	5.2	0.3	135.5	0.5	208.9	79.3	103.4	25.2	46.9
20071008	23	ebb	4.9	0.4	130.5	0.4	138.2	53.6	77.9	20.4	28.1
20071008	24	flood	4.7	0.3	140	0.4	209.2	76.5	118.7	22.1	51
20071008	24	ebb	5.2	0.4	191.2	0.4	131.4	64	93.4	23.9	32.8

RCM9 & VALEPORT AVERAGES FOR EVERY TIDAL PHASE

Date	Tide no.	Phase	Tidal Diff	UP Velocity (RCM9) Bottom +1.0m		DOWN Velocity (Valeport) Bottom +0.1m		SS Concentration [mg/l]		SS Flux [g/m²s]	
			[m]	Magnitude [m/s]	Direction [°]	Magnitude [m/s]	Direction [°]	UP (RCM9)	DOWN (Valeport)	UP (RCM9)	DOWN (Valeport)
20071009	25	flood	5.4	0.3	138.1	0.5	211.7	66.5	97	23	47.3
20071009	25	ebb	5.1	0.4	162.8	0.4	140	62.1	88.3	22.5	30.3
20071009	26	flood	5	0.3	135.8	0.5	209.7	72.7	110.4	22.8	50.3
20071009	26	ebb	5.3	0.4	162.3	0.4	136.6	61.6	88.1	22.4	30.5
20071010	27	flood	5.7	0.4	142.3	0.5	210.4	87.1	117.3	31.5	59.8
20071010	27	ebb	5.3	0.4	218.2	0.4	136.6	73.3	106.5	26.1	37.5
20071010	28	flood	5.2	0.3	130.7	0.4	205.2	95.7	132.3	30.4	55.9
20071010	28	ebb	5.6	0.5	202.4	0.4	131.6	61.2	87.4	25.9	30.8
20071011	29	flood	5.7	0.3	134.7	0.5	210.5	97.7	130	34.3	66
20071011	29	ebb	5.5	0.5	211.8	0.4	132.9	82	119	31.3	42.7
20071011	30	flood	5.4	0.3	140.1	0.5	207.6	109.7	147.4	38.2	68.3
20071011	30	ebb	5.4	0.4	230.8	0.4	134.1	80.2	114.5	30.6	40.3
20071012	31	flood	5.8	0.4	140.6	0.4	197	114.8	177.9	42.2	77
20071012	31	ebb	5.4	0.4	212.7	-	-	94.5	-	33.8	-
20071012	32	flood	5.3	0.3	132.4	-	-	122.8	-	41	-
20071012	32	ebb	5.8	0.5	168.6	-	-	72.7	-	30.3	-
20071013	33	flood	5.6	0.4	136	-	-	95.5	-	34.8	-
20071013	33	ebb	5.6	0.4	176.9	-	-	86.9	-	30.8	-
20071013	34	flood	5.5	0.3	146.3	-	-	105.2	-	36.1	-
20071013	34	ebb	5.6	0.4	203.7	-	-	74.4	-	27	-
20071014	35	flood	5.5	0.3	138.2	-	-	90.1	-	31.4	-
20071014	35	ebb	5.3	0.4	206.9	-	-	76.3	-	27.8	-
20071014	36	flood	5.5	0.3	135.4	-	-	96.9	-	33.6	-
20071014	36	ebb	5.4	0.4	188.1	-	-	70.8	-	25.4	-

RCM9 & VALEPORT AVERAGES FOR EVERY TIDAL PHASE

Date	Tide no.	Phase	Tidal Diff	UP Velocity (RCM9) Bottom +1.0m		DOWN Velocity (Valeport) Bottom +0.1m		SS Concentration [mg/l]		SS Flux [g/m²s]	
			[m]	Magnitude [m/s]	Direction [°]	Magnitude [m/s]	Direction [°]	UP (RCM9)	DOWN (Valeport)	UP (RCM9)	DOWN (Valeport)
20071015	37	flood	5.4	0.4	134.4	-	-	76.5	-	27.7	-
20071015	37	ebb	5.2	0.4	225.2	-	-	76.3	-	27.7	-
20071015	38	flood	5.3	0.3	135.5	-	-	101.2	-	34.9	-
20071016	38	ebb	5.3	0.4	207.3	-	-	69.3	-	24.5	-
20071016	39	flood	5.1	0.4	139.1	-	-	77	-	29.5	-
20071016	39	ebb	4.9	0.4	211.7	-	-	59.5	-	21.1	-
20071016	40	flood	5	0.4	140.2	-	-	78.5	-	27.8	-
20071017	40	ebb	5	0.4	215.7	-	-	65.8	-	24.1	-
20071017	41	flood	5	0.3	144.8	-	-	83.9	-	28.9	-
20071017	41	ebb	4.3	0.4	228.9	0.1	318.8	74.2	168.6	23.3	11.8
20071017	42	flood	4.2	0.4	162.2	0.3	22.3	103.4	142.4	36.7	41.5
20071018	42	ebb	4.5	0.4	304	0.4	186.7	66.1	93.8	22.2	31.1
20071018	43	flood	4.2	0.3	160.9	0.3	50.5	70.5	100.2	21.9	25.8
20071018	43	ebb	4.5	0.4	304.8	0.4	182	55.1	82.1	20	28.2
20071018	44	flood	4.3	0.3	147.1	0.3	51.8	75	108.3	23.8	28.9
20071019	44	ebb	4.4	0.4	302.8	0.4	184.3	51.4	76.7	17.4	26.5
20071019	45	flood	4	0.3	163.3	0.3	54.6	71.7	100.8	22.4	26.1
20071019	45	ebb	4.1	0.4	280.2	0.3	187.8	49.2	74.6	16.4	22.6
20071019	46	flood	4.1	0.3	166.3	0.3	48.2	78	115	23.5	28.8
20071020	46	ebb	3.9	0.3	292.5	0.3	182.6	45.1	70.8	14.3	21.9
20071020	47	flood	3.5	0.3	155.7	0.2	51.2	61.6	97.1	16.8	21
20071020	47	ebb	3.6	0.3	307.9	0.3	171.4	40.3	61.4	12.4	17.4
20071020	48	flood	3.8	0.3	156.7	0.3	49.5	61.4	94.2	18.8	24.2
20071021	48	ebb	3.6	0.3	314.9	0.3	185.7	38.5	58.7	11.4	16.5

RCM9 & VALEPORT AVERAGES FOR EVERY TIDAL PHASE

Date	Tide no.	Phase	Tidal Diff	UP Velocity (RCM9) Bottom +1.0m		DOWN Velocity (Valeport) Bottom +0.1m		SS Concentration [mg/l]		SS Flux [g/m²s]	
			[m]	Magnitude [m/s]	Direction [°]	Magnitude [m/s]	Direction [°]	UP (RCM9)	DOWN (Valeport)	UP (RCM9)	DOWN (Valeport)
20071021	49	flood	3.4	0.3	174.2	0.2	47.7	54.7	88.6	15.5	19.7
20071021	49	ebb	3.6	0.3	314.3	0.3	188.8	33.2	72.4	10.8	25.3
20071021	50	flood	4.1	0.3	179.1	0.3	34.8	50.9	82.2	15.4	22.4
20071022	50	ebb	4.2	0.4	301.9	0.4	176.1	34.6	54.1	12	18
20071022	51	flood	3.9	0.3	165.1	0.3	41.8	48.1	78	15.4	20.2
20071022	51	ebb	4.3	0.4	306.6	0.4	183.9	42	68.9	14.7	23.2
20071023	52	flood	4.9	0.4	168.9	0.3	38	67	112	21.4	30.2
20071023	52	ebb	4.7	0.4	312.8	0.4	147.3	42.5	70	14.8	23.3
20071023	53	flood	4.5	0.3	173.5	0.3	37	65.8	111.9	22.6	31.9
20071023	53	ebb	5	0.4	311	0.4	212.6	46.2	77.9	16.5	26.3
20071024	54	flood	5.3	0.4	180.6	0.3	50.9	75.4	120.8	28.6	39.8
20071024	54	ebb	5.1	0.4	315.1	0.4	208.2	55.5	118.1	20.6	45.9
20071024	55	flood	5.1	0.3	173.9	0.3	92.9	94.1	142	33.8	40.1
20071024	55	ebb	5.5	0.4	315	0.4	207.3	59.6	98.2	23.1	36.8
20071025	56	flood	5.8	0.4	162.8	0.4	88.1	110	162.7	46.7	59.4
20071025	56	ebb	5.5	0.4	310.1	0.4	174.2	80.1	126.1	29.7	45.6
20071025	57	flood	5.5	0.4	167.8	0.3	158.2	130	185.4	50	59.8
20071025	57	ebb	5.8	0.4	319.7	0.4	183	61.6	98.9	25.1	38.6
20071026	58	flood	6.2	0.4	180.7	0.4	83.9	149.3	210.1	64.5	78.4
20071026	58	ebb	5.9	0.4	307.1	0.4	170.4	89.4	135.7	33.6	48.8
20071026	59	flood	5.8	0.4	178.8	0.3	62.4	169.4	232.9	67.3	79.5
20071026	59	ebb	6.1	0.4	319.4	0.4	183.6	81	124.2	31.5	47.1
20071027	60	flood	6.4	0.5	180.3	0.4	72.1	147.5	203.3	72	89.2
20071027	60	ebb	5.9	0.4	311.2	0.4	183.4	114.1	166.2	42.5	59.4

RCM9 & VALEPORT AVERAGES FOR EVERY TIDAL PHASE											
Date	Tide no.	Phase	Tidal Diff	UP Velocity (RCM9) Bottom +1.0m		DOWN Velocity (Valeport) Bottom +0.1m		SS Concentration [mg/l]		SS Flux [g/m²s]	
			[m]	Magnitude [m/s]	Direction [°]	Magnitude [m/s]	Direction [°]	UP (RCM9)	DOWN (Valeport)	UP (RCM9)	DOWN (Valeport)
20071027	61	flood	5.9	0.4	168.3	0.3	57	186.5	254.2	78.6	92.4
20071027	61	ebb	6.3	0.4	317.6	0.4	185.6	103.6	145.5	37.9	53
20071028	62	flood	6.1	0.5	174.9	0.4	47.1	153.5	206.7	74.3	86.8
20071028	62	ebb	6.1	0.4	315.7	0.4	179.6	114.7	162.8	41.5	54.7
20071028	63	flood	6	0.4	174.8	0.4	37.9	164.3	225.4	75.7	88.6
20071028	63	ebb	5.9	0.4	317	0.4	180.5	107.7	154.4	38	49.8
20071029	64	flood	6.1	0.4	169.3	0.4	39.8	157.5	214.5	76.2	85.9
20071029	64	ebb	5.8	0.4	281.1	0.4	173.1	107.6	152.5	42.1	55
20071029	65	flood	6	0.4	146.6	0.4	39.6	160.3	216.8	70.5	81.2
20071030	65	ebb	5.8	0.4	306.7	0.4	191.5	104.4	151.6	39.2	54.9
20071030	66	flood	5.6	0.4	158.1	0.3	35.3	144.9	201.5	58	70.2
20071030	66	ebb	5.5	0.4	315.2	0.4	187.7	91.7	136.3	34.4	48.3
20071030	67	flood	5.6	0.4	173.7	0.3	49.2	165.7	224.5	65.4	76.3
20071031	67	ebb	5.7	0.4	314.1	0.4	186.8	94.3	138.6	35.6	50.7
20071031	68	flood	5.1	0.4	168.5	0.3	46.9	135.3	193.3	49.8	62.8
20071031	68	ebb	5.3	0.4	286.3	0.4	183.9	97	137.6	35.8	48.6
20071031	69	flood	5.5	0.4	165.5	0.3	37.1	139.9	193.5	57.2	64.6
20071101	69	ebb	4.9	0.4	314.2	0.4	183.8	104.1	153.4	34.8	49.4
20071101	70	flood	4.6	0.3	179.1	0.3	44.5	143.3	193.3	48.2	55.9
20071101	70	ebb	4.8	0.4	306.4	0.4	187.9	86	126.7	28.5	40.6
20071101	71	flood	5	0.4	176.4	0.3	48.4	136	190.1	47.9	54.5
20071102	71	ebb	4.6	0.4	305.3	0.4	195.1	78.9	118.2	26.3	39.6
20071102	72	flood	4.1	0.3	175.8	0.3	31	120.6	164.4	39	44.9
20071102	72	ebb	4.4	0.4	317.1	0.4	207.4	65.6	97.7	21.8	32.4

RCM9 & VALEPORT AVERAGES FOR EVERY TIDAL PHASE											
Date	Tide no.	Phase	Tidal Diff	UP Velocity (RCM9) Bottom +1.0m		DOWN Velocity (Valeport) Bottom +0.1m		SS Concentration [mg/l]		SS Flux [g/m²s]	
			[m]	Magnitude [m/s]	Direction [°]	Magnitude [m/s]	Direction [°]	UP (RCM9)	DOWN (Valeport)	UP (RCM9)	DOWN (Valeport)
20071102	73	flood	4.6	0.3	173	0.3	31	122.1	173.8	41.3	47.5
20071103	73	ebb	4.1	0.4	314.6	0.3	179.9	65.5	97.5	20.5	28.6
20071103	74	flood	3.8	0.3	180.9	0.2	57.2	84.3	126.5	24.4	31.1
20071103	74	ebb	4	0.3	312	0.3	185.6	48.7	76.4	15.8	23.7
20071103	75	flood	4.4	0.3	180	0.3	41.3	70.1	102.5	22.6	27.8
20071104	75	ebb	4.3	0.4	305.3	0.3	191.3	56.5	85.7	17.4	25.3
20071104	76	flood	3.7	0.3	175.5	0.2	46.5	68	101.8	19.2	23.4
20071104	76	ebb	4.2	0.4	320.9	0.4	189.7	44.4	64.3	15.5	21.7
20071105	77	flood	4.7	0.3	175.5	0.3	40.8	67.9	107	22.9	29.8
20071105	77	ebb	4.4	0.4	312.1	0.4	196.1	49.1	77.2	16	24.8
20071105	78	flood	4.2	0.3	170.5	0.3	43	60.7	90	20	25
20071105	78	ebb	4.5	0.4	311.5	0.4	204.1	64.3	98	22.3	32.2
20071106	79	flood	5.5	0.4	179.9	0.3	34.5	83.9	121.3	32.7	40.7
20071106	79	ebb	4.4	0.4	306.7	0.4	173.1	61.9	94.8	22.6	32.5
20071106	80	flood	4.5	0.3	187.6	0.3	42.4	101.4	141.8	31.2	36.3
20071106	80	ebb	5.2	0.4	326	0.4	191.1	65.9	98.3	27	39.2
20071107	81	flood	4.6	0.4	159.4	0.3	40.1	122.2	205	41	61.1
20071107	81	ebb	4.7	0.4	308.6	-	-	68.9	-	24.6	-
20071107	82	flood	5.3	0.4	160.6	-	-	110.3	-	42.5	-
20071107	82	ebb	5.1	0.4	314	-	-	75.9	-	28.5	-
20071108	83	flood	5	0.4	174.6	-	-	129.4	-	47.7	-
20071108	83	ebb	5.4	0.4	319.5	-	-	77.2	-	30.7	-
20071109	84	flood	6.7	0.3	161	0.3	202.6	149.7	162.5	49.2	39.3
20071109	84	ebb	4.3	0.2	160.8	0.3	249.6	100.7	131	17.3	33.1

RCM9 & VALEPORT AVERAGES FOR EVERY TIDAL PHASE

Date	Tide no.	Phase	Tidal Diff	UP Velocity (RCM9) Bottom +1.0m		DOWN Velocity (Valeport) Bottom +0.1m		SS Concentration [mg/l]		SS Flux [g/m²s]	
			[m]	Magnitude [m/s]	Direction [°]	Magnitude [m/s]	Direction [°]	UP (RCM9)	DOWN (Valeport)	UP (RCM9)	DOWN (Valeport)
20071109	85	flood	3.9	0.2	162.7	0.1	142.9	201.1	224.4	39.6	32
20071109	85	ebb	5.5	0.2	160.6	0.3	282.5	117.2	147	22.3	44.2
20071110	86	flood	4.7	0.3	158.7	0.2	135.4	348.3	395.8	76.5	60.8
20071110	86	ebb	5.1	0.2	187.3	0.3	271.4	155.4	189.5	26.4	46
20071110	87	flood	5.2	0.3	163.9	0.2	133.5	238.9	266.7	75.7	52.6
20071110	87	ebb	5.4	0.2	195.3	0.3	275.7	142	170	26.1	49.1
20071111	88	flood	5.4	0.3	165.9	0.2	125.8	260.7	278.1	88.2	60.1
20071111	88	ebb	4.9	0.2	219.6	0.2	264.3	133.3	167.7	21.9	38.3
20071111	89	flood	5.2	0.3	159	0.2	127.7	173.9	211.6	54.3	43.1
20071111	89	ebb	5.5	0.2	189.7	0.3	279.6	96.5	129.6	16.5	36.8
20071112	90	flood	5.2	0.3	162.4	0.2	123.3	163.6	192.3	51.9	34.9
20071112	90	ebb	5.5	0.2	154.8	0.3	279	87.2	119.2	15.7	35.8
20071112	91	flood	5.4	0.3	169.3	0.2	118.3	125.7	147.5	43.3	30.8
20071112	91	ebb	5.6	0.2	156.8	0.3	279.3	83.3	114	15.1	33.8
20071113	92	flood	5.3	0.3	165	0.2	113.8	118.1	152.2	39.1	32.6
20071113	92	ebb	5.5	0.2	186.5	0.3	276.6	84.6	113	15	29.8
20071113	93	flood	5.7	0.4	166.5	0.2	118	133.1	165	49.7	38.6
20071113	93	ebb	4.9	0.2	157.6	0.3	264.2	121.1	164.8	21.6	36.1
20071114	94	flood	4.7	0.3	177.6	0.2	128.6	125.3	145.2	35.5	26.7
20071114	94	ebb	5.4	0.2	147.5	0.3	276.8	83.8	110.9	15.5	30.2
20071114	95	flood	5	0.3	170	0.2	115.3	108.7	135.3	34.4	25.8
20071115	95	ebb	5	0.2	136.1	0.3	274.3	83.4	111.1	14.8	29.7
20071115	96	flood	4.9	0.3	168.1	0.2	113.8	130.7	150.7	38.9	25.5
20071115	96	ebb	5.1	0.2	120.4	0.3	284.3	79.8	108.1	13.5	29.2

RCM9 & VALEPORT AVERAGES FOR EVERY TIDAL PHASE

Date	Tide no.	Phase	Tidal Diff	UP Velocity (RCM9) Bottom +1.0m		DOWN Velocity (Valeport) Bottom +0.1m		SS Concentration [mg/l]		SS Flux [g/m²s]	
			[m]	Magnitude [m/s]	Direction [°]	Magnitude [m/s]	Direction [°]	UP (RCM9)	DOWN (Valeport)	UP (RCM9)	DOWN (Valeport)
20071115	97	flood	5.1	0.3	162.5	0.2	127.2	132.9	160.2	44.4	30.6
20071116	97	ebb	4.7	0.2	112.7	0.3	267	81.1	110.7	14.8	29.5
20071116	98	flood	4.6	0.3	171.6	0.2	121.1	127.7	154.5	37	27.2
20071116	98	ebb	4.8	0.2	119.6	0.3	277.4	82.7	110.9	13	28.2
20071116	99	flood	4.8	0.3	172	0.2	115.6	126	151.2	40	27.7
20071117	99	ebb	4.5	0.2	139.9	0.3	276.4	83.8	122.5	13.7	30.3
20071117	100	flood	4.2	0.3	171.5	0.2	122.6	118.3	147.3	34.2	24.9
20071117	100	ebb	4.4	0.2	121.5	0.2	275.7	72.7	98.1	12.4	22
20071117	101	flood	4.5	0.3	173.3	0.2	119.9	112.1	141.2	34.3	25.1
20071118	101	ebb	4.2	0.2	124	0.3	273.9	74.3	97.8	12.1	23
20071118	102	flood	3.8	0.3	170.9	0.2	119.5	123.3	147.3	34.5	24.3
20071118	102	ebb	4.2	0.2	119	0.3	278.3	61.5	86.5	9.5	19.2
20071118	103	flood	4	0.3	188.4	0.2	116.6	113	140.2	36.2	25.9
20071119	103	ebb	3.7	0.2	108.3	0.3	272.6	62.3	86.9	9	18.5
20071119	104	flood	3.9	0.3	170.3	0.2	118.7	79.6	100.3	24.4	17.8
20071119	104	ebb	4.2	0.2	118.1	0.2	274.1	54.2	75.9	8.7	16.7
20071119	105	flood	4.4	0.3	174.3	0.2	118.8	108.6	140.5	31.4	24.3
20071120	105	ebb	4.1	0.2	115.3	0.3	275.8	77.8	108.1	11.6	25.4
20071120	106	flood	4.2	0.3	178.5	0.2	131.5	118.9	152.2	32.6	27.3
20071120	106	ebb	4.7	0.2	123.8	0.3	274.5	87.8	122.6	15.9	32.5
20071120	107	flood	5	0.3	167.3	0.2	119.4	244	276.4	73	50.7
20071121	107	ebb	4.6	0.2	96.8	0.3	277.8	121.7	152	22.2	35.4
20071121	108	flood	4.5	0.3	176	0.2	117.4	311.5	341.3	92	59.3
20071121	108	ebb	4.8	0.4	213.8	0.4	317.6	248.6	238.9	97.7	87.7

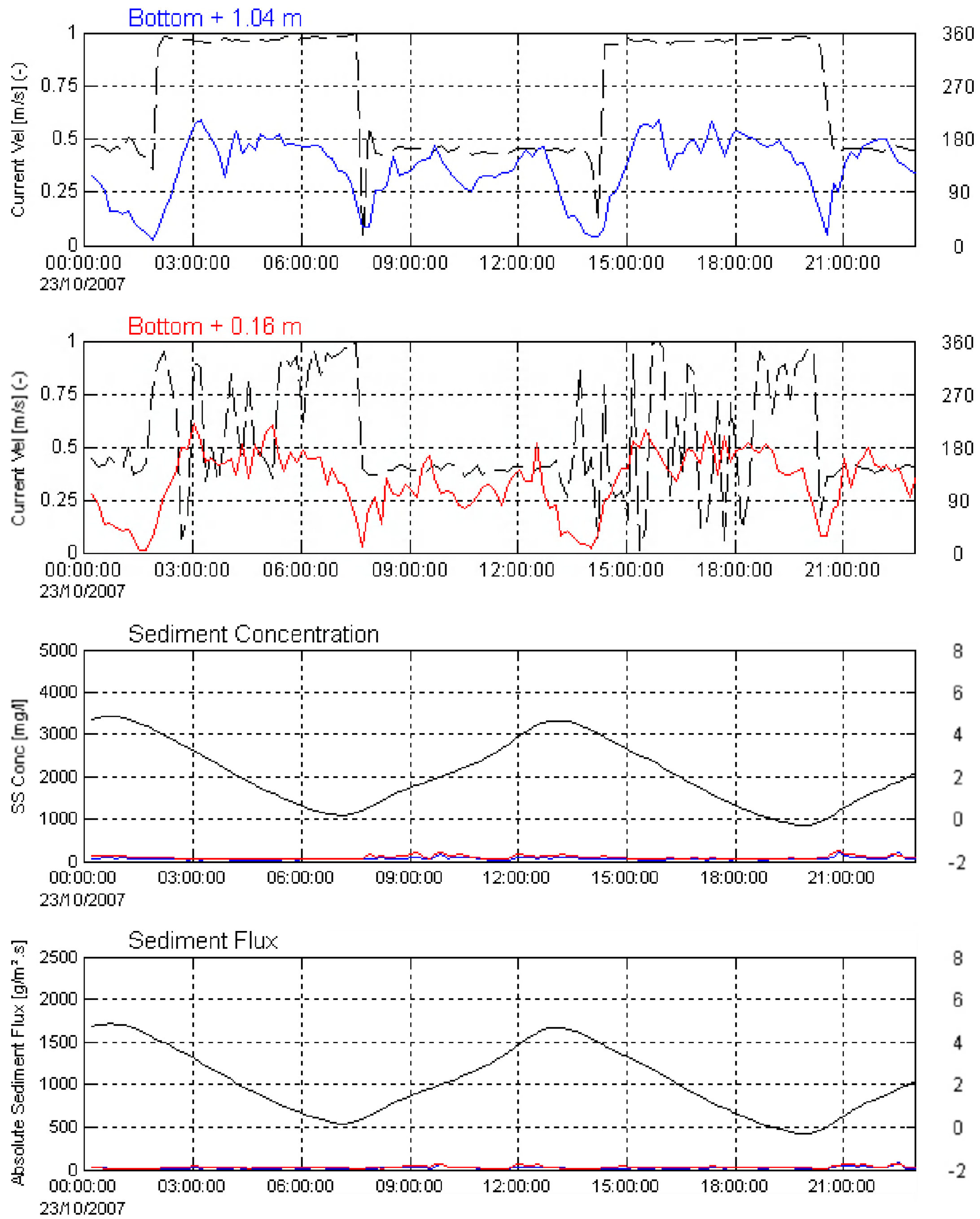
RCM9 & VALEPORT AVERAGES FOR EVERY TIDAL PHASE											
Date	Tide no.	Phase	Tidal Diff	UP Velocity (RCM9) Bottom +1.0m		DOWN Velocity (Valeport) Bottom +0.1m		SS Concentration [mg/l]		SS Flux [g/m²s]	
			[m]	Magnitude [m/s]	Direction [°]	Magnitude [m/s]	Direction [°]	UP (RCM9)	DOWN (Valeport)	UP (RCM9)	DOWN (Valeport)
20071122	109	flood	5.4	0.5	171.8	0.4	168.5	684.9	678.9	319.8	245.4
20071122	109	ebb	5.2	0.3	153.1	0.4	307.2	256.1	269.6	78.7	96.2
20071122	110	flood	5.1	0.5	164.1	0.4	173.8	844.5	885.8	398.5	353.4
20071122	110	ebb	5.4	0.3	149.6	0.4	311	294.9	300.4	97.1	102.9
20071123	111	flood	6	0.5	176.4	0.4	173.7	848.7	871	439.4	356
20071123	111	ebb	4.9	0.3	157.9	0.4	297.4	313.4	302.2	107.2	102
20071123	112	flood	5	0.4	176.7	0.3	175.8	971	978.6	392.1	338.9
20071123	112	ebb	5.9	0.4	158.9	0.4	313.6	327.3	301.9	126.4	115.8
20071124	113	flood	5.7	0.5	164.3	0.4	173.7	1016.7	1065.9	502.4	452.8
20071124	113	ebb	6	0.4	209.8	0.4	306.9	462.8	435.6	180.1	156.3
20071124	114	flood	5.7	0.5	166.6	0.4	173.6	1067.8	1028.6	546.6	382
20071124	114	ebb	5.7	0.4	205.9	0.4	308.7	441.4	433.2	151.4	139.2
20071125	115	flood	6.4	0.5	162.1	0.5	171.5	1012.7	1214.4	549.7	574.3
20071125	115	ebb	5.4	0.4	231.2	0.4	292.5	359.8	391.9	117.3	126.5
20071125	116	flood	5.9	0.4	163.3	0.4	171.5	1068.1	972.7	501.2	380.3
20071125	116	ebb	6	0.4	175.3	0.4	302.6	329.5	344.9	118.2	113
20071126	117	flood	5.5	0.4	156	0.4	175.3	877.1	769.1	410.3	298.3
20071126	117	ebb	6	0.4	180	0.4	309.8	322.5	366.4	120.4	109.6
20071126	118	flood	5.8	0.5	174.2	0.4	173.1	578.4	505.6	279.4	214.1
20071126	118	ebb	6	0.4	180.5	0.4	302.2	324.9	345.5	127	114.4
20071127	119	flood	5.7	0.4	157	0.4	176	728.7	808.3	350.5	324.2
20071127	119	ebb	6	0.4	240.3	0.4	307.1	308	320.5	126.1	114.2
20071127	120	flood	6	0.5	164	0.4	172.7	808.4	803.6	403.2	317.6
20071128	120	ebb	5.9	0.4	211.8	0.4	303.9	371.1	361.7	154.1	126.6

RCM9 & VALEPORT AVERAGES FOR EVERY TIDAL PHASE

Date	Tide no.	Phase	Tidal Diff	UP Velocity (RCM9) Bottom +1.0m		DOWN Velocity (Valeport) Bottom +0.1m		SS Concentration [mg/l]		SS Flux [g/m²s]	
			[m]	Magnitude [m/s]	Direction [°]	Magnitude [m/s]	Direction [°]	UP (RCM9)	DOWN (Valeport)	UP (RCM9)	DOWN (Valeport)
20071128	121	flood	5.5	0.5	162.7	0.4	171.7	860.9	895.8	420.7	385.9
20071128	121	ebb	5.7	0.4	168.6	0.3	310.5	386.7	374.7	143.2	119.5
20071128	122	flood	5.8	0.5	163.4	0.4	172.4	868.1	967.4	449.9	380.8
20071129	122	ebb	5.5	0.4	199.7	0.4	302.1	382.7	353.3	143.2	108.3
20071129	123	flood	5.2	0.4	153.7	0.4	172.5	1057.5	1013.9	503.6	399.7
20071129	123	ebb	5.4	0.4	183	0.4	306.6	362.9	416.4	121.1	124.7
20071129	124	flood	5.8	0.5	159.8	0.4	169.8	876.4	785.2	443.3	303.4
20071130	124	ebb	5	0.4	200	0.3	299.5	302.3	323.6	108.3	101.6
20071130	125	flood	4.5	0.4	169.1	0.3	172	1002.2	892.2	384.4	299.1
20071130	125	ebb	5.3	0.4	147.5	0.3	313.2	223.3	254.8	83.7	82.4
20071130	126	flood	5.2	0.5	175.2	0.4	172.3	726.9	670	349.1	283.7
20071201	126	ebb	4.5	0.3	186.2	0.3	308.3	256.4	283.2	79.2	76.6
20071201	127	flood	4.9	0.4	153.2	0.4	173.7	591.6	501.5	276.7	191.8
20071201	127	ebb	4.8	0.4	200.9	0.4	306	234.2	266	79.7	81.7
20071201	128	flood	4.6	0.4	167.8	0.4	176.5	614.5	584.1	258.8	238.7
20071202	128	ebb	4.3	0.3	138.7	0.3	306.4	212.2	227.7	61.2	61.5
20071202	129	flood	3.9	0.4	164.6	0.3	170.8	338.7	322.3	132.1	108.4
20071202	129	ebb	4	0.3	93.2	0.3	301	141.9	163.5	39	39.9
20071202	130	flood	4.6	0.4	164	0.4	163.6	397.1	360.4	178	136.3
20071203	130	ebb	3.7	0.3	109.2	0.3	301.5	112.5	140.2	29.3	36.8
20071203	131	flood	3.7	0.3	170.4	0.3	177.9	192.3	212.2	64.9	60.5
20071203	131	ebb	4.4	0.3	79.6	0.3	309	110	129.3	35	39.5
20071203	132	flood	4.4	0.4	171.6	0.3	167.5	291.4	289.9	108	94.8
20071204	132	ebb	4.3	0.4	106.3	0.3	298.3	121.7	140.6	43.1	42.4

RCM9 & VALEPORT AVERAGES FOR EVERY TIDAL PHASE											
Date	Tide no.	Phase	Tidal Diff	UP Velocity (RCM9) Bottom +1.0m		DOWN Velocity (Valeport) Bottom +0.1m		SS Concentration [mg/l]		SS Flux [g/m²s]	
			[m]	Magnitude [m/s]	Direction [°]	Magnitude [m/s]	Direction [°]	UP (RCM9)	DOWN (Valeport)	UP (RCM9)	DOWN (Valeport)
20071204	133	flood	3.6	0.3	166.1	0.3	171.9	277.9	301.2	86.7	80.9
20071204	133	ebb	4.7	0.4	107.8	0.3	298	136.5	178.6	40.9	47.8
20071205	134	flood	4.3	0.4	164.8	0.4	163.8	321.2	322.9	144.8	127.5
20071205	134	ebb	4.1	0.4	114.7	0.3	309	173.8	188	55.2	52.6

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel

Location: Deurganckdok CDW	Date: Avg Tide 23/10– 24/10

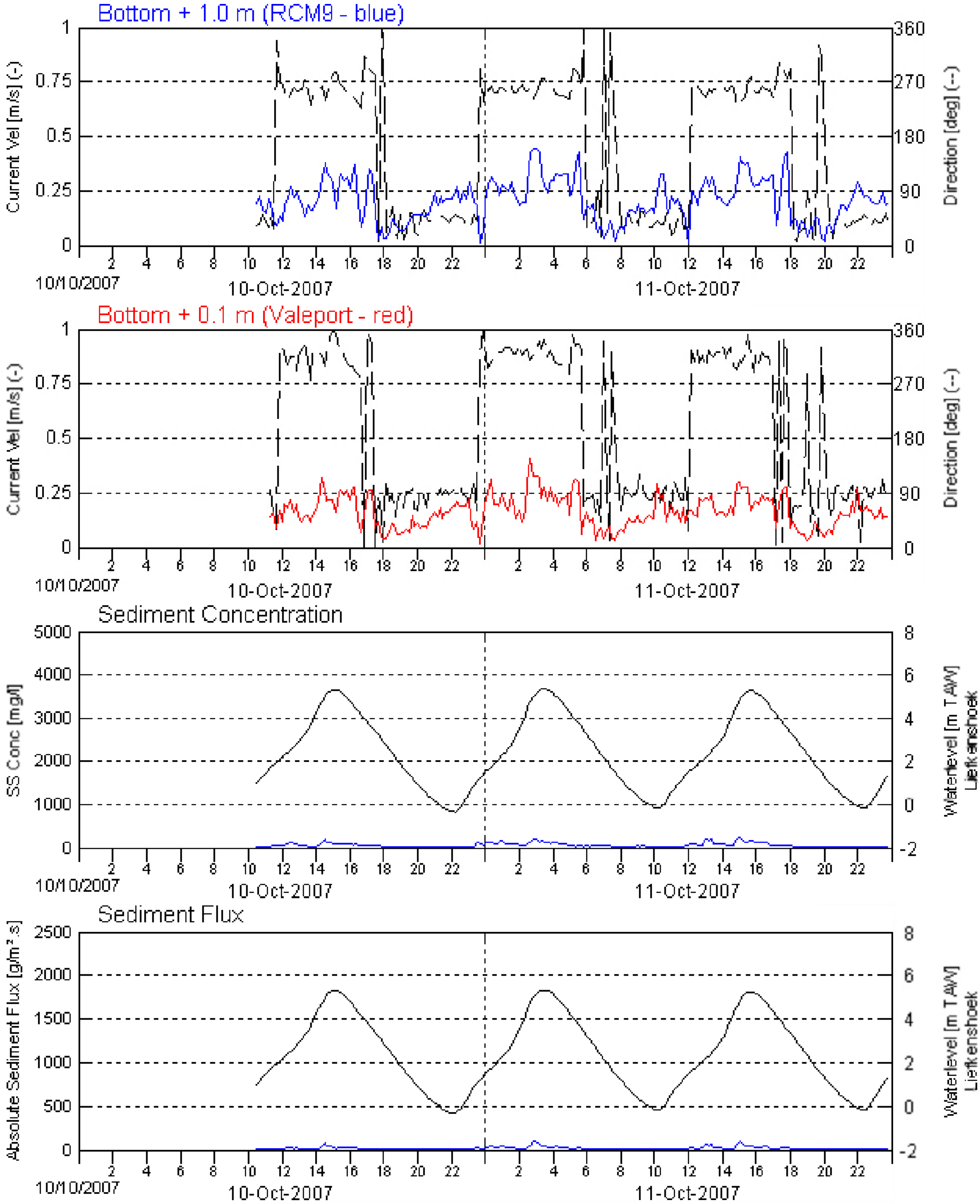
Data processed by: IMDC

In association with: wl | delft hydraulics, GEMS International

I/RA/11283/07.093/MSA

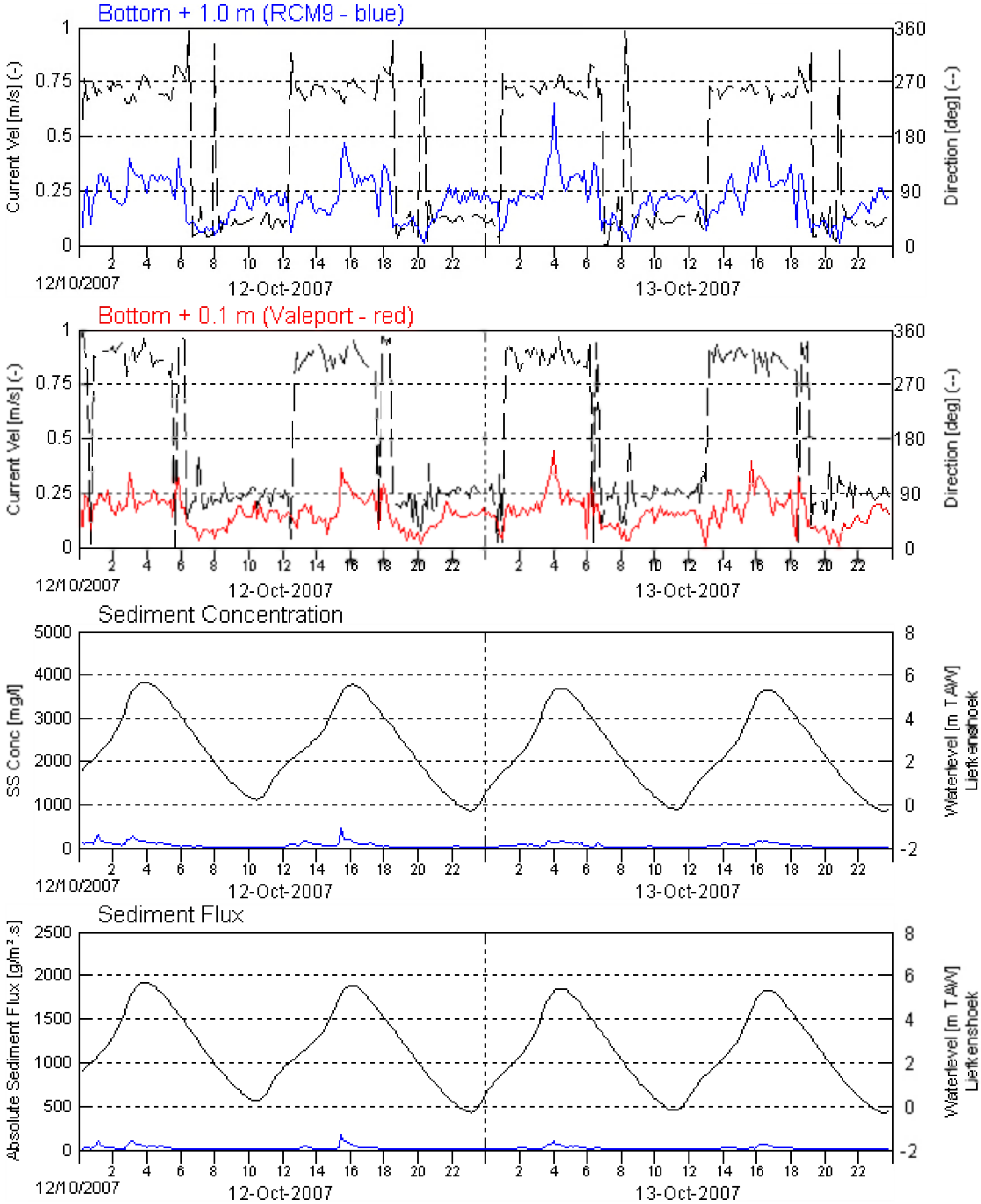
D.2 Sill Frame

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



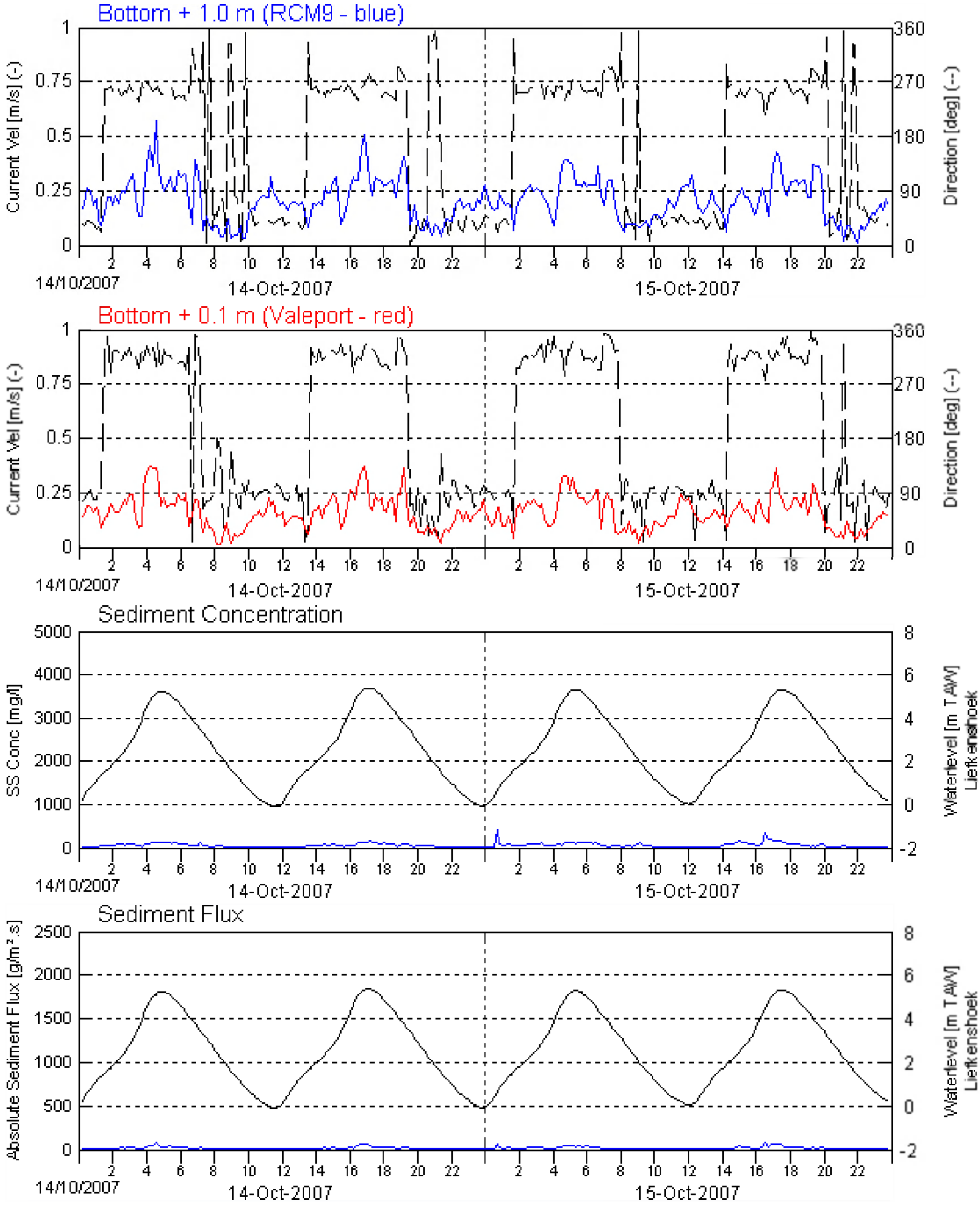
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok Sill	Date: 10/10/2007– 11/10/2007	In association with: WL delft hydraulics, GEMS International I/RA/11283/07/093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



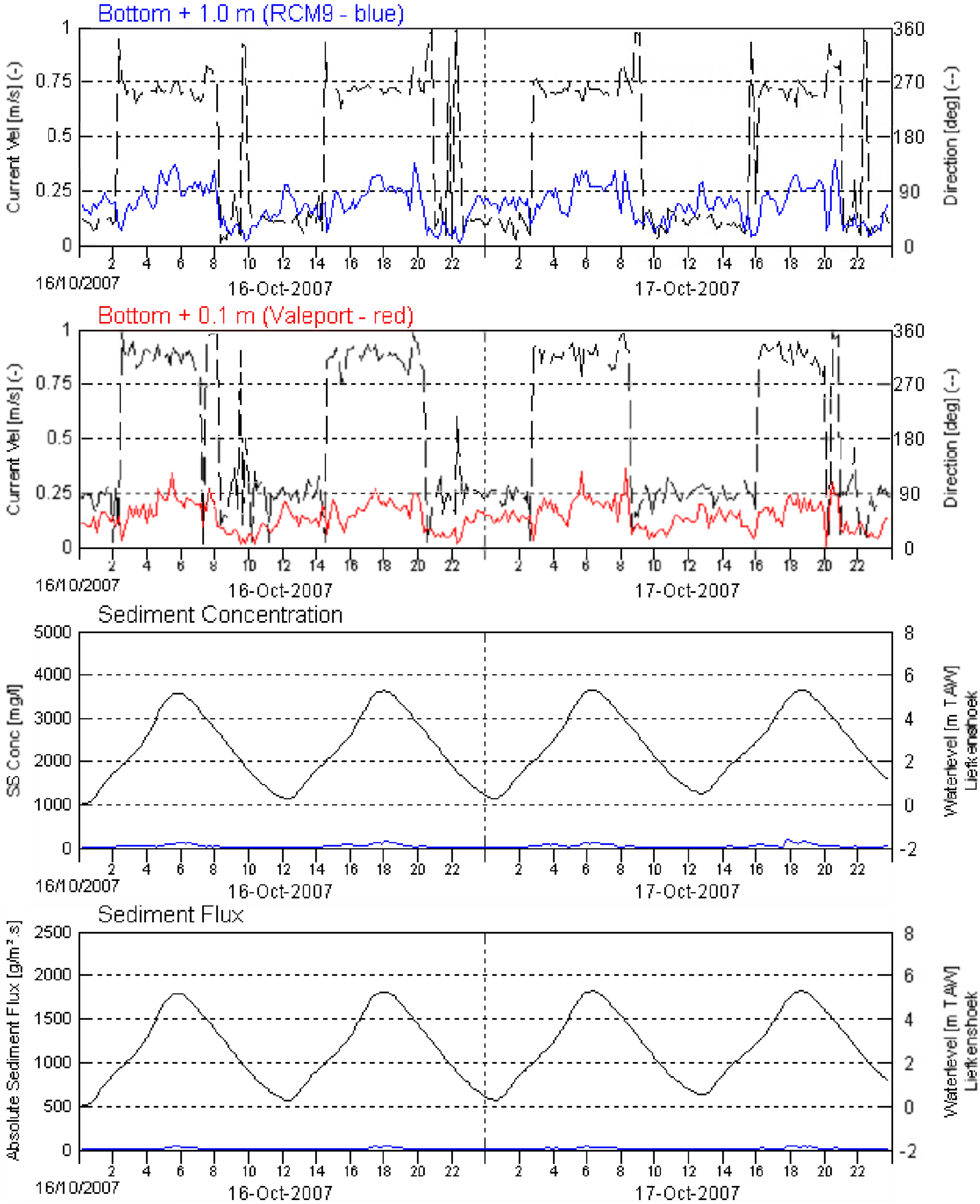
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok Sill	Date: 12/10/2007– 13/10/2007	In association with: WL delft hydraulics, GEMS International
		I/RA/11283/07/093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



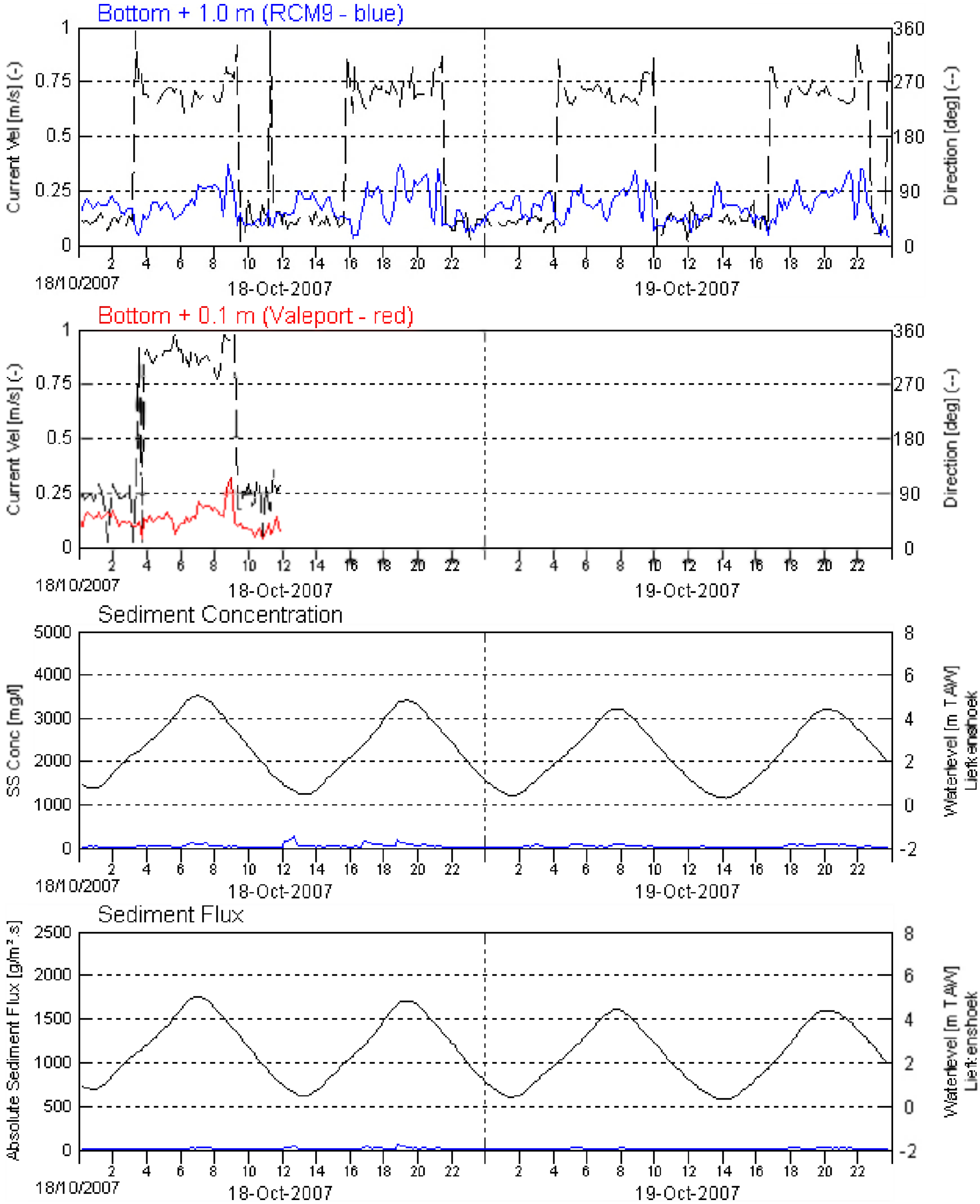
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok Sill	Date: 14/10/2007– 15/10/2007	In association with: WL delft hydraulics, GEMS International I/RA/11283/07/093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



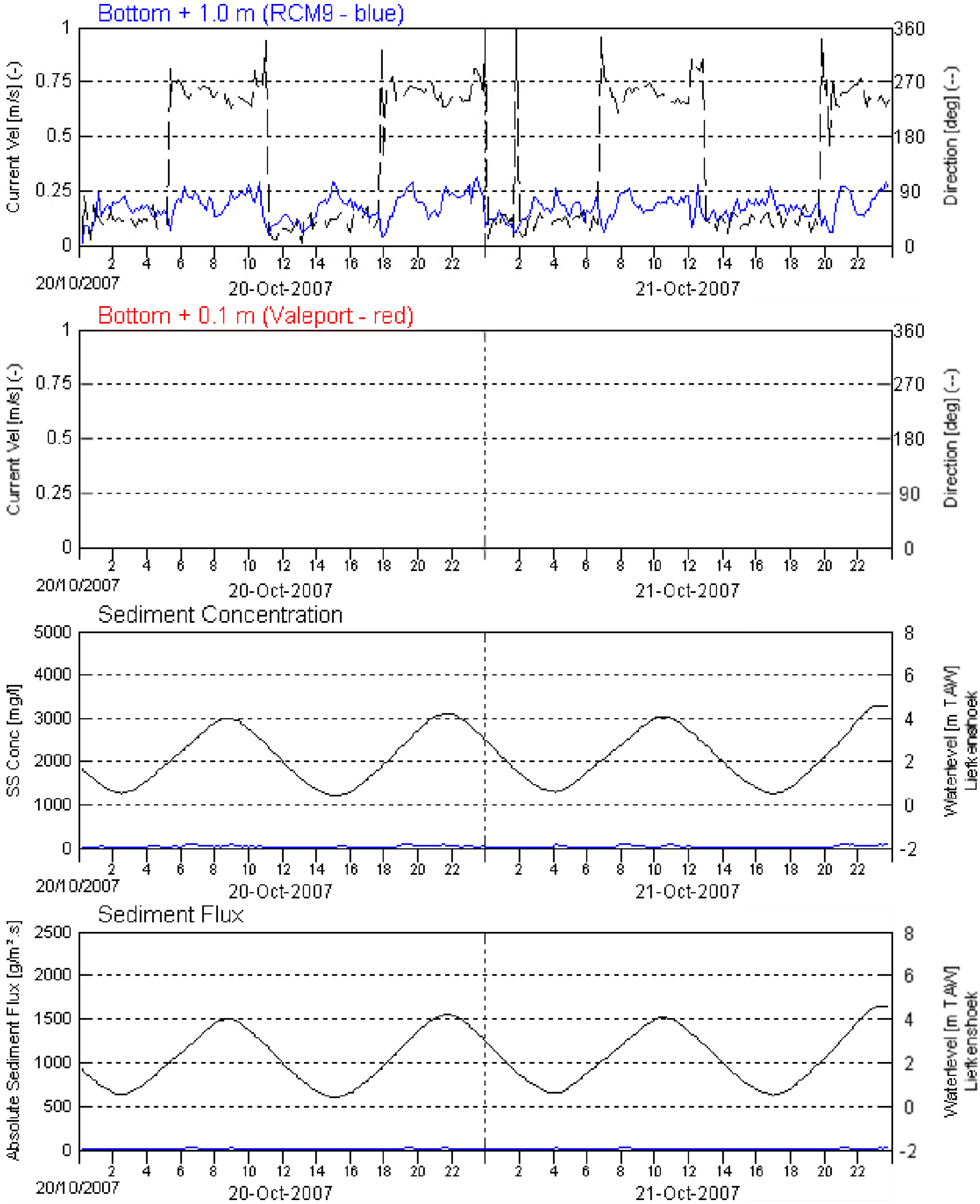
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok Sill	Date: 16/10/2007– 17/10/2007	In association with: WL delft hydraulics, GEMS International I/RA/11283/07/093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



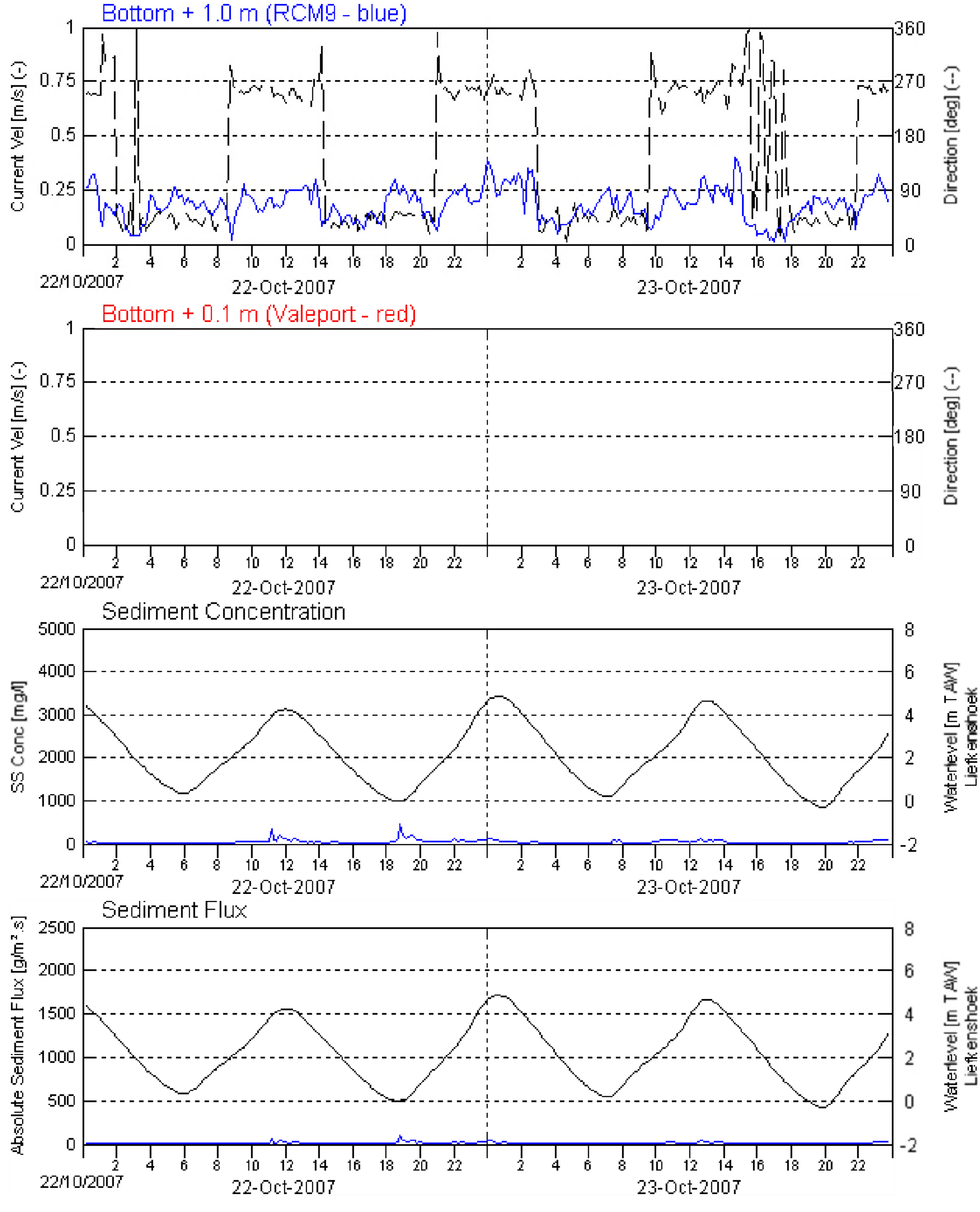
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok Sill	Date: 18/10/2007– 19/10/2007	In association with: WL delft hydraulics, GEMS International I/RA/11283/07/093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



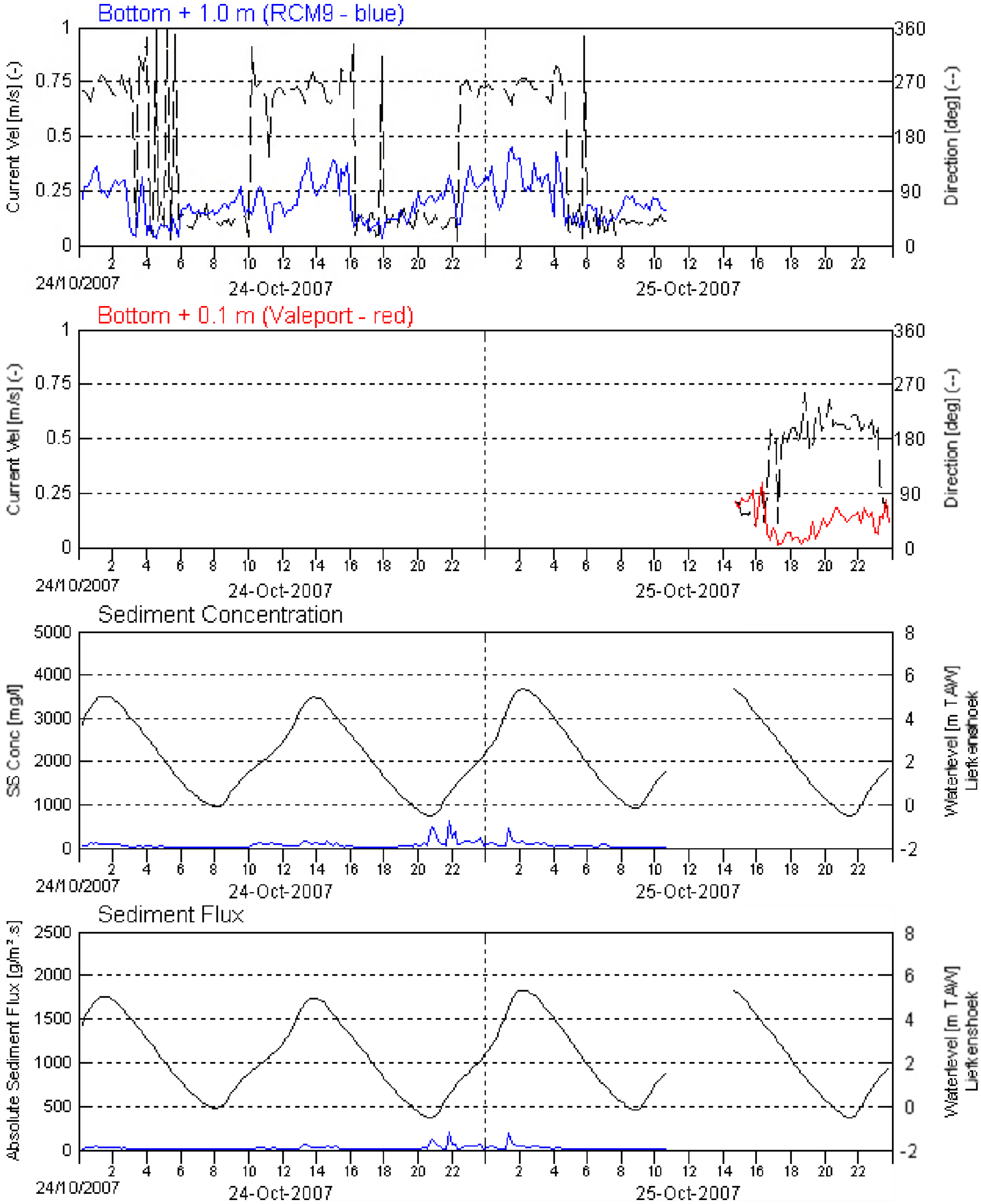
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok Sill	Date: 20/10/2007– 21/10/2007	In association with: WL | delft hydraulics, GEMS International I/RA/11283/07/093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok Sill	Date: 22/10/2007– 23/10/2007	In association with: WL | delft hydraulics, GEMS International
		I/RA/11283/07/093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel

Data processed by: IMDC

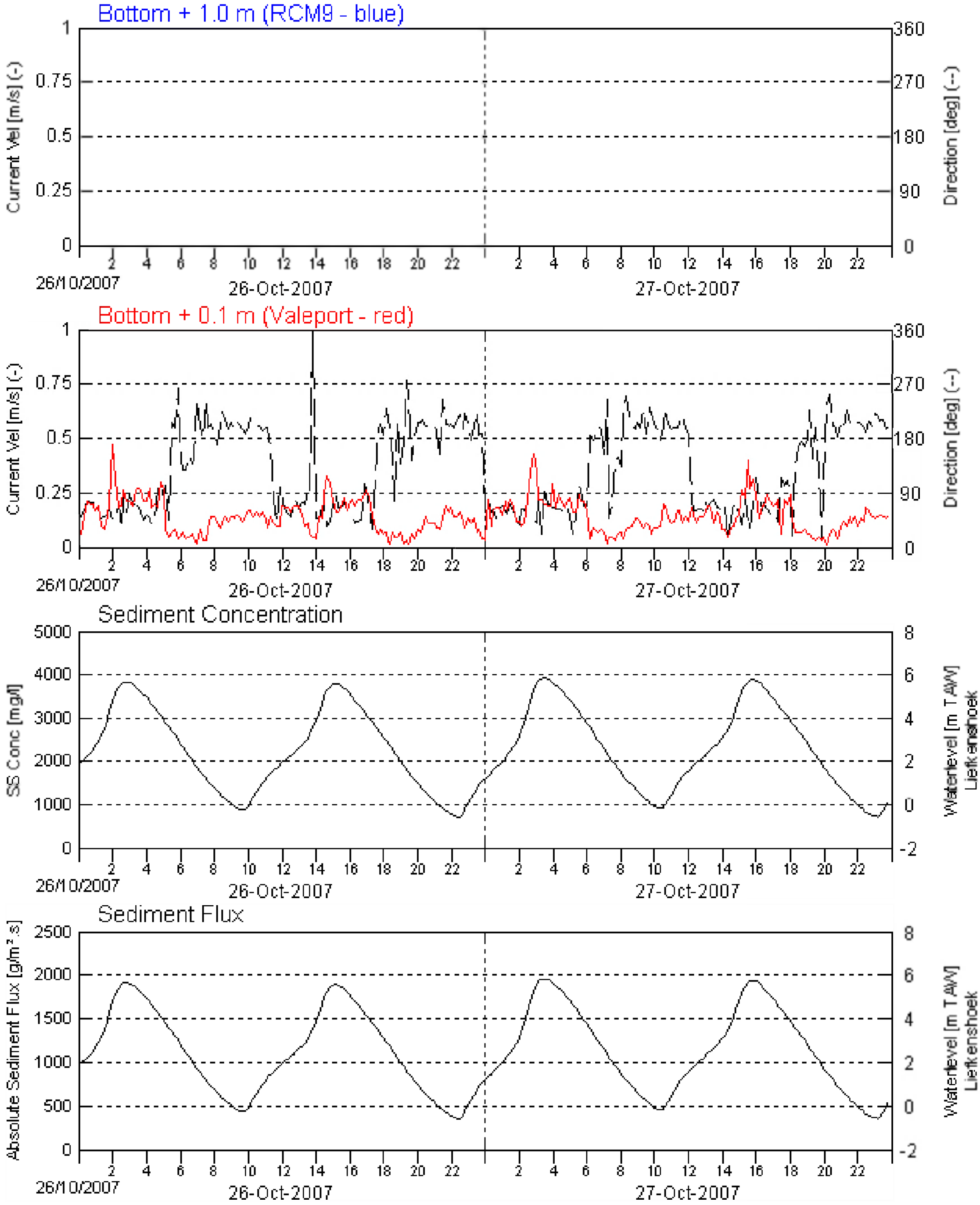
In association with: WL | delft hydraulics, GEMS International

Location: Deurganckdok Sill

Date: 24/10/2007– 25/10/2007

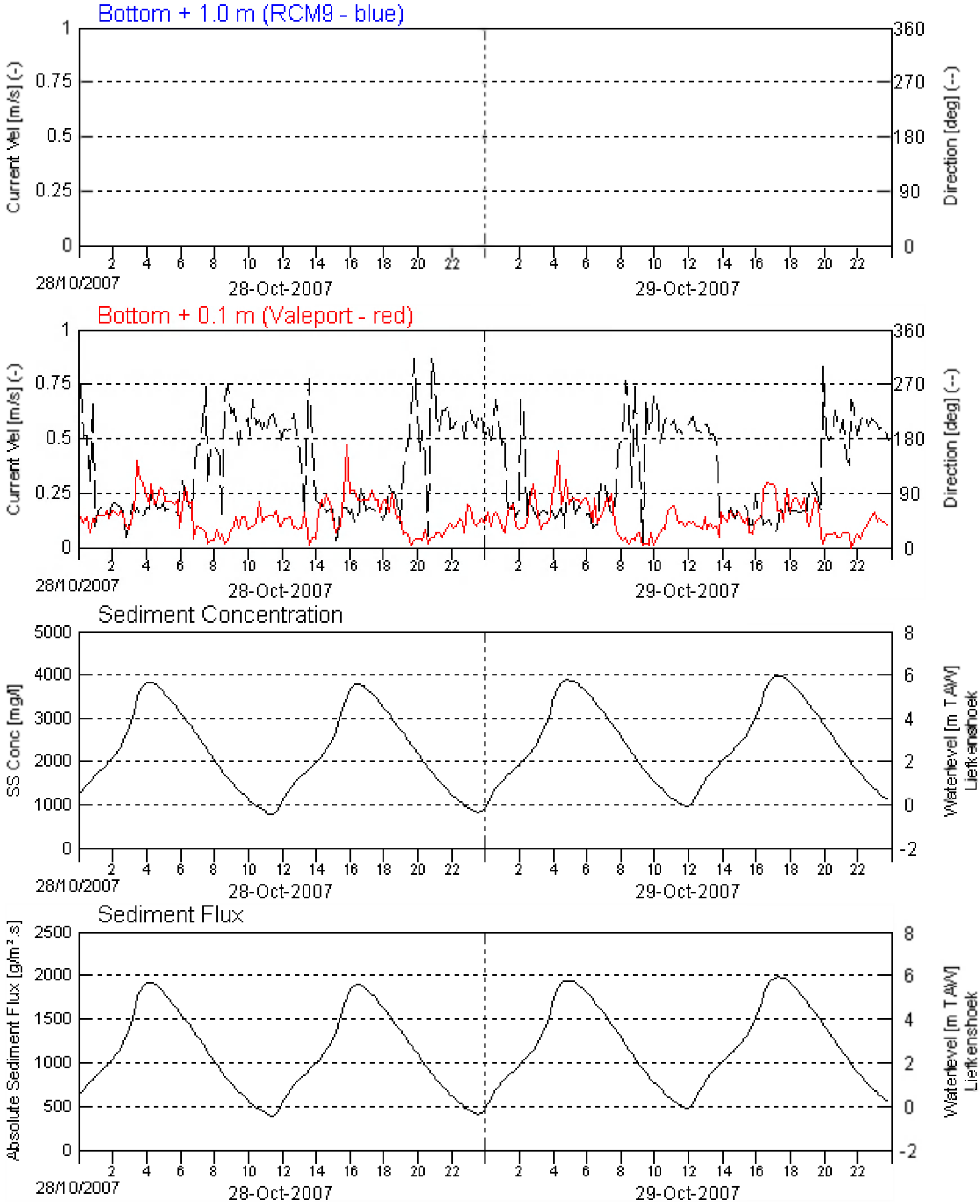
I/RA/11283/07/093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



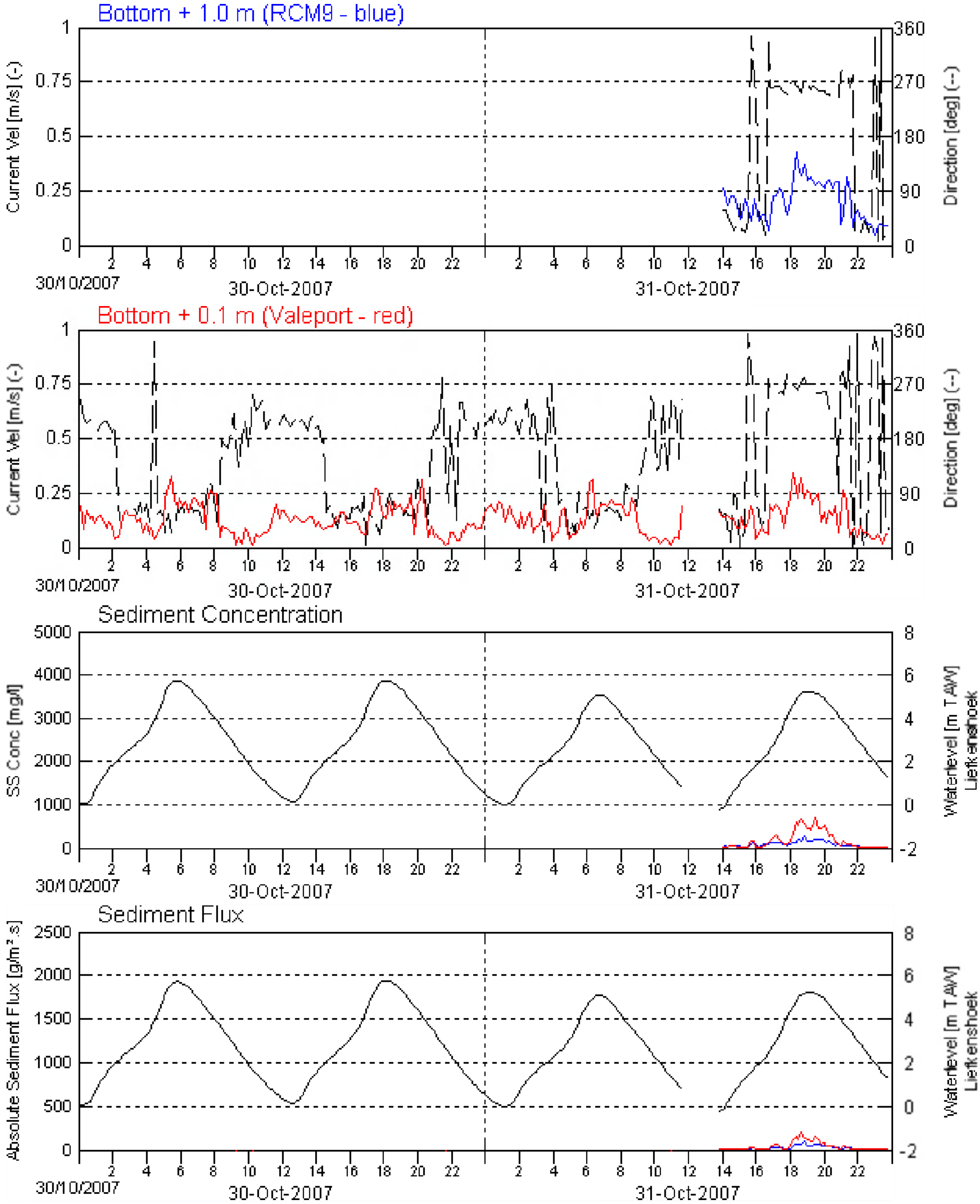
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by:
Location: Deurganckdok Sill	Date: 26/10/2007– 27/10/2007	In association with:
		I/RA/11283/07/093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



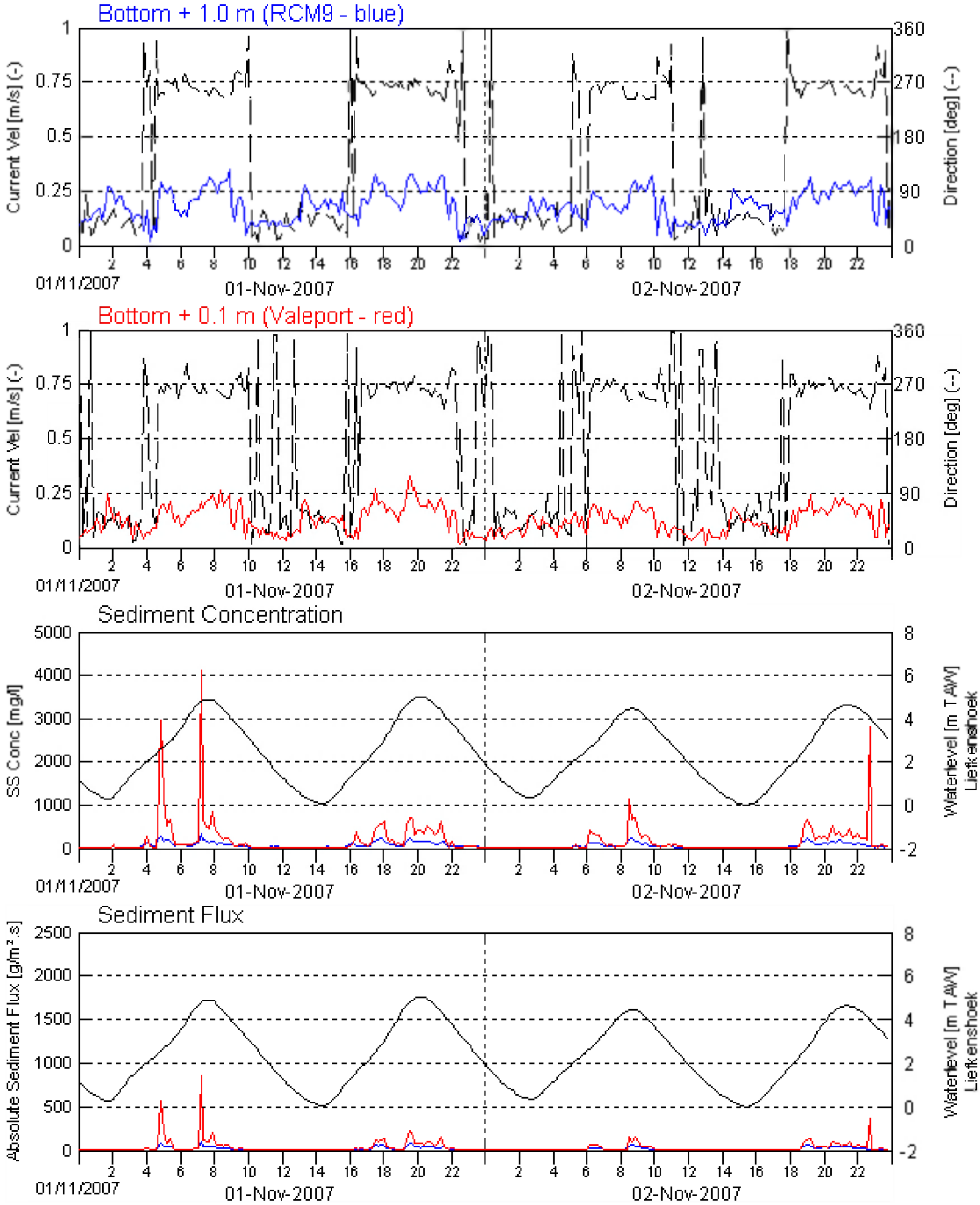
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok Sill	Date: 28/10/2007– 29/10/2007	In association with: WL delft hydraulics, GEMS International I/RA/11283/07/093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok Sill	Date: 30/10/2007– 31/10/2007	In association with: WL delft hydraulics, GEMS International I/RA/11283/07/093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel

Location: Deurganckdok Sill

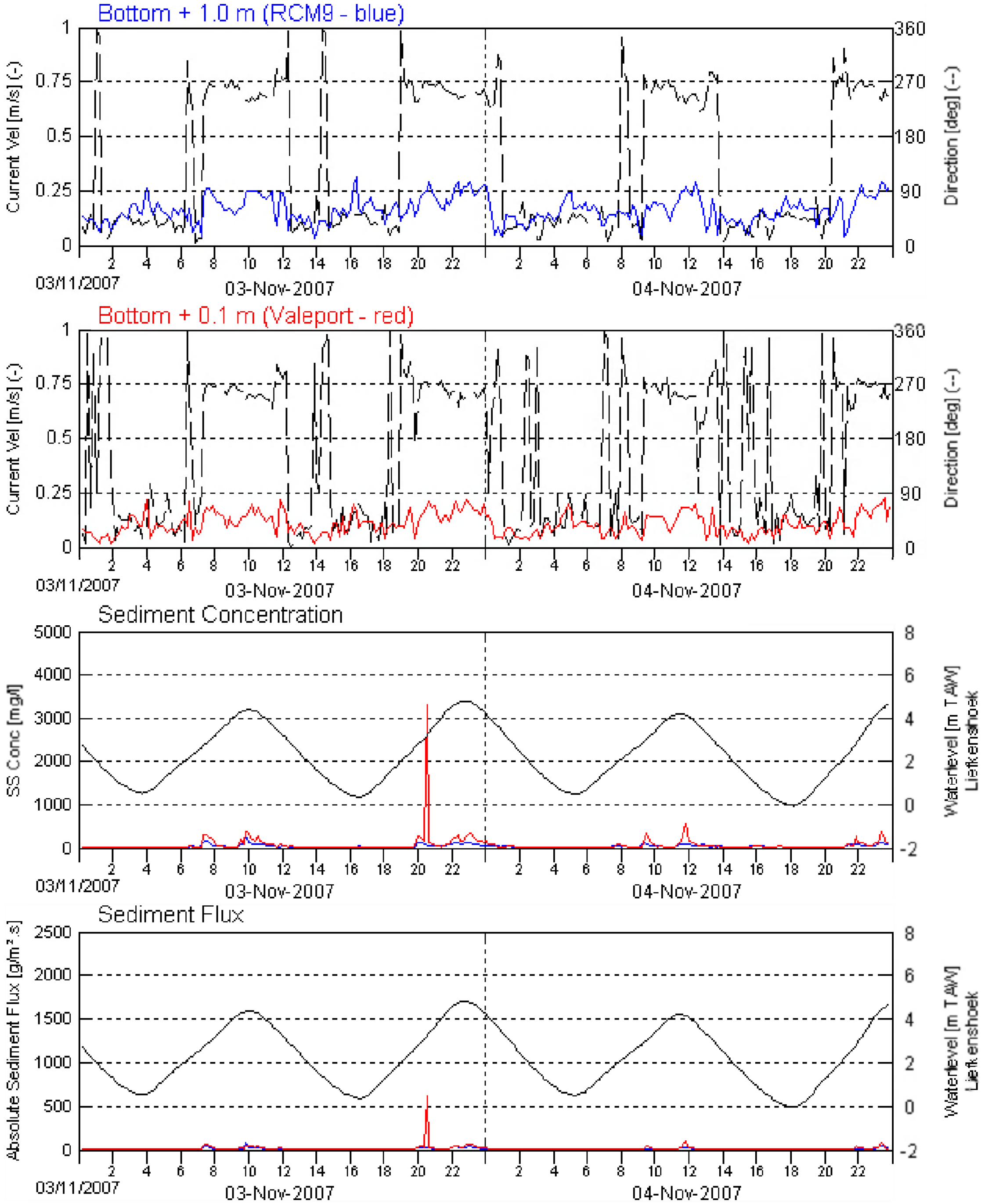
Date: 01/11/2007– 02/11/2007

Data processed by: IMDC

In association with: WL | delft hydraulics, GEMS International

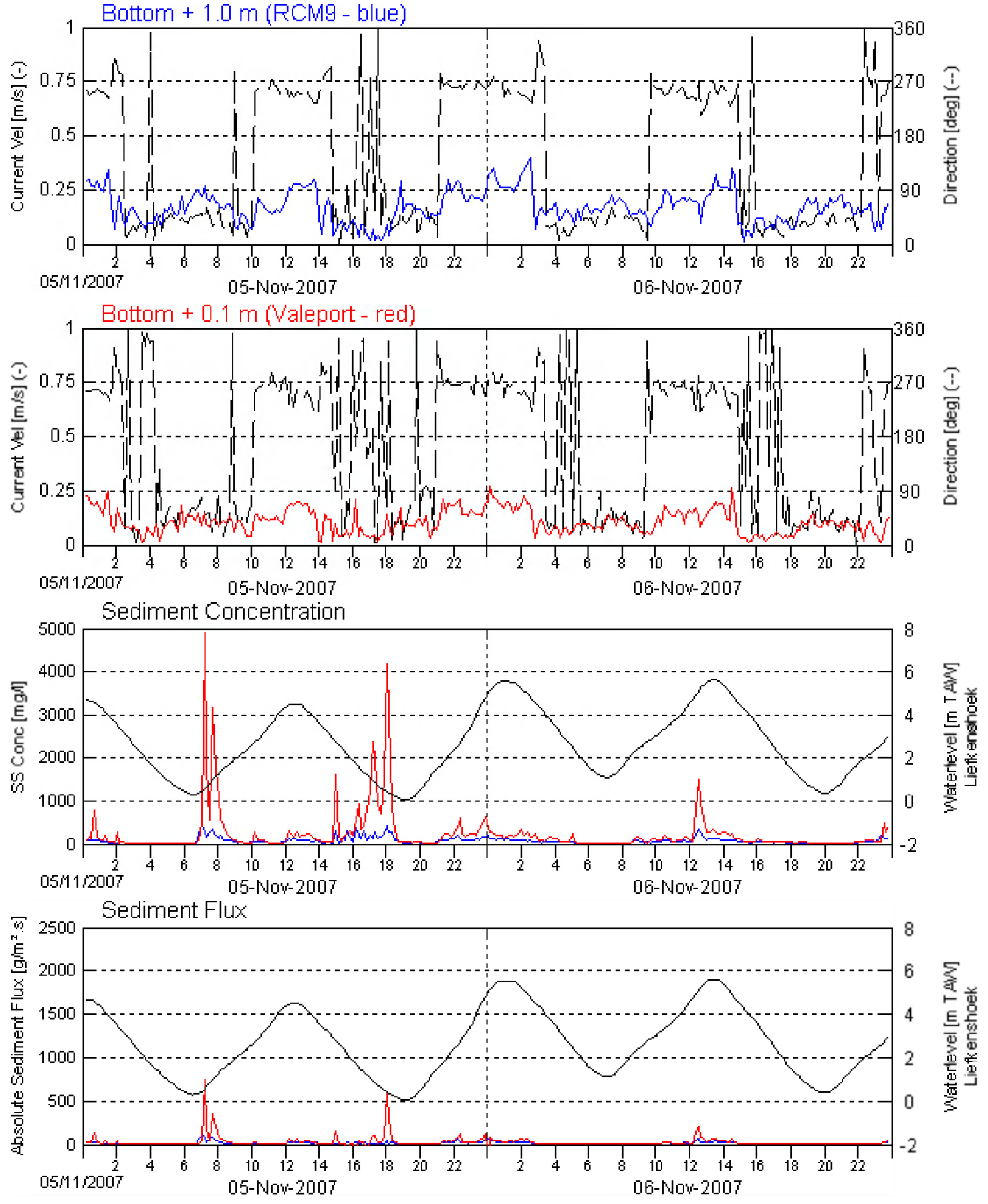
I/RA/11283/07/093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



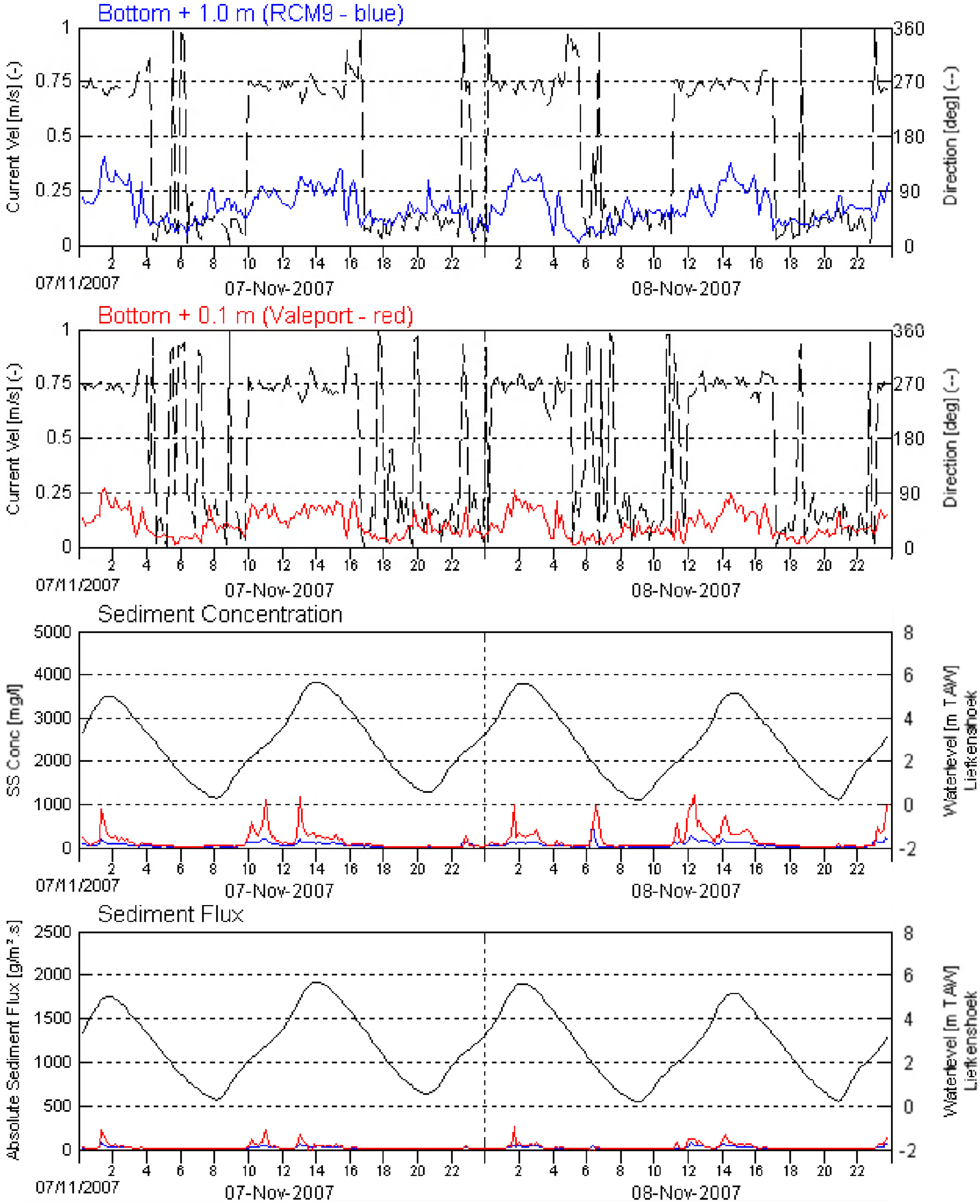
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok Sill	Date: 03/11/2007– 04/11/2007	In association with: WL delft hydraulics, GEMS International
		I/RA/11283/07/093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC In association with: WL | delft hydraulics, GEMS International I/RA/11283/07/093/MSA
Location: Deurganckdok Sill	Date: 05/112007– 06/11/2007	

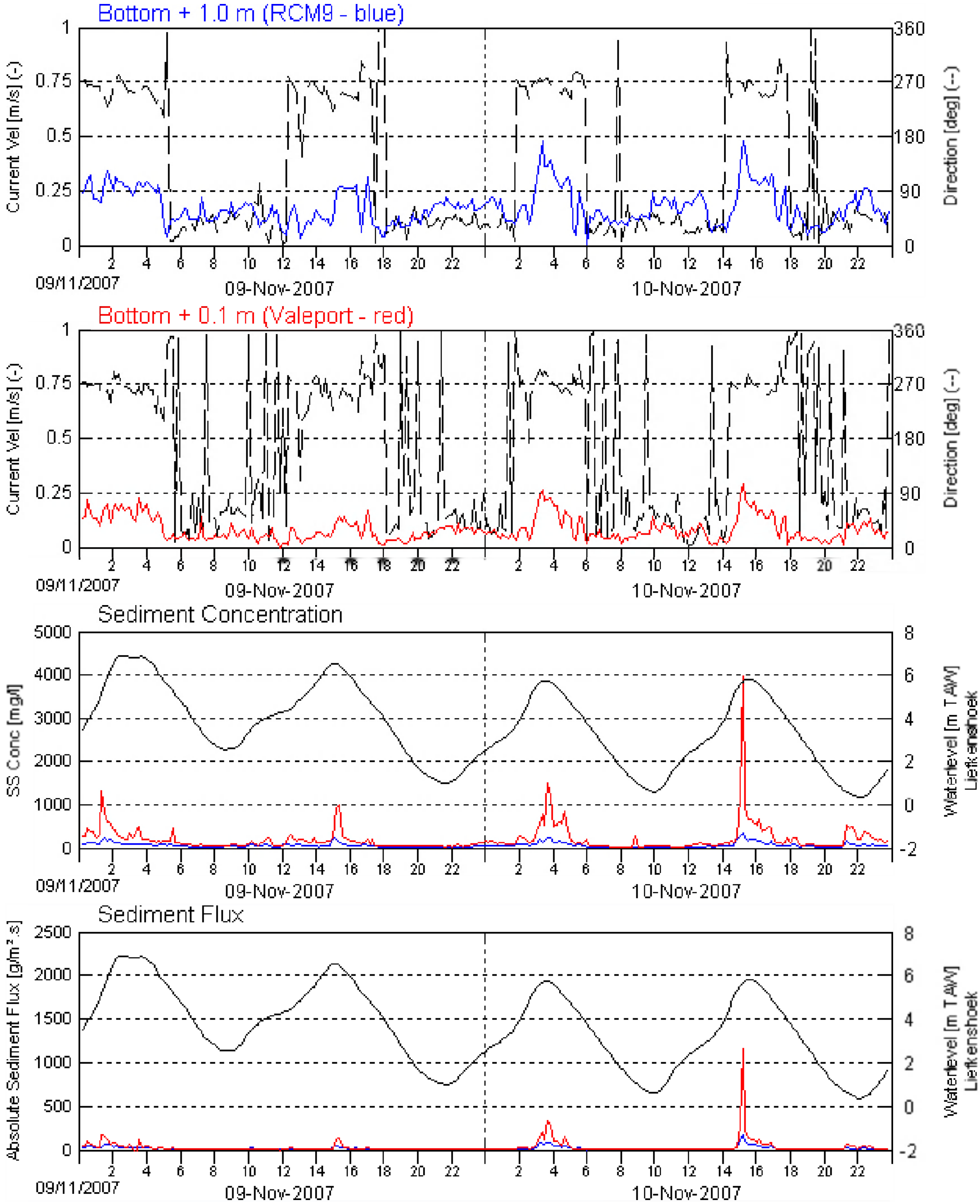
11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel	*Data processed by:* IMDC
Location: Deurganckdok Sill / Date: 07/11/2007– 08/11/2007	*In association with:* WL delft hydraulics, GEMS International

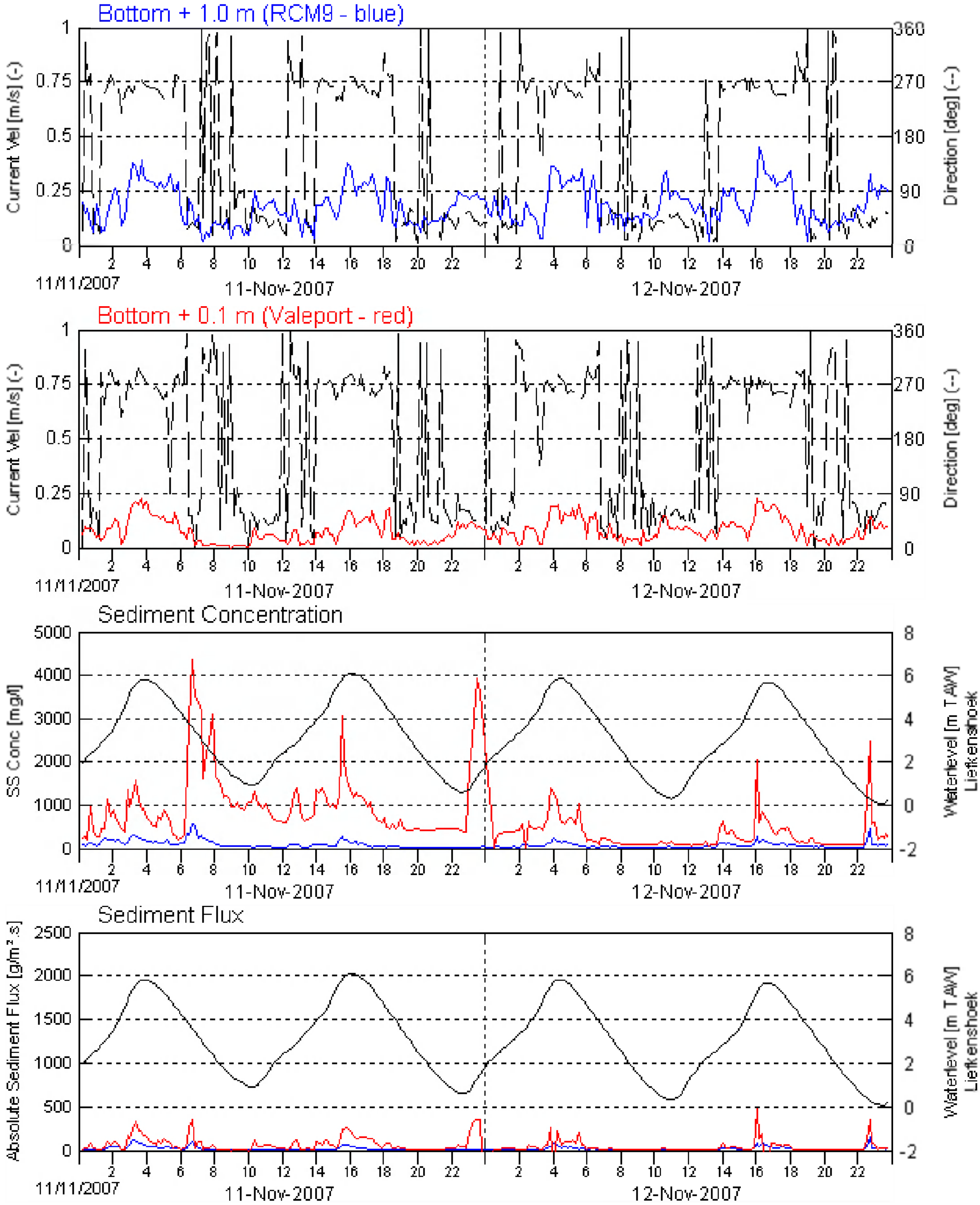
I/RA/11283/07/093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		*Data processed by:* IMDC
Location: Deurganckdok Sill	Date: 09/11/2007– 10/11/2007	*In association with:* WL delft hydraulics, GEMS International
		I/RA/11283/07/093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel

Location:
Deurganckdok Sill

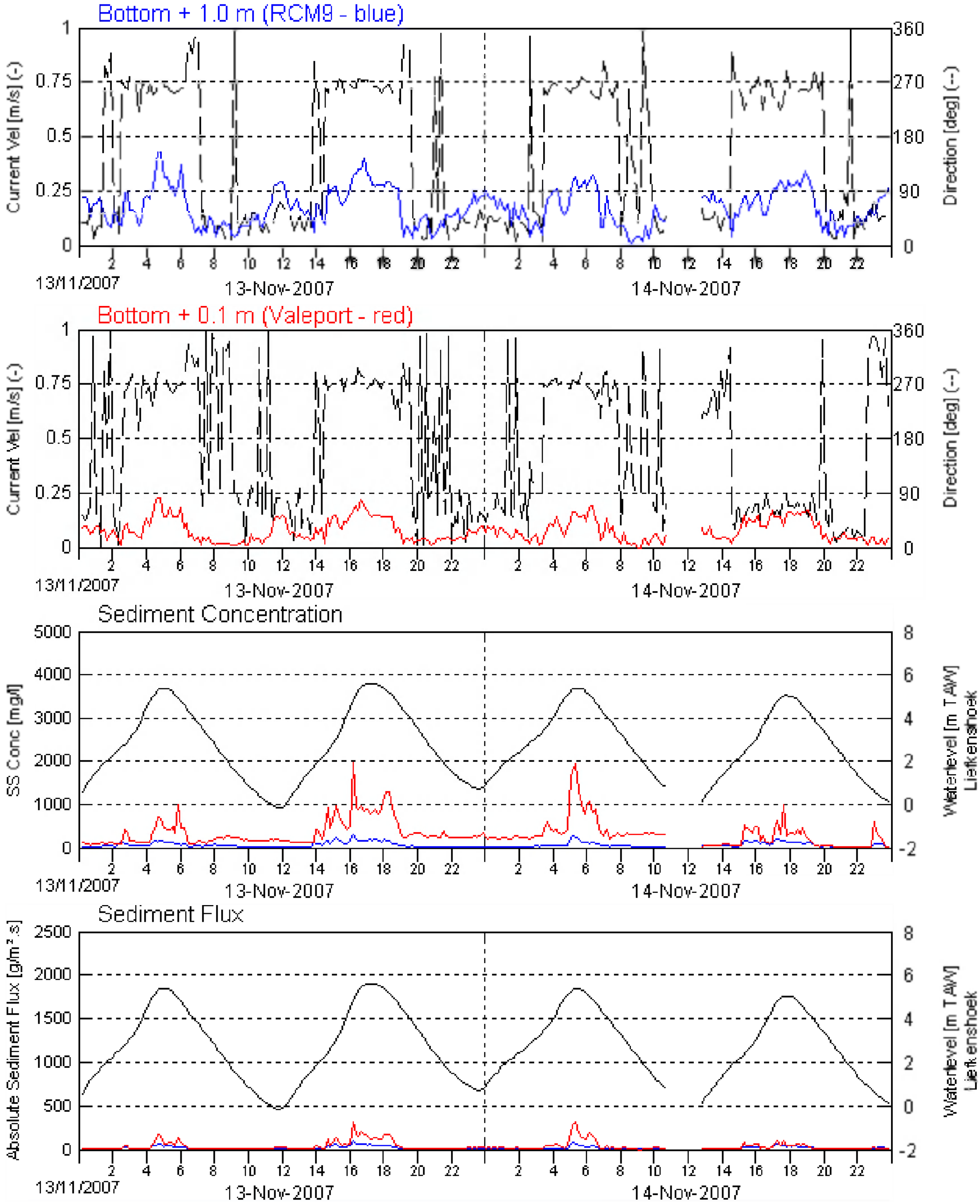
Date:
11/11/2007– 12/11/2007

Data processed by: IMDC

In association with: WL | delft hydraulics, GEMS International

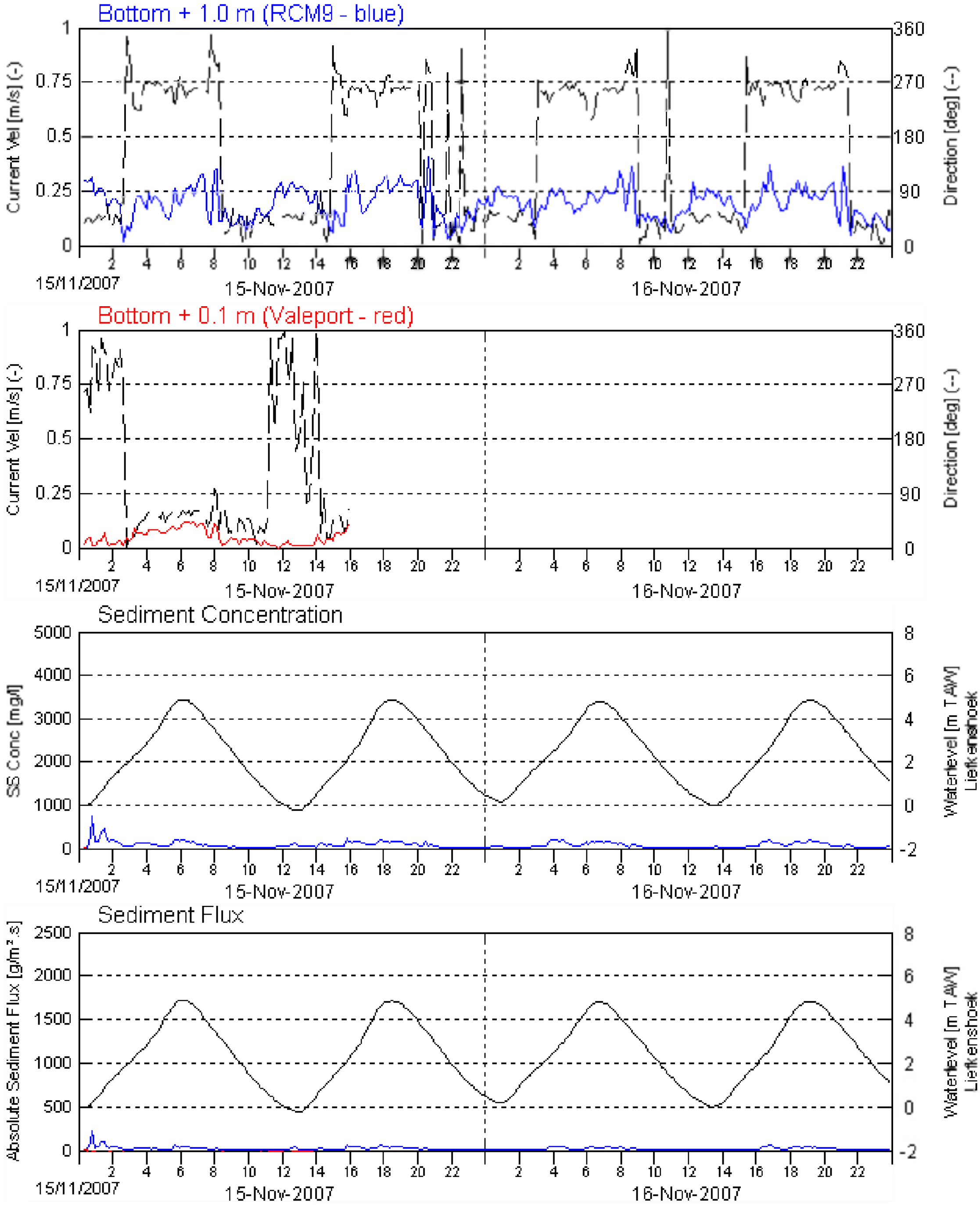
I/RA/11283/07/093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



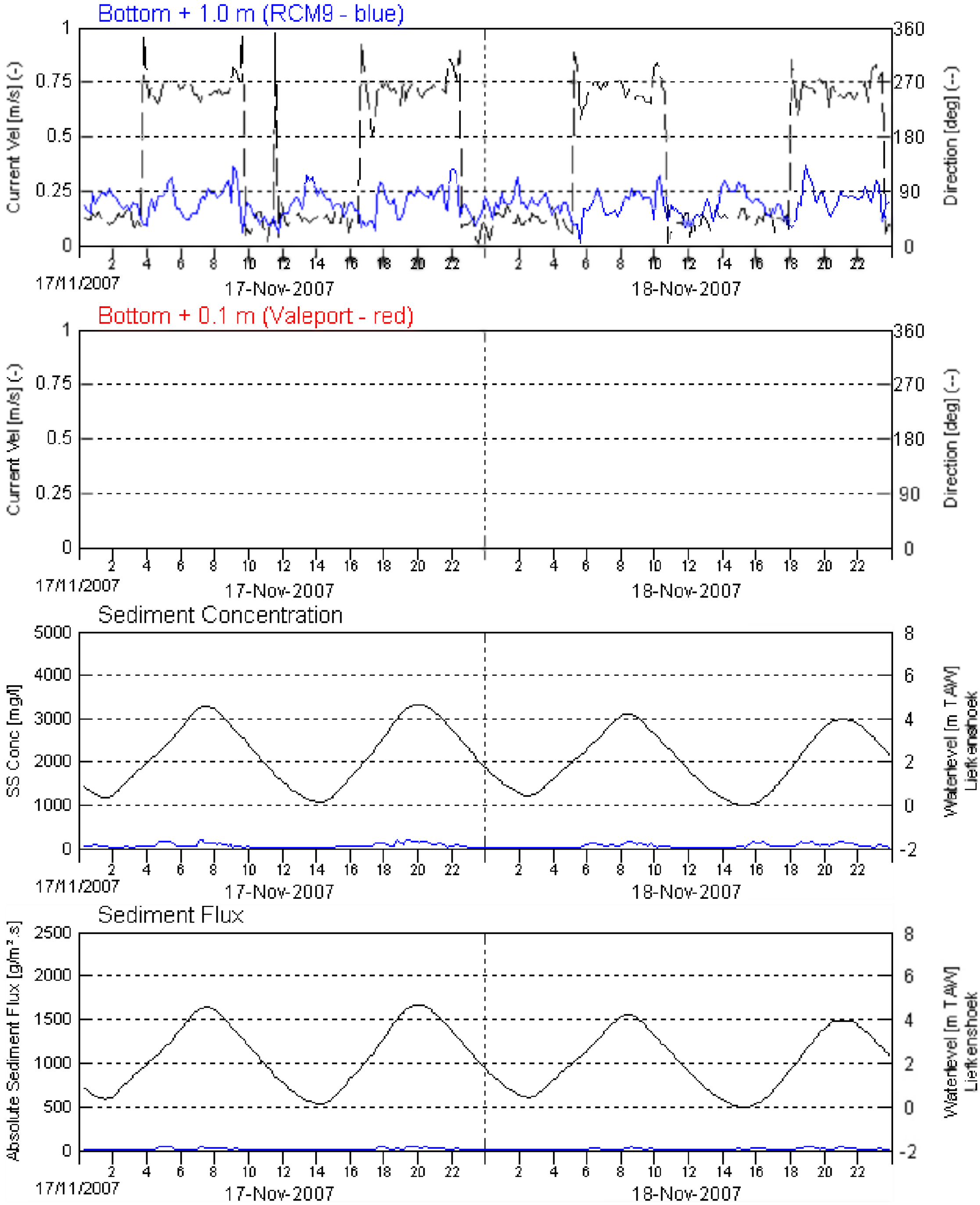
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		*Data processed by:* IMDC
Location: Deurganckdok Sill	Date: 13/11/2007– 14/11/2007	*In association with:* WL delft hydraulics, GEMS International *I/RA/11283/07/093/MSA*

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



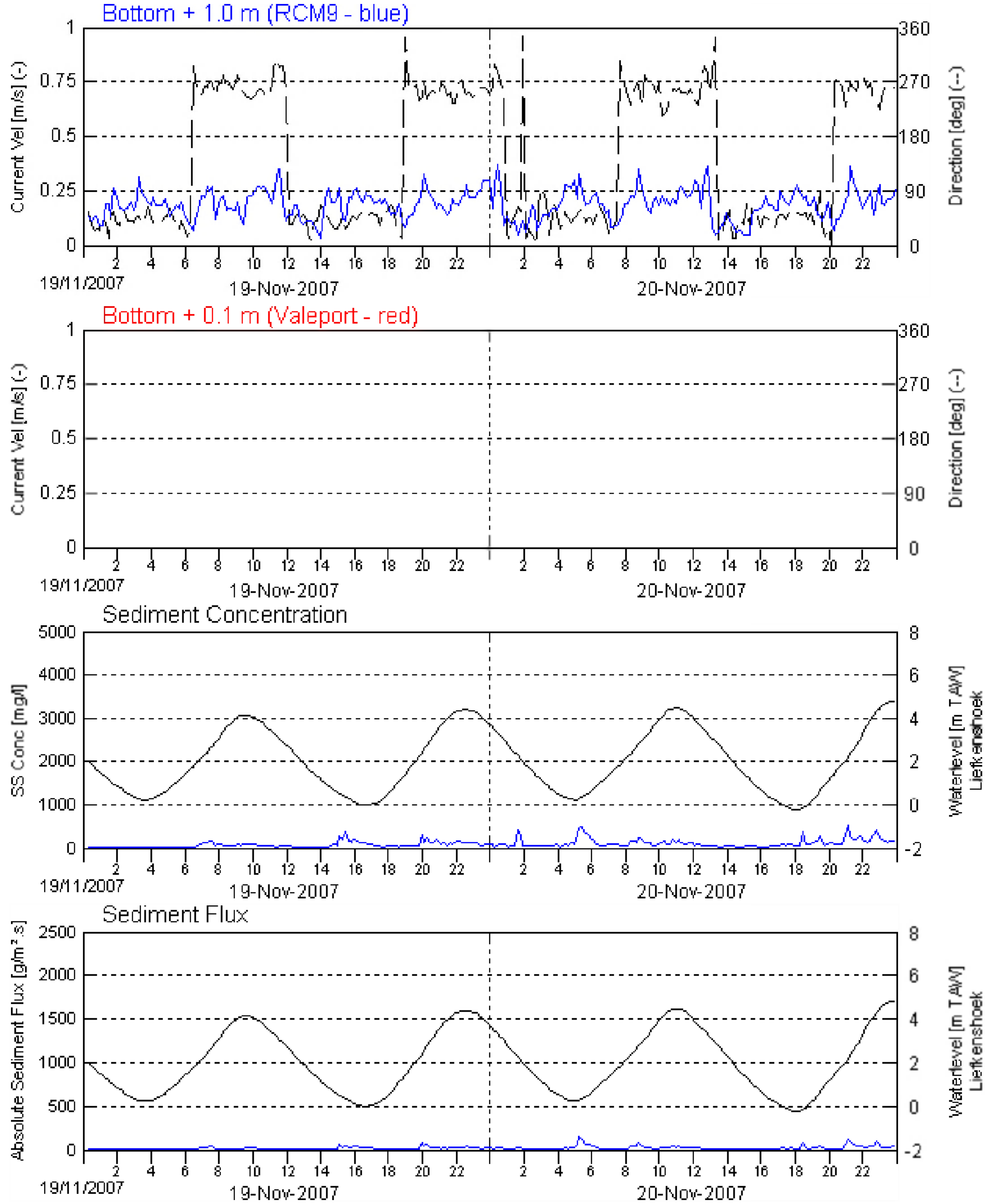
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok Sill	Date: 15/11/2007– 16/11/2007	In association with: WL | delft hydraulics, GEMS International I/RA/11283/07/093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



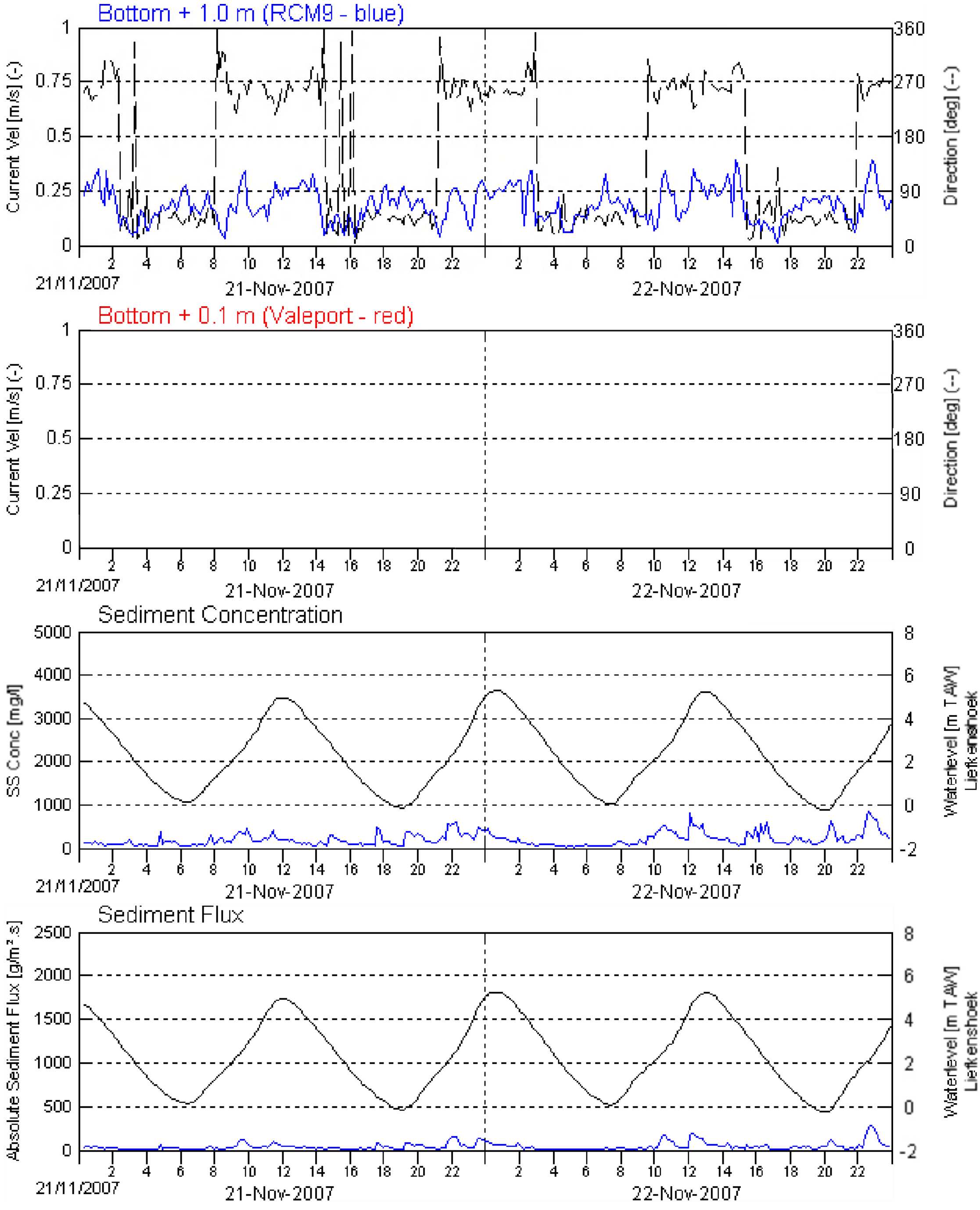
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		*Data processed by:* IMDC
Location: Deurganckdok Sill	Date: 17/11/2007– 18/11/2007	*In association with:* WL delft hydraulics, GEMS International
		I/RA/11283/07/093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



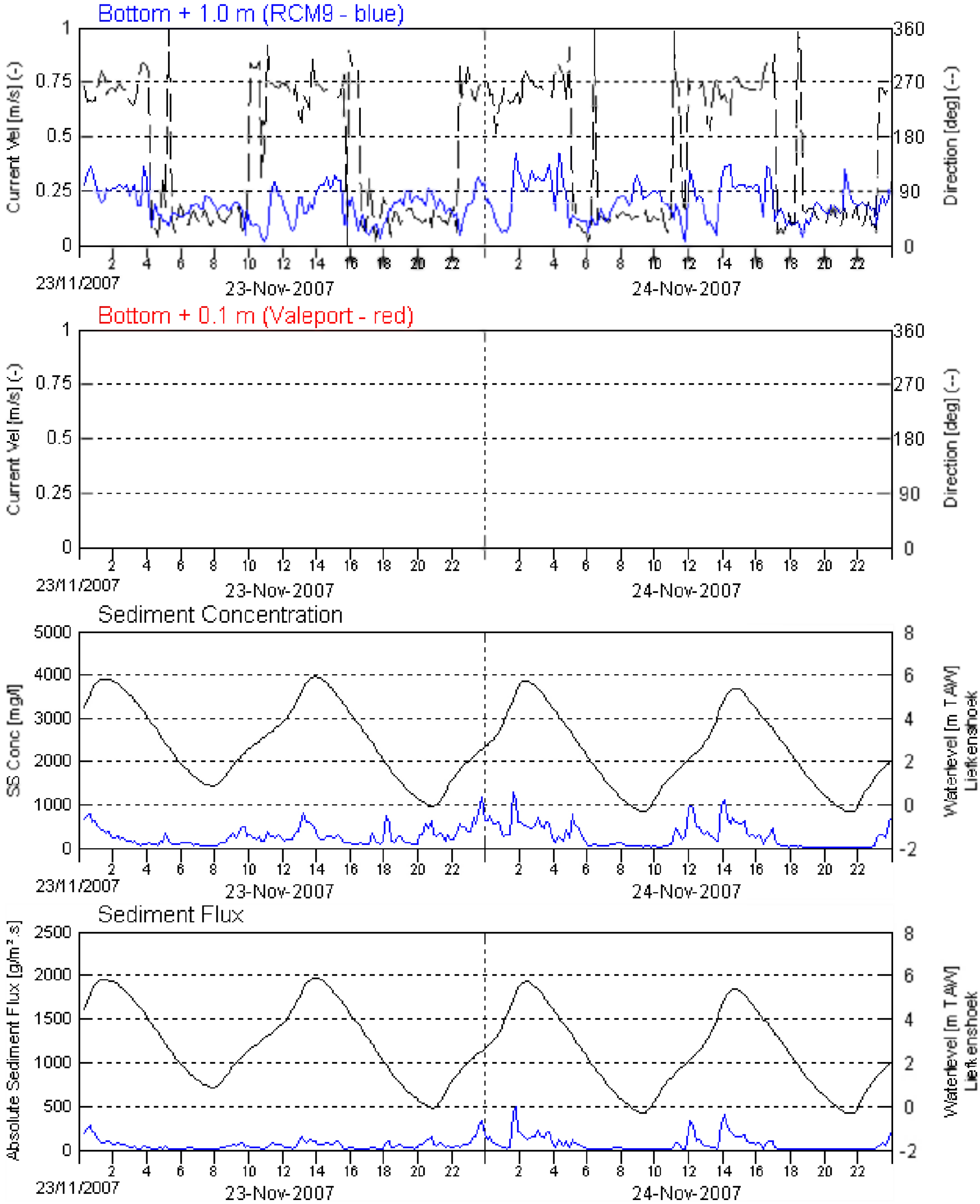
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok Sill	Date: 19/11/2007– 20/11/2007	In association with: WL delft hydraulics, GEMS International I/RA/11283/07/093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



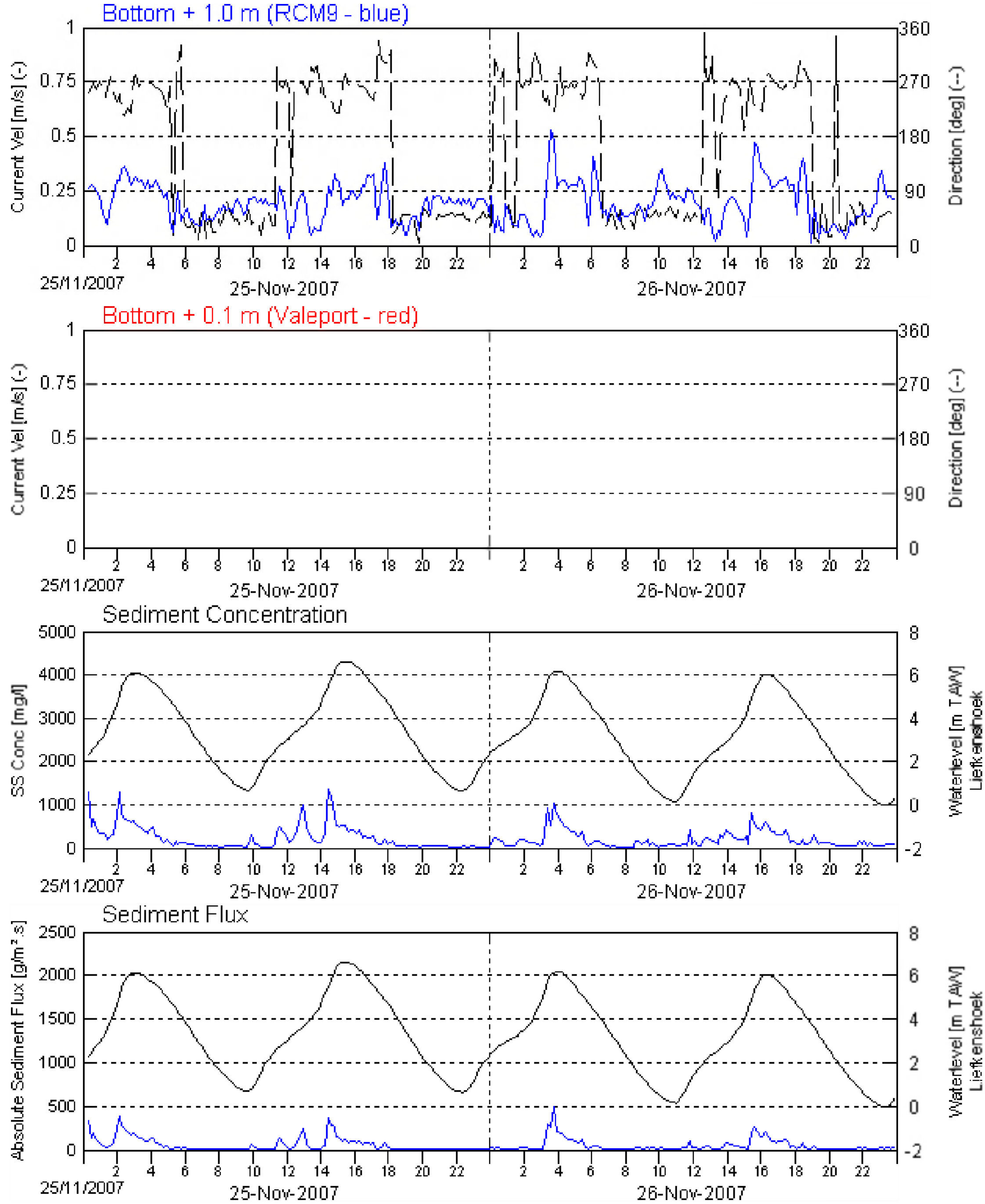
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok Sill	Date: 21/11/2007– 22/11/2007	In association with: wl | delft hydraulics, GEMS International
		I/RA/11283/07/093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



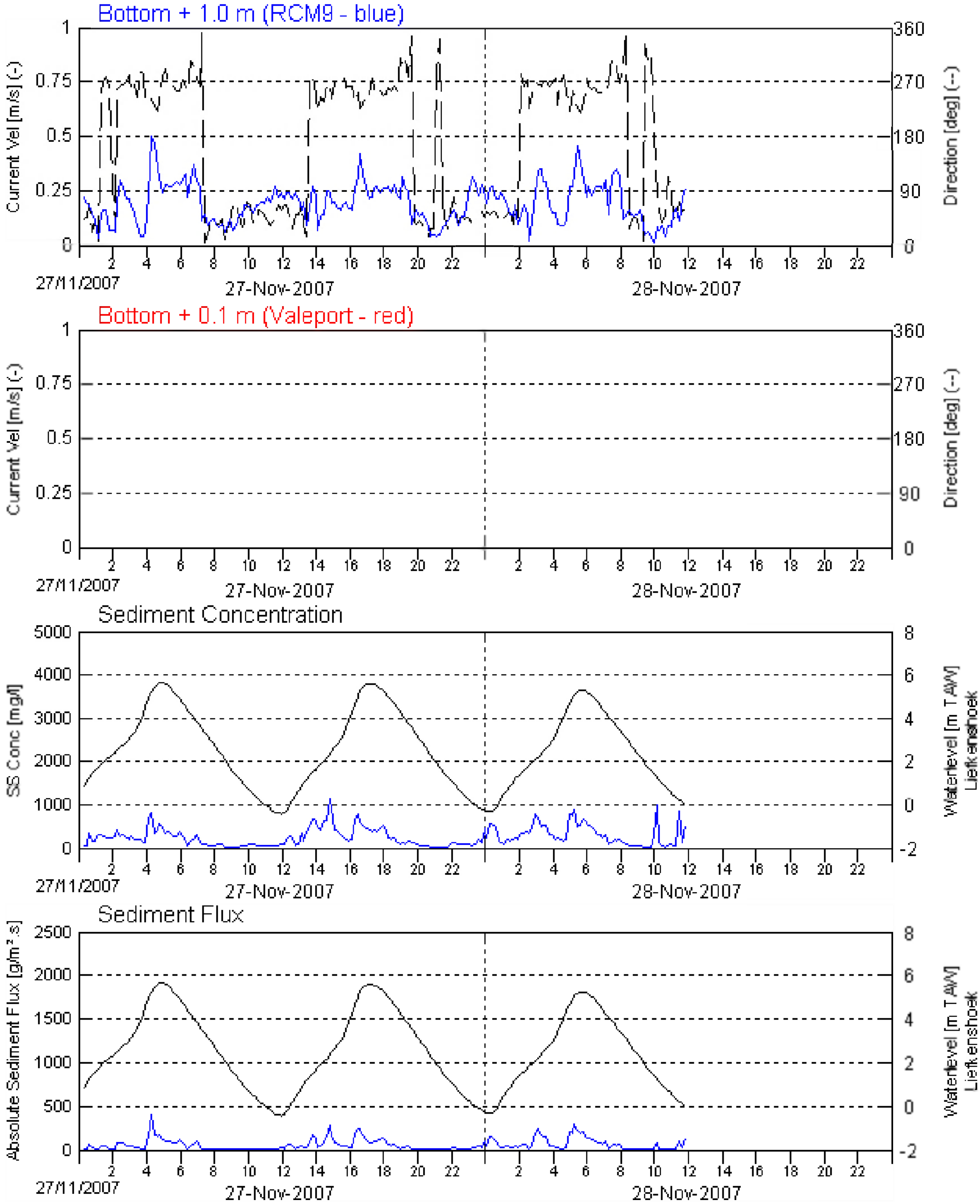
Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok Sill	Date: 23/11/2007– 24/11/2007	In association with: WL | delft hydraulics, GEMS International
		I/RA/11283/07/093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok Sill	Date: 25/11/2007– 26/11/2007	In association with: WL delft hydraulics, GEMS International I/RA/11283/07/093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		Data processed by: IMDC
Location: Deurganckdok Sill	Date: 27/11/2007– 28/11/2007	In association with: WL delft hydraulics, GEMS International
		I/RA/11283/07/093/MSA

RCM9 & VALEPORT AVERAGES FOR EVERY TIDAL PHASE

Date	Tide no.	Phase	Tidal Diff [m]	UP Velocity (RCM9) Bottom +1.0m		DOWN Velocity (Valeport) Bottom +0.1m		SS Concentration [mg/l]		SS Flux [g/m²s]	
				Magnitude [m/s]	Direction [°]	Magnitude [m/s]	Direction [°]	UP (RCM9)	DOWN (Valeport)	UP (RCM9)	DOWN (Valeport)
20071010	1	flood	4.5	0.2	211.8	0.2	279.3	64.3	-	15.2	-176.4
20071010	1	ebb	5.6	0.2	128.6	0.1	143.6	39.5	-	8.8	-144
20071011	2	flood	5.6	0.3	205.2	0.2	265.2	90.5	-	25.8	-209.1
20071011	2	ebb	5.5	0.2	147.4	0.1	172.4	48.1	-	10.4	-146.2
20071011	3	flood	5.4	0.2	181.8	0.2	239	85.7	-	24.1	-190.9
20071011	3	ebb	5.4	0.2	135.5	0.1	150.9	44.6	-	10.3	-146.2
20071012	4	flood	5.8	0.2	198.1	0.2	243.6	109.3	-	28.9	-183
20071012	4	ebb	5.4	0.2	135.6	0.1	156.5	51.1	-	11.6	-147.2
20071012	5	flood	5.3	0.2	188.3	0.2	233.2	86.3	-	22.9	-167.4
20071012	5	ebb	5.8	0.2	126.8	0.1	147.4	41.4	-	9.8	-141.9
20071013	6	flood	5.6	0.2	188	0.2	233.7	60.8	-	18.3	-188.1
20071013	6	ebb	5.6	0.2	137.5	0.1	153.9	48.9	-	11.7	-146.6
20071013	7	flood	5.5	0.2	185.6	0.2	244.1	65.3	-	17.9	-185.5
20071013	7	ebb	5.6	0.2	124.8	0.1	153.7	44.8	-	9.9	-136.1
20071014	8	flood	5.5	0.2	180.9	0.2	238.5	58.2	-	16.8	-199.1
20071014	8	ebb	5.3	0.2	155.7	0.1	161.6	51.5	-	11.6	-135.2
20071014	9	flood	5.5	0.2	186.4	0.2	232.6	55.8	-	15.1	-177.9
20071014	9	ebb	5.5	0.2	144.7	0.1	158.8	51.8	-	11.6	-145.4
20071015	10	flood	5.3	0.2	193.5	0.2	241.8	81.5	-	19.9	-178.8
20071015	10	ebb	5.2	0.2	140.4	0.1	173.7	57.3	-	11.8	-146.2
20071015	11	flood	5.3	0.2	177.2	0.2	220.7	88.7	-	20.9	-168.5
20071016	11	ebb	5.3	0.2	151.9	0.1	166.7	41.6	-	9.1	-131
20071016	12	flood	5.1	0.2	186	0.2	230.9	47.3	-	11.3	-163.9
20071016	12	ebb	4.9	0.2	133.3	0.1	168.2	38.8	-	8.1	-124.9
20071016	13	flood	5	0.2	183.2	0.2	227.6	53.8	-	12	-155.9
20071017	13	ebb	4.9	0.2	167.6	0.1	168.2	41.9	-	8.7	-130
20071017	14	flood	5	0.2	173.7	0.2	231.3	51	-	11.9	-170

RCM9 & VALEPORT AVERAGES FOR EVERY TIDAL PHASE

Date	Tide no.	Phase	Tidal Diff	UP Velocity (RCM9) Bottom +1.0m		DOWN Velocity (Valeport) Bottom +0.1m		SS Concentration [mg/l]		SS Flux [g/m²s]	
			[m]	Magnitude [m/s]	Direction [°]	Magnitude [m/s]	Direction [°]	UP (RCM9)	DOWN (Valeport)	UP (RCM9)	DOWN (Valeport)
20071017	14	ebb	4.7	0.2	142.6	0.1	162.4	39.4	-	8.7	-140
20071017	15	flood	4.7	0.2	151.2	0.1	194.8	55.7	-	11.9	-146.9
20071018	15	ebb	4.5	0.2	144.6	0.1	150.9	46.2	-	9.5	-126.7
20071018	16	flood	4.2	0.2	169.7	0.1	210.2	42.3	-	7.4	-127.4
20071018	16	ebb	4.5	0.2	131.1	0.1	190.2	58.1	-	11.1	-134.1
20071018	17	flood	4.3	0.2	172.5	-	-	63.7	-	14.1	-
20071019	17	ebb	4.4	0.2	116.9	-	-	33.7	-	6.7	-
20071019	18	flood	4	0.2	161.3	-	-	46	-	8.7	-
20071019	18	ebb	4.1	0.2	115.8	-	-	33.2	-	6.4	-
20071019	19	flood	4.1	0.2	168.9	-	-	44.4	-	8.9	-
20071020	19	ebb	3.9	0.2	139.6	-	-	38.3	-	7.7	-
20071020	20	flood	3.5	0.2	162.9	-	-	40.1	-	7.4	-
20071020	20	ebb	3.6	0.2	113.2	-	-	27.7	-	5.1	-
20071020	21	flood	3.8	0.2	168	-	-	40.7	-	8	-
20071021	21	ebb	3.6	0.2	124.4	-	-	28.6	-	5.6	-
20071021	22	flood	3.4	0.2	172	-	-	38.3	-	7.3	-
20071021	22	ebb	3.6	0.2	118.3	-	-	25.8	-	4.9	-
20071021	23	flood	4.1	0.2	163.5	-	-	37.4	-	7.3	-
20071022	23	ebb	4.2	0.2	132.3	-	-	28.3	-	5.6	-
20071022	24	flood	3.9	0.2	165.8	-	-	54.1	-	10.2	-
20071022	24	ebb	4.3	0.2	107.9	-	-	37.5	-	7.6	-
20071023	25	flood	4.9	0.2	181.7	-	-	92.9	-	21.3	-
20071023	25	ebb	4.7	0.2	113	-	-	30.1	-	6.4	-
20071023	26	flood	4.5	0.2	167.1	-	-	50.7	-	10.2	-
20071023	26	ebb	5	0.2	167.5	-	-	27.5	-	5.1	-
20071024	27	flood	5.3	0.2	182.4	-	-	53.5	-	13.4	-
20071024	27	ebb	5.1	0.2	146.5	-	-	38.3	-	7	-

RCM9 & VALEPORT AVERAGES FOR EVERY TIDAL PHASE

Date	Tide no.	Phase	Tidal Diff	UP Velocity (RCM9) Bottom +1.0m		DOWN Velocity (Valeport) Bottom +0.1m		SS Concentration [mg/l]		SS Flux [g/m²s]	
			[m]	Magnitude [m/s]	Direction [°]	Magnitude [m/s]	Direction [°]	UP (RCM9)	DOWN (Valeport)	UP (RCM9)	DOWN (Valeport)
20071024	28	flood	5.1	0.2	181.8	-	-	69.3	-	15.2	-
20071024	28	ebb	5.5	0.2	124.7	-	-	55	-	12.2	-
20071025	29	flood	5.8	0.3	191.7	-	-	172	-	48.5	-
20071025	29	ebb	5.5	0.2	129.6	-	-	52.7	-	11.8	-
20071026	30	flood	5.8	0.2	39	-	-	28.5	-	-	-
20071026	30	ebb	5.9	-	-	-	-	-	-	-	-
20071026	31	flood	5.8	-	-	-	-	-	-	-	-
20071026	31	ebb	6.1	-	-	-	-	-	-	-	-
20071027	32	flood	6.4	-	-	-	-	-	-	-	-
20071027	32	ebb	6	-	-	-	-	-	-	-	-
20071027	33	flood	5.9	-	-	-	-	-	-	-	-
20071027	33	ebb	6.3	-	-	-	-	-	-	-	-
20071028	34	flood	6.2	-	-	-	-	-	-	-	-
20071028	34	ebb	6.1	-	-	-	-	-	-	-	-
20071028	35	flood	6	-	-	-	-	-	-	-	-
20071028	35	ebb	5.9	-	-	-	-	-	-	-	-
20071029	36	flood	6.1	-	-	-	-	-	-	-	-
20071029	36	ebb	5.8	-	-	-	-	-	-	-	-
20071029	37	flood	6	-	-	-	-	-	-	-	-
20071030	37	ebb	5.9	-	-	-	-	-	-	-	-
20071030	38	flood	5.6	-	-	-	-	-	-	-	-
20071030	38	ebb	5.6	-	-	-	-	-	-	-	-
20071030	39	flood	5.6	-	-	-	-	-	-	-	-
20071031	39	ebb	5.7	-	-	-	-	-	-	-	-
20071031	40	flood	5.1	-	-	-	-	-	-	-	-
20071031	40	ebb	5.3	0.1	68.6	0.2	64.3	23.3	21.3	-	3.4
20071031	41	flood	5.4	0.2	177	0.2	181.1	93.2	181.4	23.1	41

RCM9 & VALEPORT AVERAGES FOR EVERY TIDAL PHASE

Date	Tide no.	Phase	Tidal Diff [m]	UP Velocity (RCM9) Bottom +1.0m		DOWN Velocity (Valeport) Bottom +0.1m		SS Concentration [mg/l]		SS Flux [g/m²s]	
				Magnitude [m/s]	Direction [°]	Magnitude [m/s]	Direction [°]	UP (RCM9)	DOWN (Valeport)	UP (RCM9)	DOWN (Valeport)
20071101	41	ebb	4.9	0.2	133.7	0.1	171.5	59.8	119.7	14	19.8
20071101	42	flood	4.6	0.2	183.8	0.1	172.9	93.1	366.1	19.7	68
20071101	42	ebb	4.8	0.2	120.8	0.1	156	51.1	101.5	10.5	19.3
20071101	43	flood	5	0.2	204.4	0.2	200.3	94.4	219.4	23.4	45.1
20071102	43	ebb	4.6	0.2	132	0.1	158.5	55	115.9	11	20.2
20071102	44	flood	4.1	0.2	153.2	0.1	175.5	56.4	119.9	11	18.1
20071102	44	ebb	4.4	0.2	126.2	0.1	168.6	43.9	84.4	8.3	13.3
20071102	45	flood	4.6	0.2	178.3	0.1	184	78.8	171.6	18.9	31
20071103	45	ebb	4.1	0.2	135.4	0.1	170.1	41.5	148.1	8.4	21.3
20071103	46	flood	3.8	0.2	150.8	0.1	158.7	51.6	73.5	9.9	10.9
20071103	46	ebb	4	0.2	135.6	0.1	143.9	34.6	52.7	6.4	7.5
20071103	47	flood	4.4	0.2	177	0.1	187.1	50.4	162.2	10.9	28.2
20071104	47	ebb	4.3	0.2	109.4	0.1	129.5	42.7	69.2	8	10.5
20071104	48	flood	3.7	0.2	137.3	0.1	160.5	36.1	43.8	5.4	5
20071104	48	ebb	4.3	0.2	108	0.1	156.2	41.7	64.3	7.3	9
20071105	49	flood	4.7	0.2	183.5	0.1	187.7	48.4	69.9	10.5	11.6
20071105	49	ebb	4.4	0.2	119.1	0.1	167.4	32.6	66.4	6.6	10.8
20071105	50	flood	4.2	0.2	135.8	0.1	145.9	104.3	477.1	21.2	57.8
20071105	50	ebb	4.5	0.1	142.6	0.1	176.4	133.7	627.5	12.6	39.1
20071106	51	flood	5.5	0.2	192.4	0.1	222.6	90	191.1	21.7	26.1
20071106	51	ebb	4.4	0.2	124.4	0.1	171.7	52.5	110.4	11.4	14.6
20071106	52	flood	4.5	0.2	169.9	0.1	178.7	77.2	189.4	14.4	24.6
20071106	52	ebb	5.2	0.1	85.7	0.1	147.3	47.5	82.3	8.2	9.1
20071107	53	flood	4.6	0.2	173.5	0.1	161.6	66.8	147.6	13.7	22.9
20071107	53	ebb	4.7	0.2	150.6	0.1	190.4	41.3	80.7	8.5	11.2
20071107	54	flood	5.4	0.2	191.2	0.1	205.2	89.8	256.4	20.6	34.6
20071107	54	ebb	5.1	0.2	131	0.1	165.8	47.9	86.8	10.1	12.5

RCM9 & VALEPORT AVERAGES FOR EVERY TIDAL PHASE

Date	Tide no.	Phase	Tidal Diff	UP Velocity (RCM9) Bottom +1.0m		DOWN Velocity (Valeport) Bottom +0.1m		SS Concentration [mg/l]		SS Flux [g/m²s]	
			[m]	Magnitude [m/s]	Direction [°]	Magnitude [m/s]	Direction [°]	UP (RCM9)	DOWN (Valeport)	UP (RCM9)	DOWN (Valeport)
20071108	55	flood	5	0.2	146.2	0.1	149.9	56.3	109.3	11.1	19.4
20071108	55	ebb	5.4	0.1	167.3	0.1	181.4	61.3	134.3	9.9	11.2
20071108	56	flood	4.9	0.2	183.6	0.1	191.9	97.8	300.2	21.6	40.8
20071108	56	ebb	4.9	0.2	130.9	0.1	144.6	42.2	106.4	8.8	13.8
20071109	57	flood	6.6	0.2	182.9	0.1	186.8	98.1	323.6	23.8	48.3
20071109	57	ebb	4.4	0.2	129.4	0.1	170.2	57.2	143.8	11.4	13.1
20071109	58	flood	4	0.1	129.5	0.1	168.9	55.3	131.8	6.6	7
20071109	58	ebb	5.5	0.2	137.4	0.1	175.3	40.8	128.5	7.7	13
20071110	59	flood	4.7	0.2	107.8	0.1	131.9	58.3	162	13.4	21.4
20071110	59	ebb	5.1	0.2	125.7	0.1	174.1	55	216.3	13.5	33.6
20071110	60	flood	5.2	0.2	95.5	0.1	100.6	63.1	264.7	17.9	57
20071110	60	ebb	5.4	0.2	131.5	0.1	204.7	68.2	226.5	14.7	26.8
20071111	61	flood	5.4	0.2	160.9	0.1	170.2	129.6	549.8	28.9	68.9
20071111	61	ebb	4.9	0.2	170.5	0.1	194.3	146.8	1373.3	22.6	59.7
20071111	62	flood	5.1	0.2	164.2	0.1	173.9	73.8	1058.9	15	72
20071111	62	ebb	5.5	0.2	140.3	0.1	164.3	42.1	613.2	8.9	51.5
20071112	63	flood	5.2	0.2	139.6	0.1	155.9	54.7	903.4	12.5	66.9
20071112	63	ebb	5.5	0.2	134.1	0.1	158.2	44.6	239.5	10.2	29.1
20071112	64	flood	5.3	0.2	164.2	0.1	198.4	68	278.5	17.3	27.7
20071112	64	ebb	5.6	0.2	140	0.1	163.3	64.2	287.8	15.3	32.4
20071113	65	flood	5.3	0.2	166	0.1	172.5	65.6	207	15.5	26.8
20071113	65	ebb	5.5	0.1	114.6	0.1	196	47.7	237.4	8.2	18.4
20071113	66	flood	5.7	0.2	181.7	0.1	185.7	107	500.1	27.5	68.5
20071113	66	ebb	4.9	0.2	134.9	0.1	165.8	56.6	444.6	12.4	40.8
20071114	67	flood	4.6	0.2	122.4	0.1	153.2	51	414.3	10.9	41.8
20071114	67	ebb	5.2	0.1	179.8	0.1	195	57.3	444.9	10.9	41.3
20071114	68	flood	4.7	0.2	185.3	0.1	125.9	90.2	229	19.6	26.7

RCM9 & VALEPORT AVERAGES FOR EVERY TIDAL PHASE

Date	Tide no.	Phase	Tidal Diff	UP Velocity (RCM9) Bottom +1.0m		DOWN Velocity (Valeport) Bottom +0.1m		SS Concentration [mg/l]		SS Flux [g/m²s]	
			[m]	Magnitude [m/s]	Direction [°]	Magnitude [m/s]	Direction [°]	UP (RCM9)	DOWN (Valeport)	UP (RCM9)	DOWN (Valeport)
20071115	68	ebb	5	0.2	123.6	0.1	123.4	54.6	125.7	11.9	13.2
20071115	69	flood	4.9	0.2	177	0.1	145.2	157.5	34.8	35.8	-54.8
20071115	69	ebb	5.1	0.2	115.8	-	-	55.7	-	12.6	-47.2
20071115	70	flood	5.1	0.2	184.7	-	-	100.5	-	23.2	-55.9
20071116	70	ebb	4.7	0.2	130	-	-	60.9	-	13.6	-47.4
20071116	71	flood	4.6	0.2	175.5	-	-	88.5	-	19	-49.7
20071116	71	ebb	4.8	0.2	122	-	-	53	-	11.9	-45.4
20071116	72	flood	4.8	0.2	186.9	-	-	87.9	-	20.7	-48
20071117	72	ebb	4.5	0.2	122.6	-	-	61	-	12.1	-46.3
20071117	73	flood	4.2	0.2	184.1	-	-	74.7	-	15.6	-47.5
20071117	73	ebb	4.4	0.2	120.9	-	-	45.5	-	9.9	-45.2
20071117	74	flood	4.5	0.2	171.6	-	-	86.9	-	16.6	-45.4
20071118	74	ebb	4.2	0.2	127.9	-	-	52.7	-	11.9	-45.1
20071118	75	flood	3.8	0.2	164	-	-	53.3	-	9.6	-46.9
20071118	75	ebb	4.2	0.2	110.8	-	-	47.6	-	10.2	-48
20071118	76	flood	4	0.2	157	-	-	94.5	-	19.6	-52.5
20071119	76	ebb	3.7	0.2	121.6	-	-	41.2	-	8.6	-52.9
20071119	77	flood	3.9	0.2	161.3	-	-	53.6	-	10.5	-55.9
20071119	77	ebb	4.2	0.2	115.6	-	-	79.5	-	16.1	-48.1
20071119	78	flood	4.4	0.2	179.3	-	-	93.5	-	19.2	-48.3
20071120	78	ebb	4.1	0.2	127.5	-	-	83	-	14.6	7.2
20071120	79	flood	4.2	0.2	167	-	-	149.2	-	32.5	54.9
20071120	79	ebb	4.7	0.2	115.9	-	-	61.5	-	12.1	33.9
20071120	80	flood	5	0.2	178.2	-	-	181.7	-	37.3	82.2
20071121	80	ebb	4.6	0.2	133.9	-	-	107.7	-	20.4	42.6
20071121	81	flood	4.8	0.2	204.2	-	-	203.1	-	38.8	75.5
20071121	81	ebb	5.1	0.2	132.9	-	-	142.6	-	25.4	37.4

RCM9 & VALEPORT AVERAGES FOR EVERY TIDAL PHASE

Date	Tide no.	Phase	Tidal Diff	UP Velocity (RCM9) Bottom +1.0m		DOWN Velocity (Valeport) Bottom +0.1m		SS Concentration [mg/l]		SS Flux [g/m²s]	
			[m]	Magnitude [m/s]	Direction [°]	Magnitude [m/s]	Direction [°]	UP (RCM9)	DOWN (Valeport)	UP (RCM9)	DOWN (Valeport)
20071122	82	flood	5.4	0.2	181.1	-	-	319.8	-	65	-
20071122	82	ebb	5.2	0.2	119.3	-	-	96.7	-	20.9	-
20071122	83	flood	5.2	0.2	179.5	-	-	282.1	-	62.5	-
20071122	83	ebb	5.5	0.2	119.8	-	-	204.6	-	33.4	-
20071123	84	flood	6	0.2	188.4	-	-	436.6	-	111	-
20071123	84	ebb	4.9	0.2	145.4	-	-	140.6	-	29.4	-
20071123	85	flood	5	0.2	182.1	-	-	304.9	-	49.1	-36.5
20071123	85	ebb	6	0.2	121.1	-	-	228.1	-	45.1	-33.9
20071124	86	flood	5.8	0.2	198.4	-	-	518.4	-	115.2	-13.5
20071124	86	ebb	6	0.2	134	-	-	241	-	58.6	-12
20071124	87	flood	5.7	0.2	178.1	-	-	366.8	-	90.6	-15.3
20071124	87	ebb	5.7	0.2	142	-	-	157.1	-	38.8	-16.8
20071125	88	flood	6.4	0.2	191.7	-	-	430.6	-	114.8	-11.8
20071125	88	ebb	5.4	0.2	125.5	-	-	136.5	-	31.8	-13.3
20071125	89	flood	5.9	0.2	192.1	-	-	354	-	75	-14
20071125	89	ebb	6	0.2	132.7	-	-	122.8	-	28.2	-18.1
20071126	90	flood	5.5	0.2	177.2	-	-	200.5	-	53	-30.9
20071126	90	ebb	6	0.2	127.7	-	-	156.9	-	40.2	-21.7
20071126	91	flood	5.8	0.2	185.4	-	-	256.6	-	60.7	-20
20071126	91	ebb	6	0.2	134.4	-	-	146.5	-	32.6	-21.4
20071127	92	flood	5.7	0.2	174.6	-	-	254.9	-	57.7	-21.2
20071127	92	ebb	6.1	0.2	124.4	-	-	126.1	-	30.6	-21.6
20071127	93	flood	6	0.2	194.6	-	-	421.5	-	93.2	-20.3
20071128	93	ebb	5.9	0.2	138.6	-	-	151.6	-	33.8	-21.2
20071128	94	flood	5.6	0.2	186.6	-	-	389.9	-	93.1	-21.5
20071122	83	ebb	5.5	0.2	119.8	-	-	204.6	-	33.4	-
20071123	84	flood	6	0.2	188.4	-	-	436.6	-	111	-

RCM9 & VALEPORT AVERAGES FOR EVERY TIDAL PHASE

Date	Tide no.	Phase	Tidal Diff	UP Velocity (RCM9) Bottom +1.0m		DOWN Velocity (Valeport) Bottom +0.1m		SS Concentration [mg/l]		SS Flux [g/m²s]	
			[m]	Magnitude [m/s]	Direction [°]	Magnitude [m/s]	Direction [°]	UP (RCM9)	DOWN (Valeport)	UP (RCM9)	DOWN (Valeport)
20071123	84	ebb	4.9	0.2	145.4	-	-	140.6	-	29.4	-
20071123	85	flood	5	0.2	182.1	-	-	304.9	-	49.1	-36.5
20071123	85	ebb	6	0.2	121.1	-	-	228.1	-	45.1	-33.9
20071124	86	flood	5.8	0.2	198.4	-	-	518.4	-	115.2	-13.5
20071124	86	ebb	6	0.2	134	-	-	241	-	58.6	-12
20071124	87	flood	5.7	0.2	178.1	-	-	366.8	-	90.6	-15.3
20071124	87	ebb	5.7	0.2	142	-	-	157.1	-	38.8	-16.8
20071125	88	flood	6.4	0.2	191.7	-	-	430.6	-	114.8	-11.8
20071125	88	ebb	5.4	0.2	125.5	-	-	136.5	-	31.8	-13.3
20071125	89	flood	5.9	0.2	192.1	-	-	354	-	75	-14
20071125	89	ebb	6	0.2	132.7	-	-	122.8	-	28.2	-18.1
20071126	90	flood	5.5	0.2	177.2	-	-	200.5	-	53	-30.9
20071126	90	ebb	6	0.2	127.7	-	-	156.9	-	40.2	-21.7
20071126	91	flood	5.8	0.2	185.4	-	-	256.6	-	60.7	-20
20071126	91	ebb	6	0.2	134.4	-	-	146.5	-	32.6	-21.4
20071127	92	flood	5.7	0.2	174.6	-	-	254.9	-	57.7	-21.2
20071127	92	ebb	6.1	0.2	124.4	-	-	126.1	-	30.6	-21.6
20071127	93	flood	6	0.2	194.6	-	-	421.5	-	93.2	-20.3
20071128	93	ebb	5.9	0.2	138.6	-	-	151.6	-	33.8	-21.2
20071128	94	flood	5.6	0.2	186.6	-	-	389.9	-	93.1	-21.5

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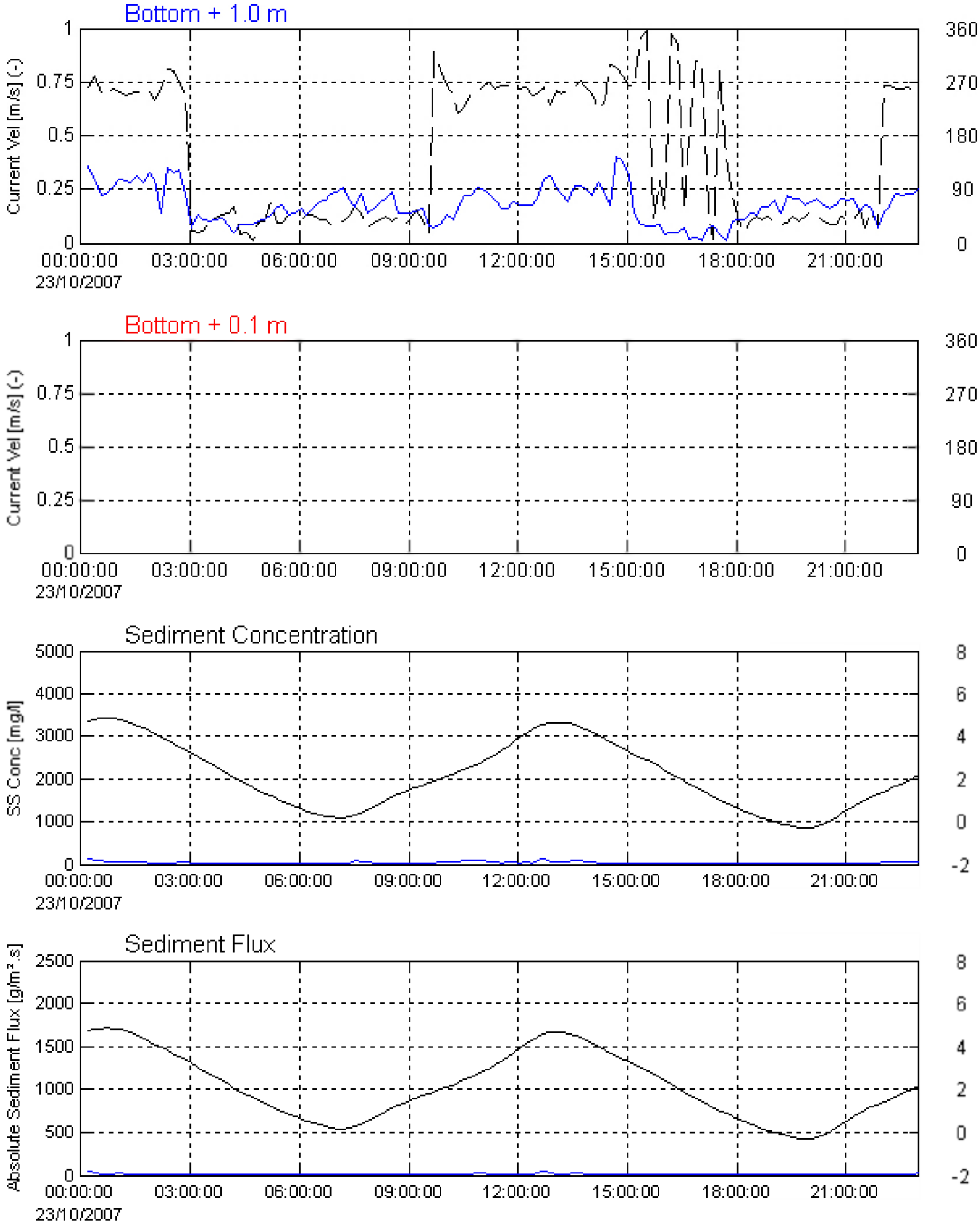

Current Velocity and Direction upper (RCM9) and lower (Valeport) EMC, OBS SS Conc. & flux and waterlevel		*Data processed by:* IMDC
Location: Deurganckdok Sill	Date: Avg Tide 23/10– 24/10	*In association with:* WL delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

APPENDIX E.

COMPARISON OF RCM9 & VALEPORT SENSORS

TO ARGUS SENSORS

E.1 CDW Frame

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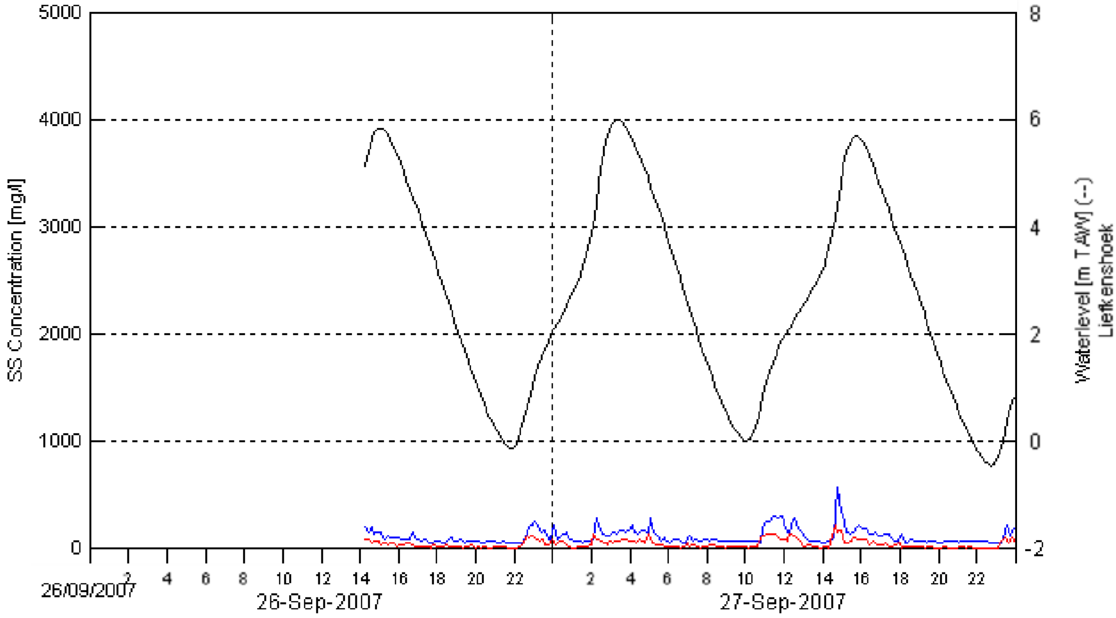

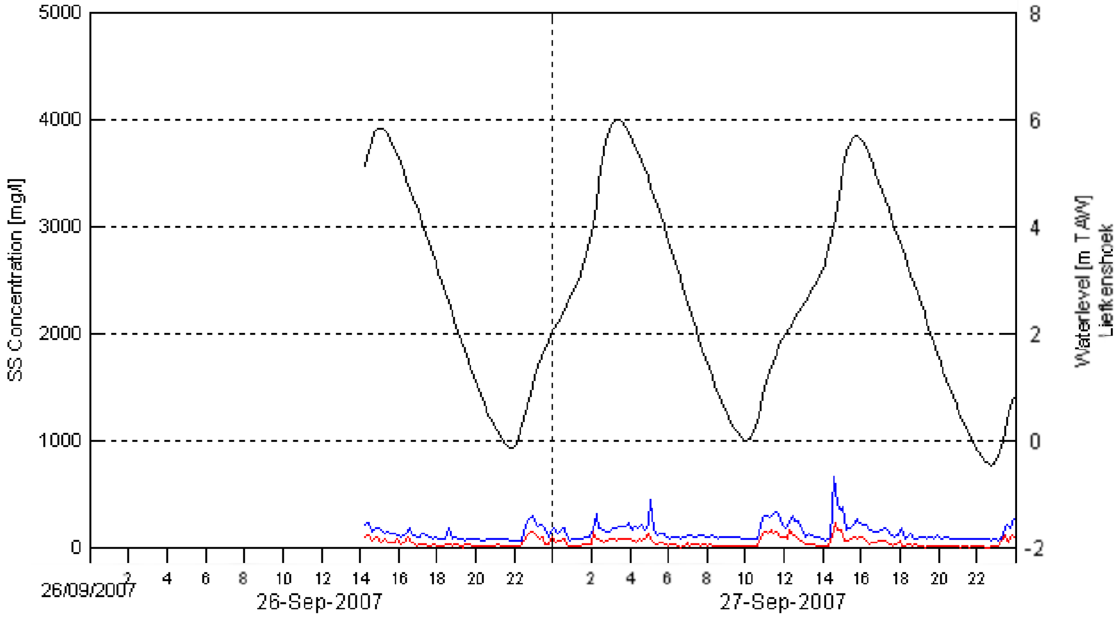

Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1.04 m and 0.16 m above the bottom for SS concentration

Data processed by: IMDC

Location: Deurganckdok CDW

Date: 26/09/07 – 27/09/07

In association with: wL | delft hydraulics GEMS International

I/RA/11283/07.093/MSA

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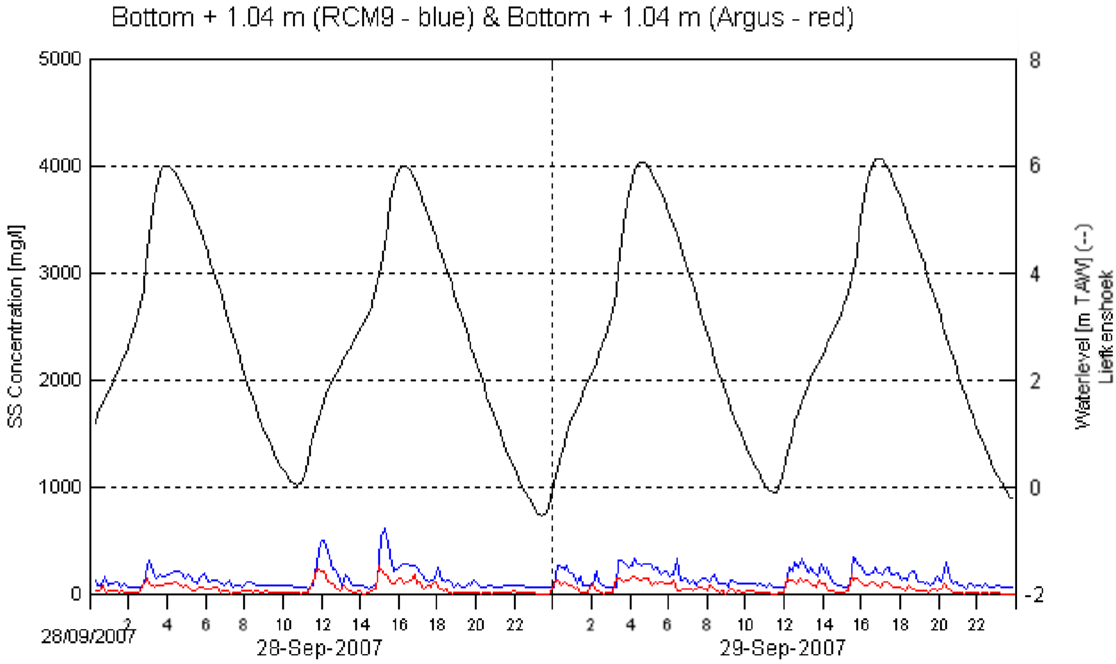
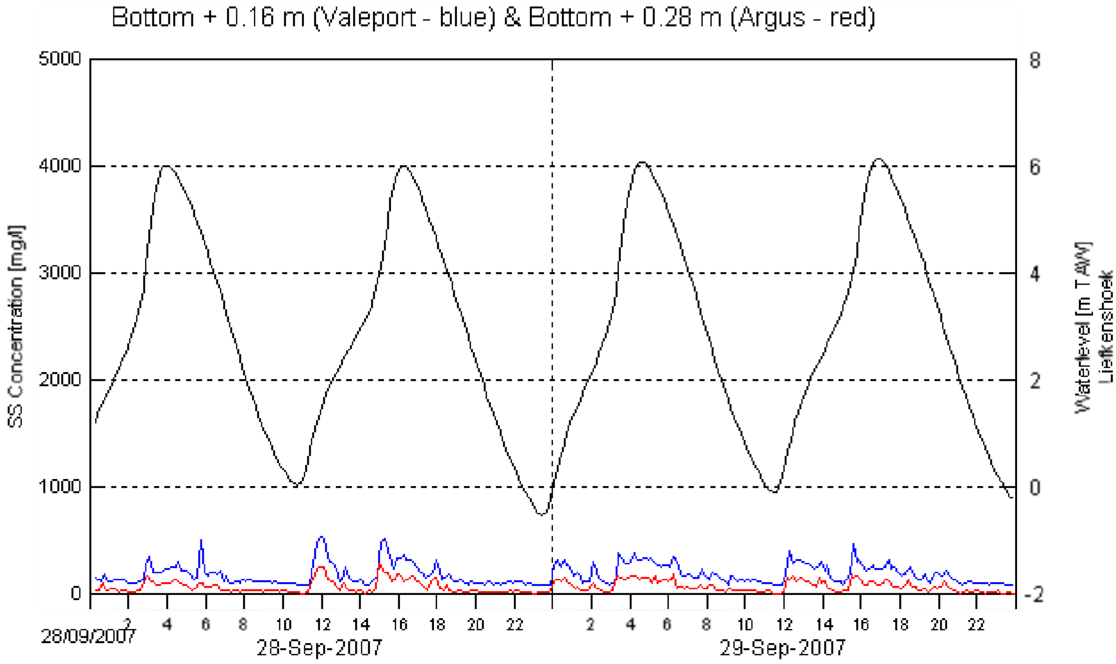
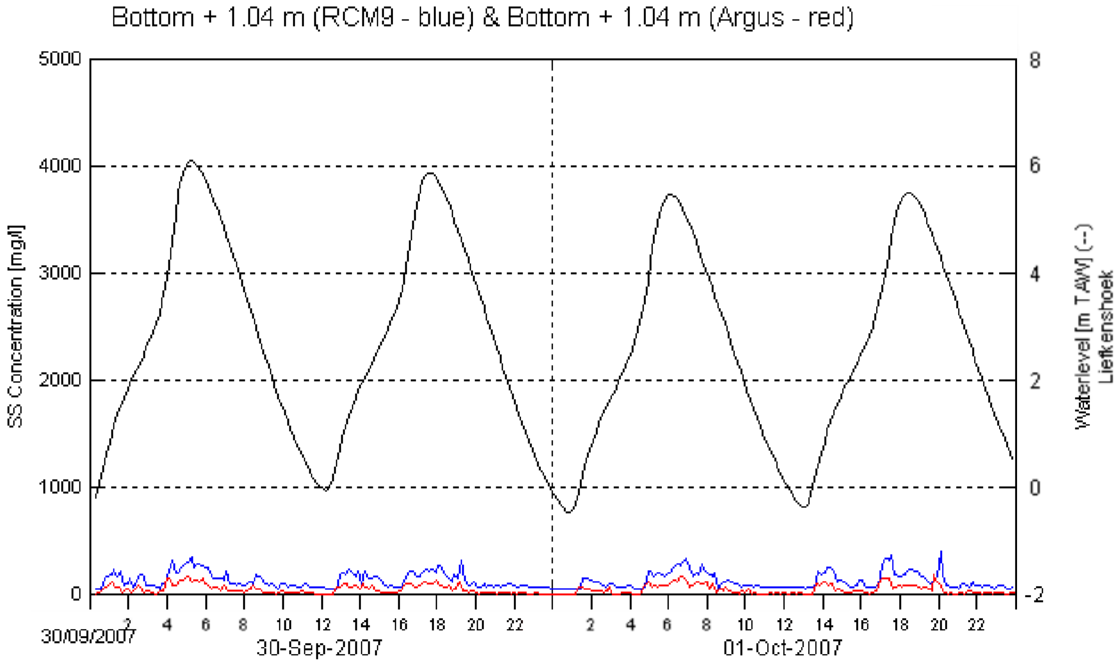


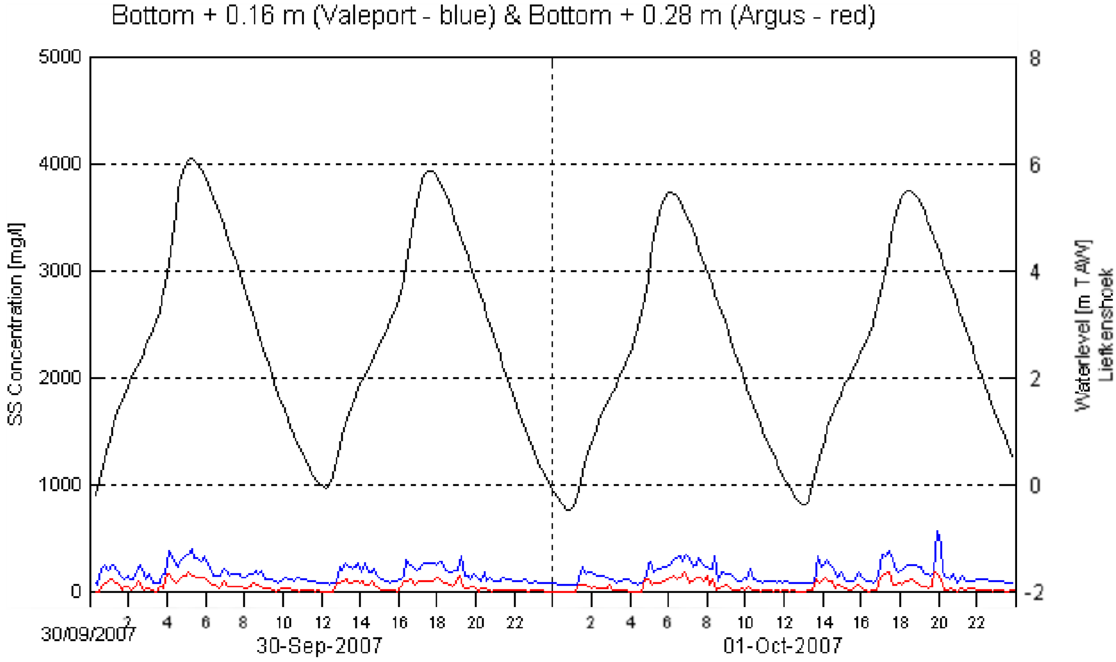


Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1.04 m and 0.16 m above the bottom for SS concentration

Location: Deurganckdok Sill	Date: 28/09/07 – 29/09/07	*Data processed by:* IMDC *In association with:* wl | delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007





Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1.04 m and 0.16 m above the bottom for SS concentration

Location: Deurganckdok Sill

Date: 30/09/07 – 01/10/07

Data processed by: IMDC

In association with: wL | delft hydraulics, GEMS International

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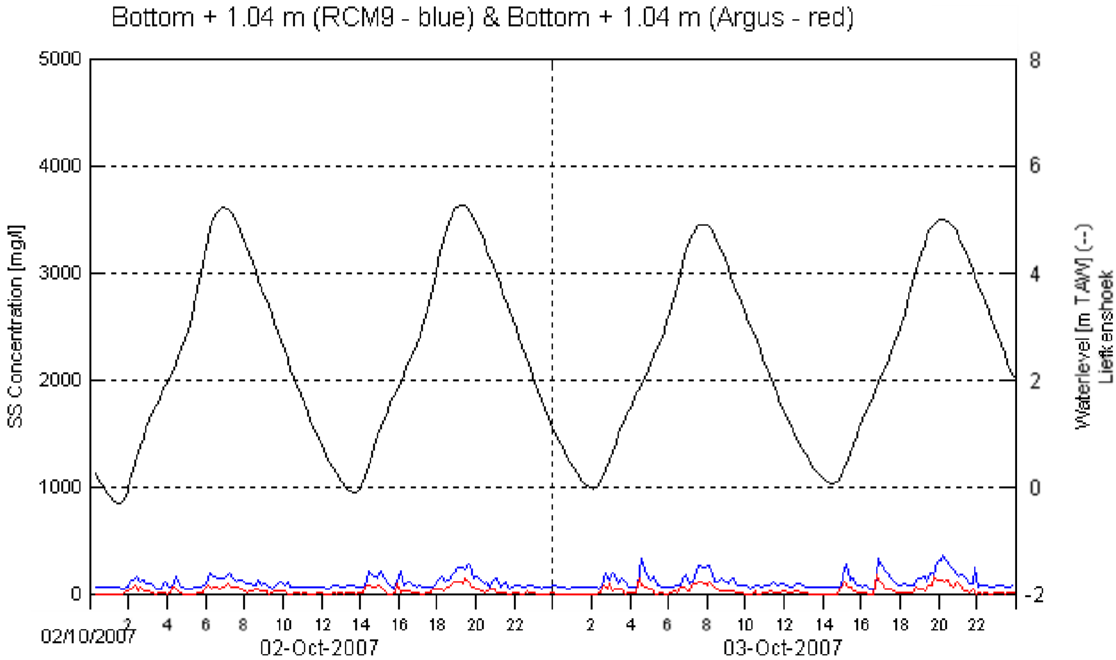

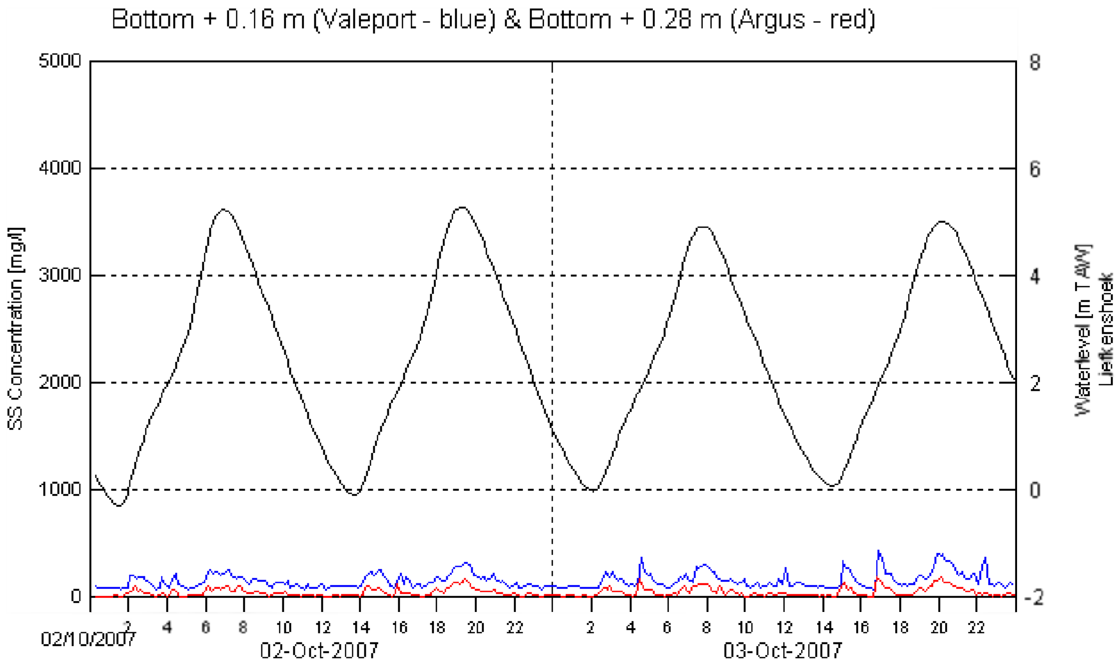

Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1.04 m and 0.16 m above the bottom for SS concentration

Data processed by: IMDC

Location: Deurganckdok Sill

Date: 02/10/07 – 03/10/07

In association with: wL | delft hydraulics, GEMS International

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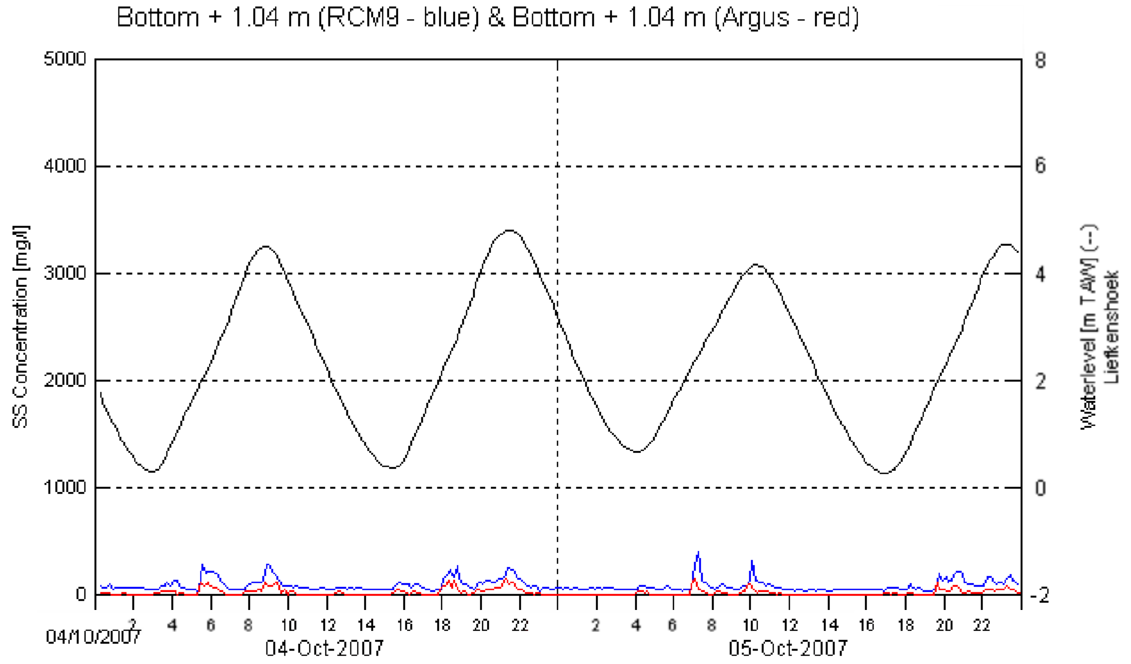
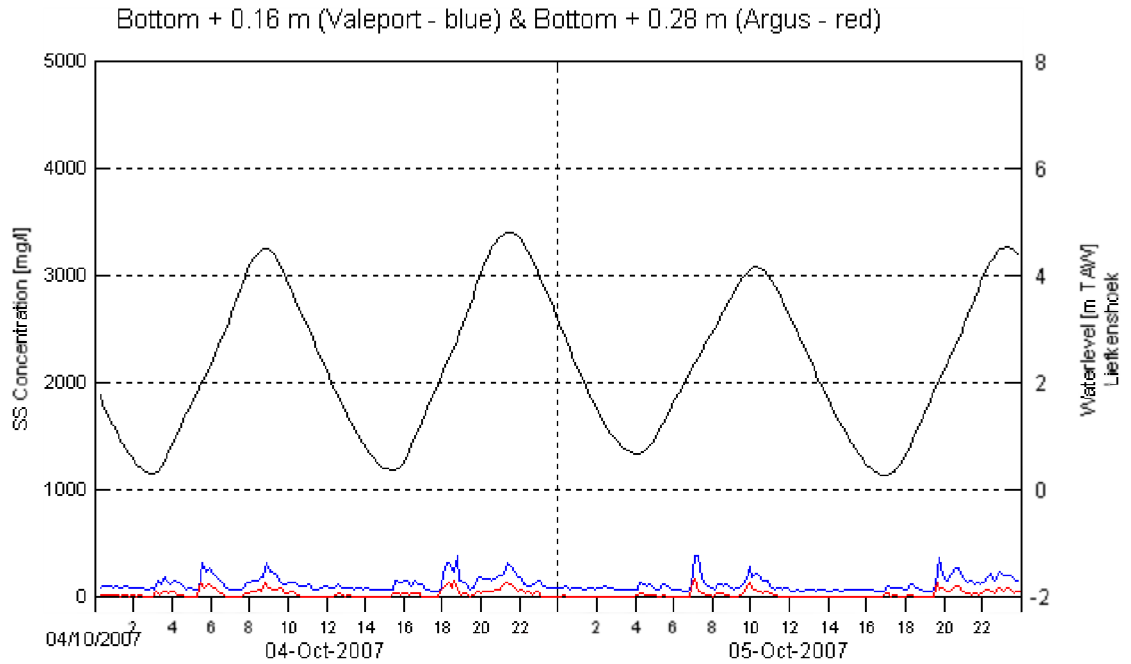
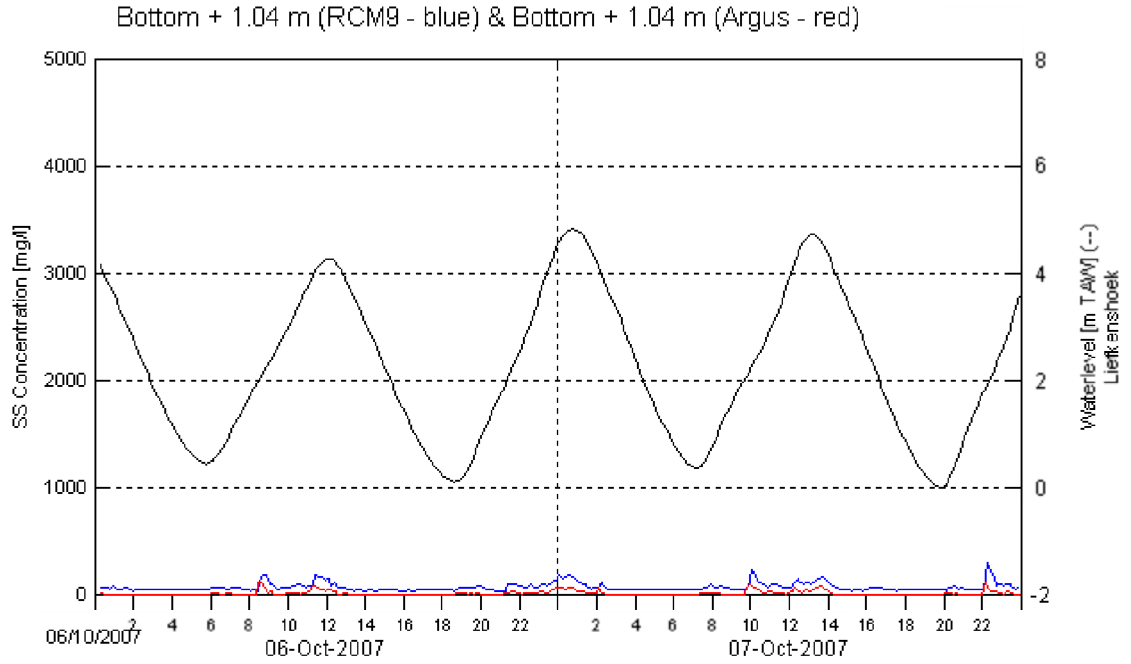
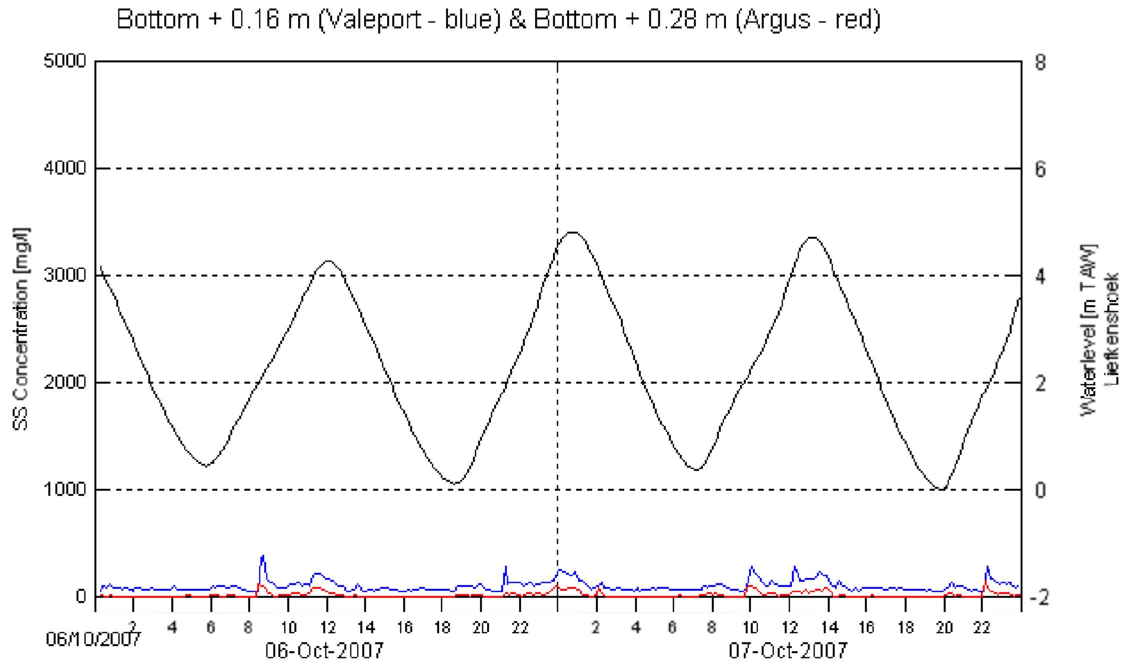




Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1.04 m and 0.16 m above the bottom for SS concentration		*Data processed by:* IMDC
Location: Deurganckdok Sill	Date: 04/10/07 – 05/10/07	*In association with:* wl delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007





Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1.04 m and 0.16 m above the bottom for SS concentration

Data processed by: IMDC

In association with: wL | delft hydraulics, GEMS International

Location: Deurganckdok Sill

Date: 06/10/07 – 07/10/07

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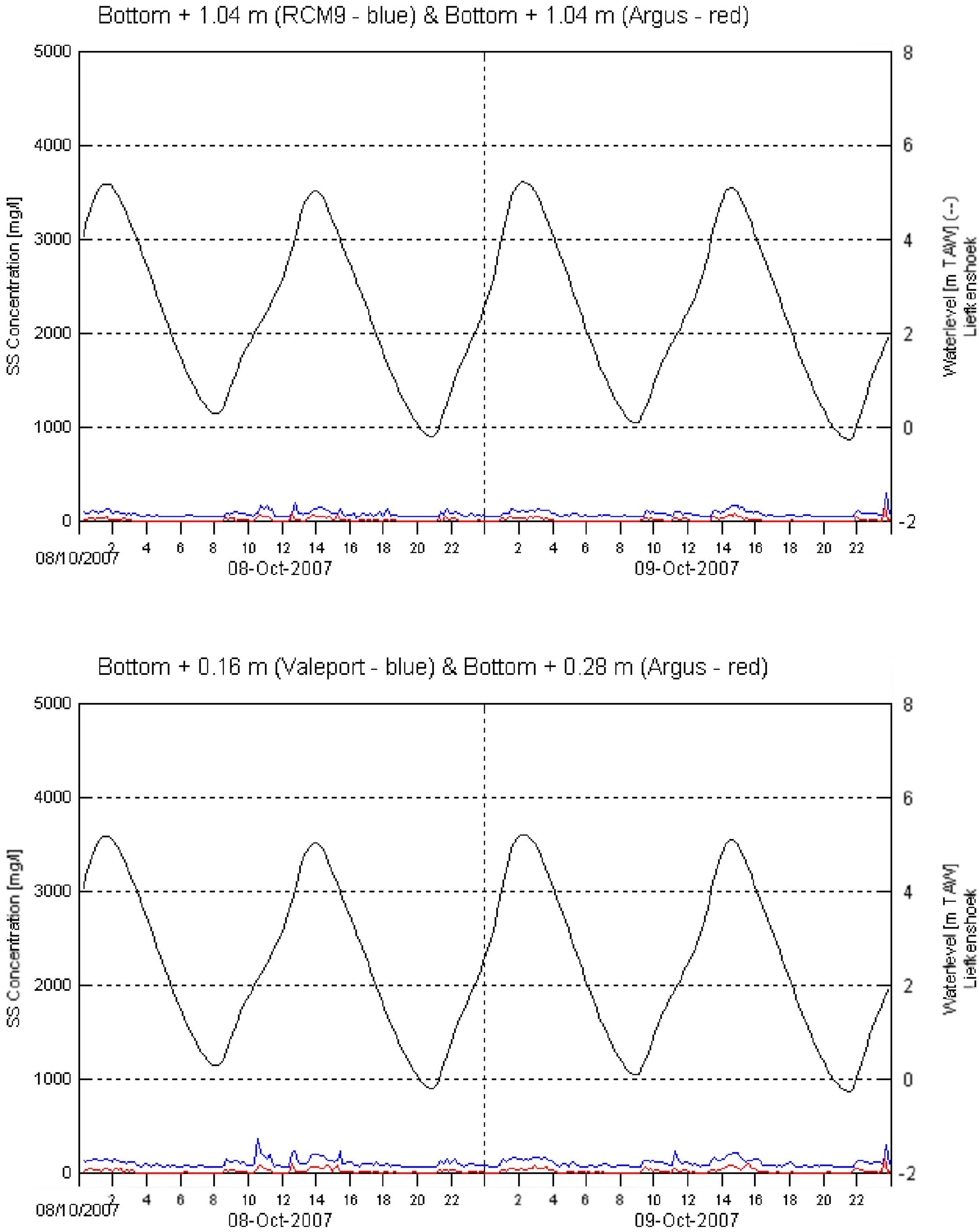
11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1.04 m and 0.16 m above the bottom for SS concentration

Location: Deurganckdok Sill	Date: 08/10/07 – 09/10/07

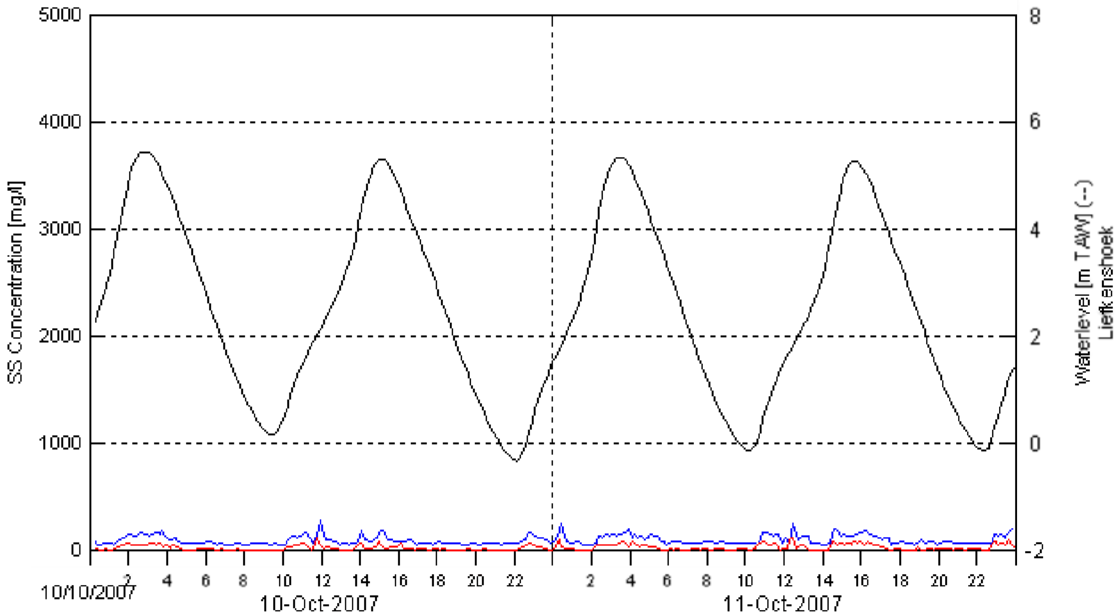
Data processed by: IMDC

In association with: wl | delft hydraulics, GEMS International

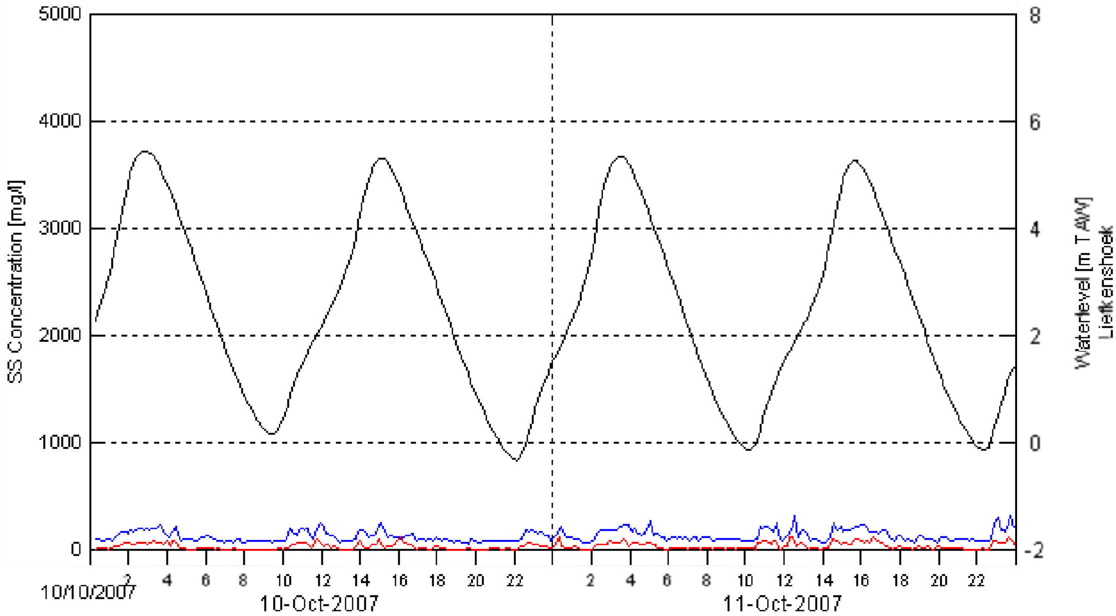
I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007

Bottom + 1.04 m (RCM9 - blue) & Bottom + 1.04 m (Argus - red)



Bottom + 0.16 m (Valeport - blue) & Bottom + 0.28 m (Argus - red)



Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1.04 m and 0.16 m above the bottom for SS concentration

Location: Deurganckdok Sill

Date: 10/10/07 – 11/10/07

Data processed by: IMDC

In association with: wl | delft hydraulics, GEMS International

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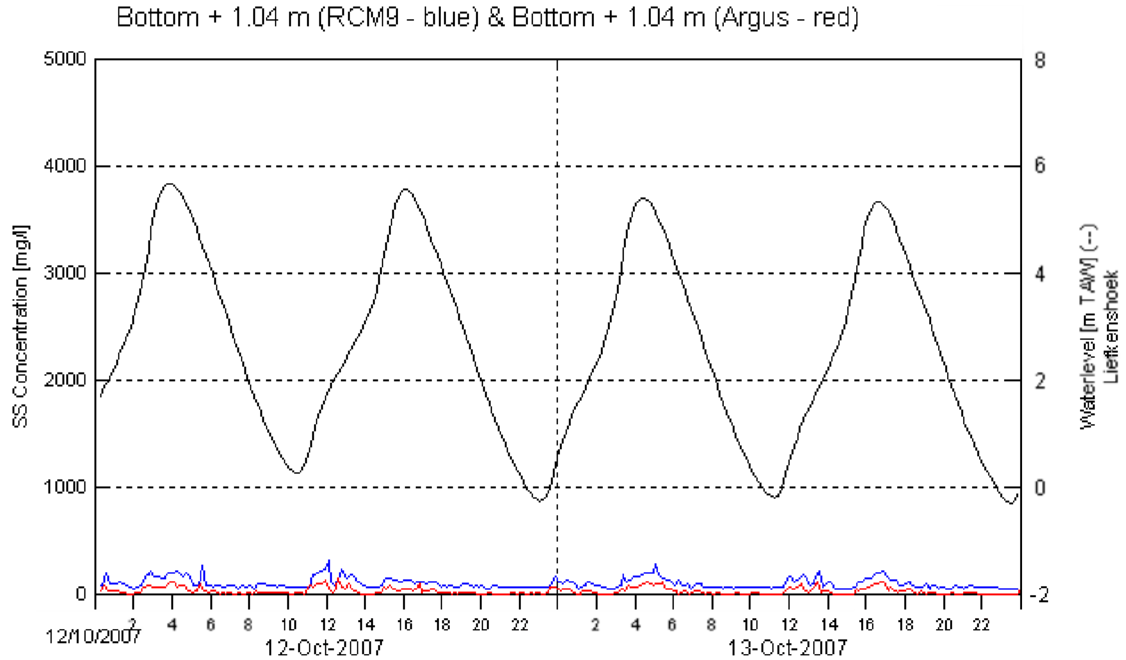
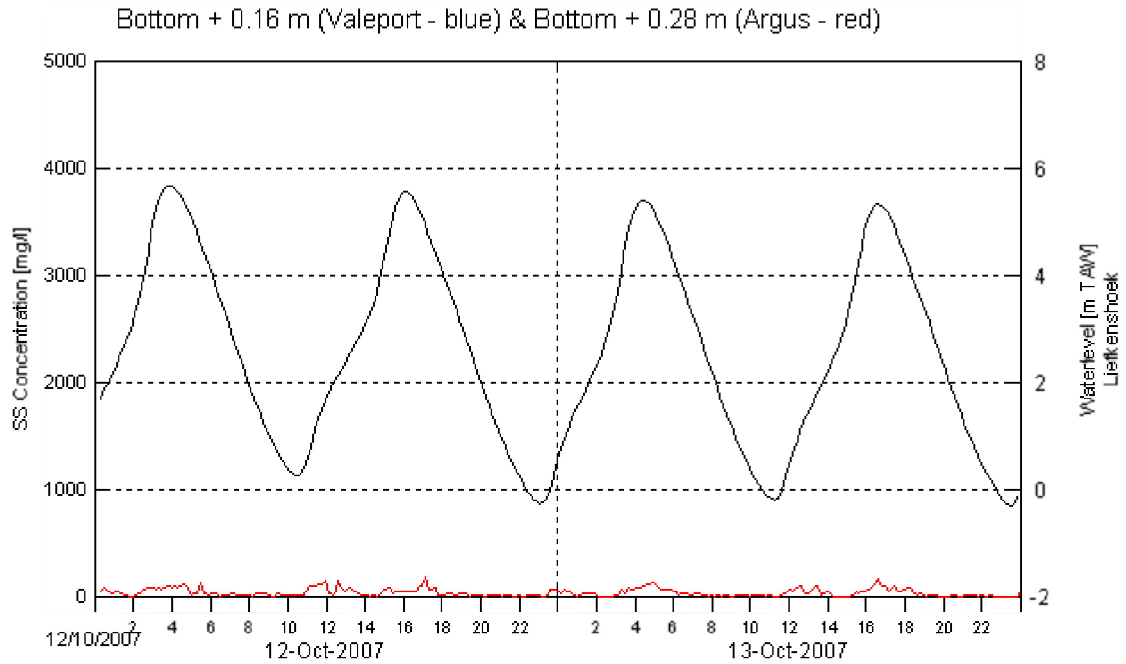
11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007

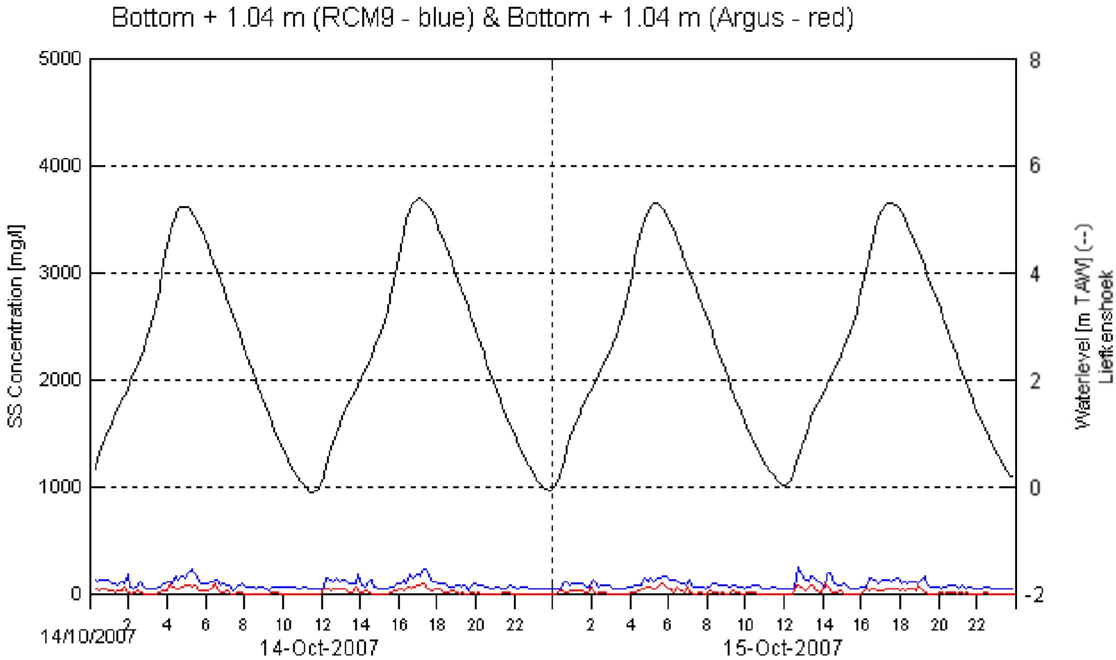


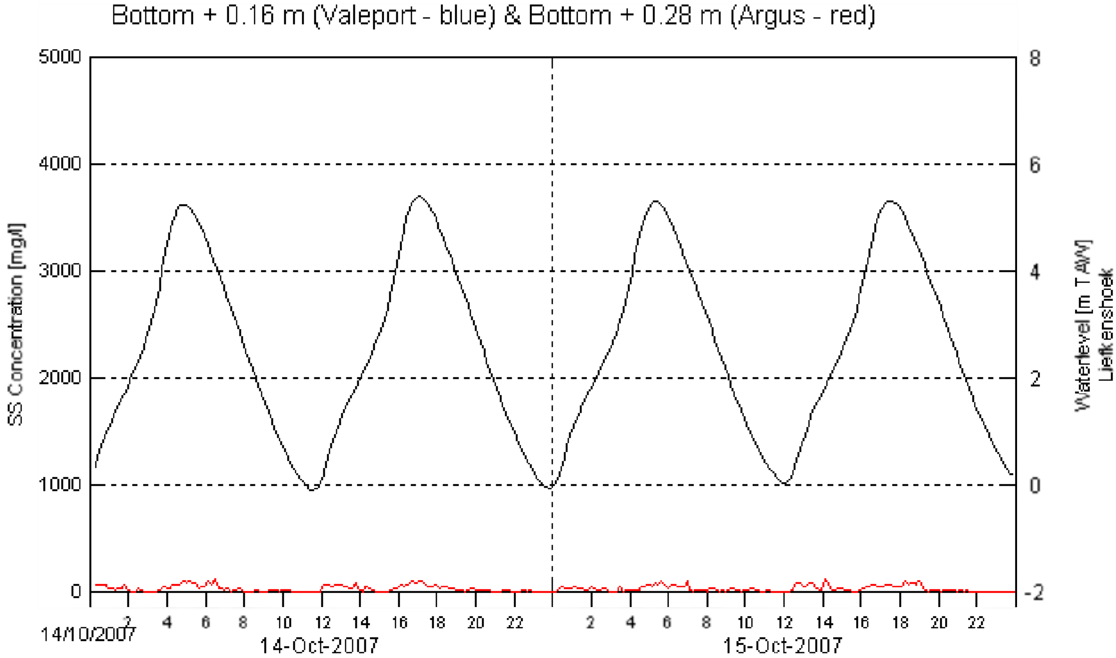


Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1.04 m and 0.16 m above the bottom for SS concentration

Location: Deurganckdok Sill	Date: 12/10/07 – 13/10/07	*Data processed by:* IMDC *In association with:* wl delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007





Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1.04 m and 0.16 m above the bottom for SS concentration

Location: Deurganckdok Sill

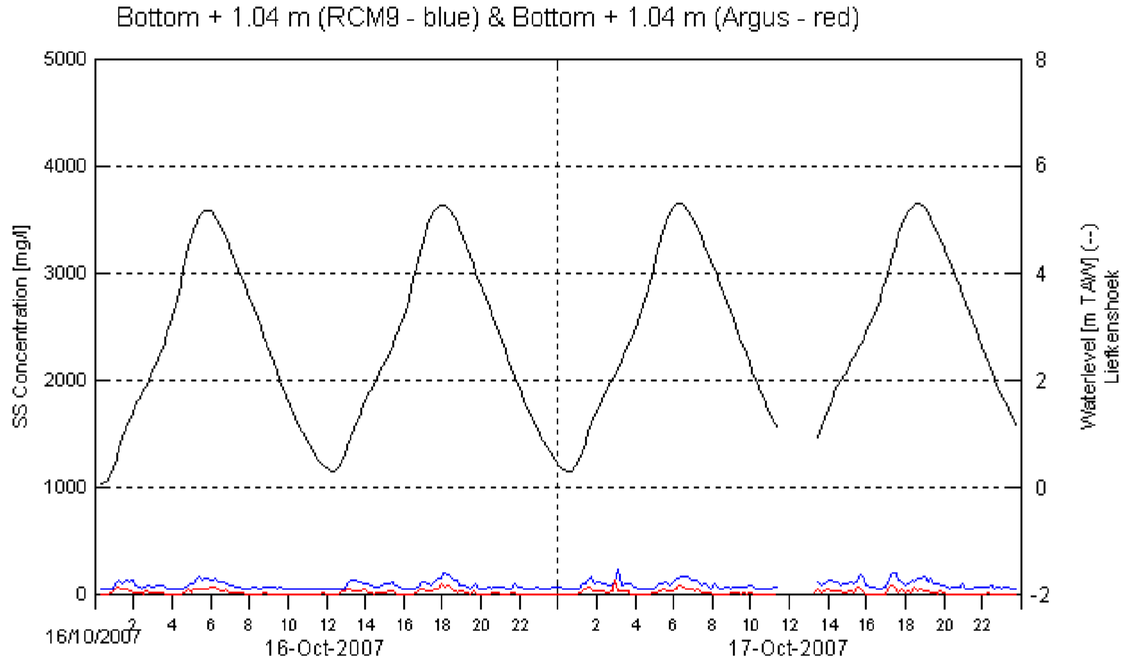
Date: 14/10/07 – 15/10/07

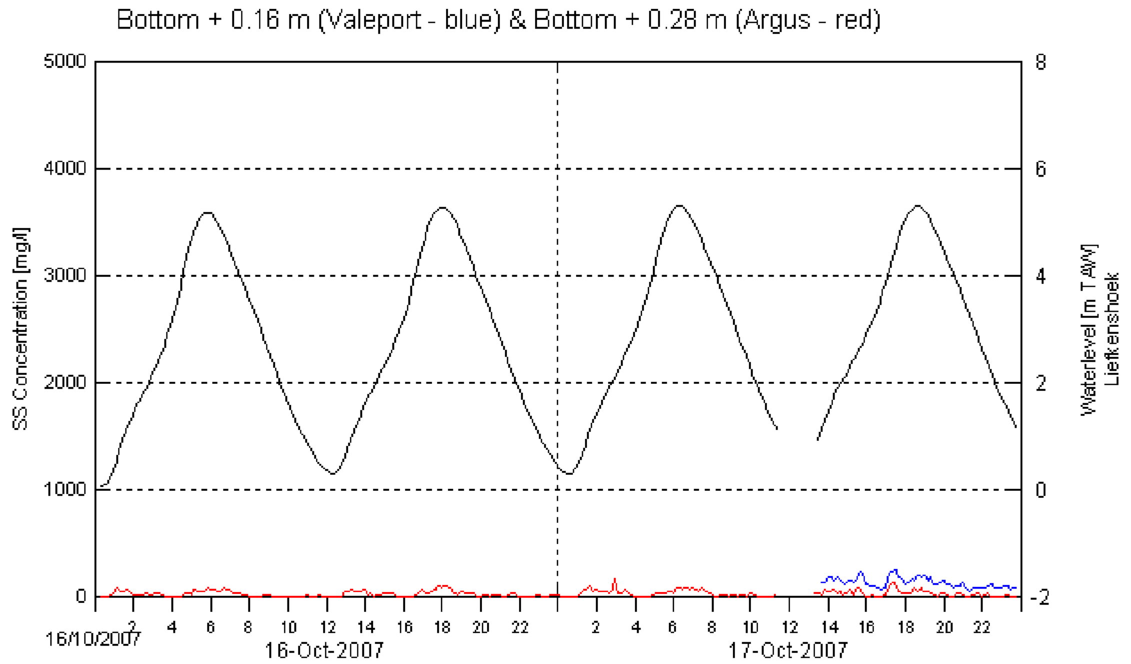
Data processed by: IMDC

In association with: wL | delft hydraulics, GEMS International

I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007





Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1.04 m and 0.16 m above the bottom for SS concentration

Location: Deurganckdok Sill

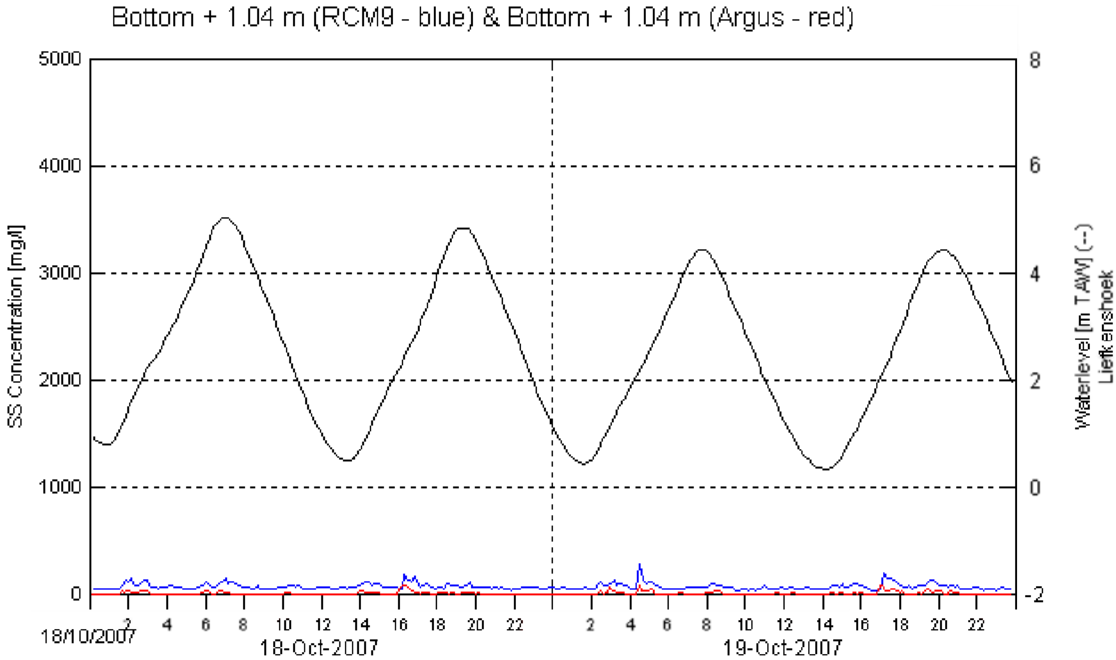
Date: 16/10/07 – 17/10/07

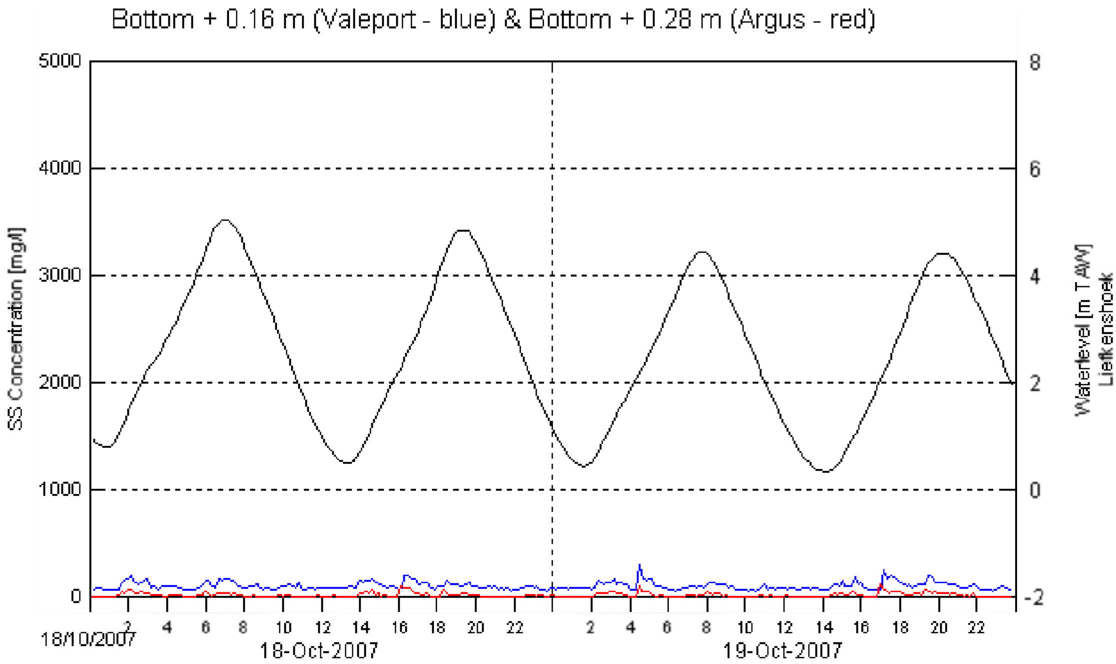
Data processed by: IMDC

In association with: WL | delft hydraulics, GEMS International

I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007





Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1.04 m and 0.16 m above the bottom for SS concentration

Location: Deurganckdok Sill

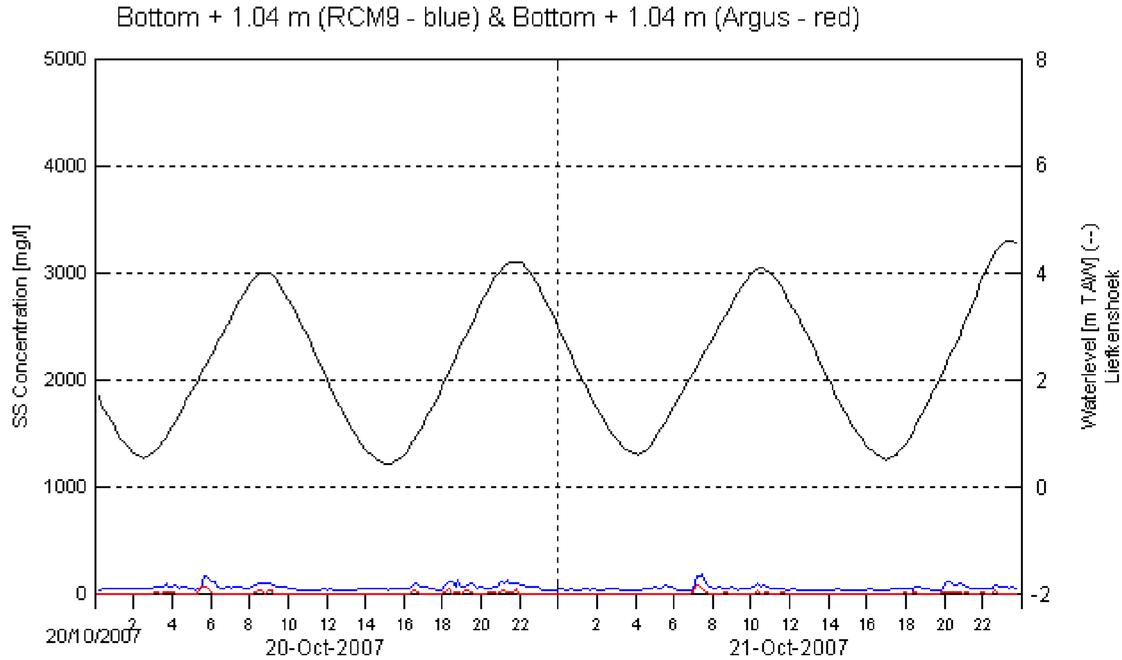
Date: 18/10/07 – 19/10/07

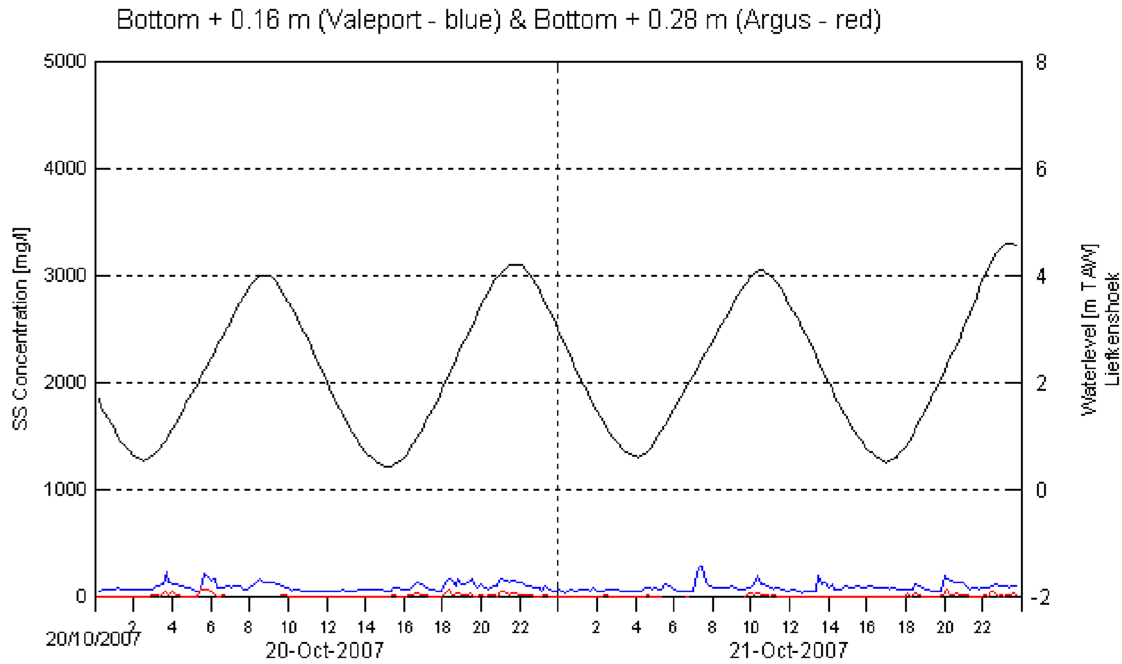
Data processed by: IMDC

In association with: wl | delft hydraulics, GEMS International

I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007





Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1.04 m and 0.16 m above the bottom for SS concentration

Data processed by: IMDC

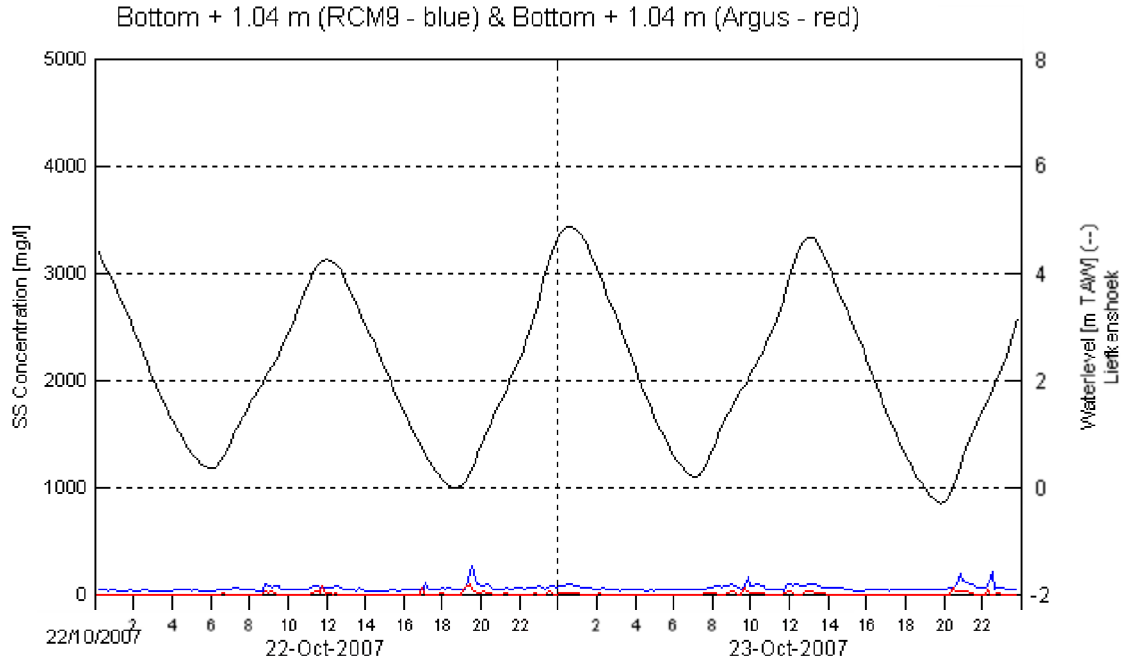
Location: Deurganckdok Sill

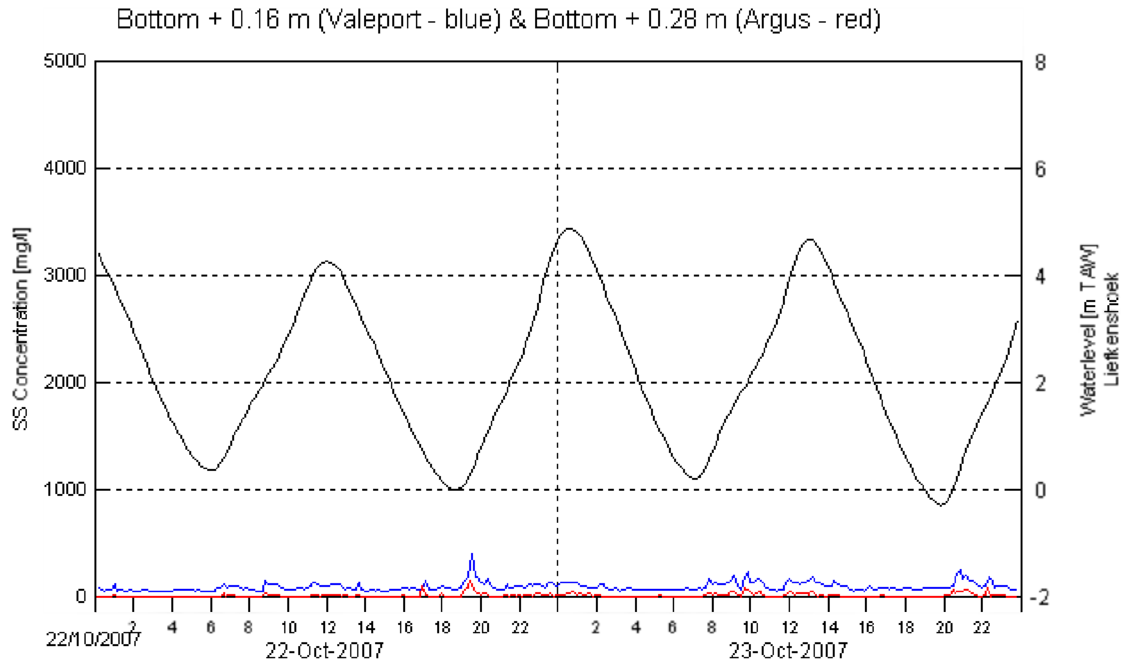
Date: 20/10/07 – 21/10/07

In association with: WL | delft hydraulics, GEMS International

I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007





Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1.04 m and 0.16 m above the bottom for SS concentration

Location: Deurganckdok Sill

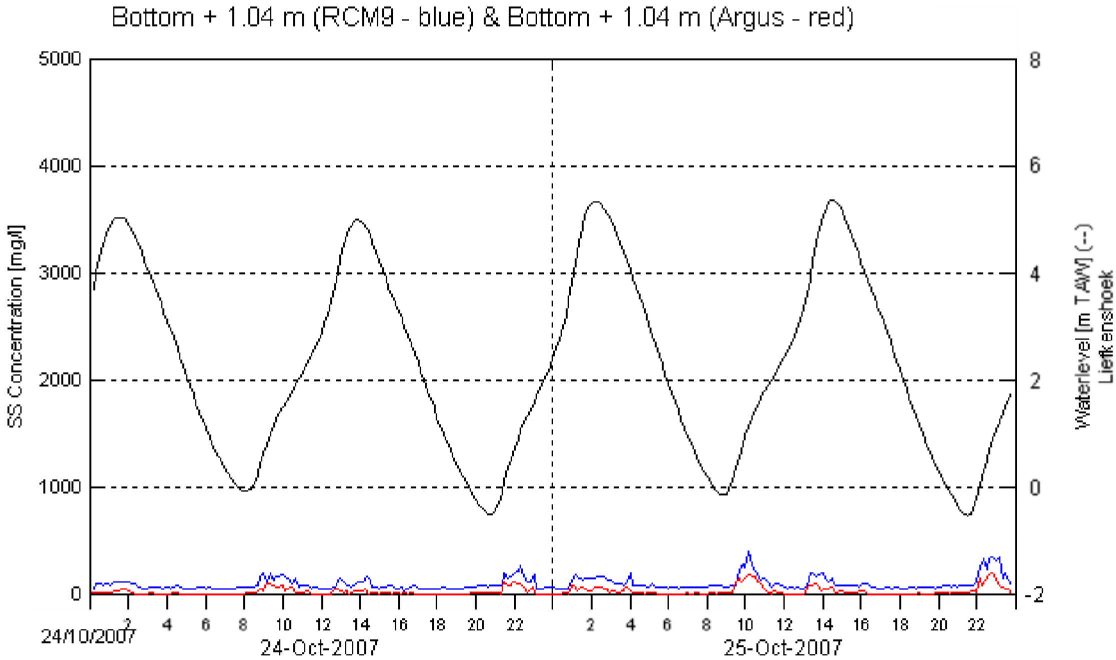
Date: 22/10/07 – 23/10/07

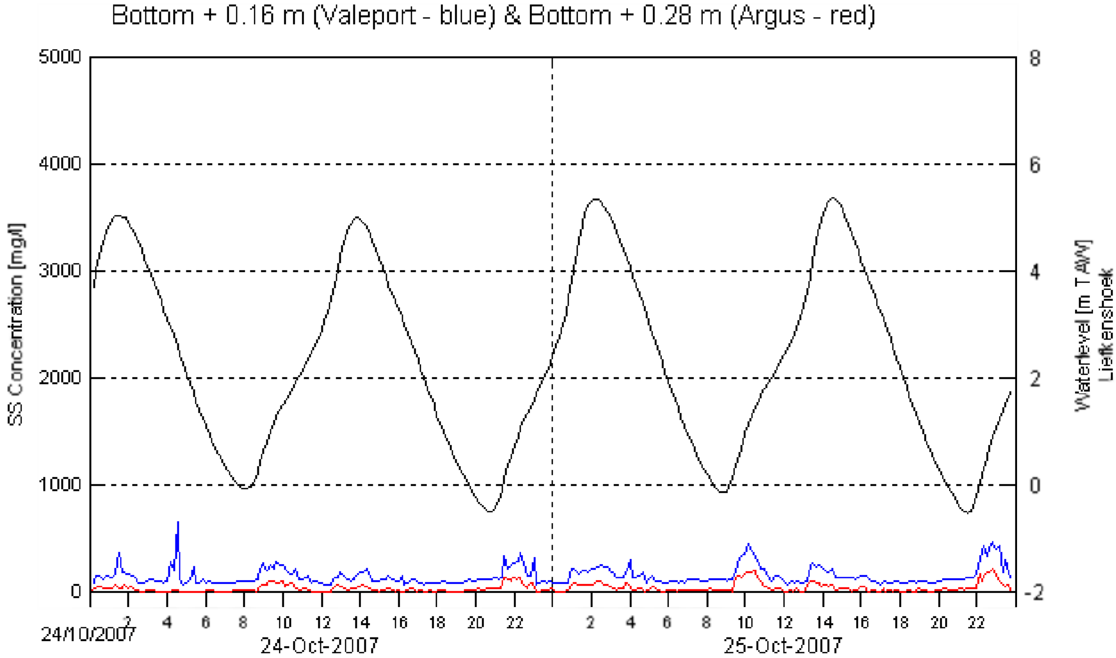
Data processed by: IMDC

In association with: wl | delft hydraulics, GEMS International

I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



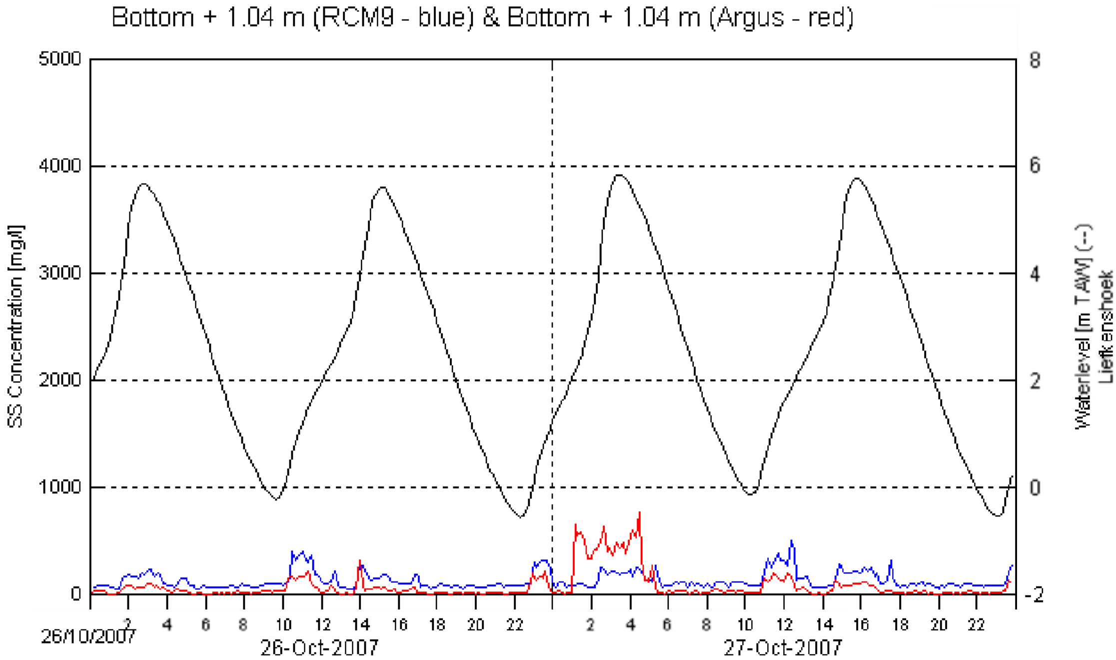


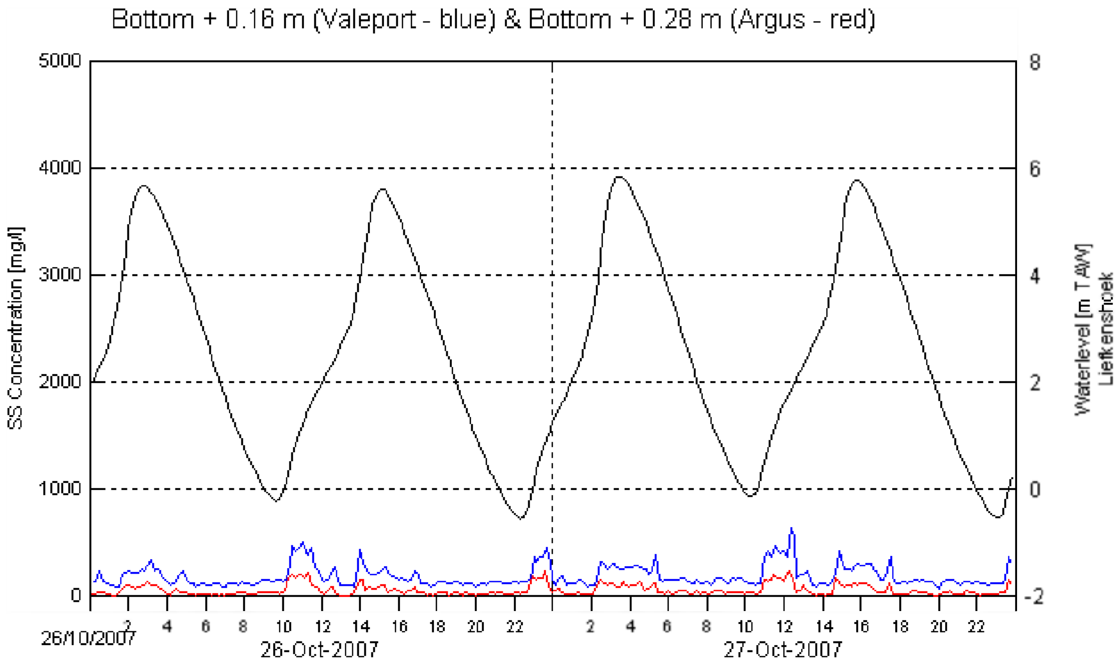
Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1.04 m and 0.16 m above the bottom for SS concentration

Location: Deurganckdok Sill	Date: 24/10/07 – 25/10/07	*Data processed by:* IMDC *In association with:* wl delft hydraulics, GEMS International

I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007





Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1.04 m and 0.16 m above the bottom for SS concentration

Data processed by: IMDC

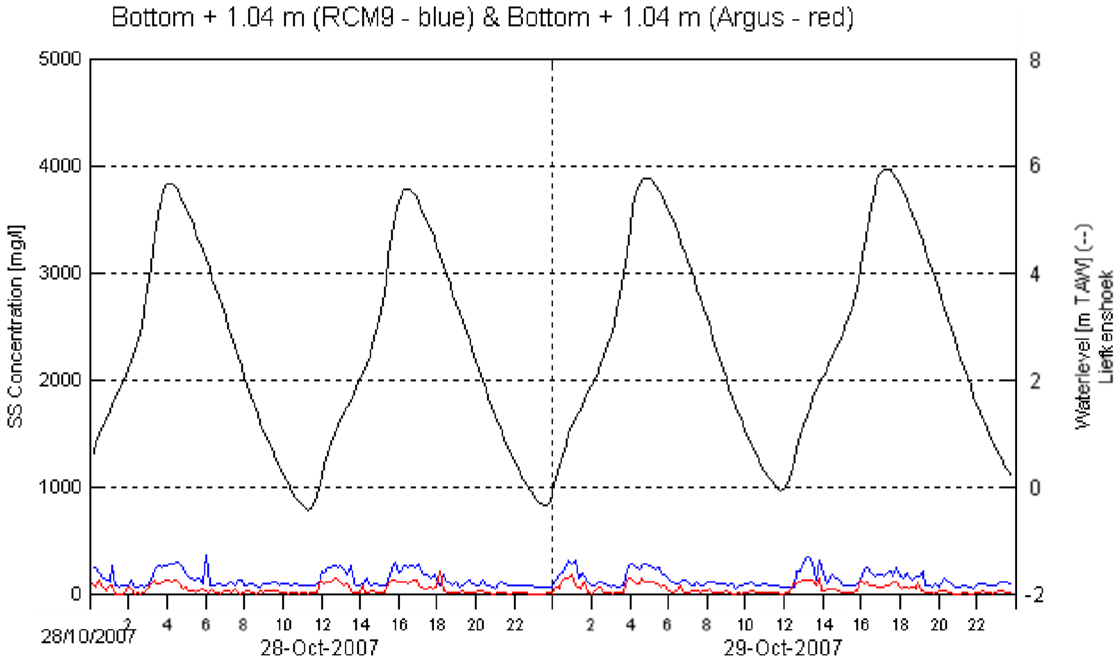
Location: Deurganckdok Sill

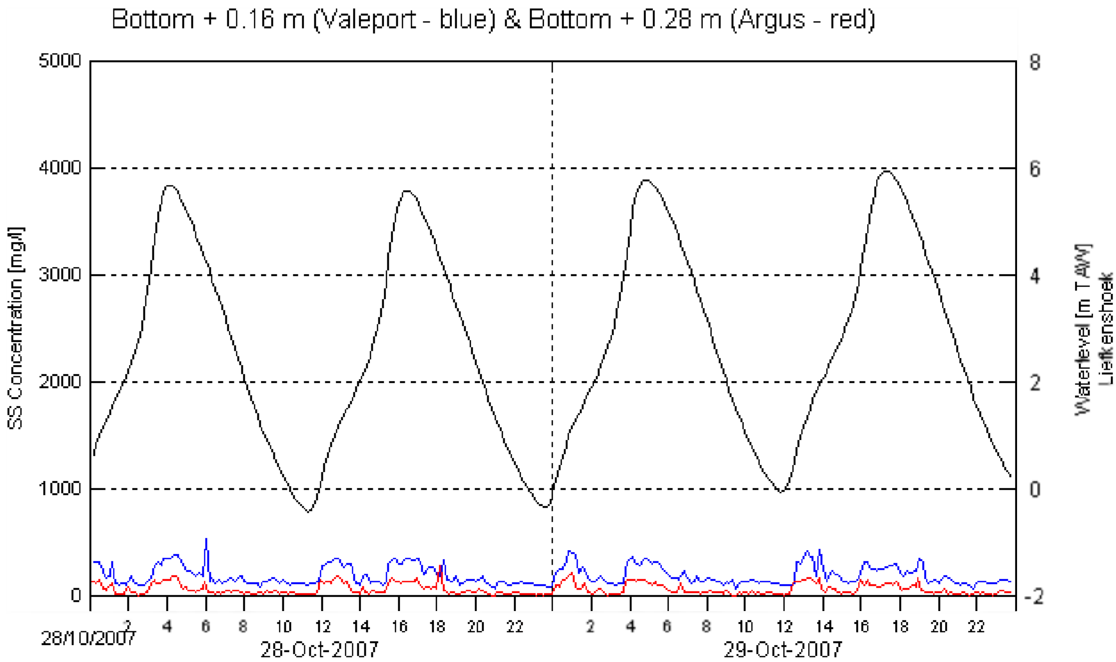
Date: 26/10/07 – 27/10/07

In association with: WL | delft hydraulics, GEMS International

I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007





Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1.04 m and 0.16 m above the bottom for SS concentration

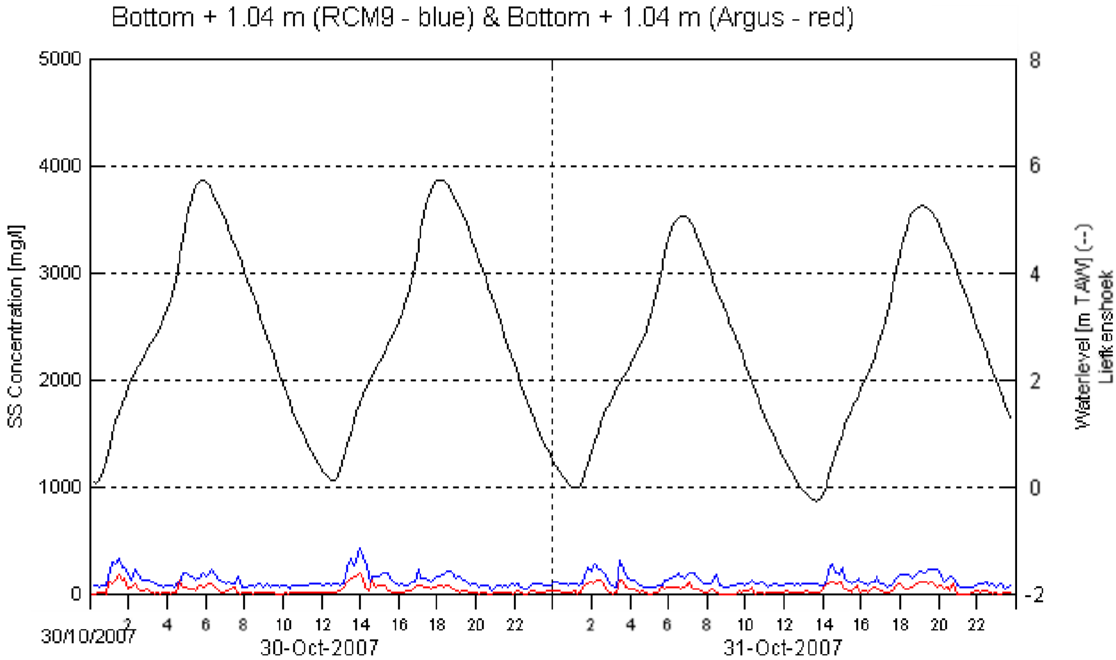
Data processed by: IMDC

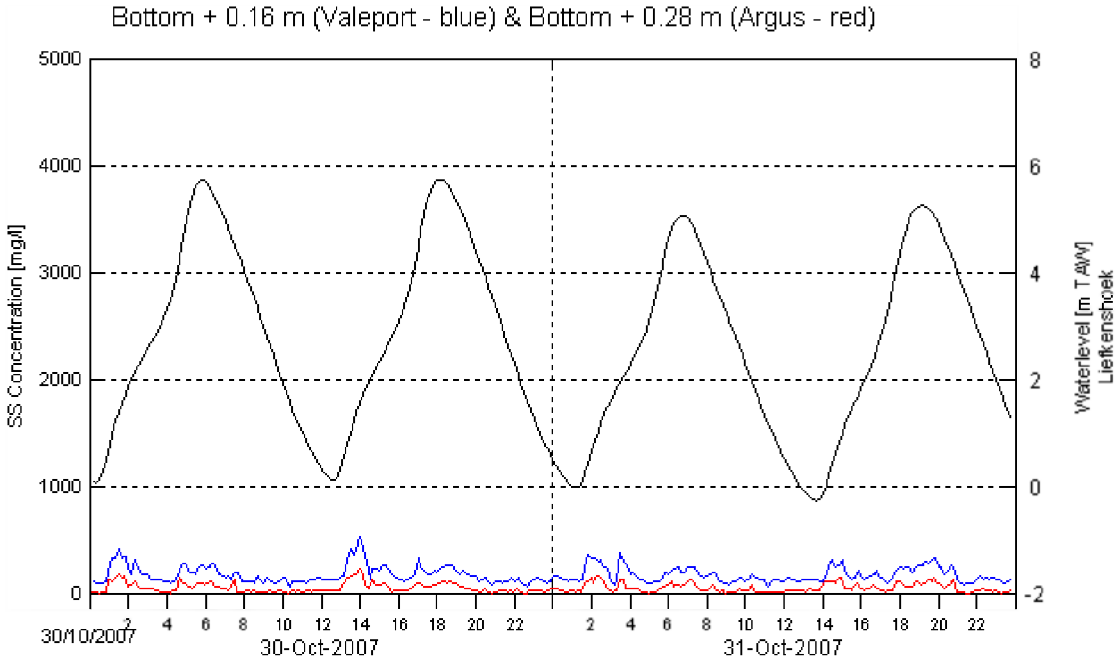
In association with: WL | delft hydraulics, GEMS International

Location:	Date:
Deurganckdok Sill	28/10/07 – 29/10/07

I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007

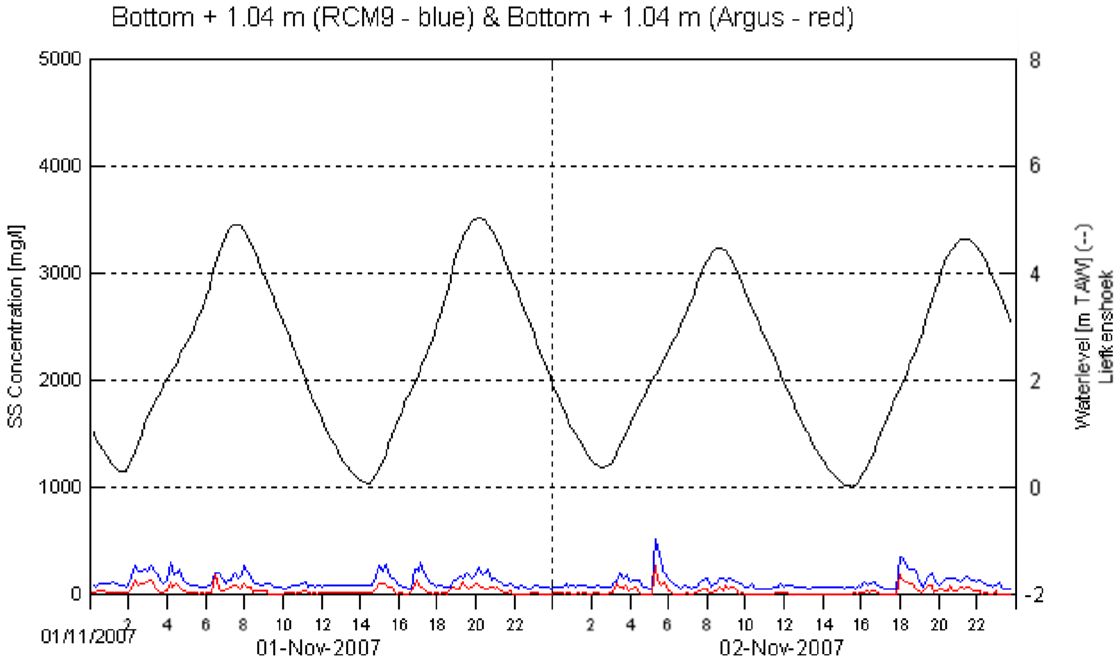


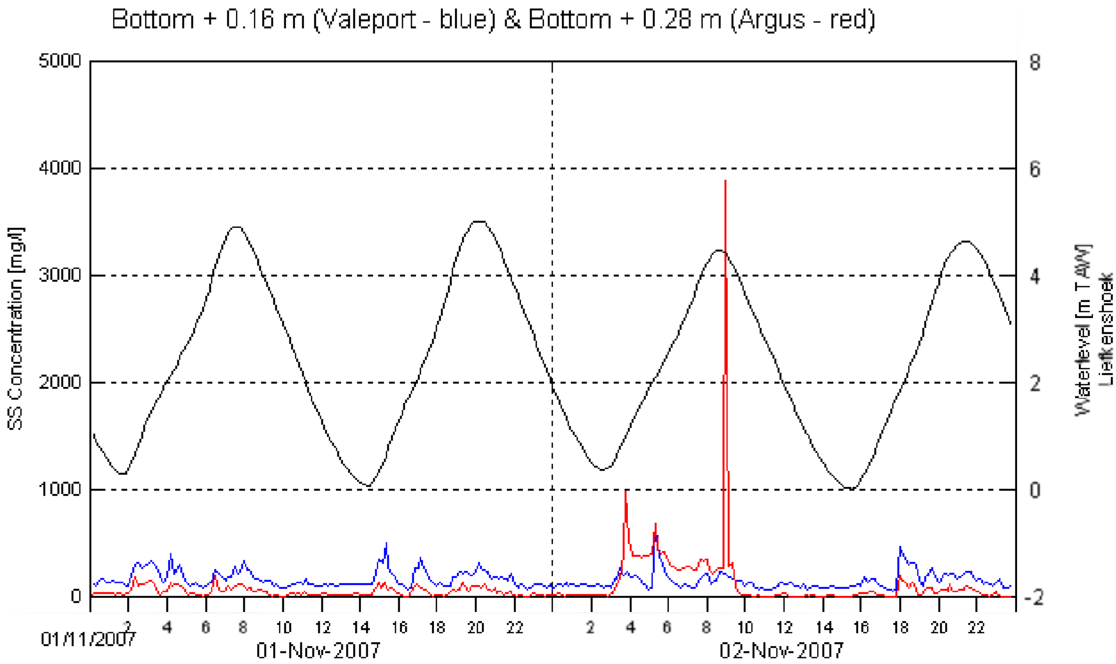


Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1.04 m and 0.16 m above the bottom for SS concentration

Location: Deurganckdok Sill	Date: 30/10/07 – 31/10/07	*Data processed by:* IMDC *In association with:* wl | delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007





Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1.04 m and 0.16 m above the bottom for SS concentration

Data processed by: IMDC

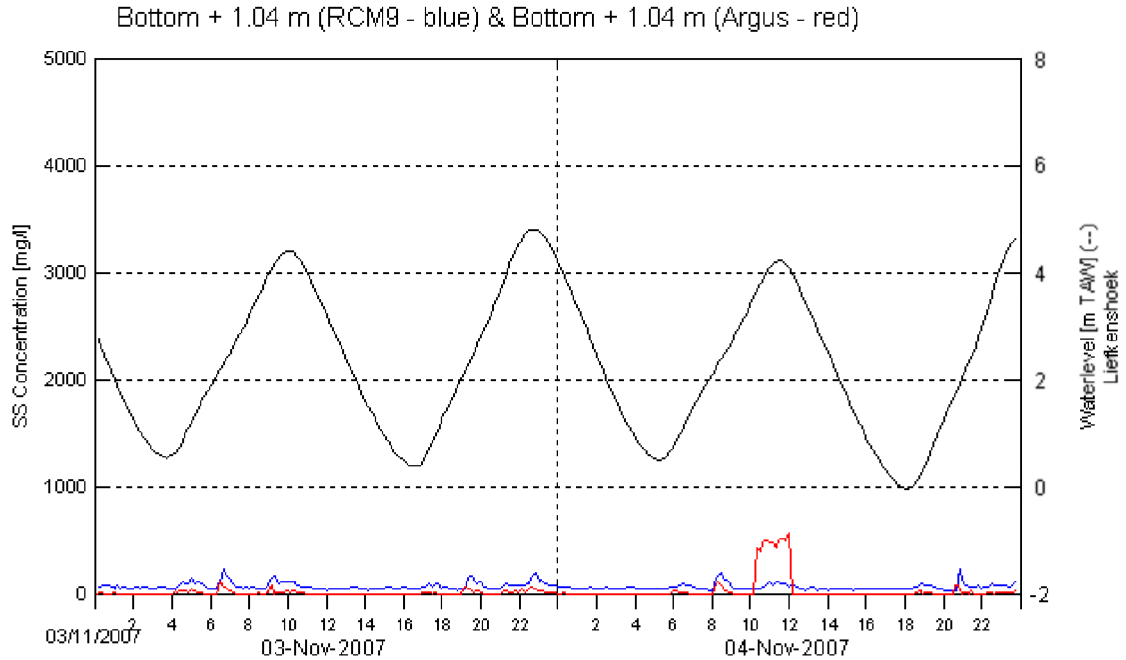
Location: Deurganckdok Sill

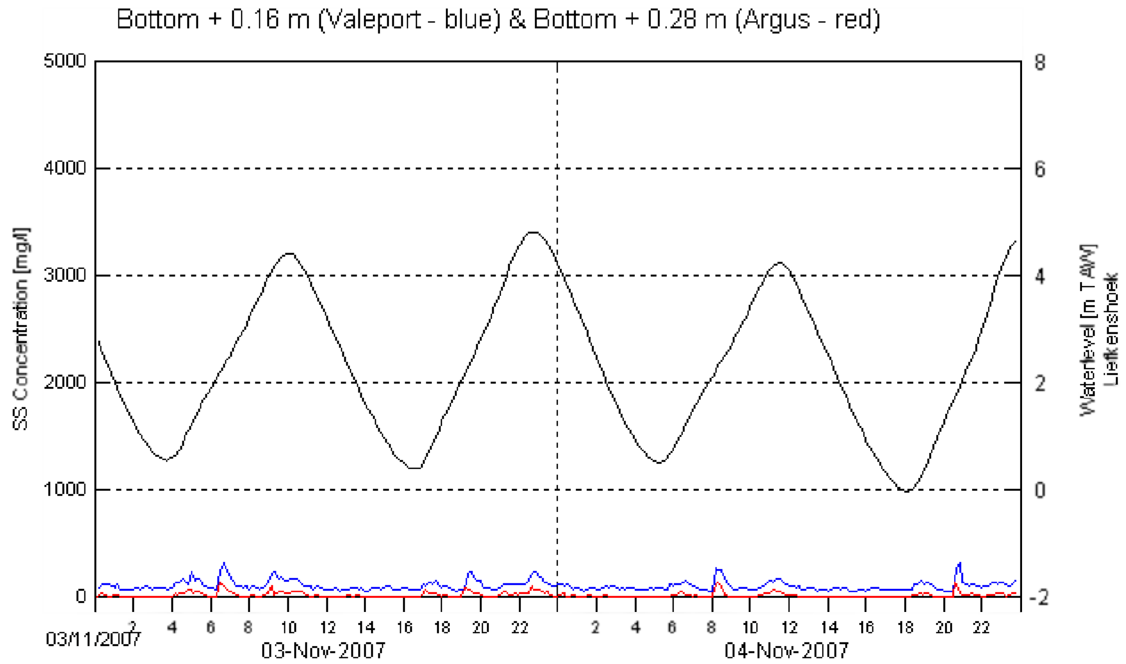
Date: 01/11/07 – 02/11/07

In association with: wl | delft hydraulics, GEMS International

I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007





Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1.04 m and 0.16 m above the bottom for SS concentration

Data processed by: IMDC

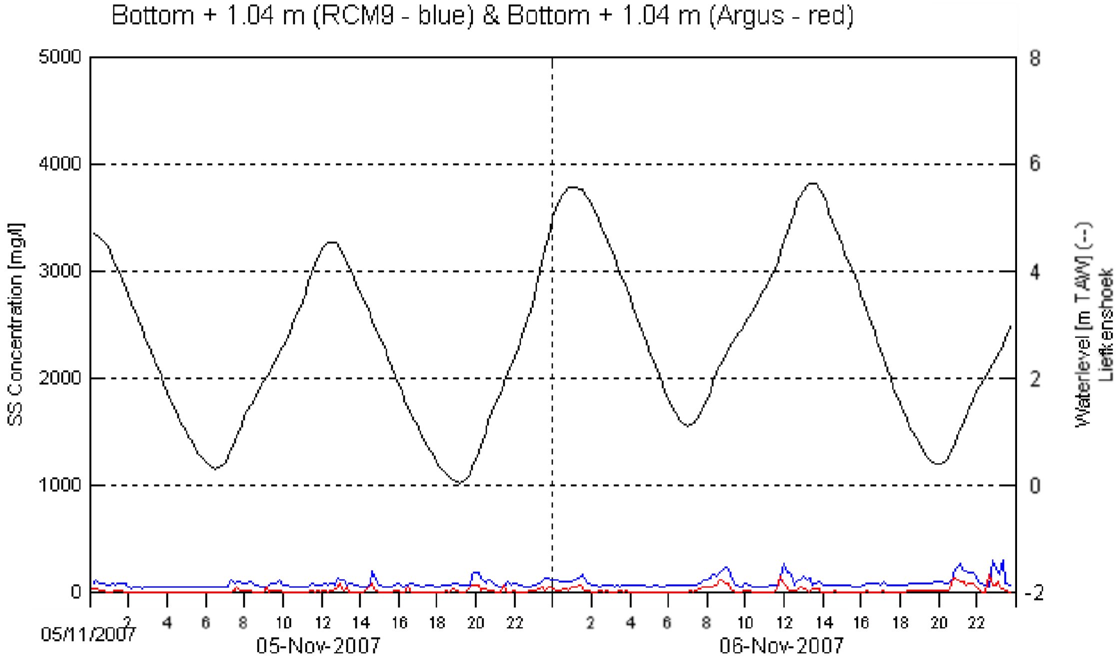
In association with: wL | delft hydraulics, GEMS International

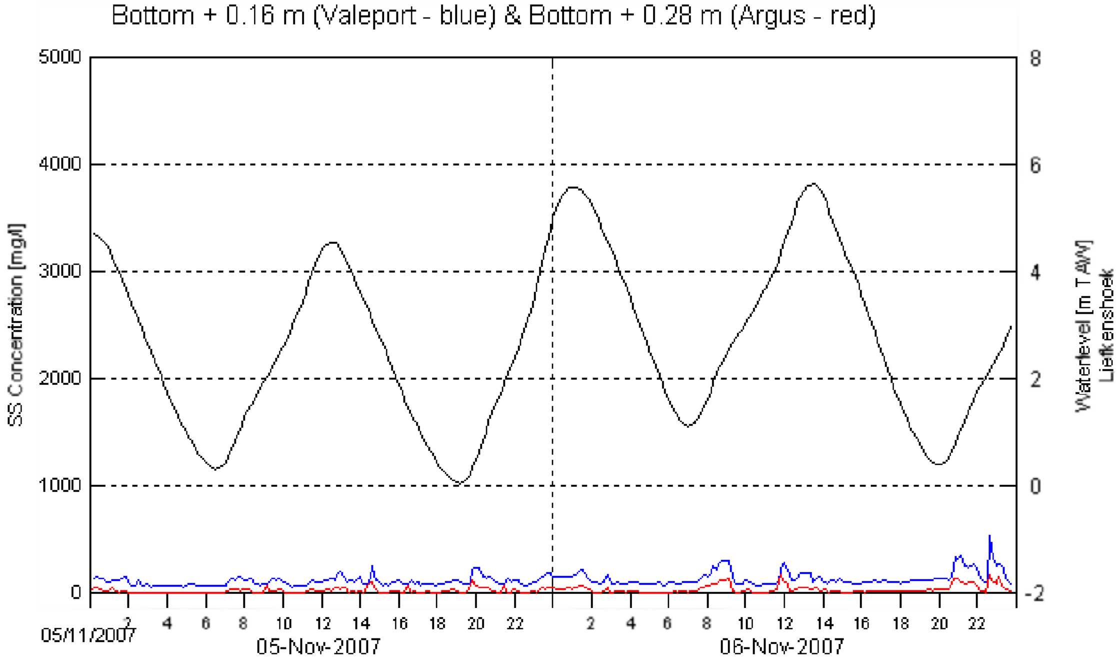
Location: Deurganckdok Sill

Date: 03/11/07 – 04/11/07

I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007

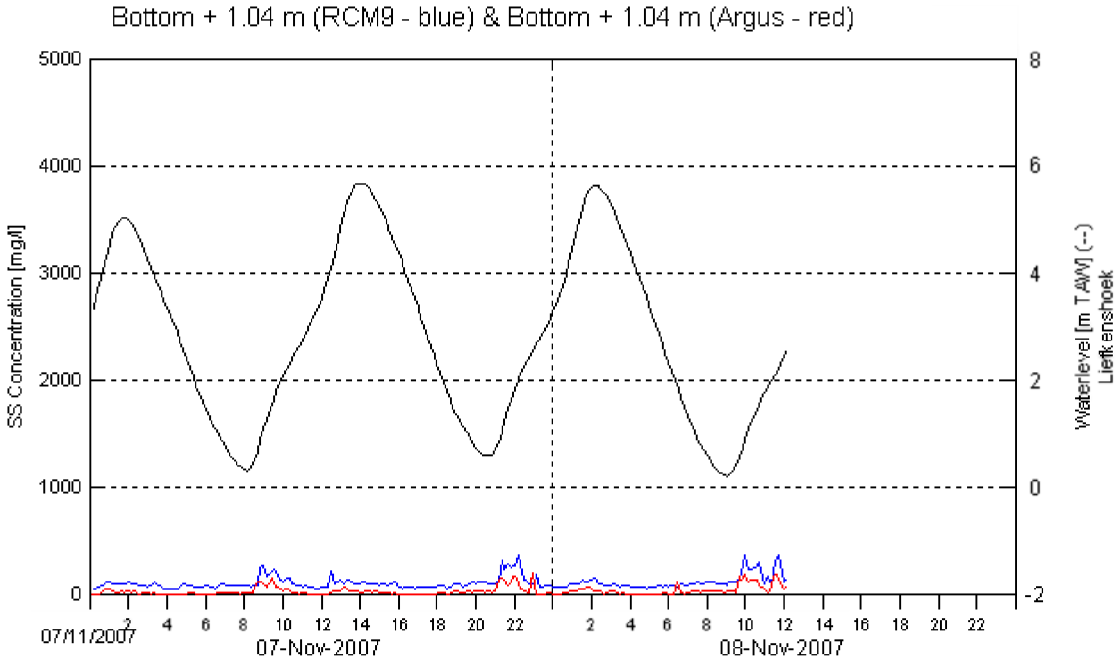


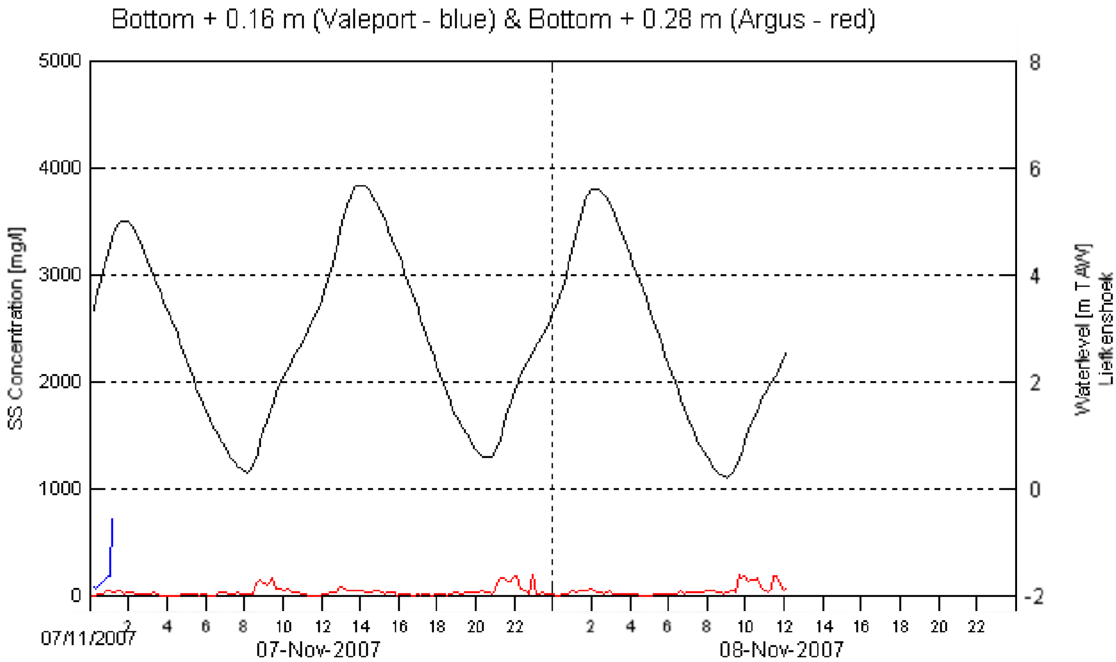


Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1.04 m and 0.16 m above the bottom for SS concentration

Location: Deurganckdok Sill	Date: 05/11/07 – 06/11/07	*Data processed by:* IMDC *In association with:* wl | delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007





Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1.04 m and 0.16 m above the bottom for SS concentration	*Data processed by:* IMDC
Location: Deurganckdok Sill — Date: 07/11/07 – 08/11/07	*In association with:* wl | delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

Comparison of SS concentrations during each tidal phase

Date	Tide No.	Phase	Tidal Diff	OBS SS Concentration [mg/l]		Argus SS Concentration [mg/l]	
			[m]	UP (RCM9)	DOWN (Valeport)	UP	DOWN
20070926	1	flood	1	175.7	191	57.4	77.9
20070926	1	ebb	5.9	62.9	91.1	10.7	21.6
20070927	2	flood	6.1	117.3	146.8	44.4	55.6
20070927	2	ebb	6	93.8	126.7	24.4	30.6
20070927	3	flood	5.7	163.6	209.3	65.7	78.1
20070927	3	ebb	6.1	77.2	106.1	12.5	18.5
20070928	4	flood	6.5	116.4	150.7	41.9	52.8
20070928	4	ebb	6	107.9	149.3	30.6	39.5
20070928	5	flood	5.9	208.4	238.8	86.5	98.9
20070928	5	ebb	6.5	104.3	133.7	29.6	35.4
20070929	6	flood	6.6	162.3	205	68.8	78.1
20070929	6	ebb	6.2	136.9	172.3	42.5	53.7
20070929	7	flood	6.2	185.6	224.8	79.1	86.3
20070930	7	ebb	6.4	111.6	138.3	26.3	34.2
20070930	8	flood	6.3	148.3	191.9	59.3	65.5
20070930	8	ebb	6.1	114.5	147.1	30	37.4
20070930	9	flood	5.9	140.2	178.4	49.9	57.5
20071001	9	ebb	6.3	95	128.1	18.6	25.2
20071001	10	flood	5.9	102.4	140.8	34.1	39.4
20071001	10	ebb	5.8	123.3	164.4	37.6	44.6
20071001	11	flood	5.9	145.3	181.3	51.5	59.3
20071002	11	ebb	5.8	93.6	132.2	20.1	24.4
20071002	12	flood	5.5	90.3	133.2	24	28.8
20071002	12	ebb	5.3	81.1	114.5	15.2	18.4
20071002	13	flood	5.3	118.8	158.7	38.1	43.5
20071003	13	ebb	5.3	85.2	120.6	14.8	21
20071003	14	flood	4.9	120.9	155.6	38	45.5
20071003	14	ebb	4.8	87.5	124.6	15.4	19.1
20071003	15	flood	4.9	131.5	174.4	46.6	55.2
20071004	15	ebb	4.7	97.8	141.9	18.2	26
20071004	16	flood	4.2	93.2	122	25.4	32.1
20071004	16	ebb	4.1	70.3	97.3	11.8	12
20071004	17	flood	4.4	102.4	146.2	33.5	38.9
20071005	17	ebb	4.1	62.7	90.9	7.4	9.9
20071005	18	flood	3.5	84.3	114.5	17.6	22.6
20071005	18	ebb	3.9	44.3	63.6	2.9	4.3
20071005	19	flood	4.3	91.9	132.5	24.9	32.6
20071006	19	ebb	4.1	51.9	75.1	2.5	5.5
20071006	20	flood	3.8	77.6	115.1	17	21.3
20071006	20	ebb	4.2	41.3	61.5	1.1	1.2
20071007	21	flood	4.7	78.1	117.8	15.1	19.9
20071007	21	ebb	4.4	53	76.3	4.2	6.4
20071007	22	flood	4.4	79	114.8	16.2	20.6
20071007	22	ebb	4.7	55.1	81.7	6.6	8.2
20071008	23	flood	5.2	79.3	103.4	14.3	17.9

Comparison of SS concentrations during each tidal phase

Date	Tide No.	Phase	Tidal Diff	OBS SS Concentration [mg/l]		Argus SS Concentration [mg/l]	
			[m]	UP (RCM9)	DOWN (Valeport)	UP	DOWN
20071008	23	ebb	4.9	53.6	77.9	1.9	4.2
20071008	24	flood	4.7	76.5	118.7	15.5	18.8
20071008	24	ebb	5.2	64	93.4	7.8	12.2
20071009	25	flood	5.4	66.5	97	9.5	12.4
20071009	25	ebb	5.1	62.1	88.3	6	9.9
20071009	26	flood	5	72.7	110.4	14.1	19.7
20071009	26	ebb	5.3	61.6	88.1	4.9	11.7
20071010	27	flood	5.7	87.1	117.3	19.8	24.7
20071010	27	ebb	5.3	73.3	106.5	11	16.1
20071010	28	flood	5.2	95.7	132.3	24.9	30
20071010	28	ebb	5.6	61.2	87.4	4.7	11.3
20071011	29	flood	5.7	97.7	130	24.3	30.7
20071011	29	ebb	5.5	82	119	12.4	18.3
20071011	30	flood	5.4	109.7	147.4	34.5	40.4
20071011	30	ebb	5.4	80.2	114.5	13	22.2
20071012	31	flood	5.8	114.8	177.9	37.2	44.2
20071012	31	ebb	5.4	94.5	-	18.5	24.9
20071012	32	flood	5.3	122.8	-	40.1	49.2
20071012	32	ebb	5.8	72.7	-	10.2	20.9
20071013	33	flood	5.6	95.5	-	28.4	31.9
20071013	33	ebb	5.6	86.9	-	19.5	22.5
20071013	34	flood	5.5	105.2	-	32.7	39.3
20071013	34	ebb	5.6	74.4	-	12.5	19.8
20071014	35	flood	5.5	90.1	-	26	29.2
20071014	35	ebb	5.3	76.3	-	12.4	18.8
20071014	36	flood	5.5	96.9	-	25.8	33.9
20071014	36	ebb	5.4	70.8	-	8.2	12.7
20071015	37	flood	5.4	76.5	-	16.2	21.1
20071015	37	ebb	5.2	76.3	-	13.8	18.6
20071015	38	flood	5.3	101.2	-	25.8	32.1
20071016	38	ebb	5.3	69.3	-	11	16.8
20071016	39	flood	5.1	77	-	17.9	23.2
20071016	39	ebb	4.9	59.5	-	6.9	12.4
20071016	40	flood	5	78.5	-	19.1	26.9
20071017	40	ebb	5	65.8	-	6.8	12.3
20071017	41	flood	5	83.9	-	21.5	34.3
20071017	41	ebb	4.3	74.2	168.6	10.6	20.4
20071017	42	flood	4.2	103.4	142.4	23.8	36.5
20071018	42	ebb	4.5	66.1	93.8	4.1	8.6
20071018	43	flood	4.2	70.5	100.2	6.3	12.9
20071018	43	ebb	4.5	55.1	82.1	0.4	2.8
20071018	44	flood	4.3	75	108.3	9.8	19.6
20071019	44	ebb	4.4	51.4	76.7	0.5	1.9
20071019	45	flood	4	71.7	100.8	8.4	12.5
20071019	45	ebb	4.1	49.2	74.6	2.4	3.5
20071019	46	flood	4.1	78	115	10.3	23.5

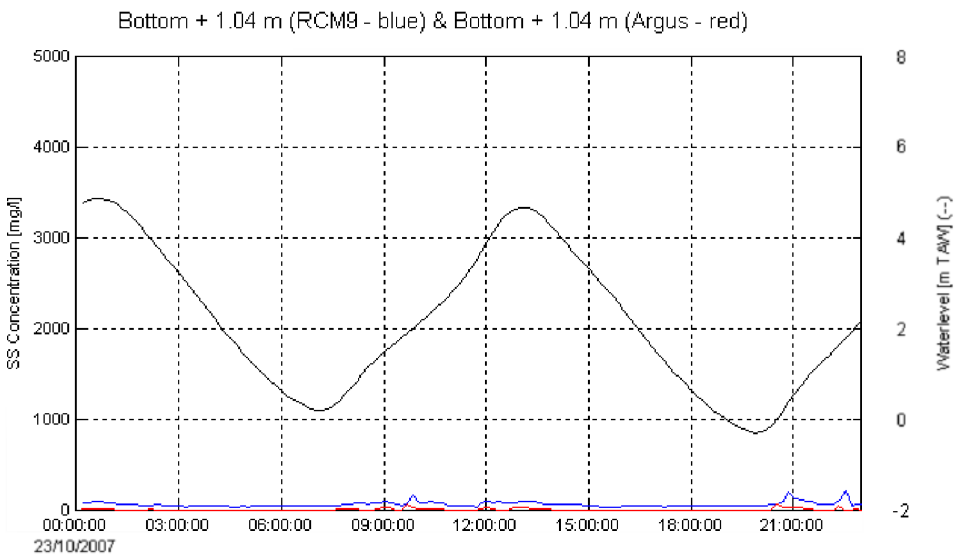
Comparison of SS concentrations during each tidal phase

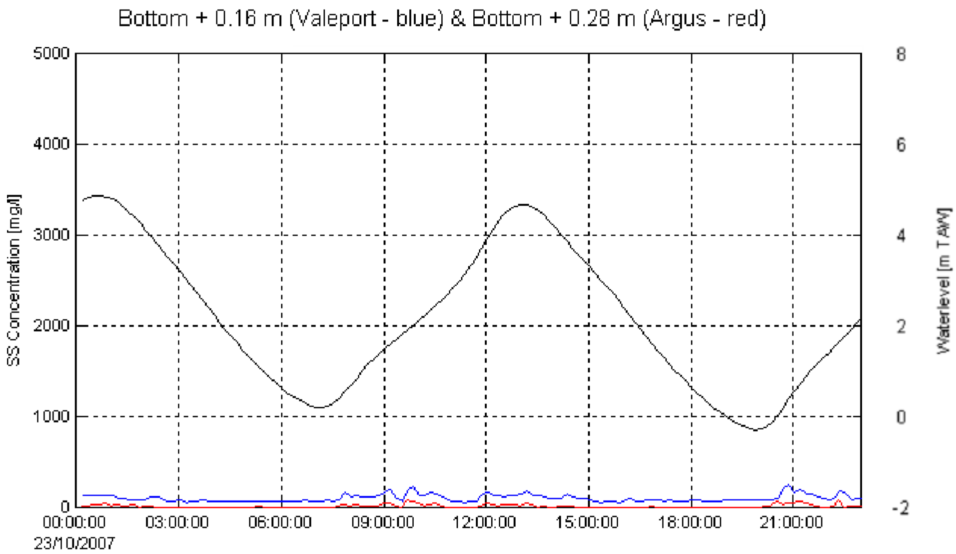
Date	Tide No.	Phase	Tidal Diff	OBS SS Concentration [mg/l]		Argus SS Concentration [mg/l]	
			[m]	UP (RCM9)	DOWN (Valeport)	UP	DOWN
20071020	46	ebb	3.9	45.1	70.8	1.1	2.9
20071020	47	flood	3.5	61.6	97.1	7.2	739
20071020	47	ebb	3.6	40.3	61.4	1.3	254.8
20071020	48	flood	3.8	61.4	94.2	6.4	10.5
20071021	48	ebb	3.6	38.5	58.7	1	2.1
20071021	49	flood	3.4	54.7	88.6	5.4	691.7
20071021	49	ebb	3.6	33.2	72.4	0.4	0.2
20071021	50	flood	4.1	50.9	82.2	1.9	6.3
20071022	50	ebb	4.2	34.6	54.1	0	0.5
20071022	51	flood	3.9	48.1	78	5.5	3.6
20071022	51	ebb	4.3	42	68.9	2	4.1
20071023	52	flood	4.9	67	112	10.1	16.2
20071023	52	ebb	4.7	42.5	70	0.2	3.2
20071023	53	flood	4.5	65.8	111.9	8.7	16.3
20071023	53	ebb	5	46.2	77.9	1.5	1.8
20071024	54	flood	5.3	75.4	120.8	10.7	18.7
20071024	54	ebb	5.1	55.5	118.1	3.1	5.6
20071024	55	flood	5.1	94.1	142	25.9	31.4
20071024	55	ebb	5.5	59.6	98.2	3.7	9.2
20071025	56	flood	5.8	110	162.7	32.6	45.9
20071025	56	ebb	5.5	80.1	126.1	11.6	20.8
20071025	57	flood	5.5	130	185.4	51.3	58.4
20071025	57	ebb	5.8	61.6	98.9	4.1	9.1
20071026	58	flood	6.2	149.3	210.1	52.5	62
20071026	58	ebb	5.9	89.4	135.7	18.4	26.2
20071026	59	flood	5.8	169.4	232.9	69.7	76.2
20071026	59	ebb	6.1	81	124.2	10.7	19.1
20071027	60	flood	6.4	147.5	203.3	255.1	68.5
20071027	60	ebb	5.9	114.1	166.2	108.8	42.3
20071027	61	flood	5.9	186.5	254.2	73.1	84.8
20071027	61	ebb	6.3	103.6	145.5	17.4	25.3
20071028	62	flood	6.1	153.5	206.7	57.3	70.7
20071028	62	ebb	6.1	114.7	162.8	21.7	35.9
20071028	63	flood	6	164.3	225.4	64.3	80.7
20071028	63	ebb	5.9	107.7	154.4	26	39.2
20071029	64	flood	6.1	157.5	214.5	60.7	71
20071029	64	ebb	5.8	107.6	152.5	24	33.5
20071029	65	flood	6	160.3	216.8	61.6	77.9
20071030	65	ebb	5.8	104.4	151.6	22.7	33.2
20071030	66	flood	5.6	144.9	201.5	50.2	64
20071030	66	ebb	5.5	91.7	136.3	14.8	26.2
20071030	67	flood	5.6	165.7	224.5	63.1	77.4
20071031	67	ebb	5.7	94.3	138.6	14.6	29.1
20071031	68	flood	5.1	135.3	193.3	46.8	58.7
20071031	68	ebb	5.3	97	137.6	17.6	29.7
20071031	69	flood	5.5	139.9	193.5	51.5	66.6

Comparison of SS concentrations during each tidal phase

Date	Tide No.	Phase	Tidal Diff	OBS SS Concentration [mg/l]		Argus SS Concentration [mg/l]	
			[m]	UP (RCM9)	DOWN (Valeport)	UP	DOWN
20071101	69	ebb	4.9	104.1	153.4	26.1	35.8
20071101	70	flood	4.6	143.3	193.3	48.6	64.2
20071101	70	ebb	4.8	86	126.7	13.9	23.1
20071101	71	flood	5	136	190.1	41.3	51.9
20071102	71	ebb	4.6	78.9	118.2	10.3	17.6
20071102	72	flood	4.1	120.6	164.4	34.9	313.4
20071102	72	ebb	4.4	65.6	97.7	6.6	120.1
20071102	73	flood	4.6	122.1	173.8	36.2	47.9
20071103	73	ebb	4.1	65.5	97.5	5.3	10.2
20071103	74	flood	3.8	84.3	126.5	15.1	24.5
20071103	74	ebb	4	48.7	76.4	1.7	4.7
20071103	75	flood	4.4	70.1	102.5	11.6	18.4
20071104	75	ebb	4.3	56.5	85.7	3.7	6.8
20071104	76	flood	3.7	68	101.8	103.1	15.7
20071104	76	ebb	4.2	44.4	64.3	39	1.4
20071105	77	flood	4.7	67.9	107	8.2	14.9
20071105	77	ebb	4.4	49.1	77.2	1.6	3.8
20071105	78	flood	4.2	60.7	90	4	8.6
20071105	78	ebb	4.5	64.3	98	9.1	11.5
20071106	79	flood	5.5	83.9	121.3	15.9	22.8
20071106	79	ebb	4.4	61.9	94.8	5.1	8.8
20071106	80	flood	4.5	101.4	141.8	26.2	37.5
20071106	80	ebb	5.2	65.9	98.3	3.1	8.4
20071107	81	flood	4.6	122.2	205	38.3	48.4
20071107	81	ebb	4.7	68.9	-	3.9	9.4
20071107	82	flood	5.3	110.3	-	30.7	41.9
20071107	82	ebb	5.1	75.9	-	8.3	15.6
20071108	83	flood	5	129.4	-	41.6	52.8
20071108	83	ebb	5.4	77.2	-	10.8	14.7

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007

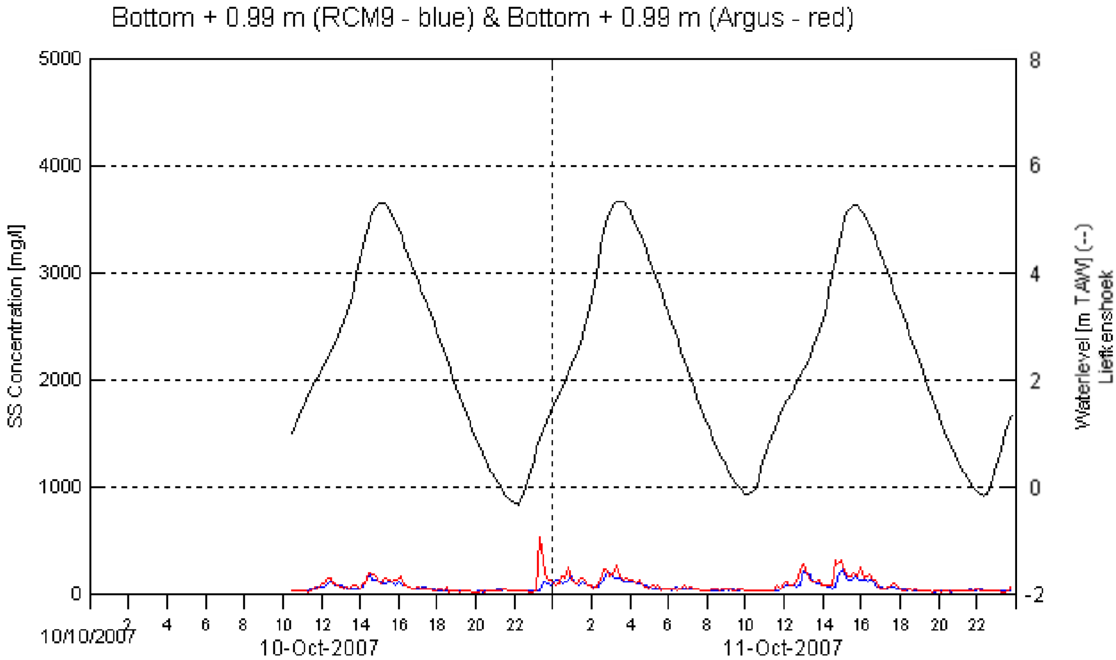


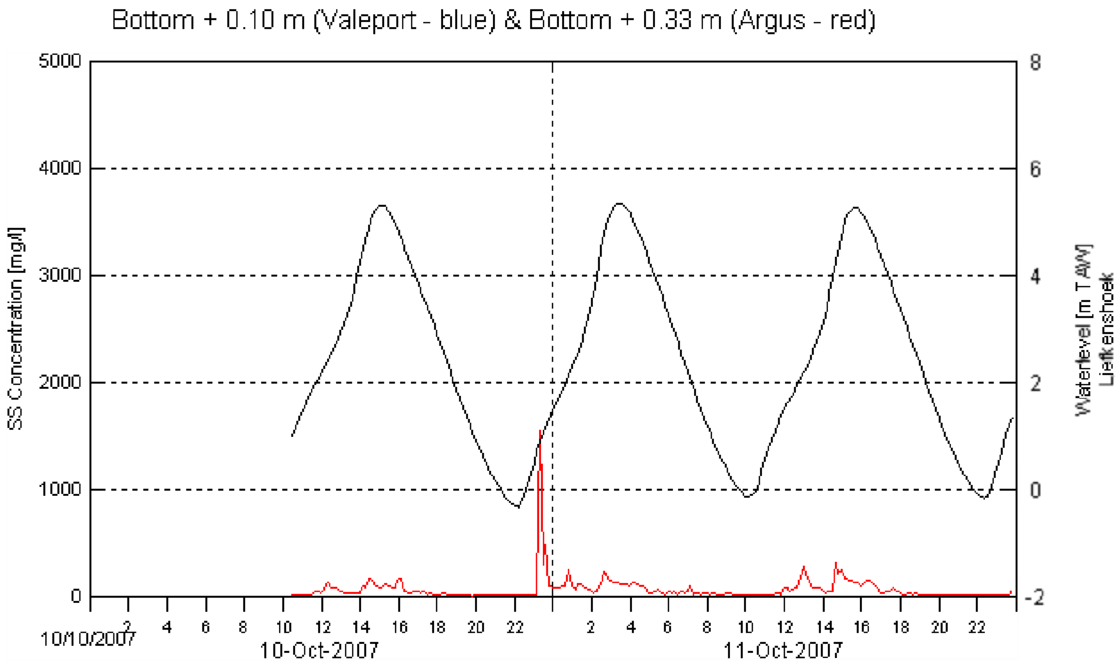


Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1.04m and 0.16 m above the bottom for SS concentration		*Data processed by:* IMDC
Location: Deurganckdok CDW	Date: Avg Tide 23/10 – 24/10	*In association with:* wl | delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

E.2 Sill Frame

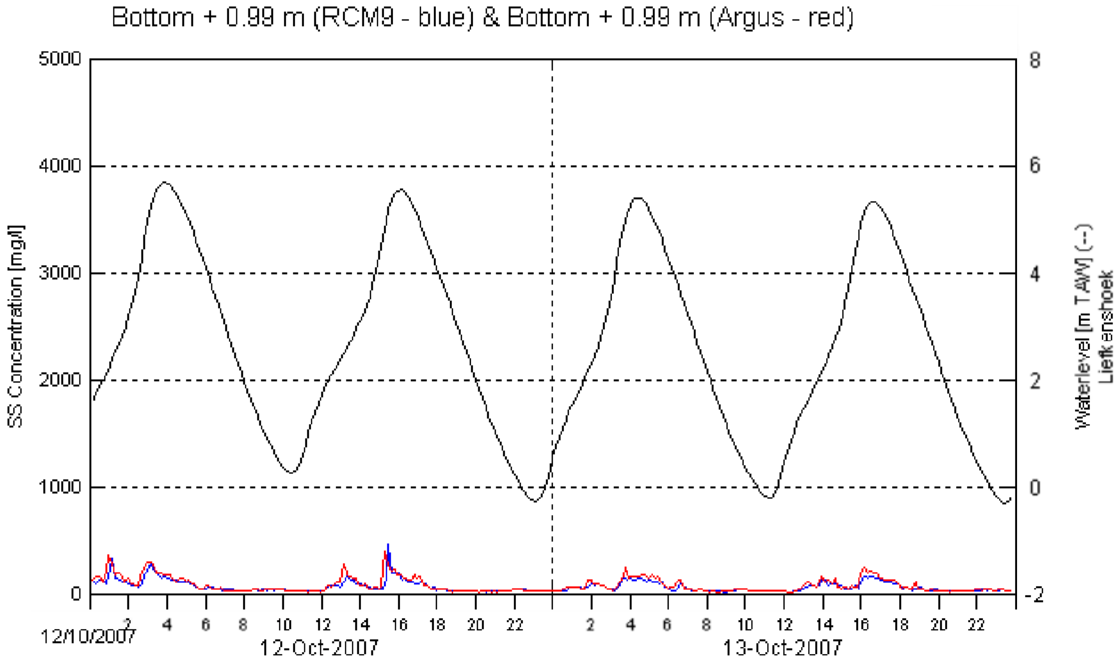
11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007

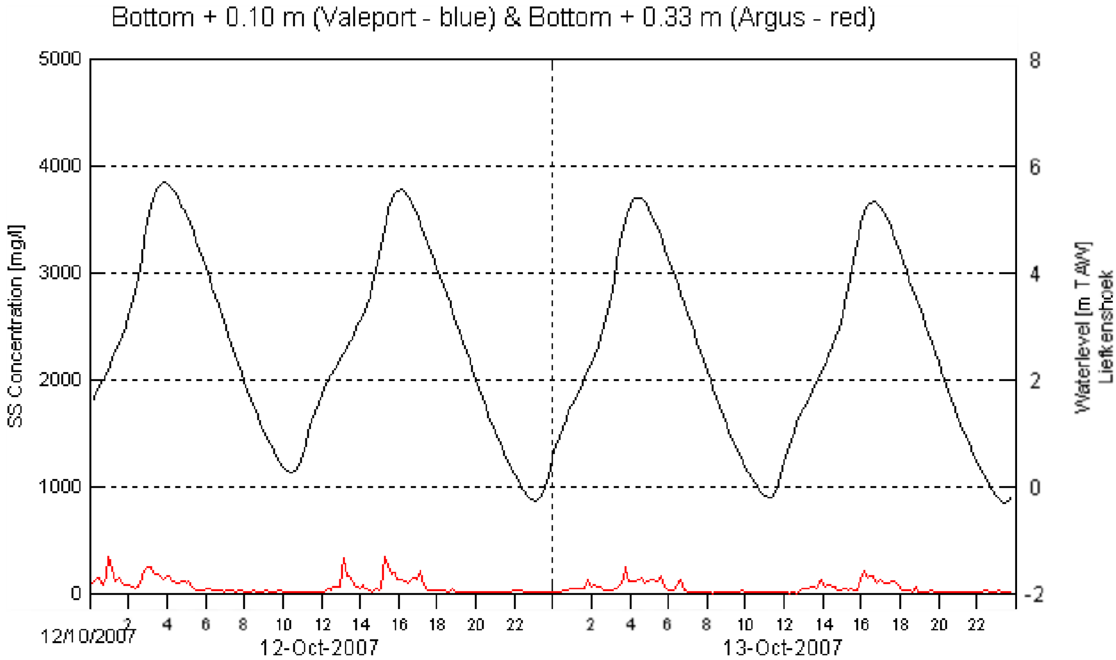




Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1 m and 0.1 m above the bottom for SS concentration		Data processed by: IMDC
Location: Deurganckdok Sill	Date: 10/10/07 – 11/10/07	In association with: WL delft hydraulics, GEMS International I/RA/11283/07.093/MSA

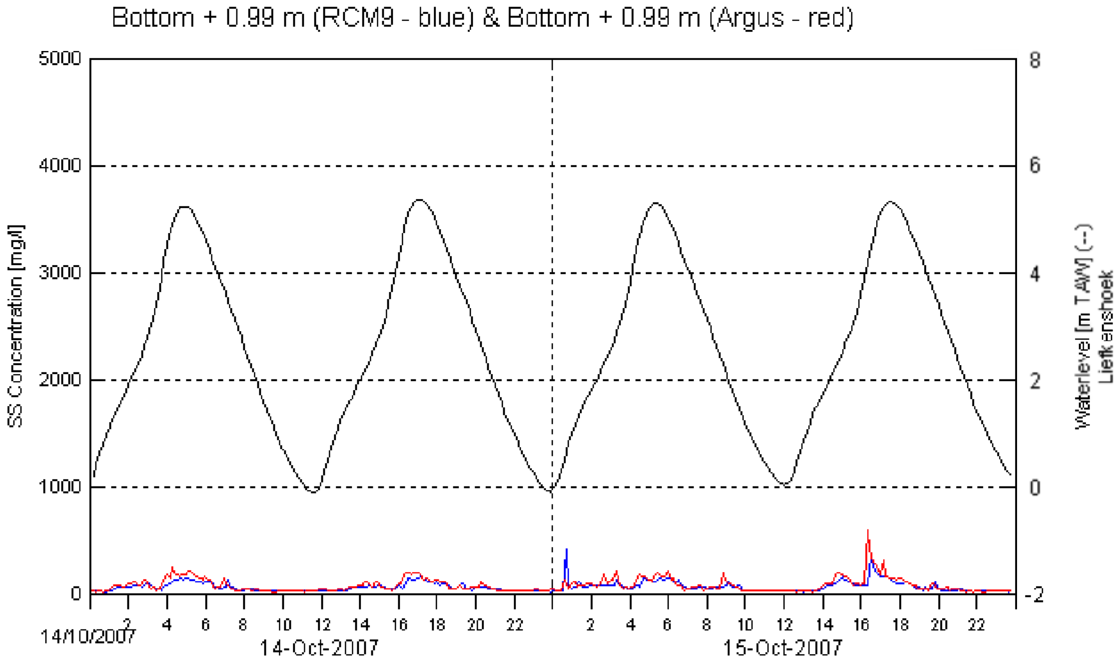
11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007

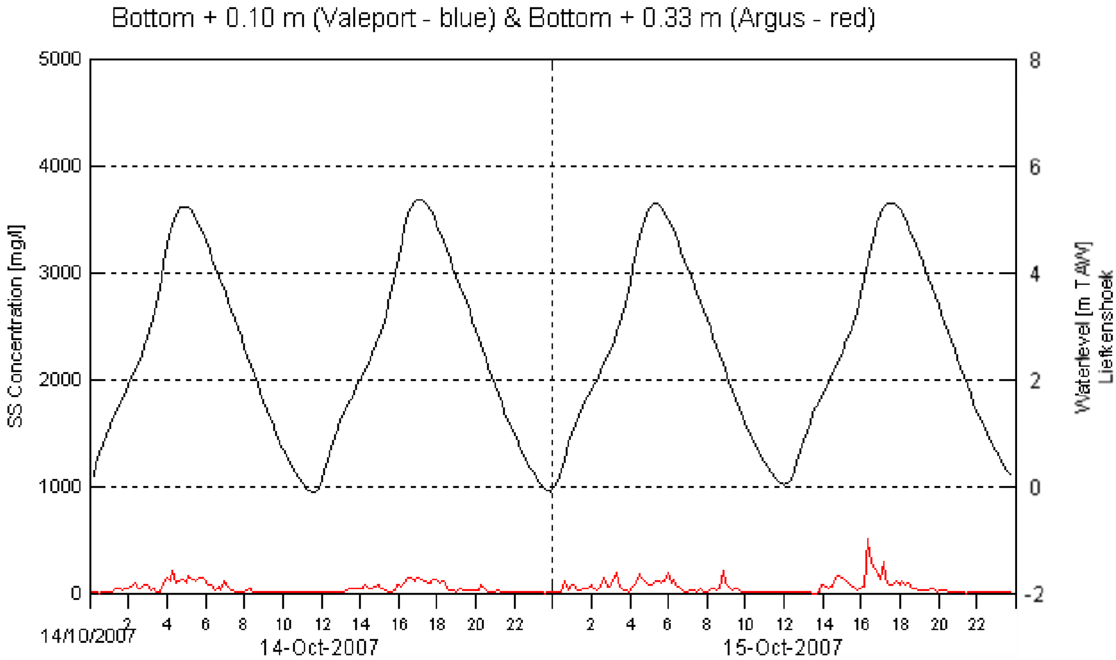




Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1 m and 0.1 m above the bottom for SS concentration		*Data processed by:* IMDC
Location: Deurganckdok Sill	Date: 12/10/07 – 13/10/07	*In association with:* WL delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007

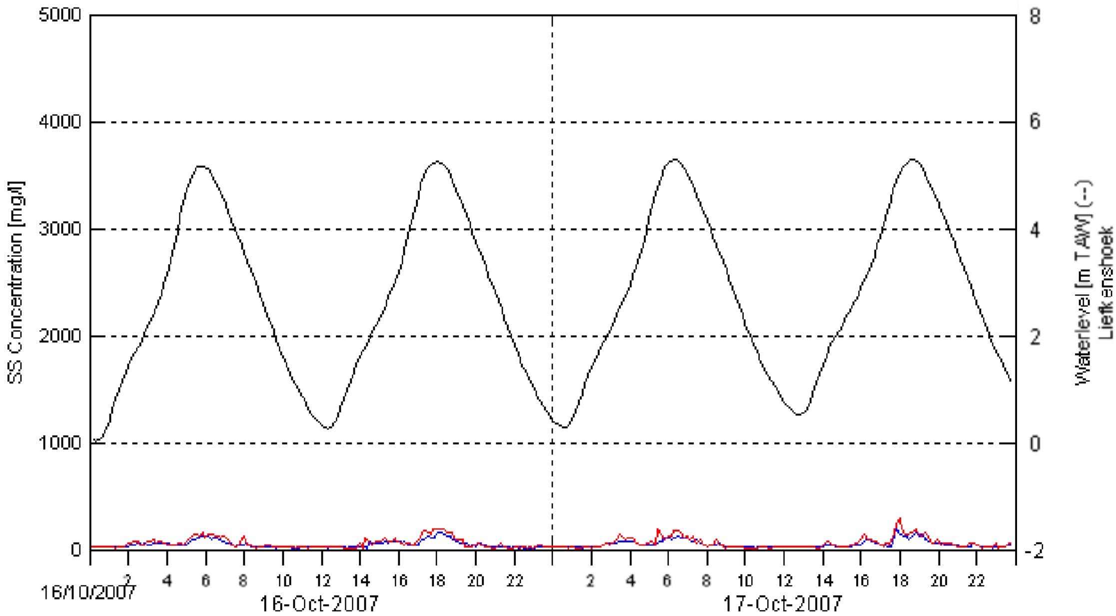




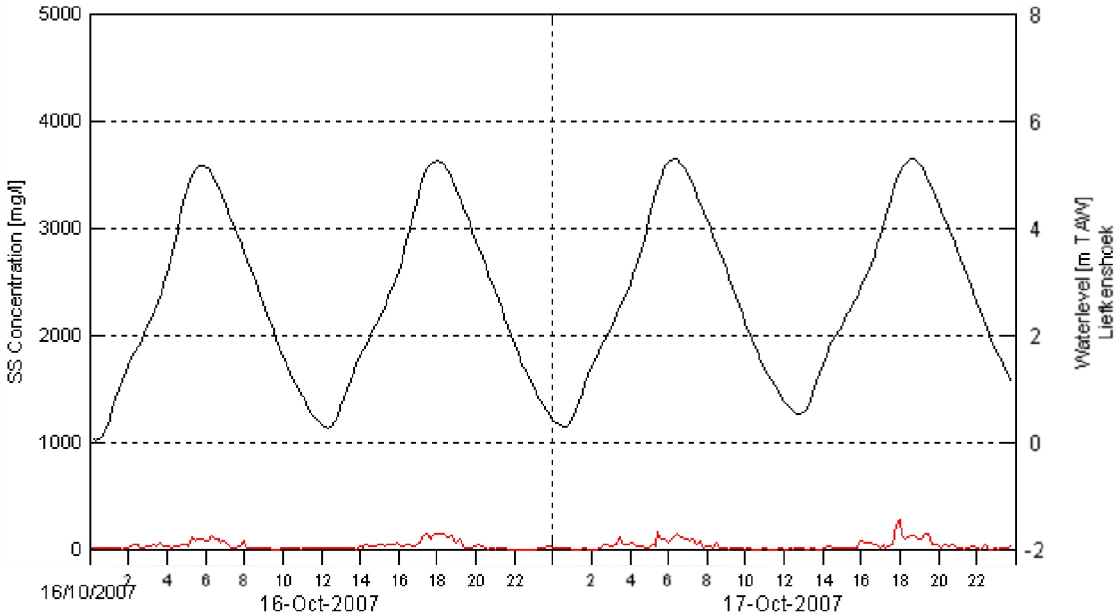
Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1 m and 0.1 m above the bottom for SS concentration		Data processed by: IMDC
Location: Deurganckdok Sill	Date: 14/10/07 – 15/10/07	In association with: WL delft hydraulics, GEMS International I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007

Bottom + 0.99 m (RCM9 - blue) & Bottom + 0.99 m (Argus - red)

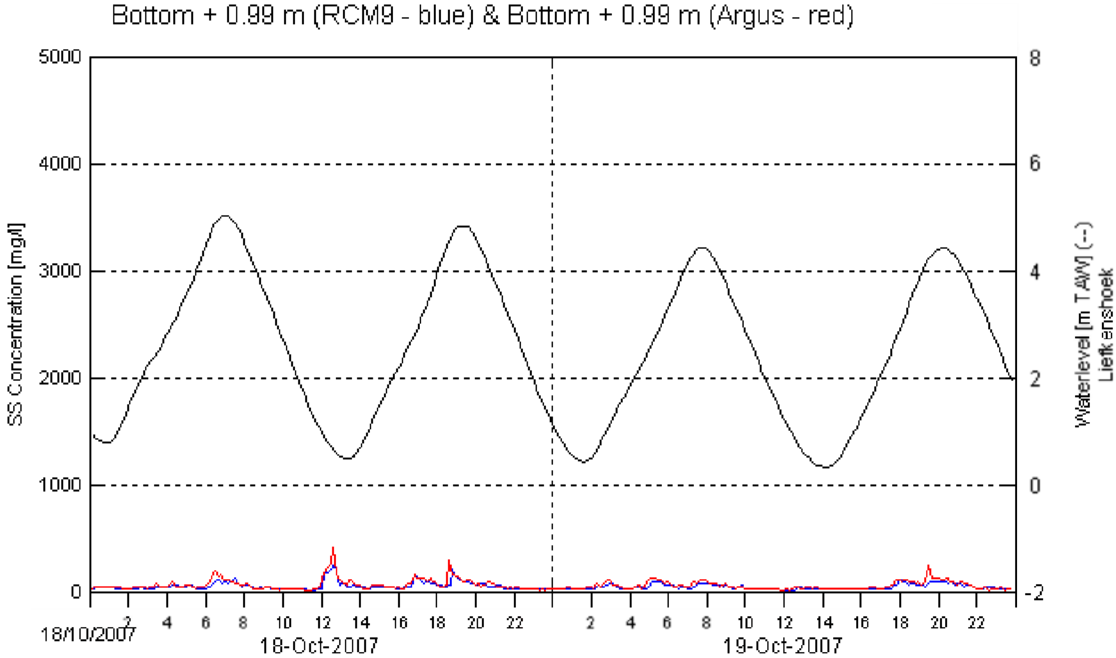


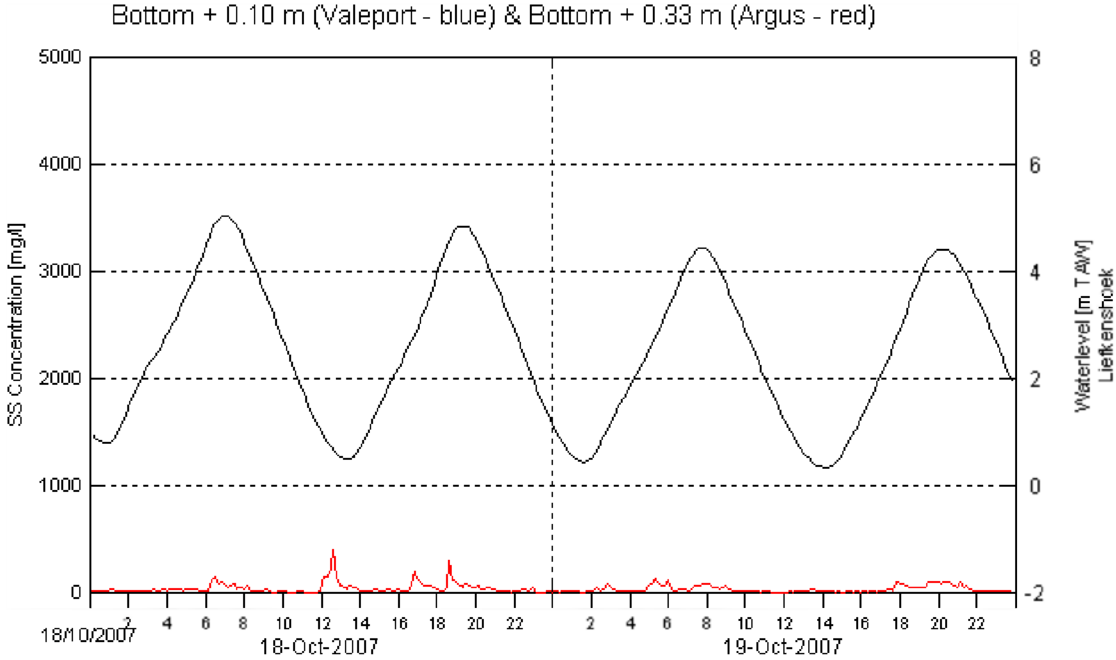
Bottom + 0.10 m (Valeport - blue) & Bottom + 0.33 m (Argus - red)



Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1 m and 0.1 m above the bottom for SS concentration		Data processed by: IMDC
Location: Deurganckdok Sill	Date: 16/10/07 – 17/10/07	In association with: WL delft hydraulics, GEMS International
		I/RA/11283/07.093/MSA

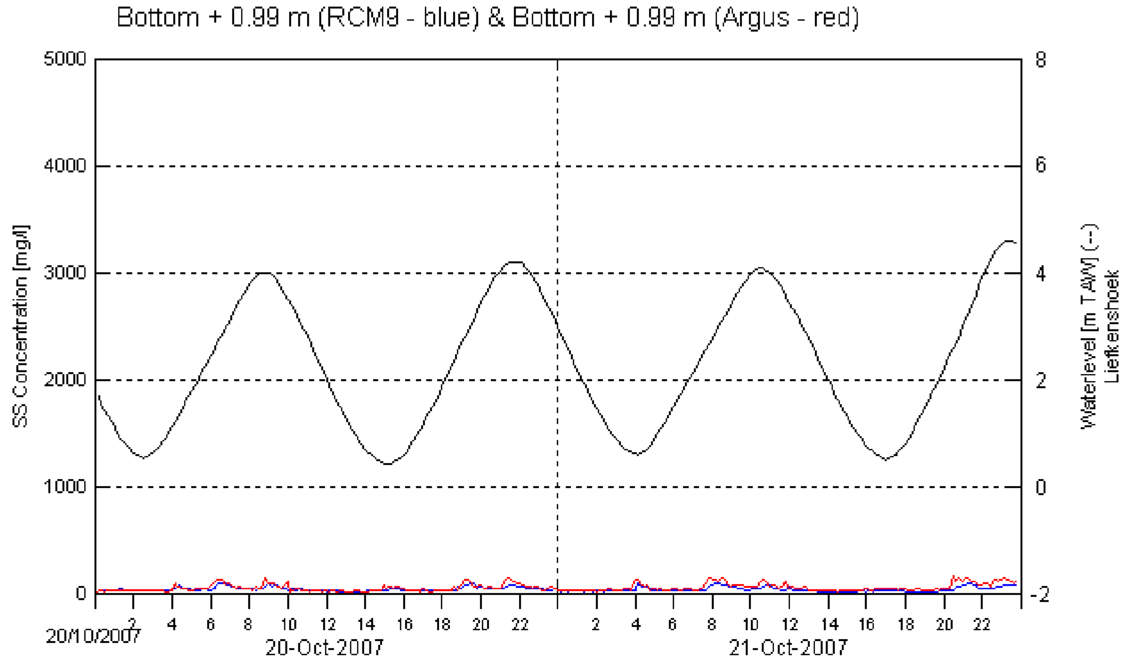
11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007

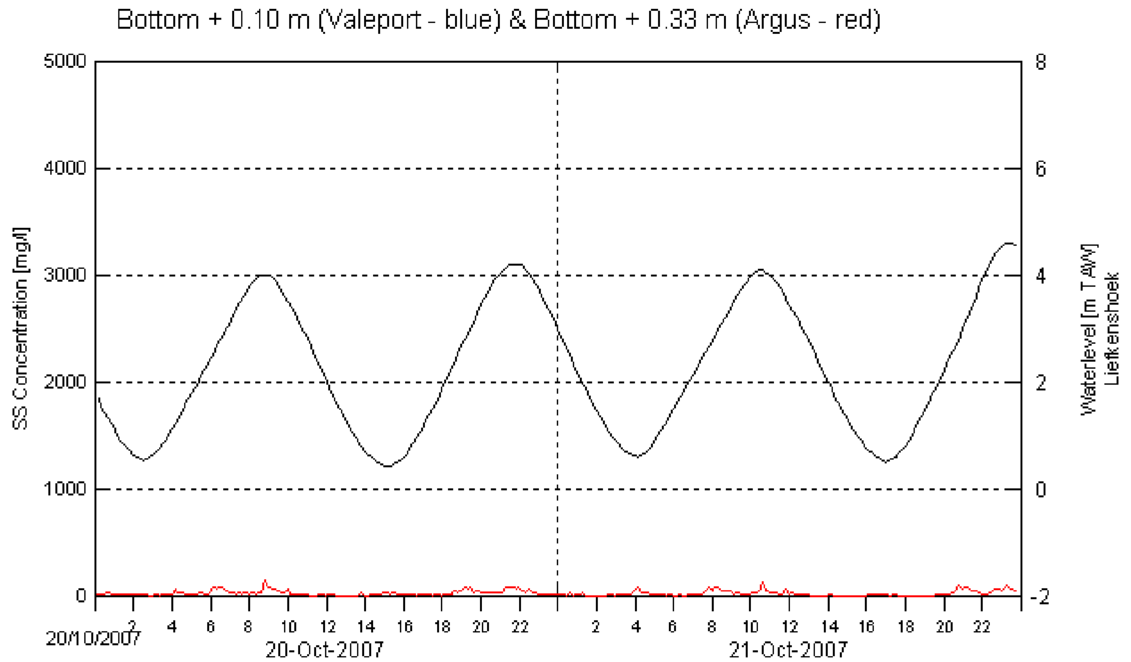




Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1 m and 0.1 m above the bottom for SS concentration		*Data processed by:* IMDC
Location: Deurganckdok Sill	Date: 18/10/07 – 19/10/07	*In association with:* WL delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

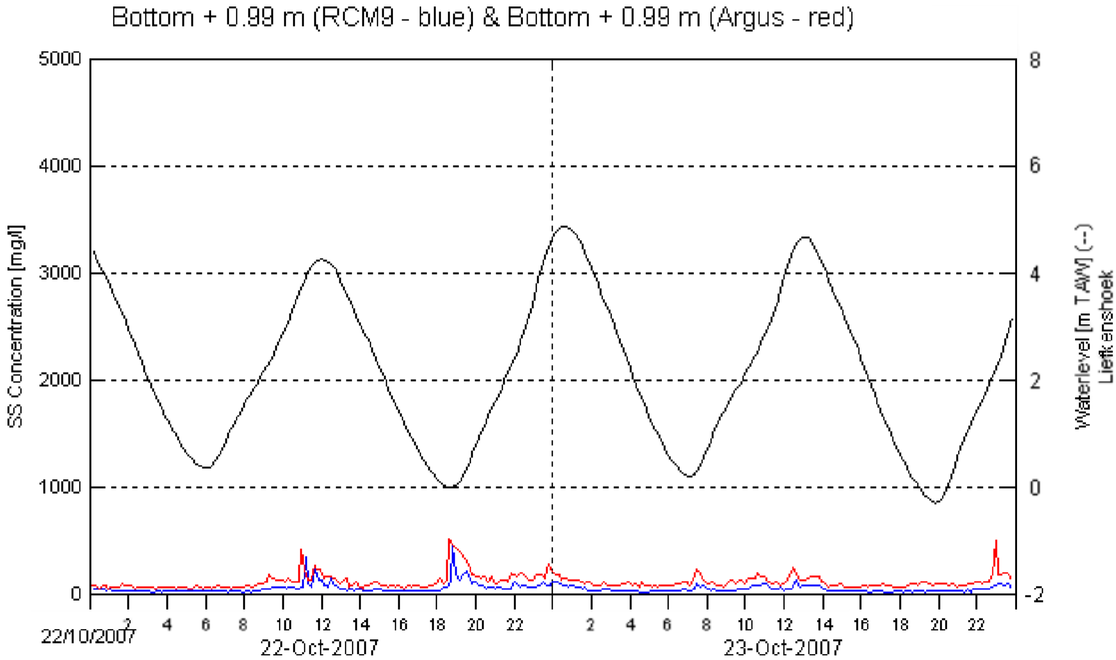
11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007

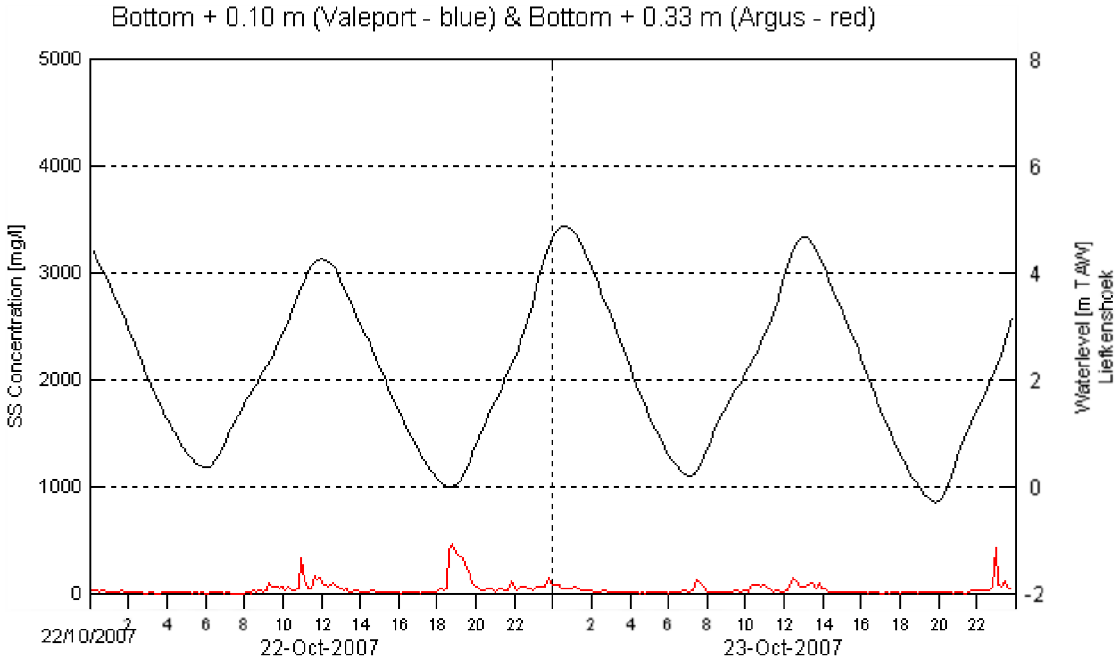




Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1 m and 0.1 m above the bottom for SS concentration		*Data processed by:* IMDC
Location: Deurganckdok Sill	Date: 20/10/07 – 21/10/07	*In association with:* WL | delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

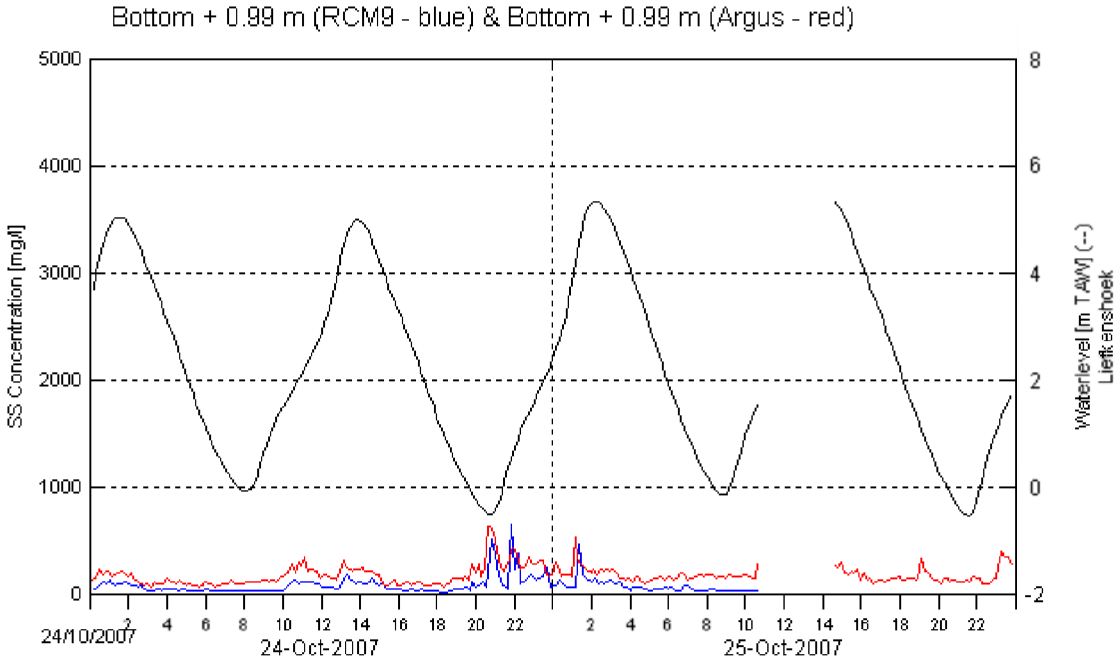
11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007

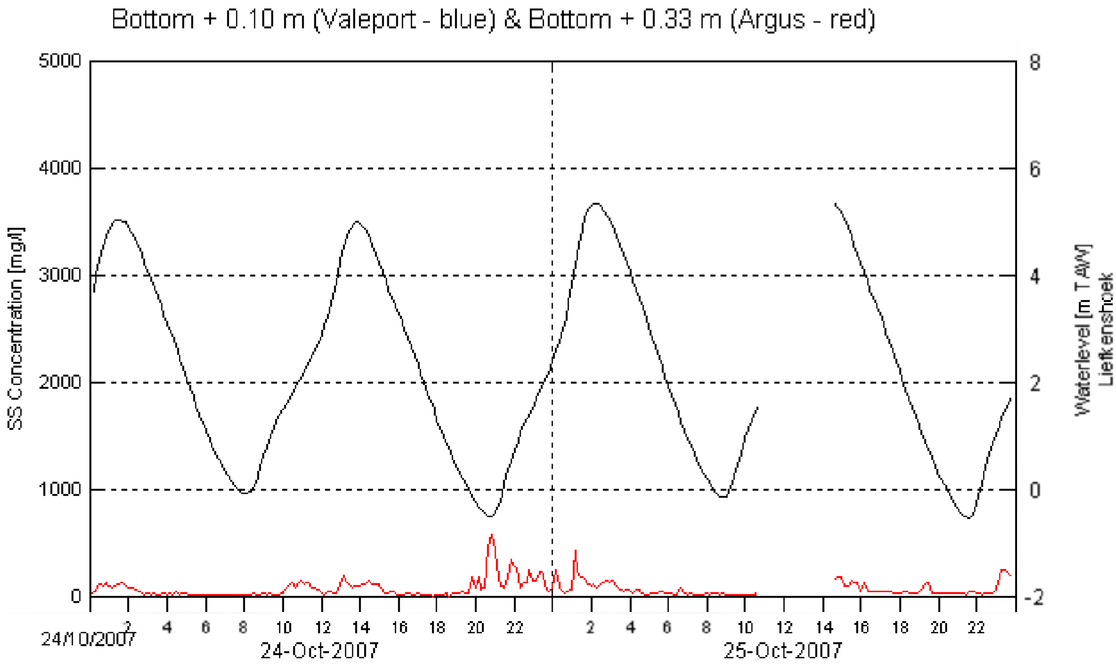




Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1 m and 0.1 m above the bottom for SS concentration		*Data processed by:* IMDC
Location: Deurganckdok Sill	Date: 22/10/07 – 23/10/07	*In association with:* WL | delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

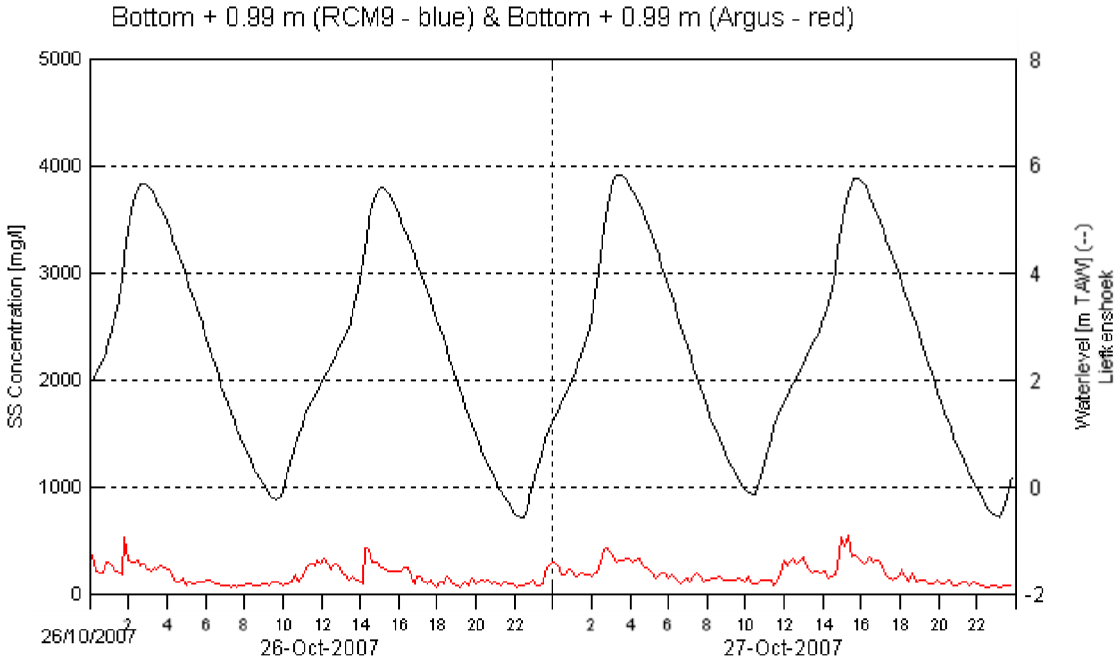
11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007

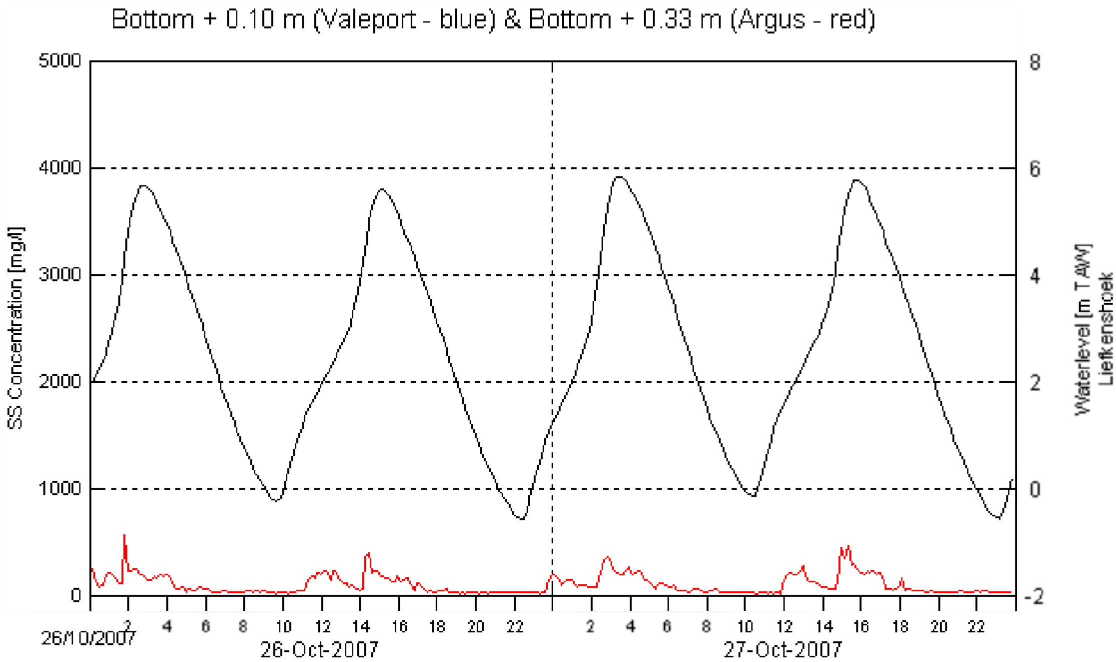




Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1 m and 0.1 m above the bottom for SS concentration		*Data processed by:* IMDC
Location: Deurganckdok Sill	Date: 24/10/07 – 25/10/07	*In association with:* WL delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

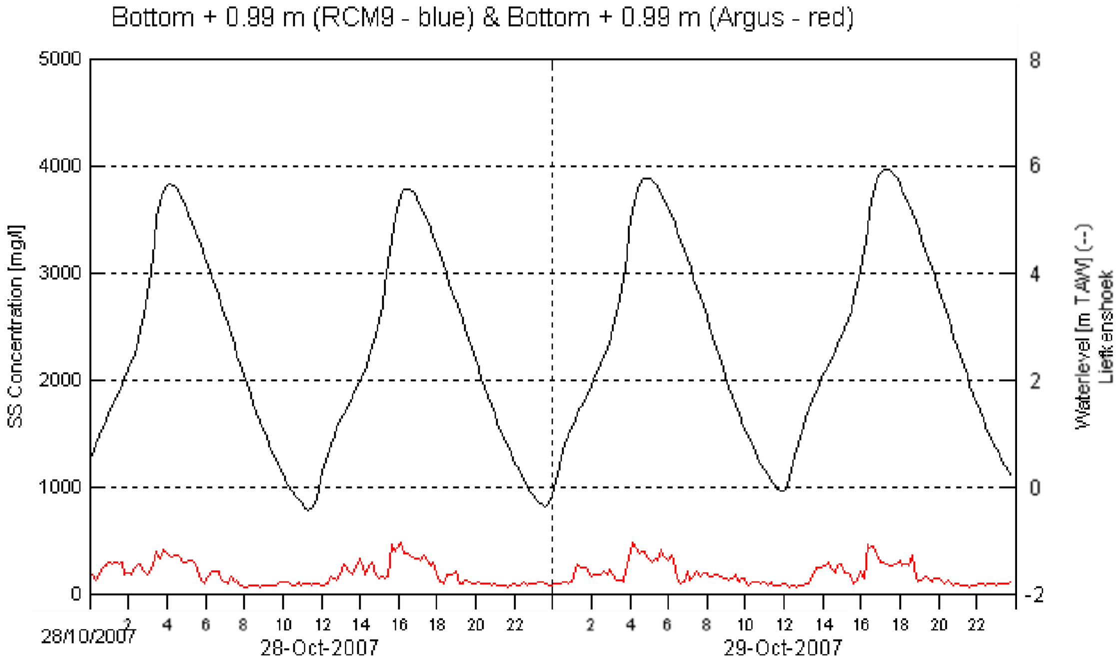
11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007

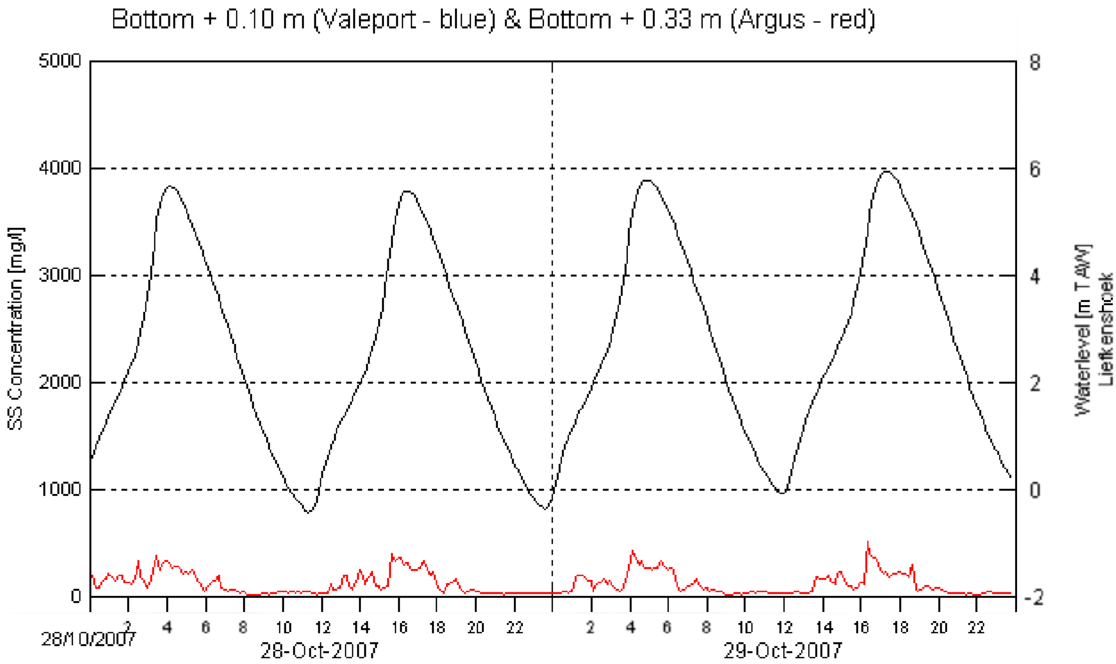




Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1 m and 0.1 m above the bottom for SS concentration		*Data processed by:* IMDC
Location: Deurganckdok Sill	Date: 26/10/07 – 27/10/07	*In association with:* WL | delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

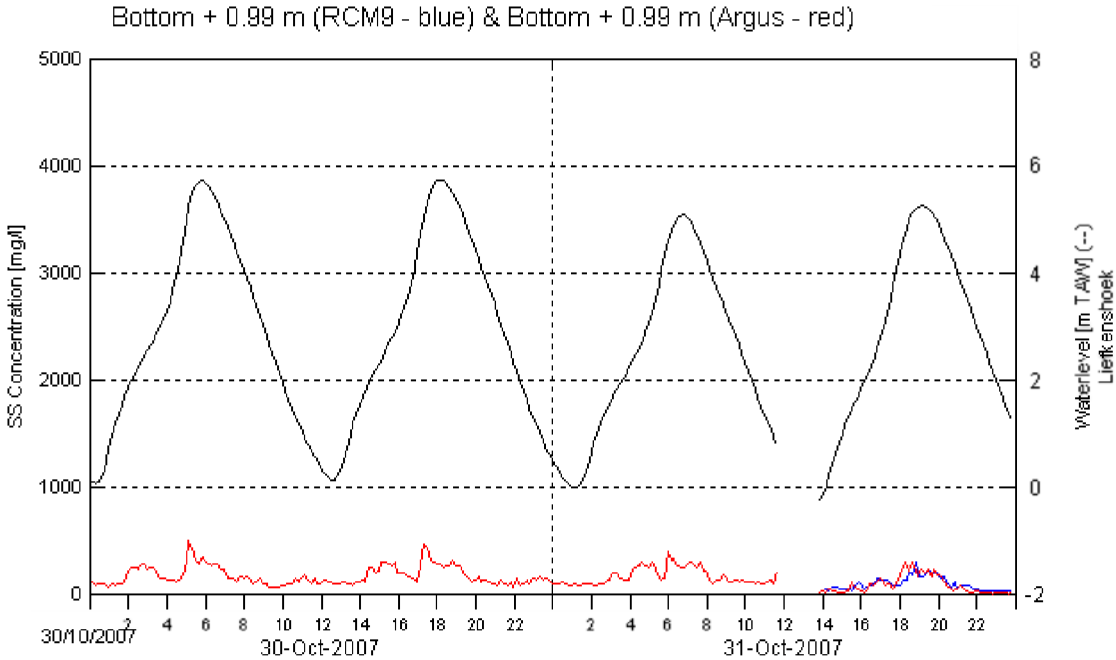
11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007

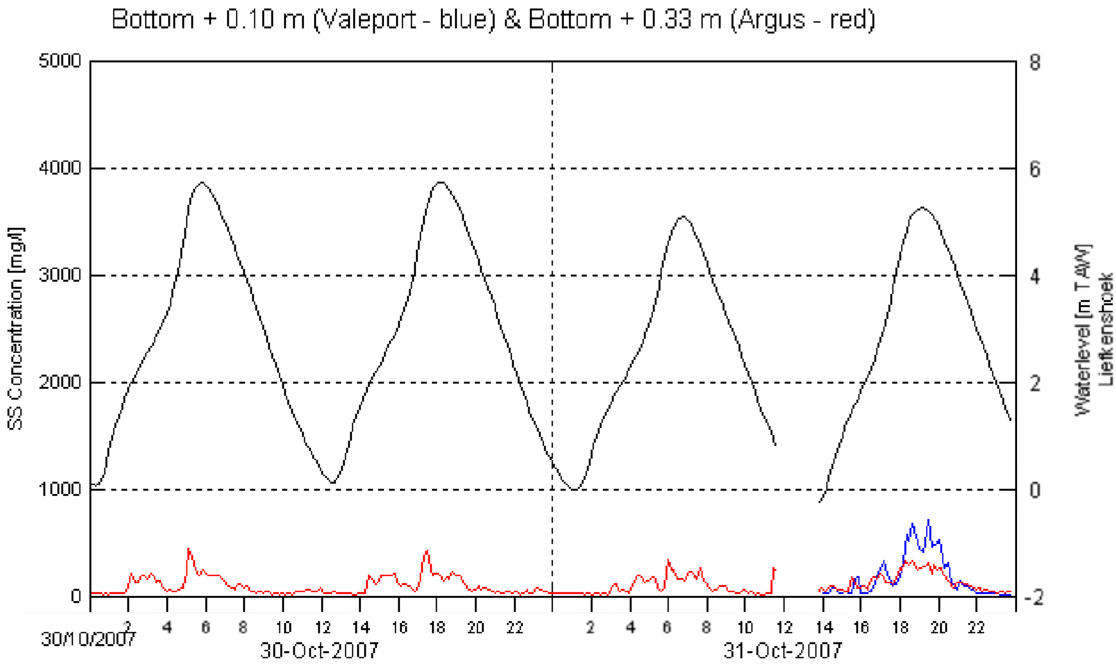




Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1 m and 0.1 m above the bottom for SS concentration		*Data processed by:* IMDC
Location: Deurganckdok Sill	Date: 28/10/07 – 29/10/07	*In association with:* WL delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

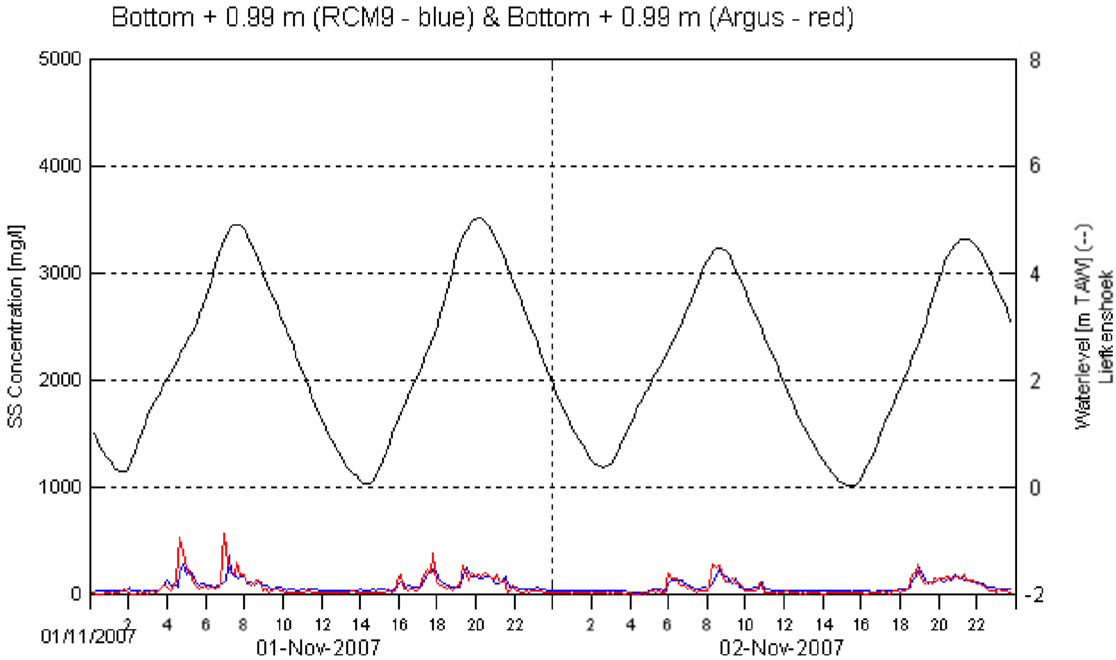
11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007

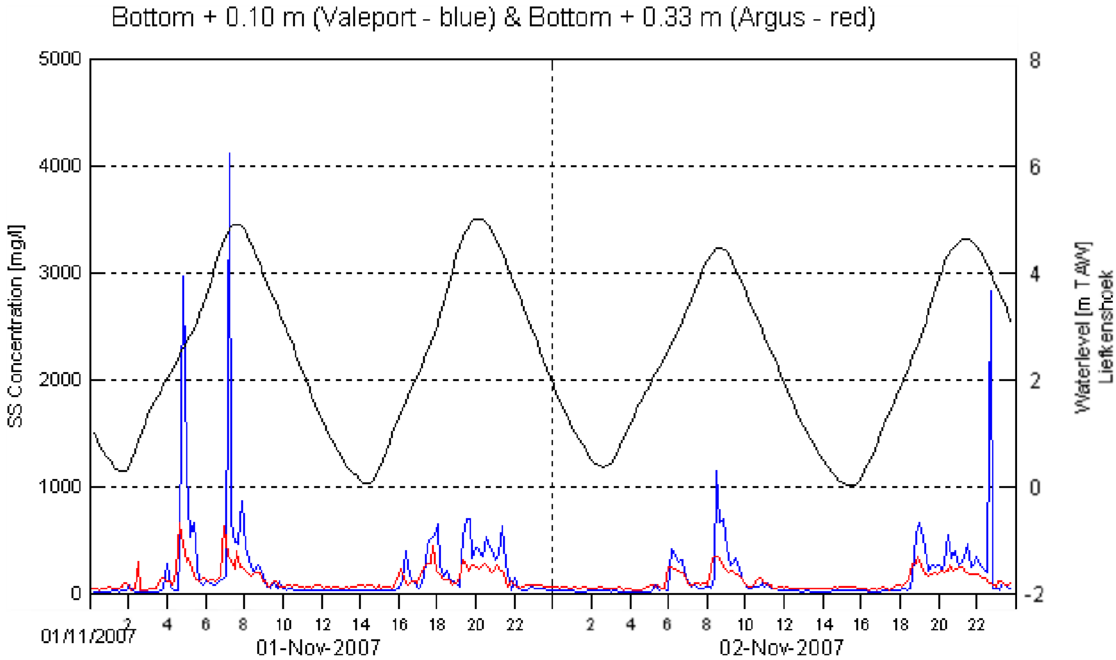




Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1 m and 0.1 m above the bottom for SS concentration		Data processed by: IMDC
Location: Deurganckdok Sill	Date: 30/10/07 – 31/10/07	In association with: WL delft hydraulics, GEMS International
		I/RA/11283/07.093/MSA

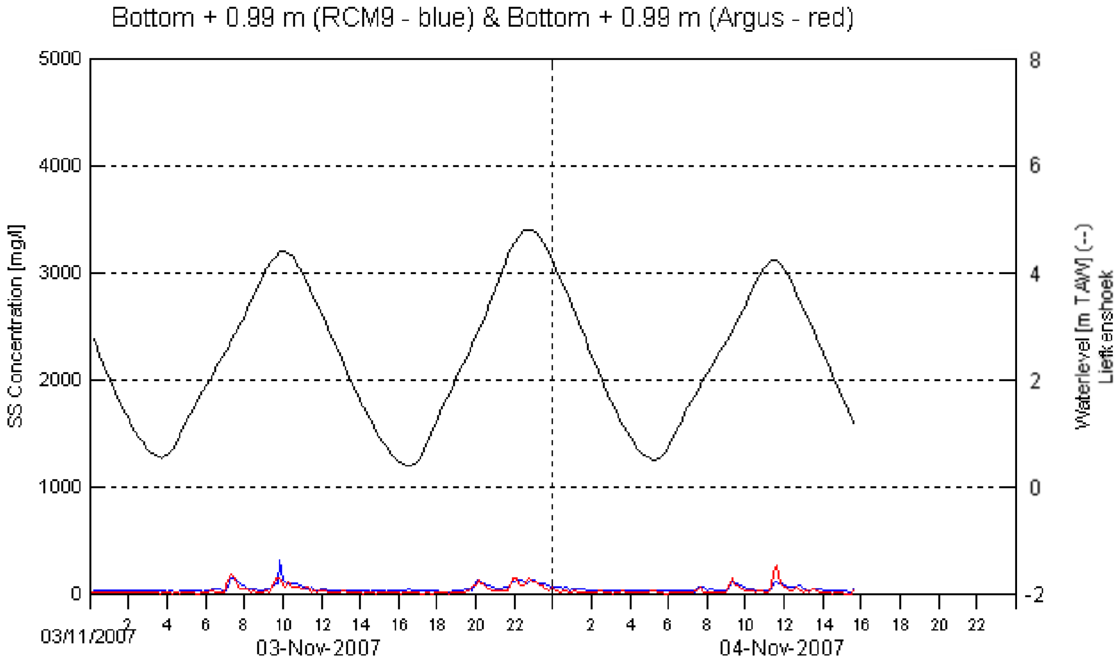
11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007

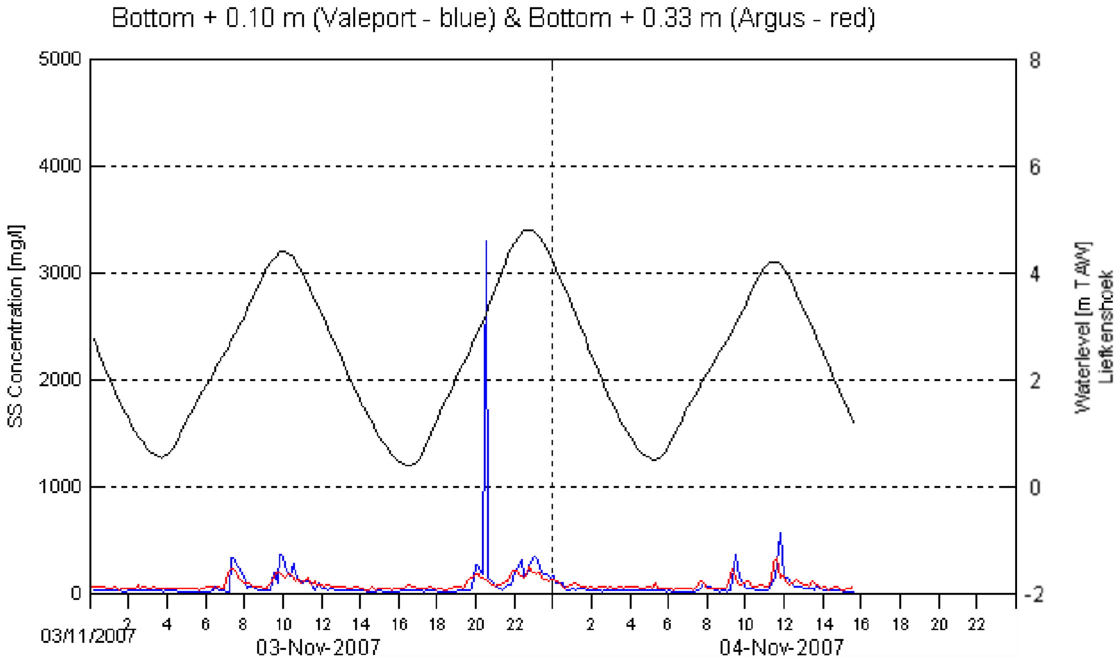




Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1 m and 0.1 m above the bottom for SS concentration		*Data processed by:* IMDC
Location: Deurganckdok Sill	Date: 01/11/07 – 02/11/07	*In association with:* WL | delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

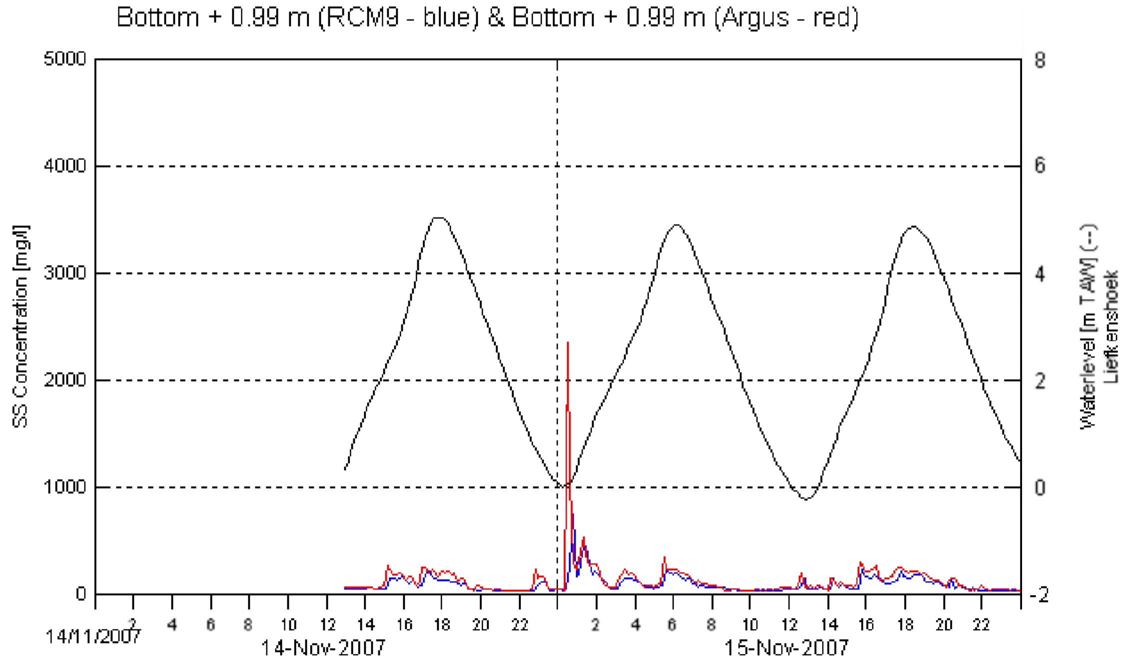
11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007

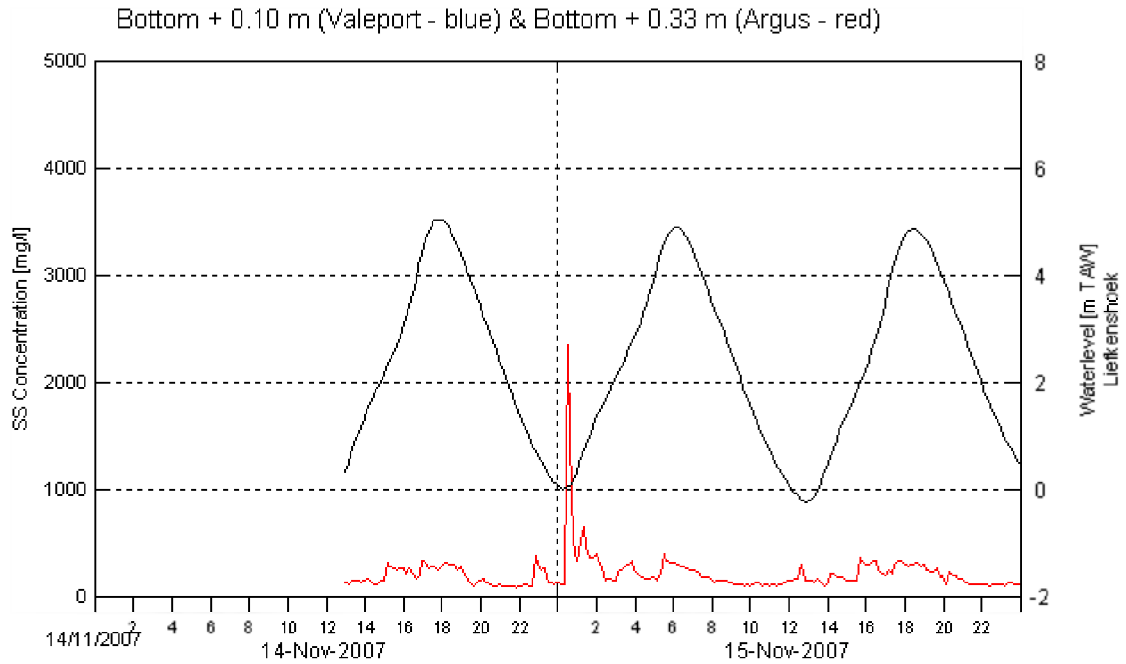




Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1 m and 0.1 m above the bottom for SS concentration		*Data processed by:* IMDC
Location: Deurganckdok Sill	Date: 03/11/07 – 04/11/07	*In association with:* WL | delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

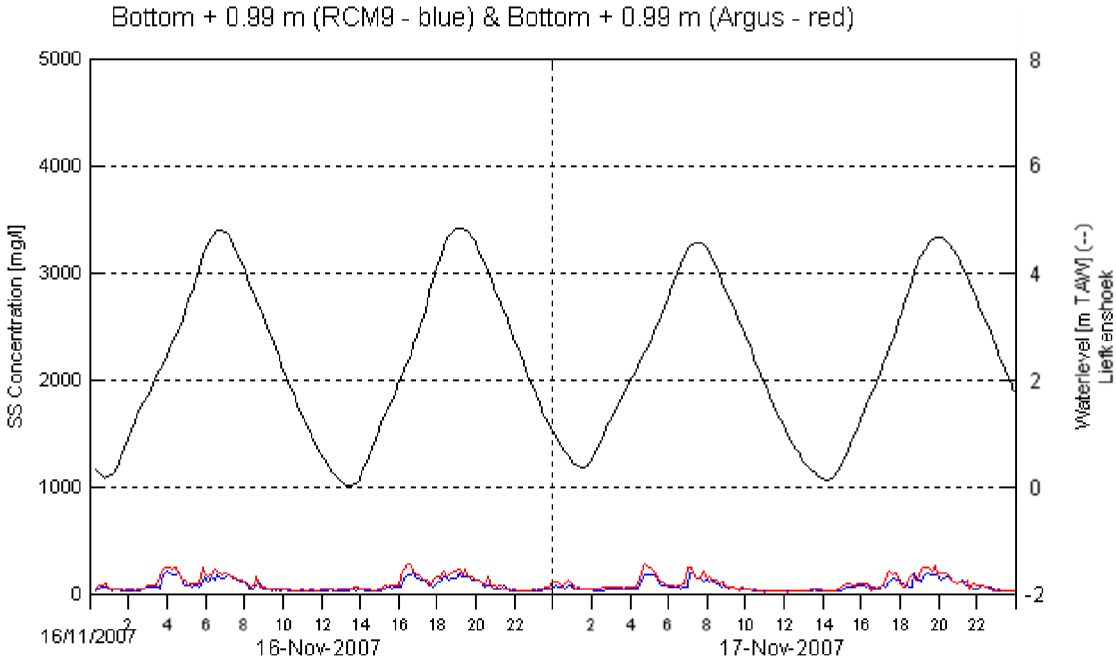
11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007

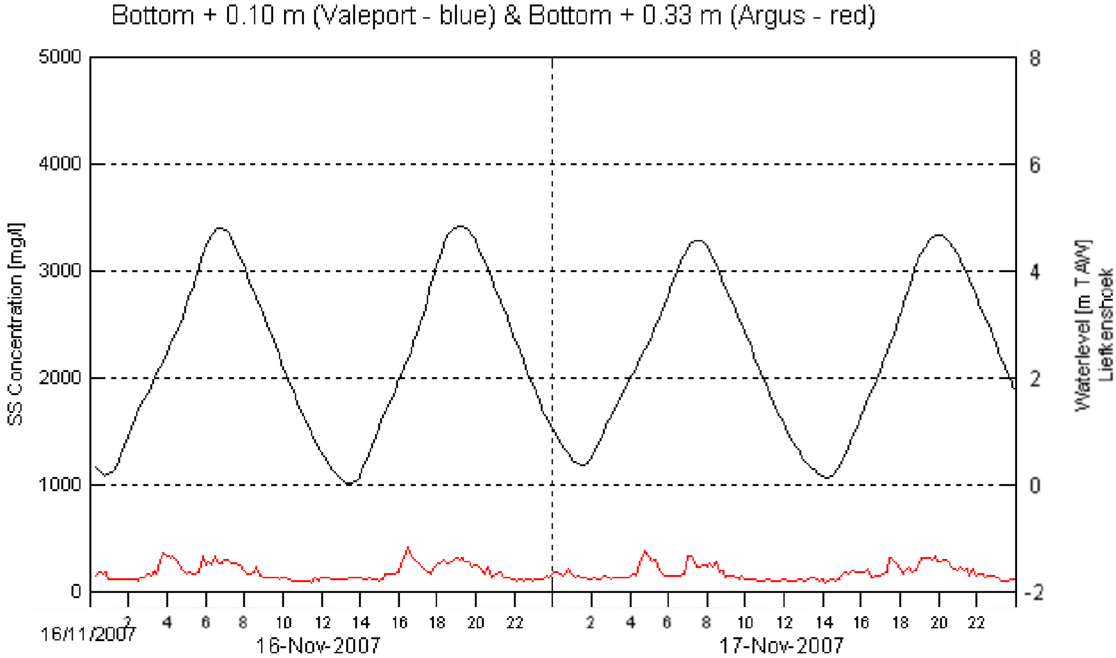




Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1 m and 0.1 m above the bottom for SS concentration	*Data processed by:* IMDC
Location: Deurganckdok Sill — Date: 14/11/07 – 15/11/07	*In association with:* WL delft hydraulics, GEMS International
	I/RA/11283/07.093/MSA

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007





Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1 m and 0.1 m above the bottom for SS concentration

Location: Deurganckdok Sill

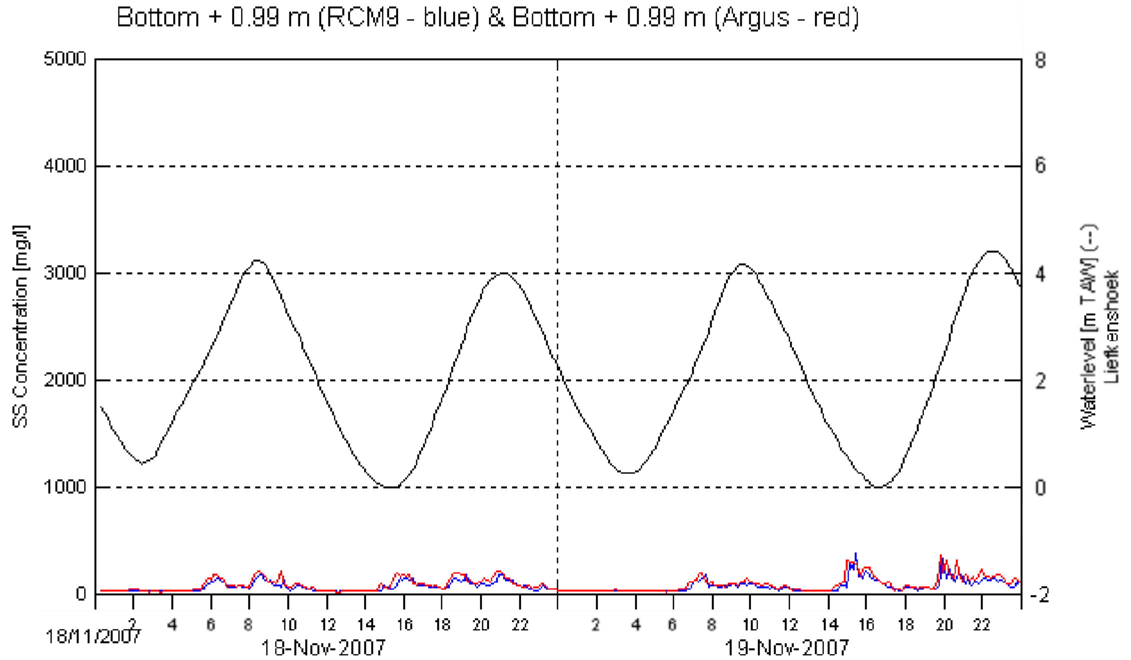
Date: 16/11/07 – 17/11/07

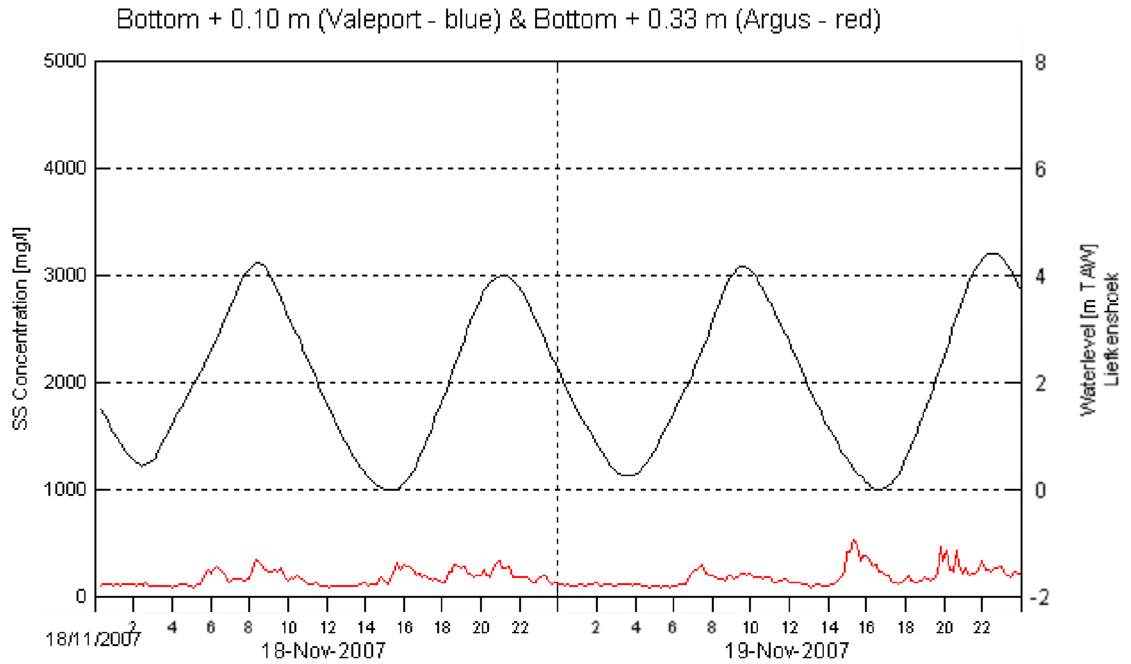
Data processed by: IMDC

In association with: WL | delft hydraulics, GEMS International

I/RA/11283/07.093/MSA

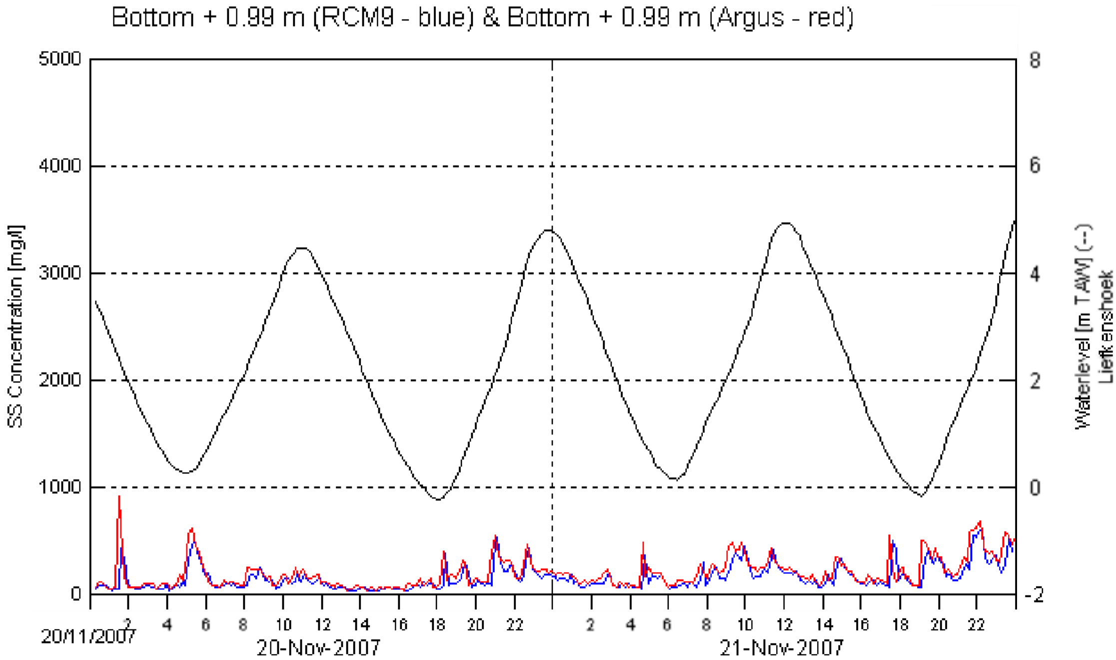
11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007

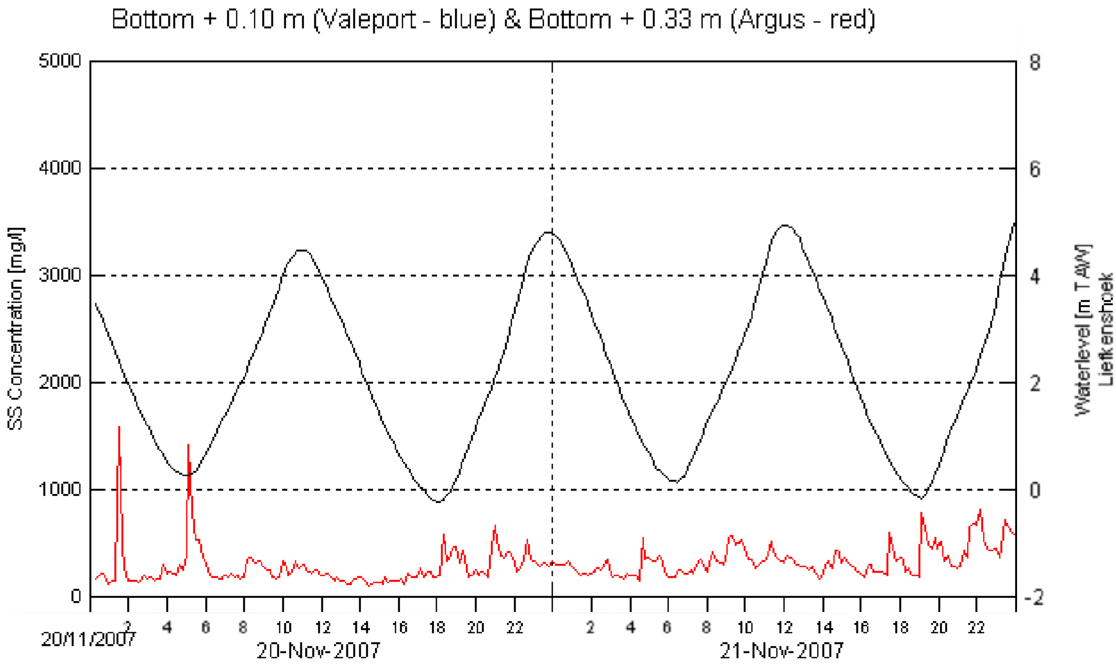




Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1 m and 0.1 m above the bottom for SS concentration	*Data processed by:* IMDC
Location: Deurganckdok Sill — Date: 18/11/07 – 19/11/07	*In association with:* WL delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

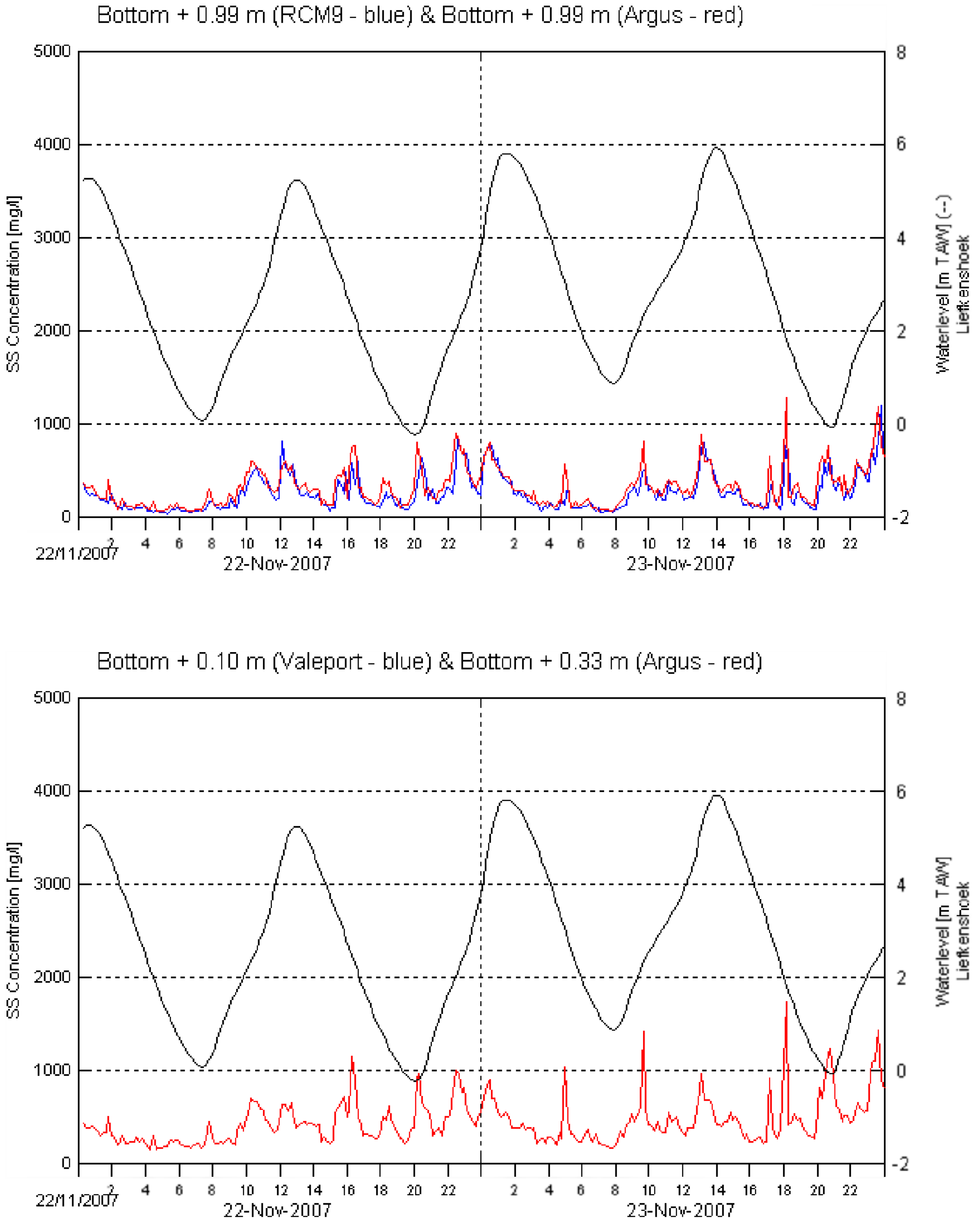
11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007





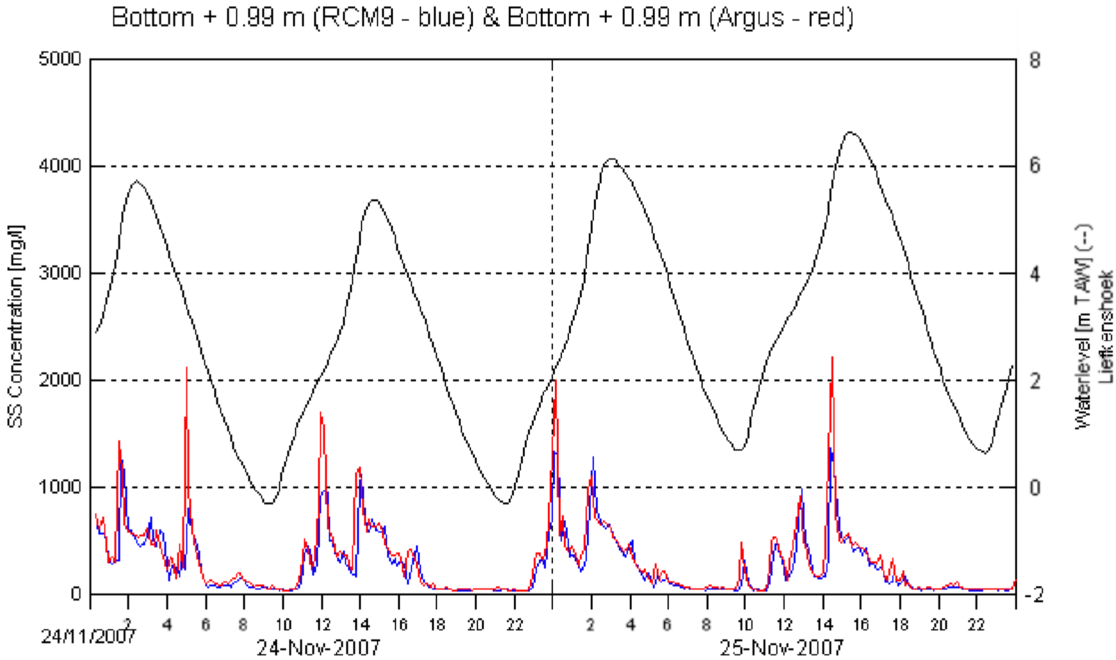
Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1 m and 0.1 m above the bottom for SS concentration		*Data processed by:* IMDC
Location: Deurganckdok Sill	Date: 20/11/07 – 21/11/07	*In association with:* WL delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

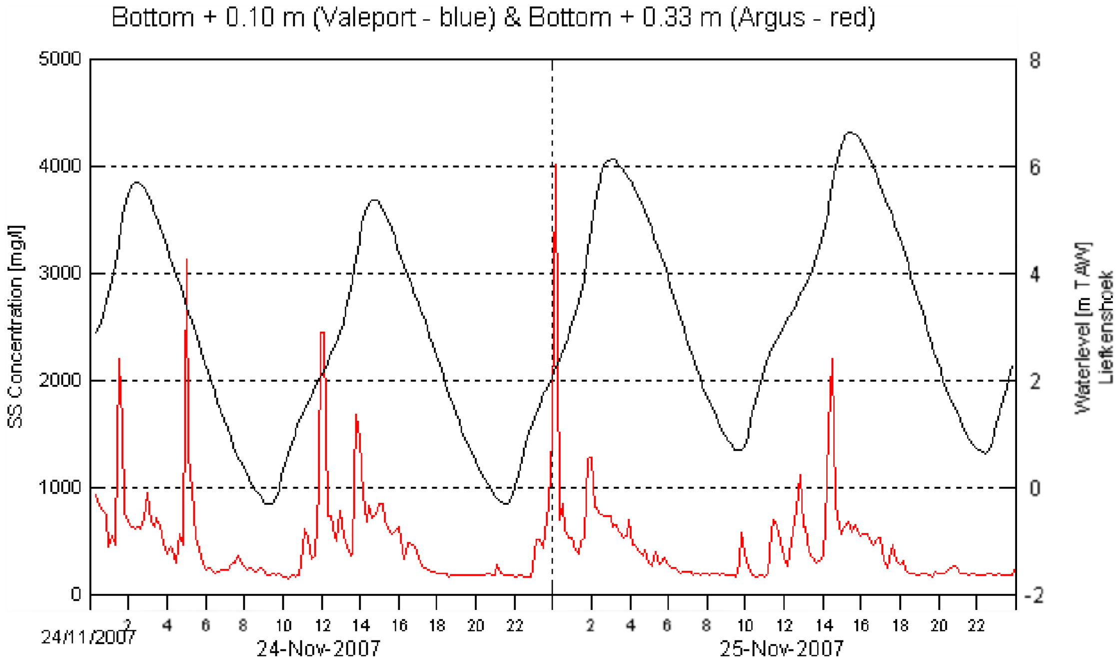
11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007



Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1 m and 0.1 m above the bottom for SS concentration		*Data processed by:* IMDC
Location: Deurganckdok Sill	Date: 22/11/07 – 23/11/07	*In association with:* WL delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

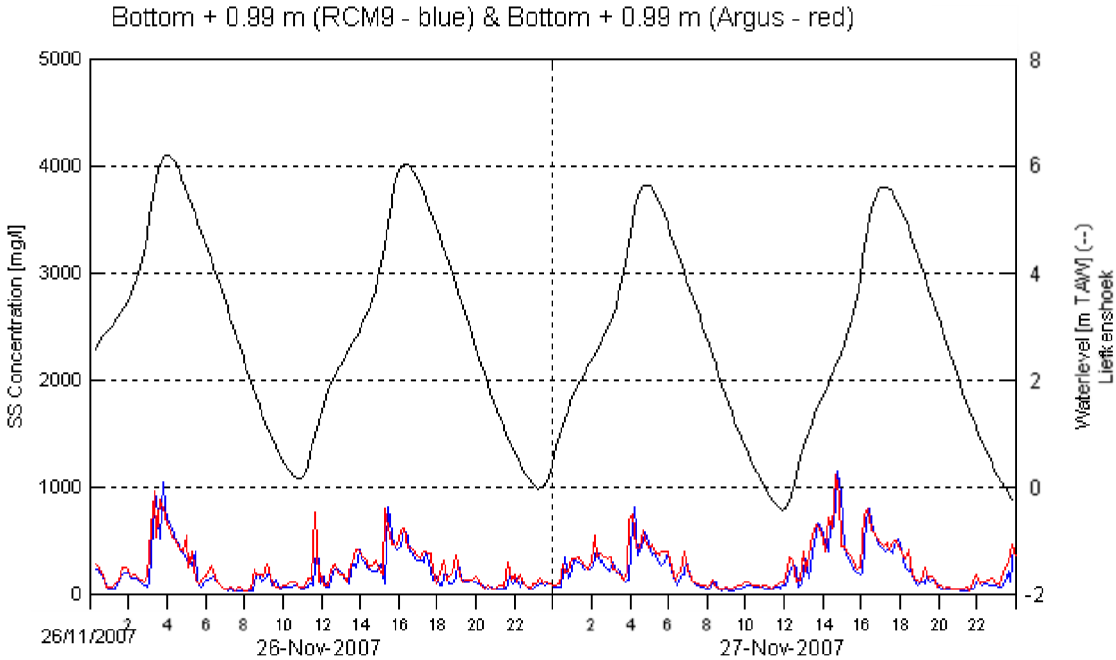
11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007

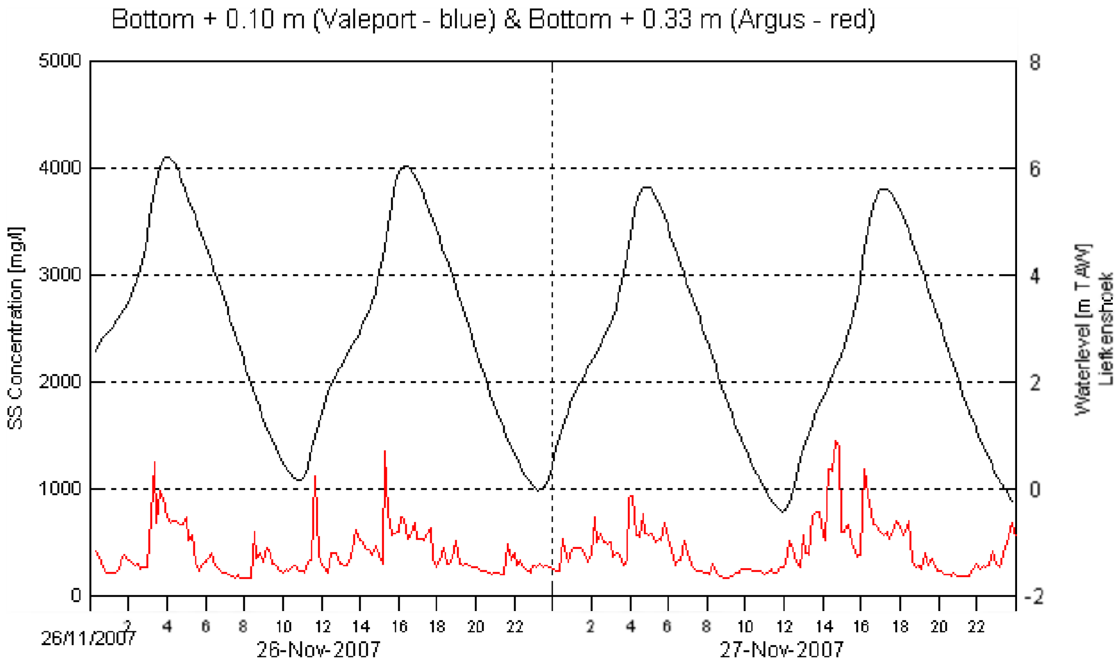




Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1 m and 0.1 m above the bottom for SS concentration		*Data processed by:* IMDC
Location: Deurganckdok Sill	Date: 24/11/07 – 25/11/07	*In association with:* WL delft hydraulics, GEMS International *I/RA/11283/07.093/MSA*

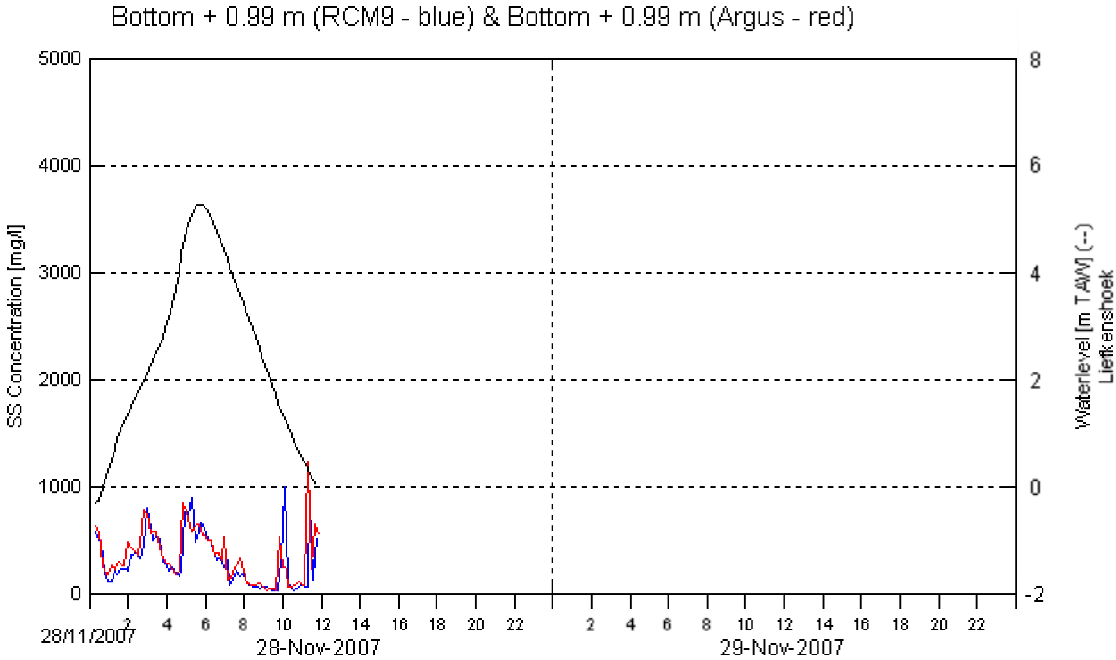
11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007

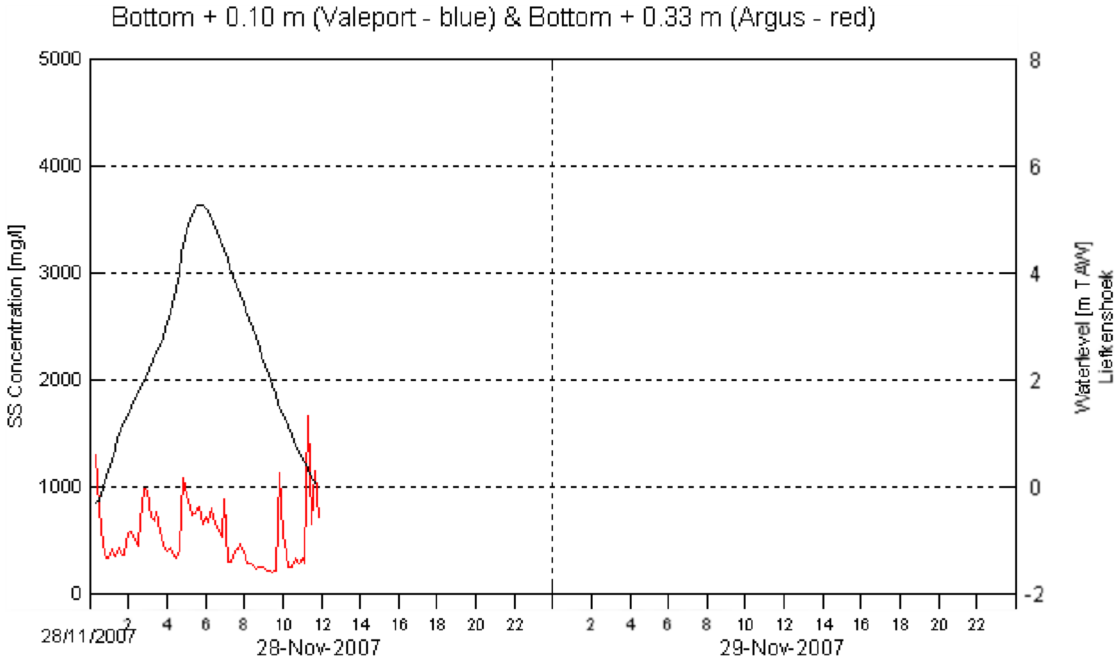




Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1 m and 0.1 m above the bottom for SS concentration	*Data processed by:* IMDC
Location: Deurganckdok Sill — Date: 26/11/07 – 27/11/07	*In association with:* WL delft hydraulics, GEMS International — *I/RA/11283/07.093/MSA*

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007





Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1 m and 0.1 m above the bottom for SS concentration

Location: Deurganckdok Sill

Date: 28/11/07

Data processed by: IMDC

In association with: WL | delft hydraulics, GEMS International

I/RA/11283/07.093/MSA

Comparison of SS concentrations during each tidal phase							
Date	Tide No.	Phase	Tidal Diff	OBS SS Concentration [mg/l]		Argus SS Concentration [mg/l]	
			[m]	UP (RCM9)	DOWN (Valeport)	UP	DOWN
20071010	1	flood	4.5	64.3	-	116.8	641.9
20071010	1	ebb	5.6	39.5	-	81.3	612.2
20071011	2	flood	5.6	90.5	-	180	761.4
20071011	2	ebb	5.5	48.1	-	93.4	609
20071011	3	flood	5.4	85.7	-	162.8	663.3
20071011	3	ebb	5.4	44.6	-	86.2	591
20071012	4	flood	5.8	109.3	-	183	676.6
20071012	4	ebb	5.4	51.1	-	96.1	610.9
20071012	5	flood	5.3	86.3	-	147.7	646.5
20071012	5	ebb	5.8	41.4	-	76.5	587.9
20071013	6	flood	5.6	60.8	-	117	627
20071013	6	ebb	5.6	48.9	-	91	625
20071013	7	flood	5.5	65.3	-	120.5	634.2
20071013	7	ebb	5.6	44.8	-	79.9	601.7
20071014	8	flood	5.5	58.2	-	113.4	629.3
20071014	8	ebb	5.3	51.5	-	92.3	615.2
20071014	9	flood	5.5	55.8	-	110.4	619.7
20071014	9	ebb	5.5	51.8	-	90.4	618.1
20071015	10	flood	5.3	81.5	-	131.5	633.9
20071015	10	ebb	5.2	57.3	-	96.7	606.2
20071015	11	flood	5.3	88.7	-	167.4	658.2
20071016	11	ebb	5.3	41.6	-	78.5	573.4
20071016	12	flood	5.1	47.3	-	98.1	582.2
20071016	12	ebb	4.9	38.8	-	75.3	578.3
20071016	13	flood	5	53.8	-	102.6	599.9
20071017	13	ebb	4.9	41.9	-	76.2	585.1
20071017	14	flood	5	51	-	107	596.9
20071017	14	ebb	4.7	39.4	-	77.8	568.4
20071017	15	flood	4.7	55.7	-	117.3	611.6
20071018	15	ebb	4.5	46.2	-	88.7	601.4
20071018	16	flood	4.2	42.3	-	93.5	616.7
20071018	16	ebb	4.5	58.1	-	102.6	620
20071018	17	flood	4.3	63.7	-	125.8	653.5
20071019	17	ebb	4.4	33.7	-	73.6	615.6
20071019	18	flood	4	46	-	107.2	651.4
20071019	18	ebb	4.1	33.2	-	77.9	627.5
20071019	19	flood	4.1	44.4	-	114.4	681.7
20071020	19	ebb	3.9	38.3	-	91.6	721.3
20071020	20	flood	3.5	40.1	-	114.7	778.1
20071020	20	ebb	3.6	27.7	-	93.6	759.4
20071020	21	flood	3.8	40.7	-	119.3	845.8
20071021	21	ebb	3.6	28.6	-	92.2	996.4
20071021	22	flood	3.4	38.3	-	123.4	979.8
20071021	22	ebb	3.6	25.8	-	98.8	924.2
20071021	23	flood	4.1	37.4	-	149.9	825.3

Comparison of SS concentrations during each tidal phase

Date	Tide No.	Phase	Tidal Diff	OBS SS Concentration [mg/l]		Argus SS Concentration [mg/l]	
			[m]	UP (RCM9)	DOWN (Valeport)	UP	DOWN
20071022	23	ebb	4.2	28.3	-	145.8	696.6
20071022	24	flood	3.9	54.1	-	230.2	763.8
20071022	24	ebb	4.3	37.5	-	218.2	745.8
20071023	25	flood	4.9	92.9	-	323.8	846.6
20071023	25	ebb	4.7	30.1	-	195.3	633.2
20071023	26	flood	4.5	50.7	-	294.1	676.7
20071023	26	ebb	5	27.5	-	226.3	637.8
20071024	27	flood	5.3	53.5	-	317	685.5
20071024	27	ebb	5.1	38.3	-	283.6	634.8
20071024	28	flood	5.1	69.3	-	394.1	708.2
20071024	28	ebb	5.5	55	-	372.1	665.9
20071025	29	flood	5.8	172	-	507.2	823.8
20071025	29	ebb	5.5	52.7	-	346.8	657.7
20071026	30	flood	5.8	28.5	-	402.5	697.8
20071026	30	ebb	5.9	-	-	376.2	680.6
20071026	31	flood	5.8	-	-	454.4	753.1
20071026	31	ebb	6.1	-	-	370.9	677
20071027	32	flood	6.4	-	-	448.3	752.3
20071027	32	ebb	6	-	-	400.2	719.9
20071027	33	flood	5.9	-	-	464.2	780.4
20071027	33	ebb	6.3	-	-	394.9	703.5
20071028	34	flood	6.2	-	-	495.7	821.3
20071028	34	ebb	6.1	-	-	411.7	722.8
20071028	35	flood	6	-	-	481.5	818.1
20071028	35	ebb	5.9	-	-	395.8	748.6
20071029	36	flood	6.1	-	-	454.8	804.7
20071029	36	ebb	5.8	-	-	403.9	739.6
20071029	37	flood	6	-	-	450.9	795.8
20071030	37	ebb	5.9	-	-	371.3	714.7
20071030	38	flood	5.6	-	-	425.2	777.8
20071030	38	ebb	5.6	-	-	375.1	719.3
20071030	39	flood	5.6	-	-	440	791.4
20071031	39	ebb	5.7	-	-	370.7	715.9
20071031	40	flood	5.1	-	-	415.4	766.9
20071031	40	ebb	5.3	23.3	21.3	376.3	916.2
20071031	41	flood	5.4	93.2	181.4	75.6	3678.6
20071101	41	ebb	4.9	61	122.4	34.4	1823
20071101	42	flood	4.6	93.1	366.1	157.6	2937.3
20071101	42	ebb	4.8	51.1	101.5	27.9	2108.7
20071101	43	flood	5	94.4	219.4	77.6	3804.7
20071102	43	ebb	4.6	55	115.9	30.6	3395.1
20071102	44	flood	4.1	56.4	119.9	42.5	3712.8
20071102	44	ebb	4.4	43.9	84.4	19.8	3147.9
20071102	45	flood	4.6	78.8	171.6	61.5	3706.1
20071103	45	ebb	4.1	41.5	148.1	16.7	2455.1
20071103	46	flood	3.8	51.6	73.5	23.5	3809.2

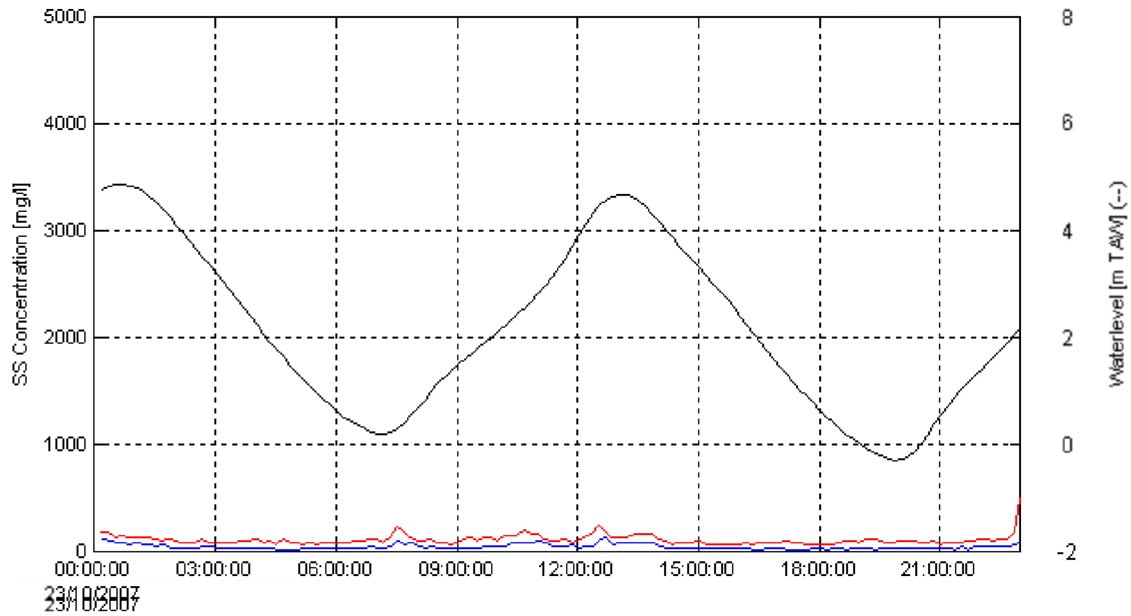
Comparison of SS concentrations during each tidal phase

Date	Tide No.	Phase	Tidal Diff	OBS SS Concentration [mg/l]		Argus SS Concentration [mg/l]	
			[m]	UP (RCM9)	DOWN (Valeport)	UP	DOWN
20071103	46	ebb	4	34.6	52.7	10	3910.2
20071103	47	flood	4.4	50.4	162.2	27.5	3848.9
20071104	47	ebb	4.3	42.7	69.2	16.2	3042.4
20071104	48	flood	3.7	36.1	43.8	12.4	3263.9
20071115	48	ebb	4.2	62.9	145.1	58.8	3832.3
20071115	49	flood	4.9	157.5	1536.1	236.9	4222
20071115	49	ebb	5.1	55.7	135.9	46.2	4200.1
20071115	50	flood	5.1	100.5	1478	107.2	4214.3
20071116	50	ebb	4.7	60.9	6007.4	48.7	4138.4
20071116	51	flood	4.6	88.5	7075.5	89.8	4167.1
20071116	51	ebb	4.8	53	5490.7	40.9	4044.2
20071116	52	flood	4.8	87.9	4388.3	94.1	4153.5
20071117	52	ebb	4.5	61	2752.7	51.3	4091.9
20071117	53	flood	4.2	74.7	3339.1	81.7	4193.9
20071117	53	ebb	4.4	45.5	2898.1	39.2	4122.8
20071117	54	flood	4.5	86.9	3877.2	87.3	4044.5
20071118	54	ebb	4.2	52.7	6082.9	38.2	4140.2
20071118	55	flood	3.8	53.3	2289.2	46.9	4168.4
20071118	55	ebb	4.2	47.6	2098.7	35.2	4132.4
20071118	56	flood	4	94.5	2304.9	92.9	4174.8
20071119	56	ebb	3.7	41.2	1524.3	27	4071.6
20071119	57	flood	3.9	53.6	1496.1	41.9	4091.6
20071119	57	ebb	4.2	79.5	1551.4	69.2	4037.7
20071119	58	flood	4.4	93.5	1290.5	92	4100.4
20071120	58	ebb	4.1	83	995.2	83.5	3641.6
20071120	59	flood	4.2	149.2	2397.7	145.5	3893.9
20071120	59	ebb	4.7	61.5	582.7	44.6	3826.5
20071120	60	flood	5	181.7	2297.3	185.6	3932.2
20071121	60	ebb	4.6	107.7	802.2	100.7	3281.4
20071121	61	flood	4.8	203.1	1353.7	219.4	3563.5
20071121	61	ebb	5.1	142.6	176.1	131	3938.3
20071122	62	flood	5.4	319.8	18.4	343.3	2981.4
20071122	62	ebb	5.2	96.7	17.3	87.2	2932.1
20071122	63	flood	5.2	282.1	17	294.2	3376.4
20071122	63	ebb	5.5	204.6	15.9	216.8	3631.7
20071123	64	flood	6	436.6	15.5	463.3	3577.8
20071123	64	ebb	4.9	140.6	15.3	129.7	3443.2
20071123	65	flood	5	304.9	15.2	332.4	3859.9
20071123	65	ebb	6	228.1	15.4	253.5	3745.6
20071124	66	flood	5.8	518.4	15.1	547.4	3493.5
20071124	66	ebb	6	241	15.1	254.4	3968.3
20071124	67	flood	5.7	366.8	15	448.6	3902.2
20071124	67	ebb	5.7	157.1	14.9	140.5	2941.4
20071125	68	flood	6.4	430.6	14.9	459	4072.2
20071125	68	ebb	5.4	136.5	14.9	122.3	3422.6
20071125	69	flood	5.9	354	14.9	393.1	4187.3

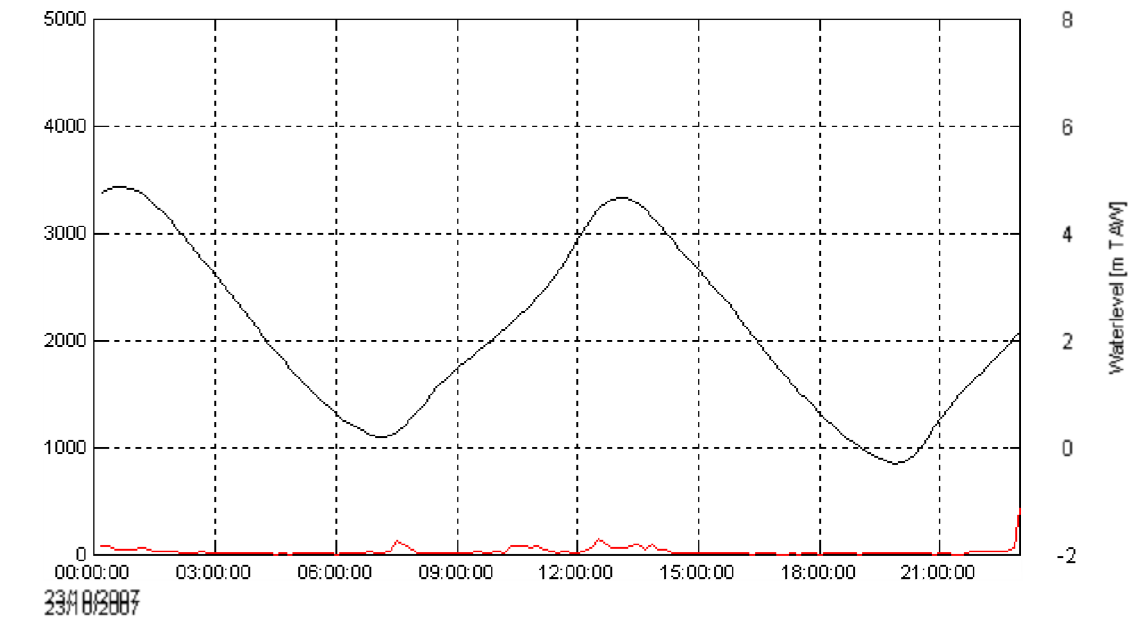
Comparison of SS concentrations during each tidal phase							
Date	**Tide No.**	**Phase**	**Tidal Diff**	**OBS SS Concentration [mg/l]**		**Argus SS Concentration [mg/l]**	
			[m]	**UP (RCM9)**	**DOWN (Valeport)**	**UP**	**DOWN**
20071125	69	ebb	6	122.8	14.8	115.6	3222.2
20071126	70	flood	5.5	200.5	14.8	210.4	4025.6
20071126	70	ebb	6	156.9	14.9	133.9	3875.2
20071126	71	flood	5.8	256.6	24.2	274.5	3614.5
20071126	71	ebb	6	146.5	14.9	144.2	3558.1
20071127	72	flood	5.7	254.9	15.6	277.4	3341.8
20071127	72	ebb	6.1	126.1	14.8	112.2	4194.7
20071127	73	flood	6	421.5	14.8	433.5	3312
20071128	73	ebb	5.9	151.6	14.8	147	3767.8
20071128	74	flood	5.6	389.9	14.8	397.2	3548.6

11283 Accretion Deurganckdok – Near bed continuous monitoring – Autumn 2007

Bottom + 0.99 m (RCM9 - blue) & Bottom + 0.99 m (Argus - red)



Bottom + 0.10 m (Valeport - blue) & Bottom + 0.33 m (Argus - red)



Comparison of RCM9 & Valeport (blue) to Argus sensors (red) at 1m and 0.1 m above the bottom for SS concentration

Location:	Date:
Deurganckdok Sill	Avg Tide 18/10 – 19/10

Data processed by: IMDC

In association with: WL | delft hydraulics, GEMS International

I/RA/11283/07.093/MSA

APPENDIX F.

HCBS2 REPORTS

Report	Description
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)~~*
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)
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)

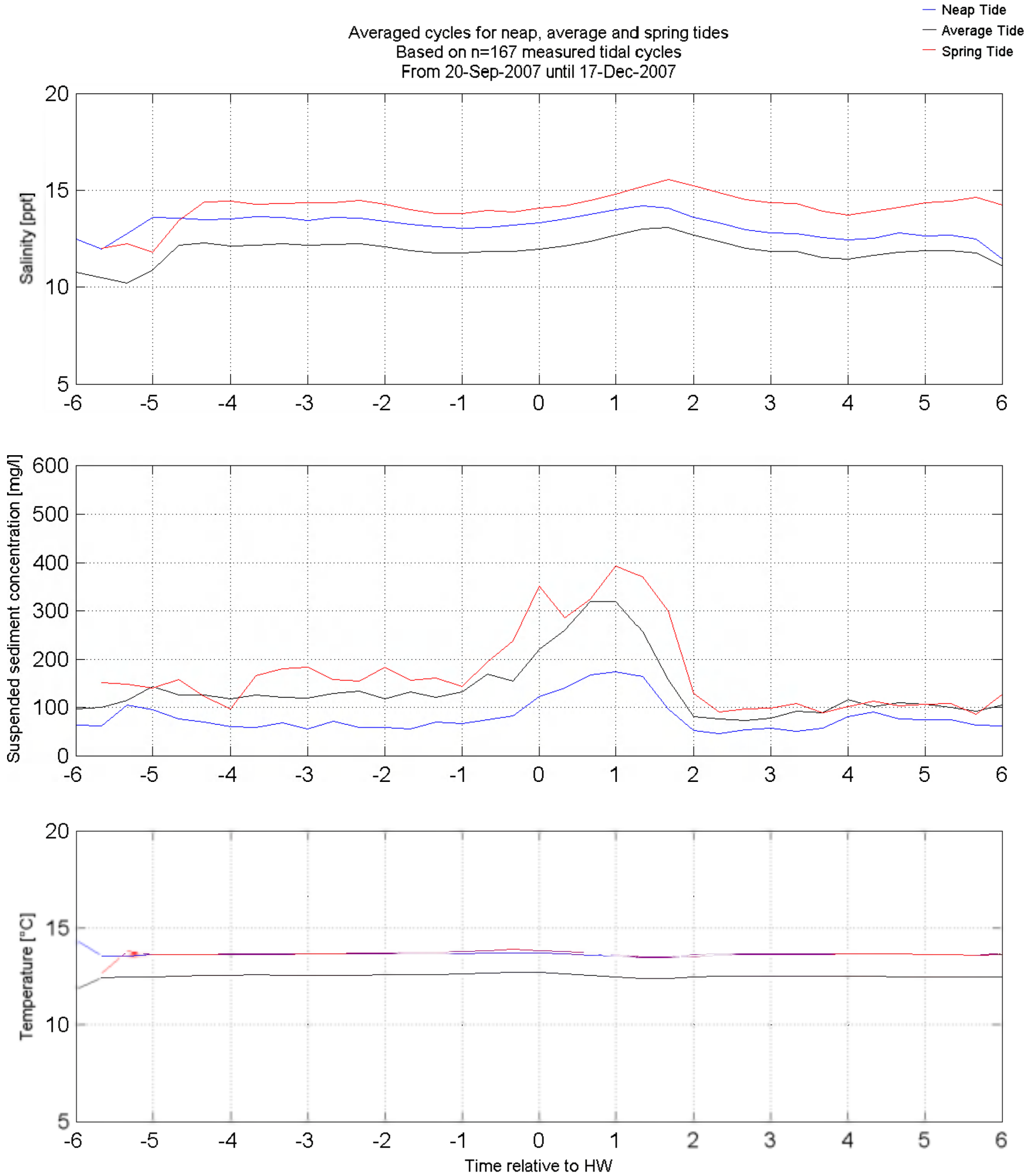
* Report 5.5 will be handled in report 3.1. Boundary conditions: Three monthly report 1/1/2007 – 31/03/2007 (I/RA/11283/06.127/MSA) including HCBS 2 report 5.5 (Deurganckdok).

APPENDIX G. AVERAGE TIDAL CYCLES

G.1 Local parameters

Long Term Monitoring Siltation Deurganckdok

Autumn 2007	Equipment(s): OBS-3A
	Location: N-ENTRANCE bottom



Absolute Parameters for averaged tidal cycle

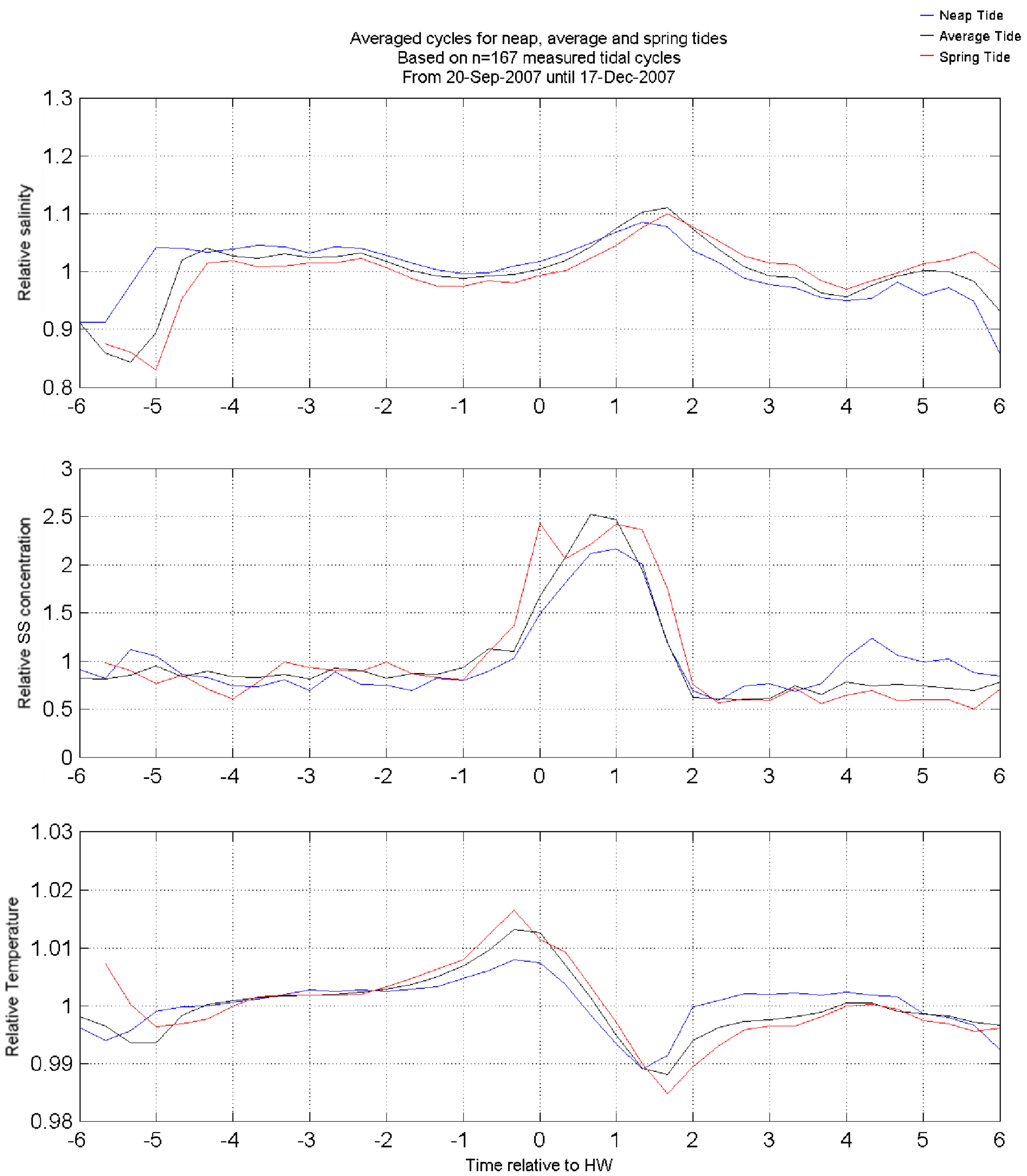
Data Processed by:

In association with :

I/RA/11283/07.093/MSA

Long Term Monitoring Siltation Deurganckdok

Autumn 2007	Equipment(s): OBS-3A
	Location: N-ENTRANCE bottom



Relative Parameters for averaged tidal cycle

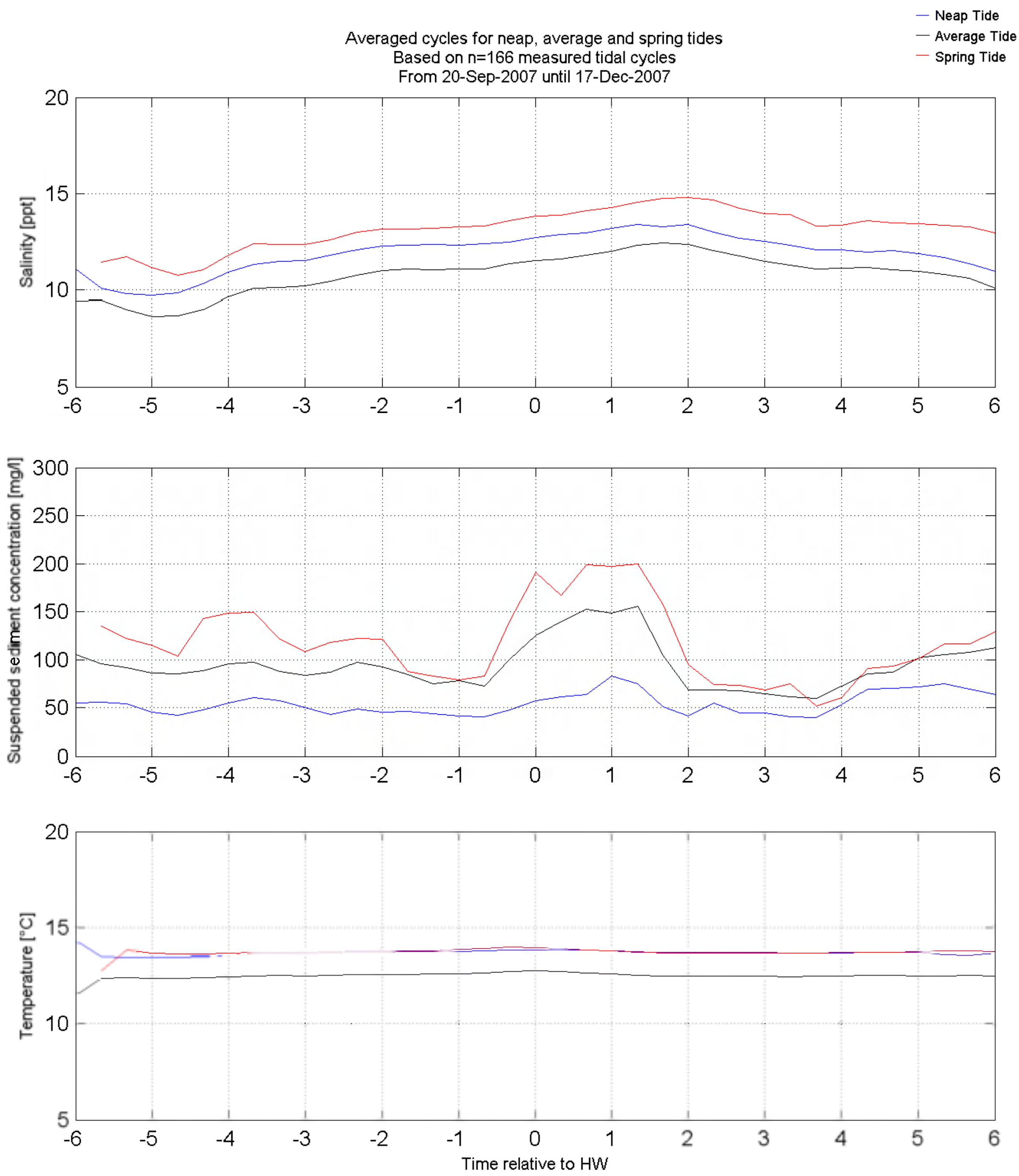
Data Processed by: IMDC

In association with :

I/RA/11283/07.093/MSA

Long Term Monitoring Siltation Deurganckdok

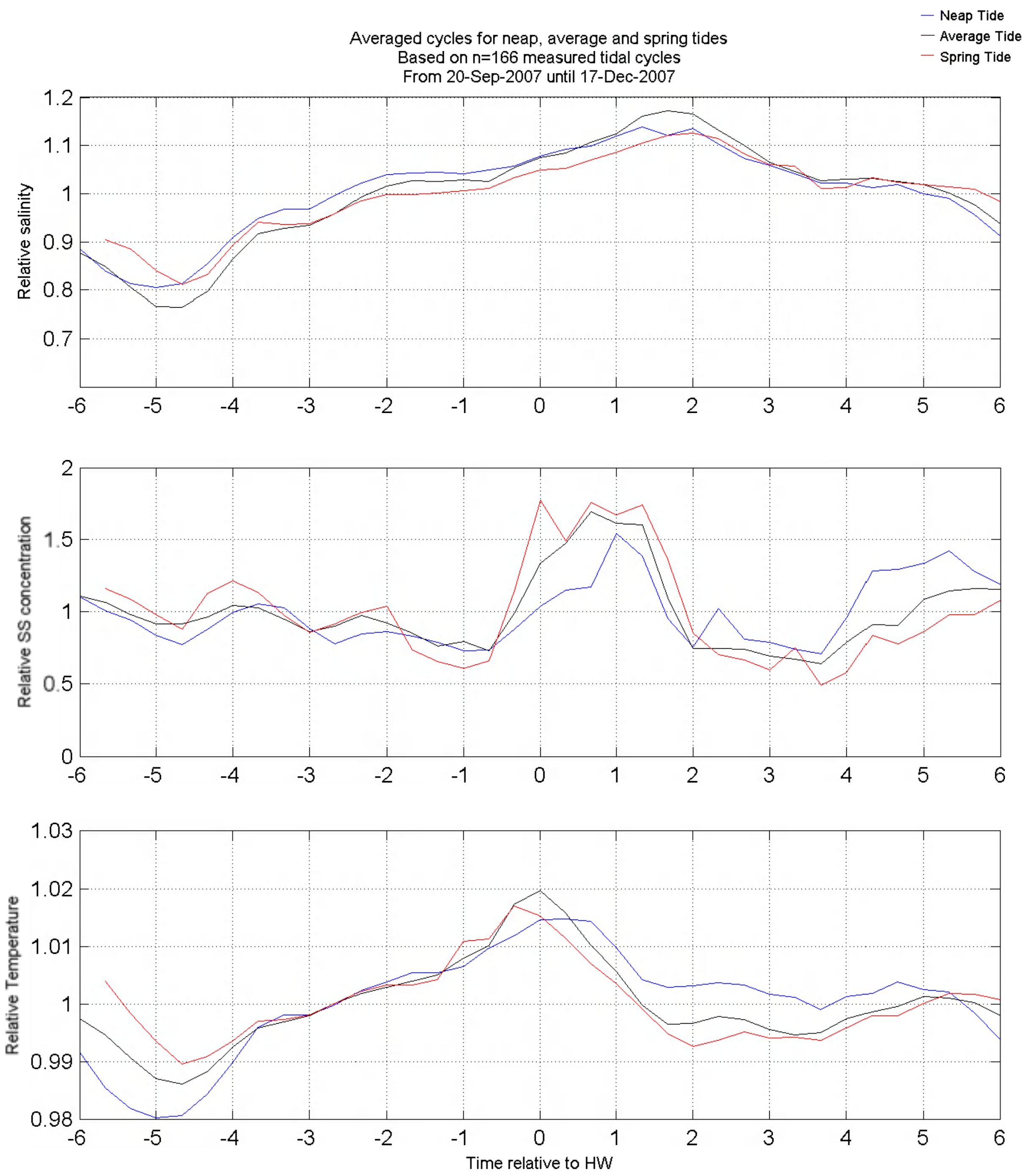
Autumn 2007	Equipment(s): OBS-3A
	Location: N-ENTRANCE top



Absolute Parameters for averaged tidal cycle	Data Processed by: IMDC In association with : I/RA/11283/07.093/MSA

Long Term Monitoring Siltation Deurganckdok

Autumn 2007	Equipment(s): OBS-3A
	Location: N-ENTRANCE top



Relative Parameters for averaged tidal cycle

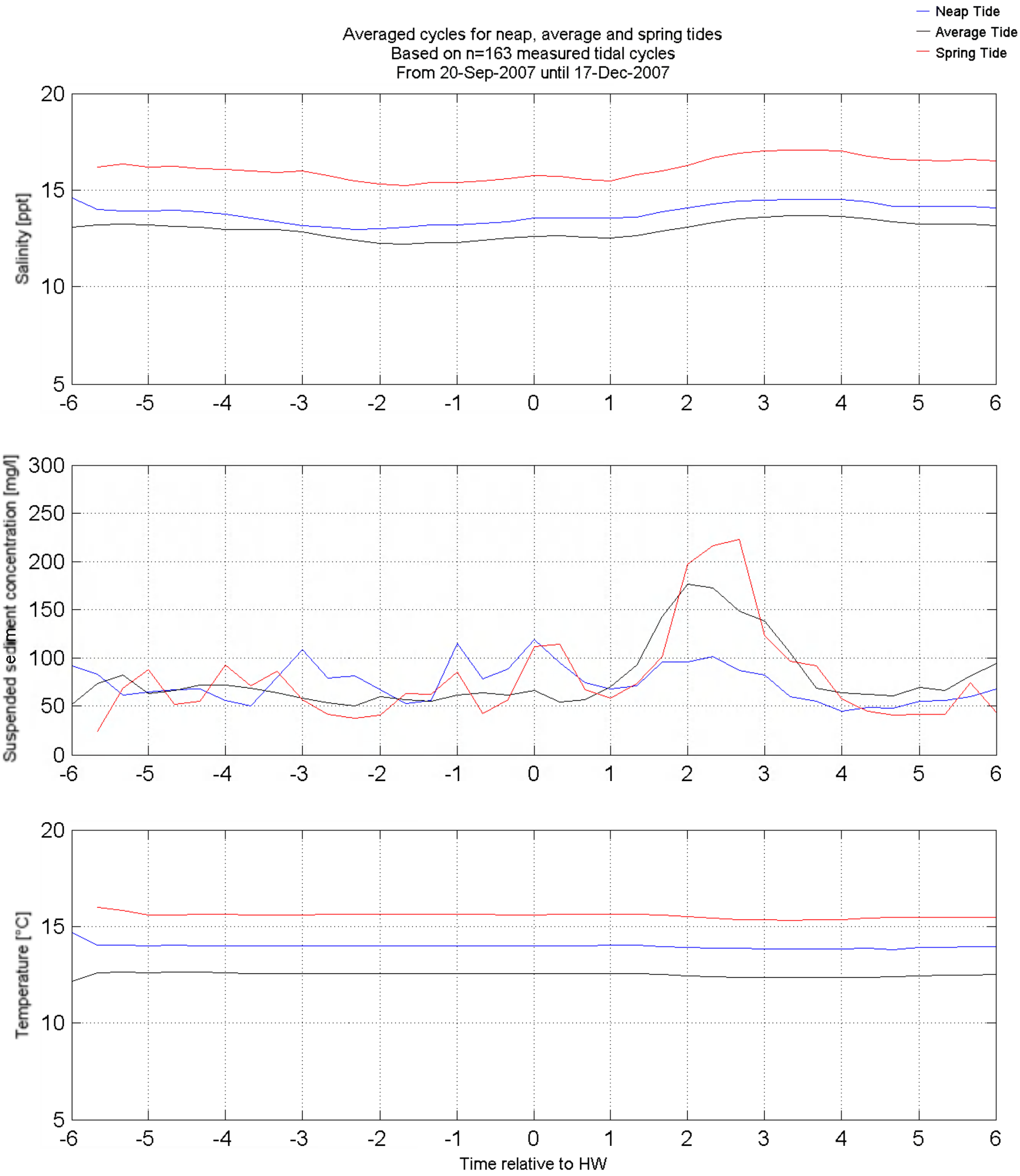
Data Processed by: IMDC

In association with :

I/RA/11283/07.093/MSA

Long Term Monitoring Siltation Deurganckdok

Autumn 2007	Equipment(s): OBS-3A
	Location: S-BACK bottom



Absolute Parameters for averaged tidal cycle

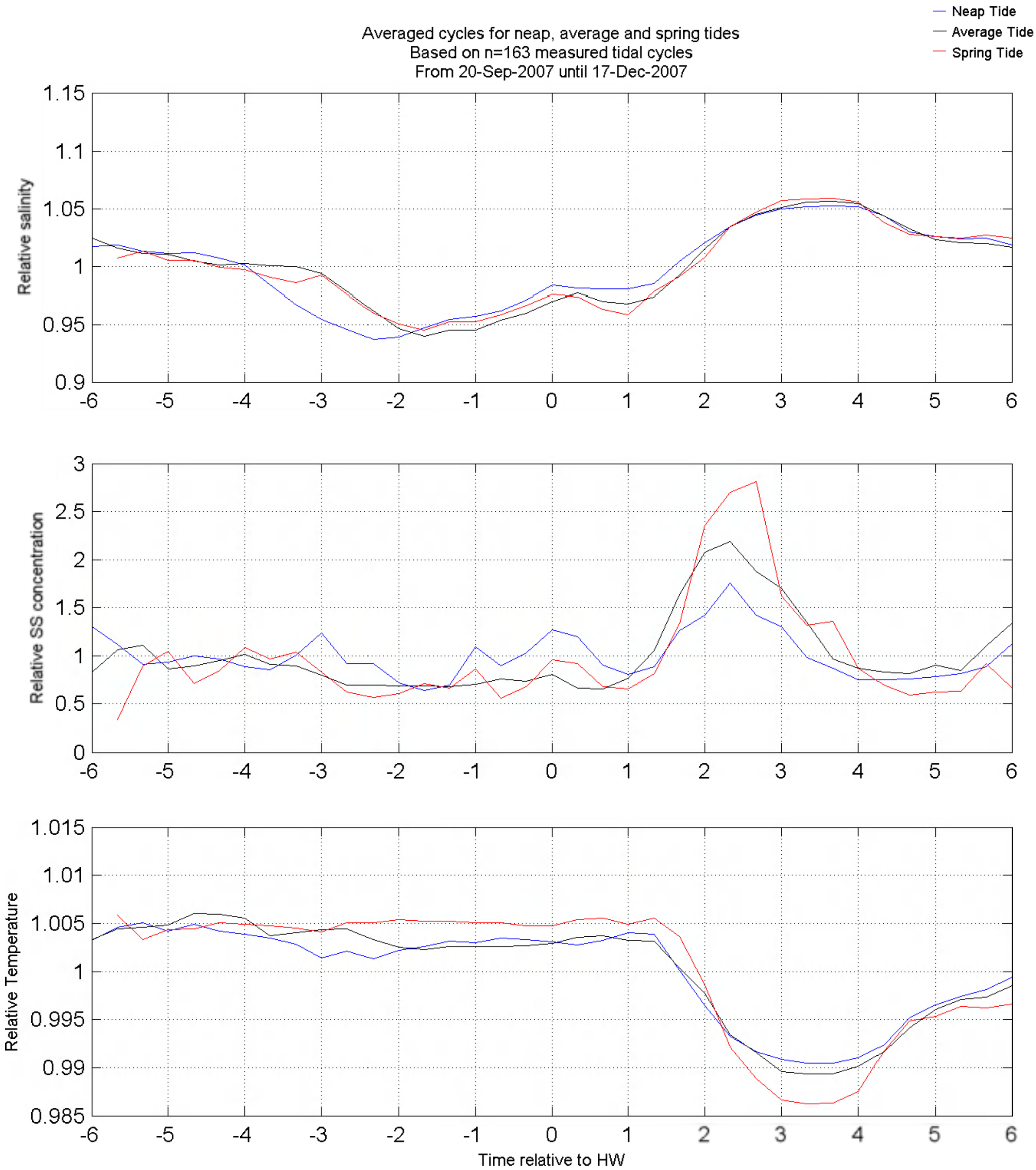
Data Processed by:

In association with :

I/RA/11283/07.093/MSA

Long Term Monitoring Siltation Deurganckdok

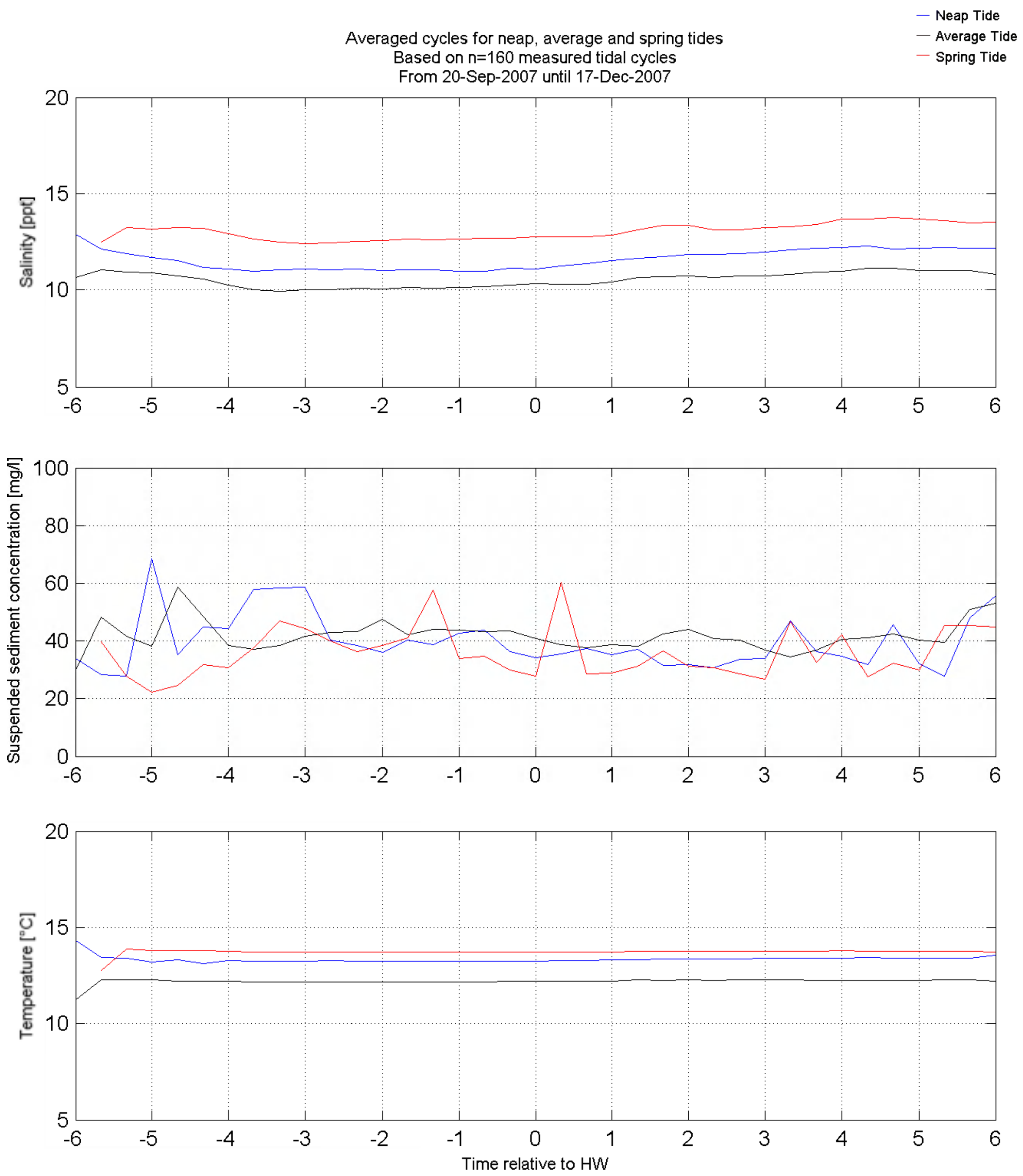
Autumn 2007	Equipment(s): OBS-3A
	Location: S-BACK bottom



Relative Parameters for averaged tidal cycle	Data Processed by: IMDC In association with : I/RA/11283/07.093/MSA

Long Term Monitoring Siltation Deurganckdok

Autumn 2007	Equipment(s): OBS-3A
	Location: S-BACK top



Absolute Parameters for averaged tidal cycle

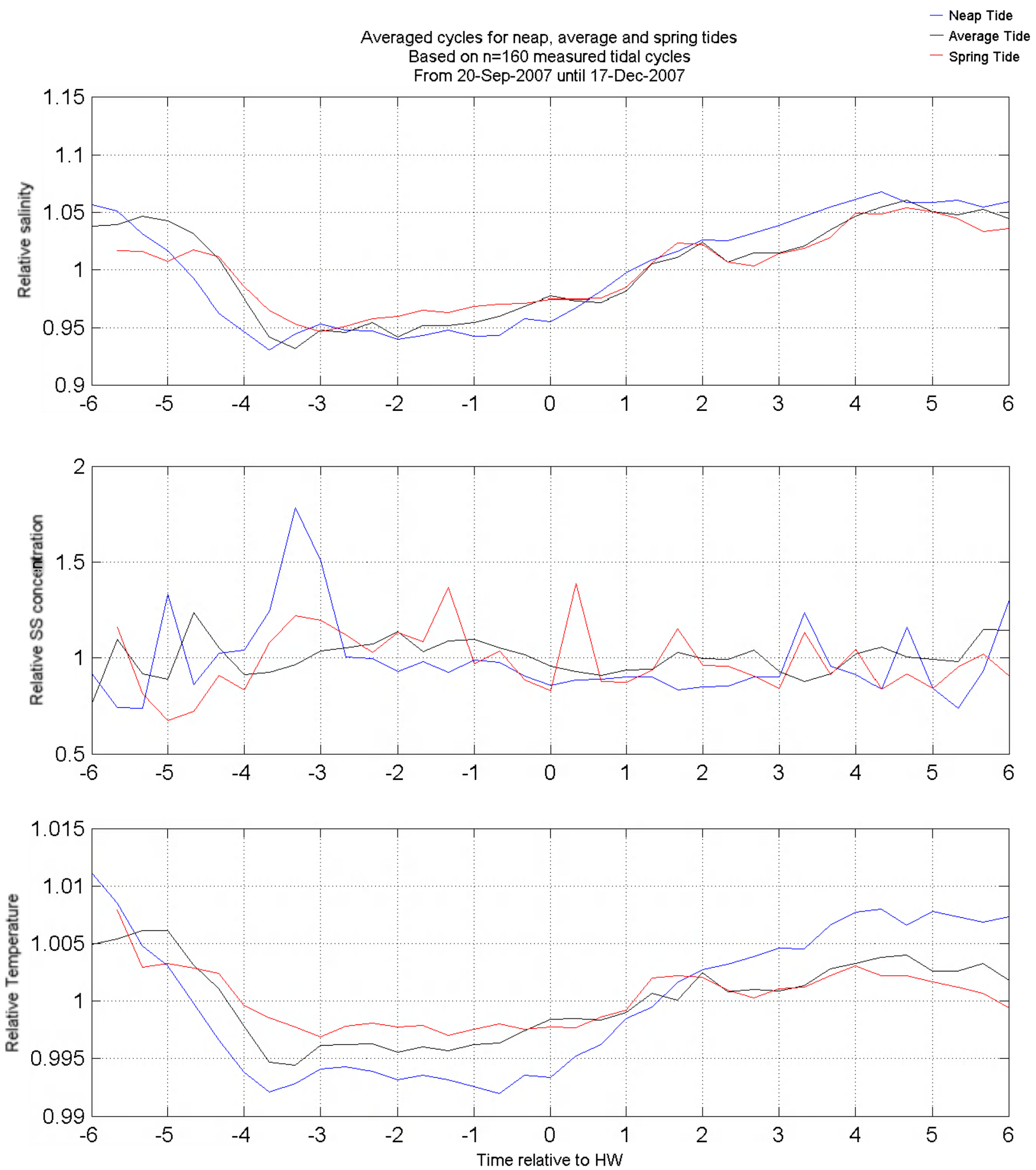
Data Processed by: IMDC

In association with :

I/RA/11283/07.093/MSA

Long Term Monitoring Siltation Deurganckdok

Autumn 2007	Equipment(s): OBS-3A
	Location: S-BACK top



Relative Parameters for averaged tidal cycle

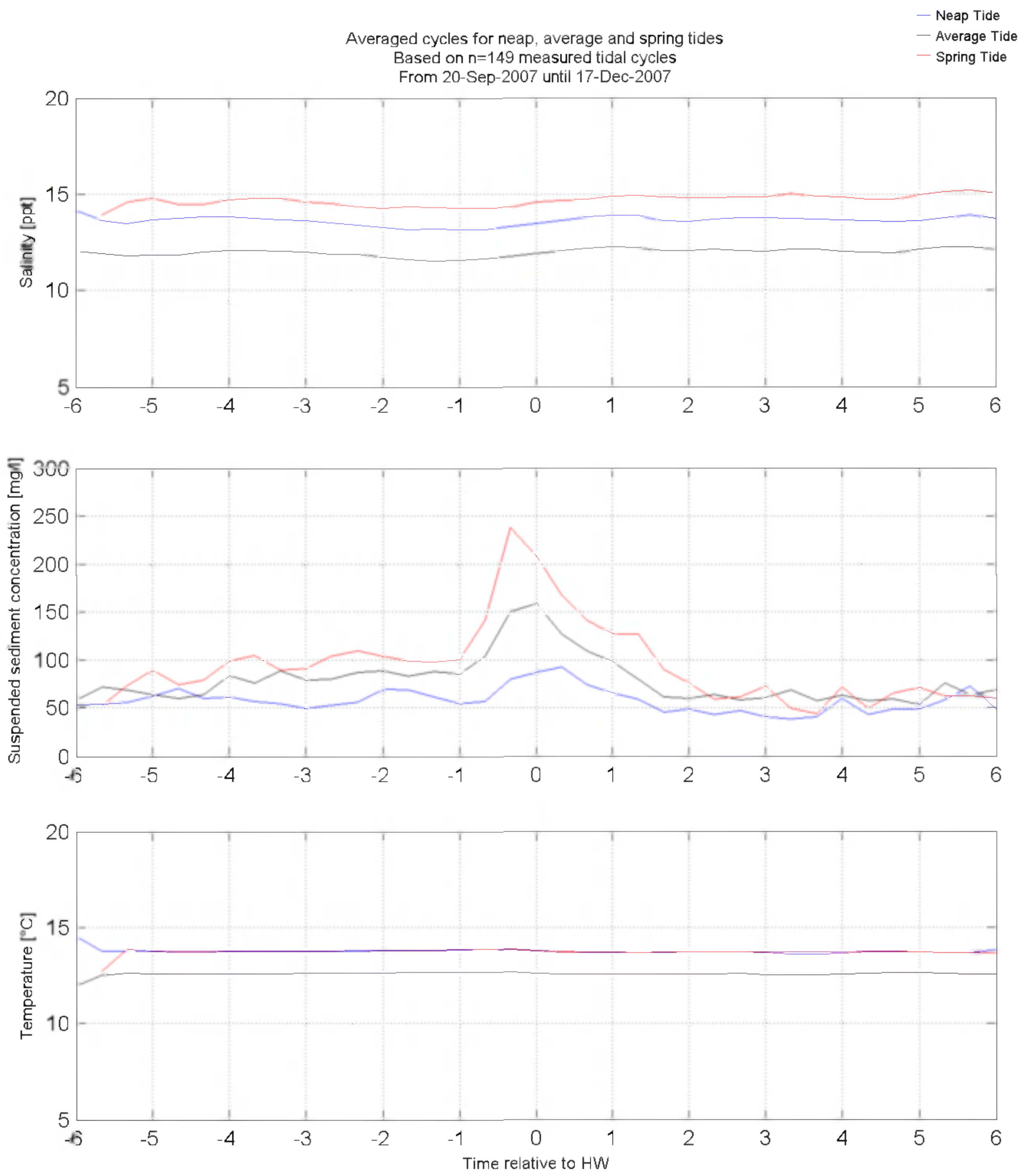
Data Processed by: IMDC

In association with :

I/RA/11283/07.093/MSA

Long Term Monitoring Siltation Deurganckdok

Autumn 2007	Equipment(s): OBS-3A
	Location: S-ENTRANCE bottom



Absolute Parameters for averaged tidal cycle

Data Processed by: IMDC

In association with :

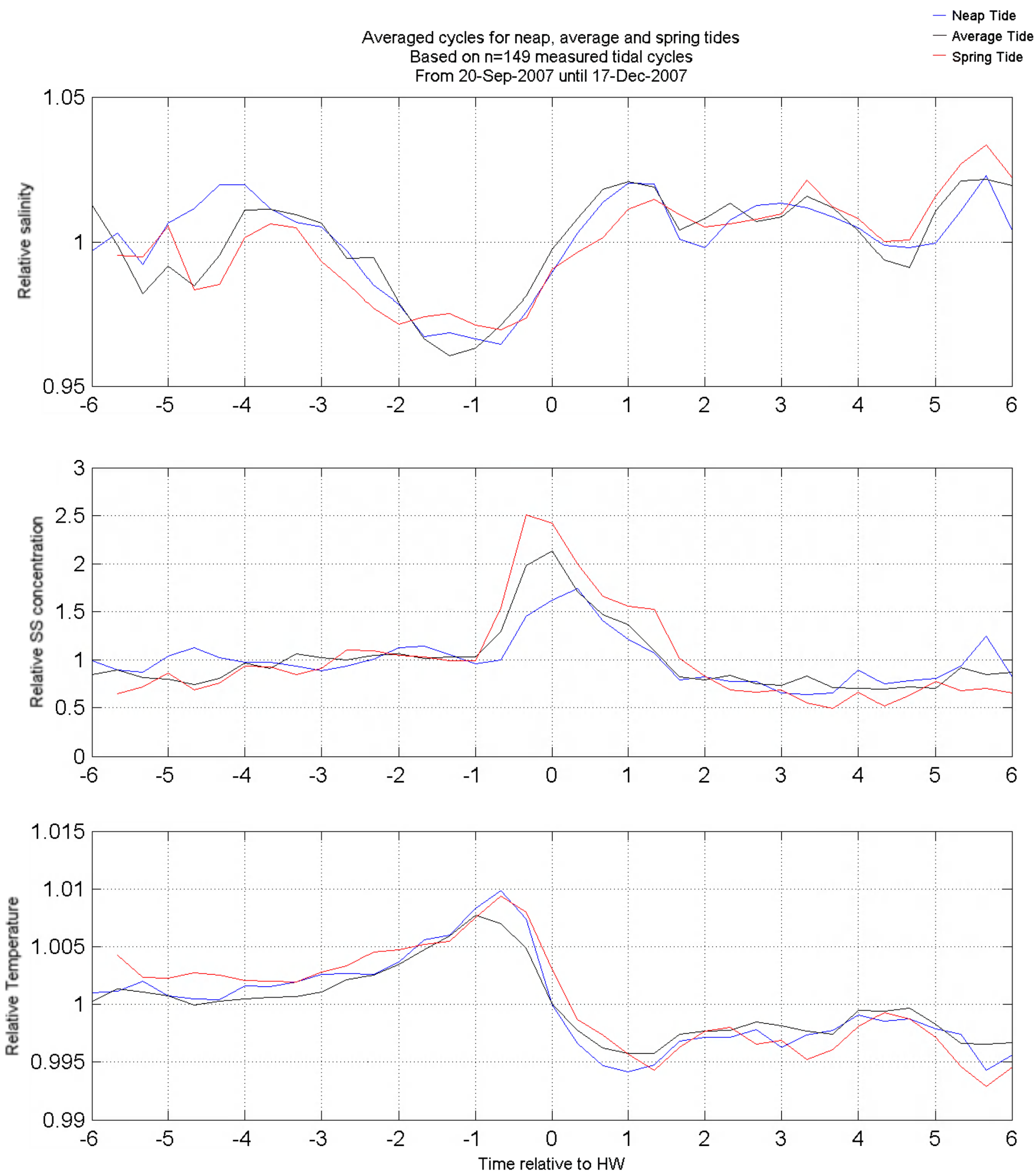
I/RA/11283/07.093/MSA

Long Term Monitoring Siltation Deurganckdok

Autumn 2007

Equipment(s):
OBS-3A

Location:
S-ENTRANCE bottom



Relative Parameters for averaged tidal cycle

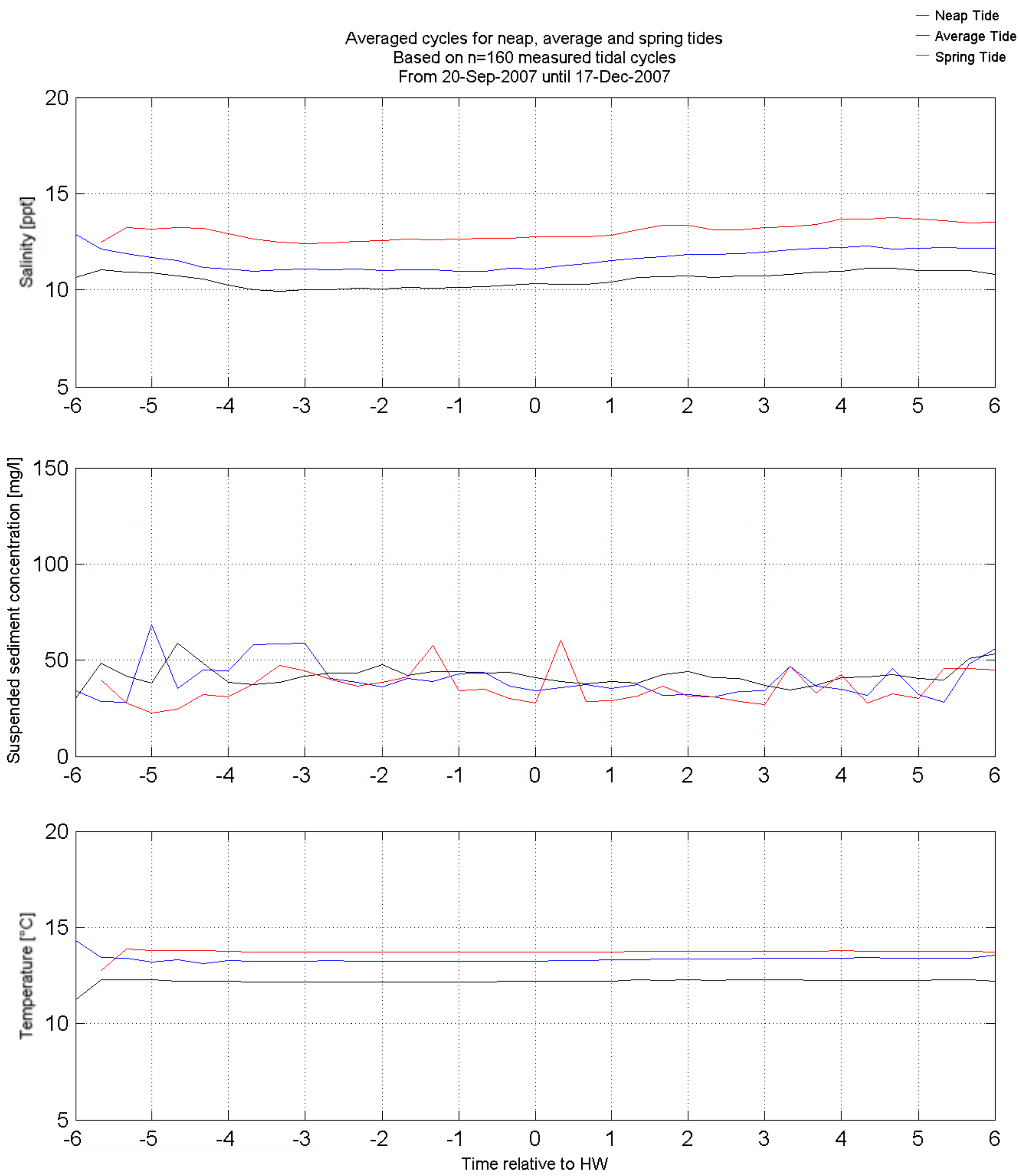
Data Processed by: IMDC

In association with :

I/RA/11283/07.093/MSA

Long Term Monitoring Siltation Deurganckdok

Autumn 2007	Equipment(s): OBS-3A
	Location: S-ENTRANCE top



Absolute Parameters for averaged tidal cycle

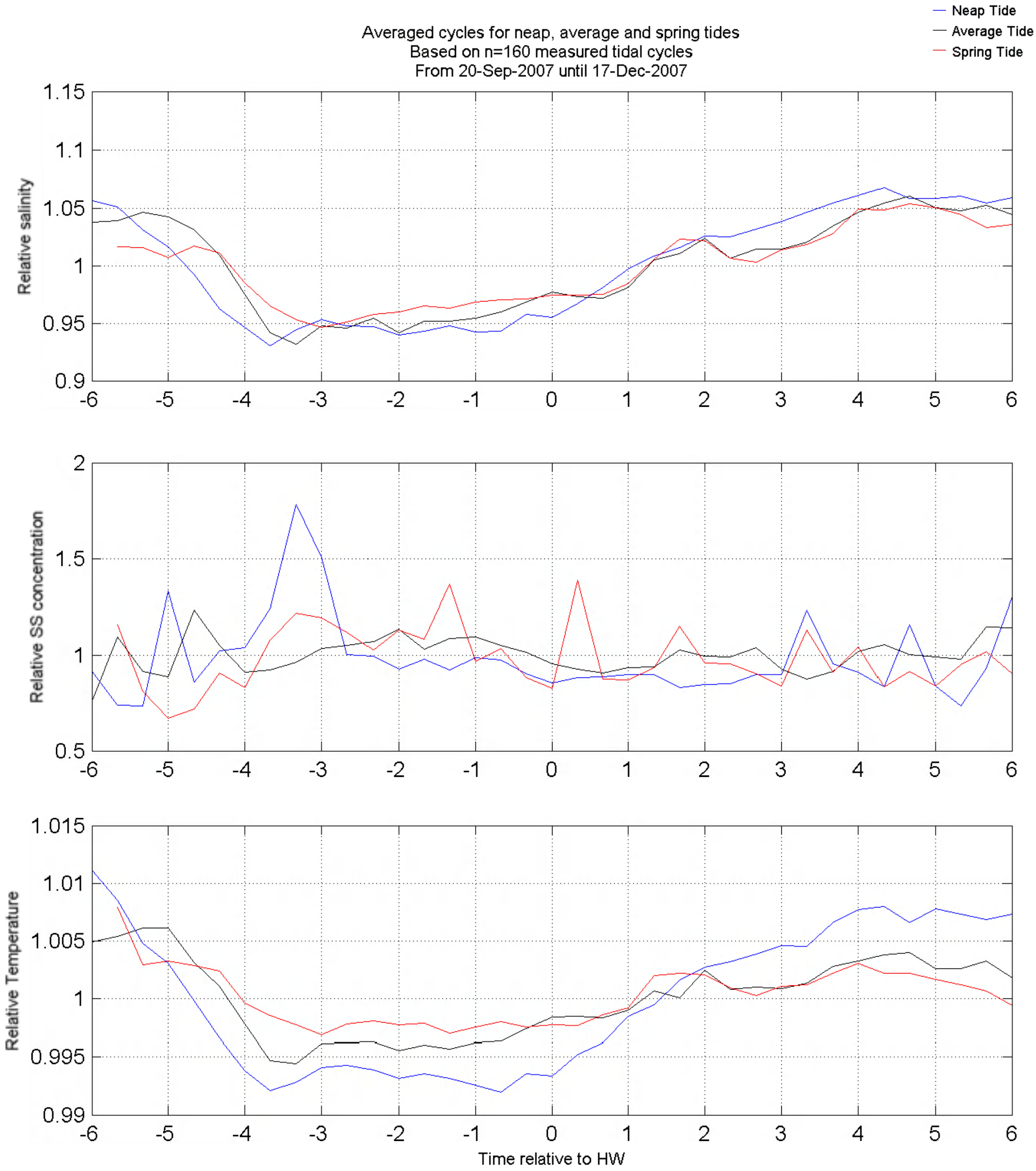
Data Processed by:

In association with :

I/RA/11283/07.093/MSA

Long Term Monitoring Siltation Deurganckdok

Autumn 2007	Equipment(s): OBS-3A
	Location: S-ENTRANCE top



Relative Parameters for averaged tidal cycle

Data Processed by: IMDC

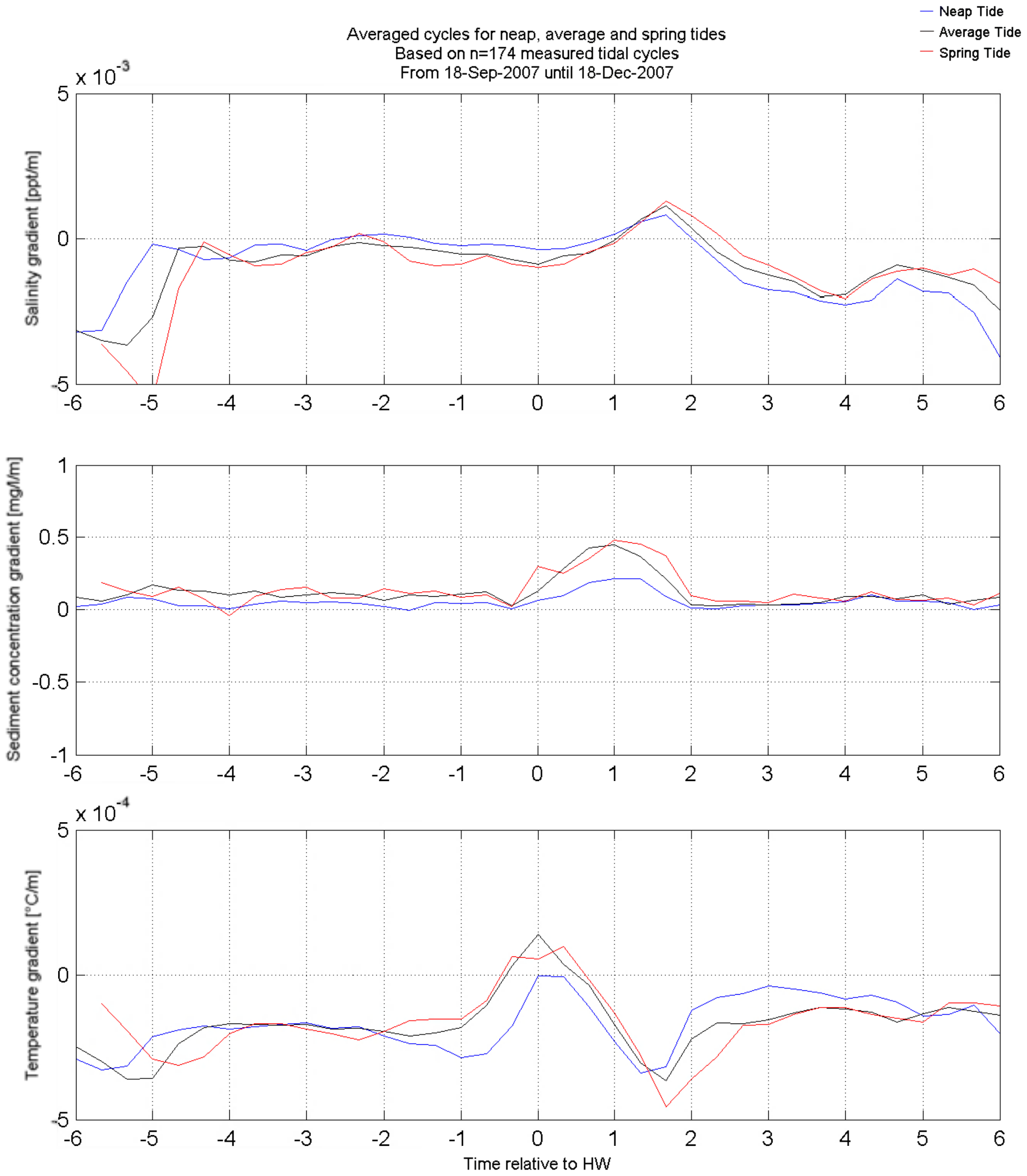
In association with :

I/RA/11283/07.093/MSA

G.2 Along-dock, cross-dock and vertical gradients

Long Term Monitoring Siltation Deurganckdok

Autumn 2007	Equipment(s): OBS 3A
	Location: DGD-entrance



Horizontal gradient at -11.8m TAW =(N-ENTRANCE - S-ENTRANCE)/Δx

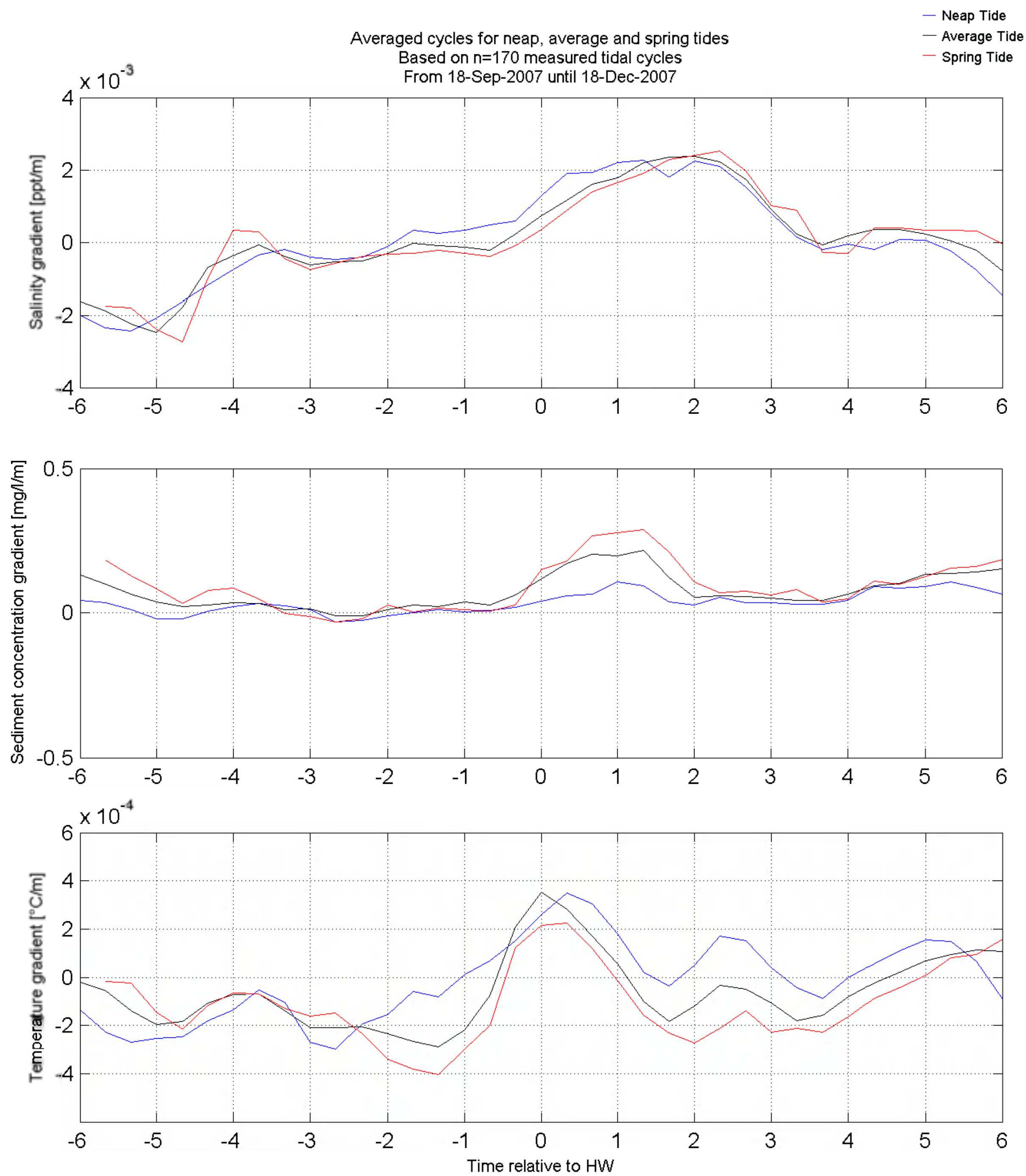
Data Processed by: IMDC

In association with :

I/RA/11283/07.093/MSA

Long Term Monitoring Siltation Deurganckdok

Autumn 2007	Equipment(s): OBS 3A
	Location: DGD-entrance



Horizontal gradient at -2.8m TAW =(N-ENTRANCE - S-ENTRANCE)/Δx

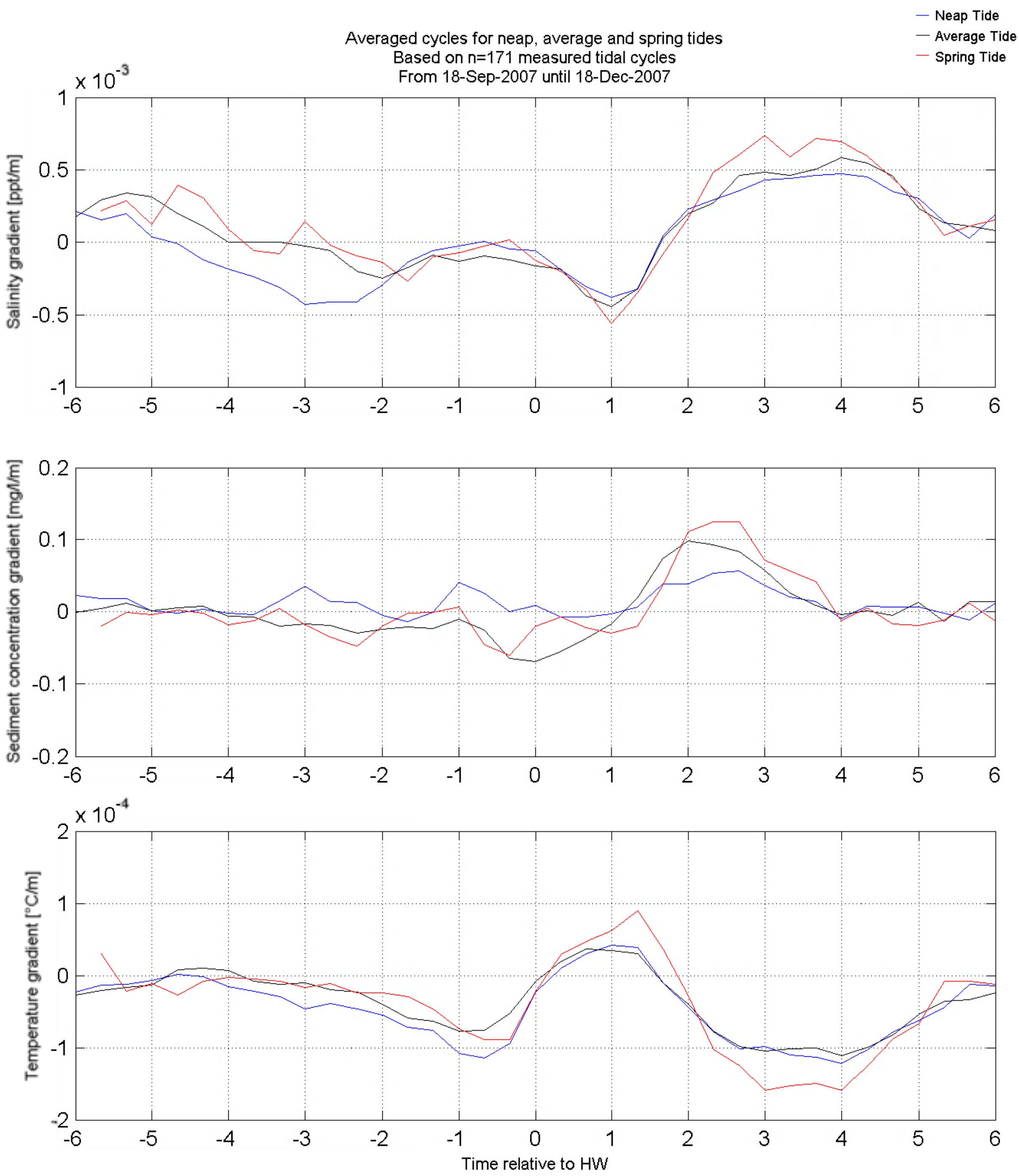
Data Processed by: IMDC

In association with :

I/RA/11283/07.093/MSA

Long Term Monitoring Siltation Deurganckdok

Autumn 2007	Equipment(s): OBS 3A
	Location: DGD-P&O (S)



Horizontal gradient at -12 m TAW =(S-BACK - S-ENTRANCE)/Δx

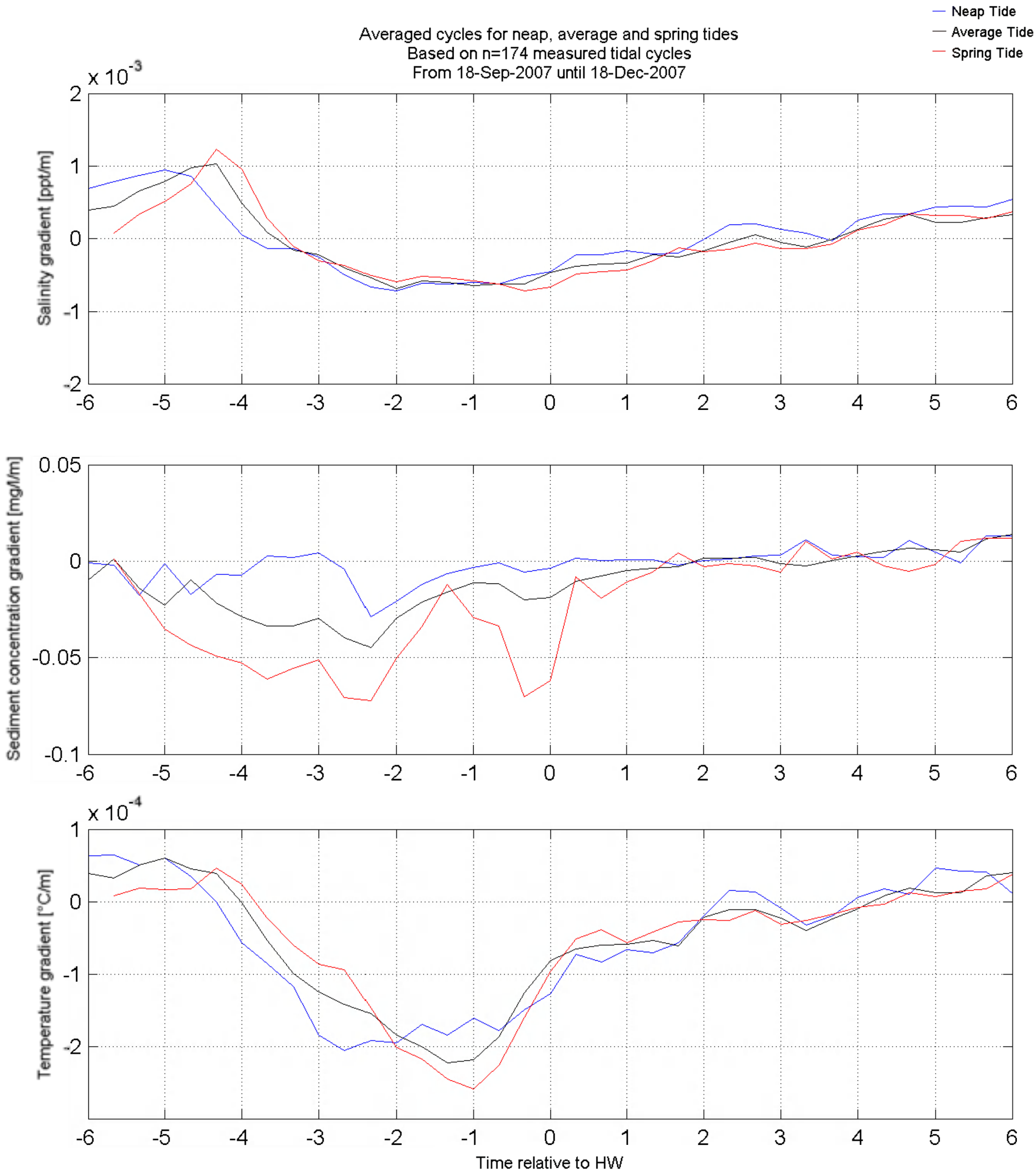
Data Processed by: IMDC

In association with :

I/RA/11283/07.093/MSA

Long Term Monitoring Siltation Deurganckdok

Autumn 2007	Equipment(s): OBS 3A
	Location: DGD-P&O (S)



Horizontal gradient at -2.8 m TAW =(S-BACK - S-ENTRANCE)/Δx

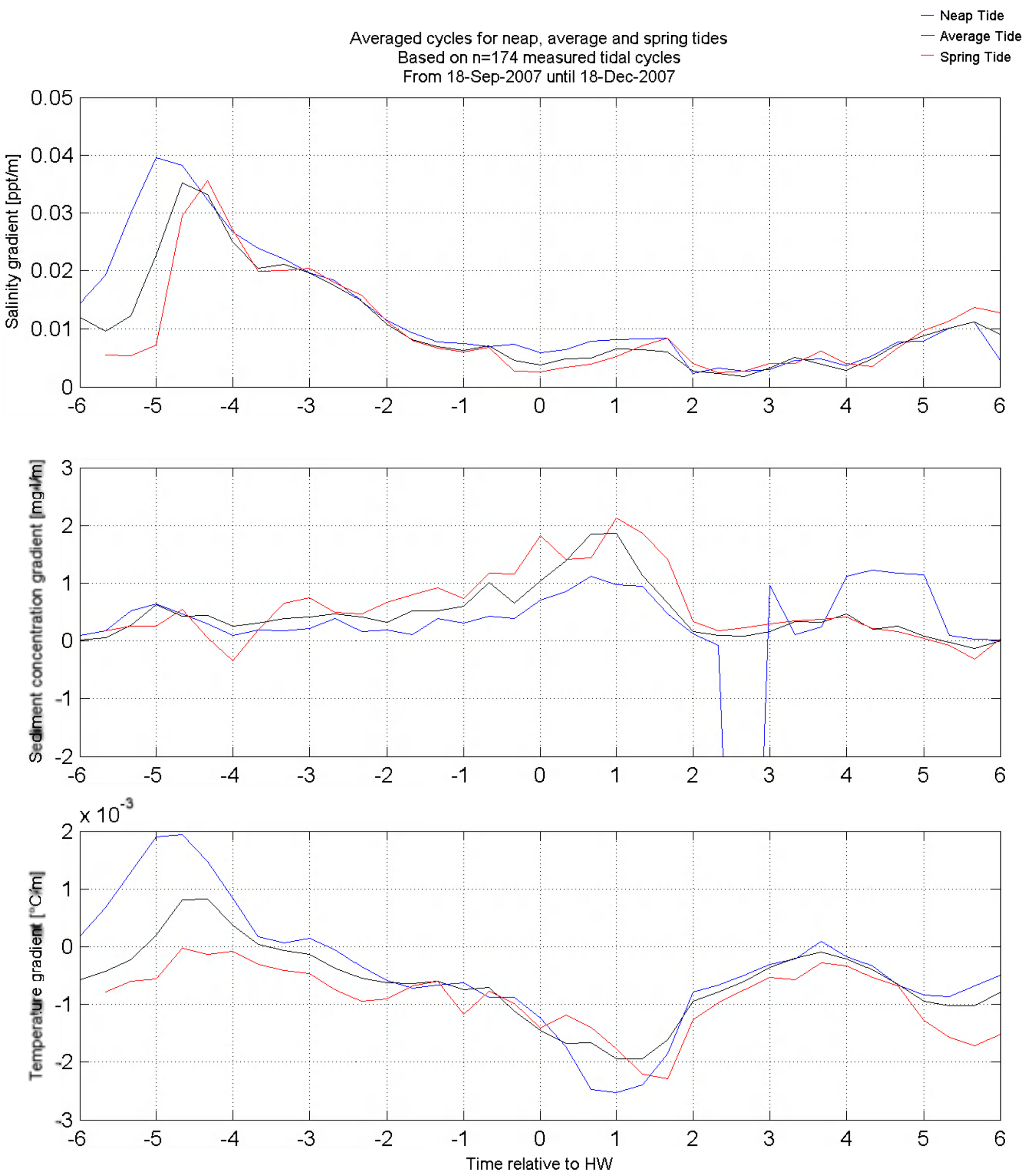
Data Processed by:

In association with :

I/RA/11283/07.093/MSA

Long Term Monitoring Siltation Deurganckdok

Autumn 2007	Equipment(s): OBS 3A
	Location: DGD-PSA (N-entrance)



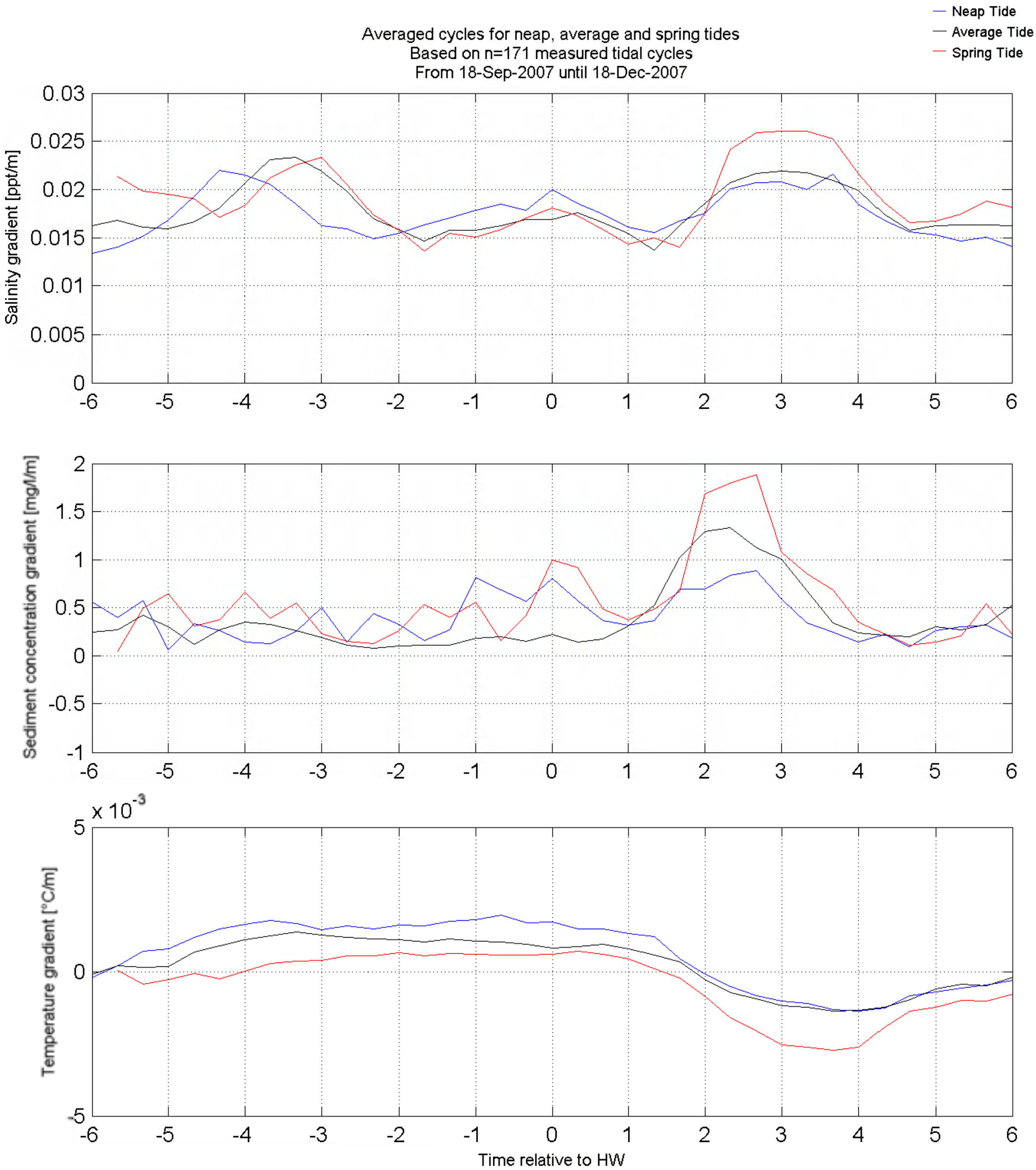
Vertical gradient at N-ENTRANCE =(data(-11.9m) - data(-2.5m))/Δz

Data Processed by: IMDC

In association with :

I/RA/11283/07.093/MSA

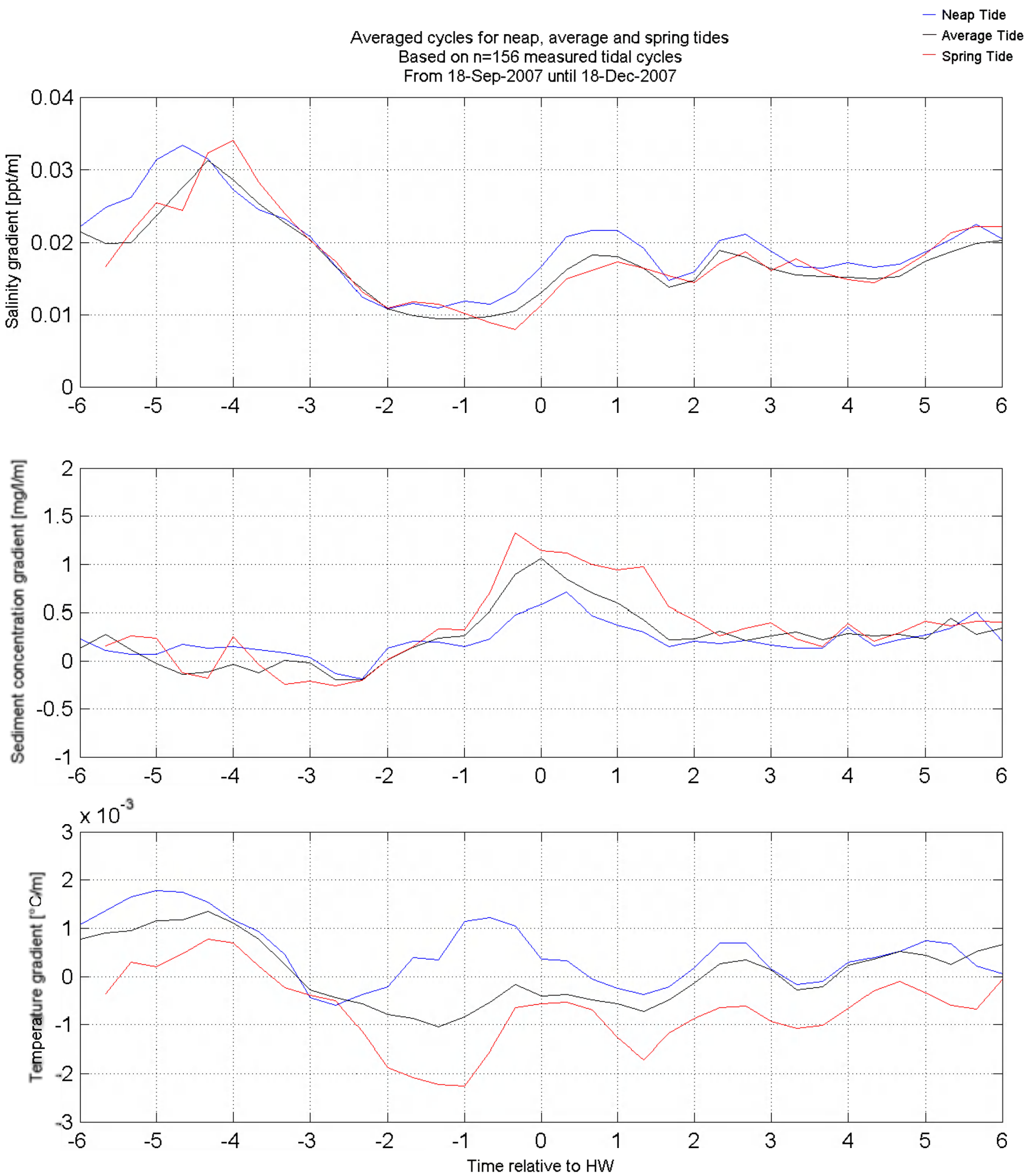
Long Term Monitoring Siltation Deurganckdok	
Autumn 2007	Equipment(s): OBS 3A
	Location: DGD-P&O1 (S-back)



Vertical gradient at S-BACK =(data(-12.3m) - data(-2.7m))/Δz	Data Processed by: IMDC In association with : I/RA/11283/07.093/MSA

Long Term Monitoring Siltation Deurganckdok

Autumn 2007	Equipment(s): OBS 3A
	Location: DGD-P&O2 (S-entrance)



Vertical gradient at S-ENTRANCE =(data(-11.7m) - data(-3m))/Δz

Data Processed by: IMDC

In association with :

I/RA/11283/07.093/MSA