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AFDELING WATERBOUWKUNDIG LABORATORIUM EN
HYDROLOGISCH ONDERZOEK

# Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies

Bestek 16EB/04/13

Survey Vessel Oostende XI (left) & Lower Sea Scheldt (right)


## Deelrapport 2.6 : Kallo 18 februari 2005

## Report 2.6: Kallo 18 February 2005

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# 1. INTRODUCTION

## 1.1. The assignment

This report is part of the set of reports describing the results 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 – Field measurements high-concentration benthic suspensions (HCBS)"[1].

The terms of reference for this study were prepared by the 'Administratie Waterwegen en Zeewezen, Afdeling Waterbouwkundig Laboratorium en Hydrologisch Onderzoek' (16EB/04/13). The study was awarded to International Marine and Dredging Consultants NV in association with WL|Delft Hydraulics, dr. R. Kirby and Gems International on 03/12/2004.

Afdeling Waterbouwkundig Laboratorium en Hydrologisch Onderzoek' – Cel Hydrometrie Schelde provided data on discharge, tide, salinity and turbidity along the river Scheldt and provided a survey vessel for the measurements at Liefkenshoek.

The settling velocity measurements with INSSEV were subcontracted to the Coastal Processes Research Group (SEOES, University of Plymouth), with team leader Dr Andrew Manning.

## 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 $\mu$m. 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.

Another observation during the last years is that the composition of the sediment dredged at the Sill of Zandvliet became more muddy, resulting in a strong increase in dumping volumes at the allocated dumping sites since 2002.

To deal with these problems, and to facilitate the management of the Lower Sea Scheldt, more knowledge on the fine sediment dynamics is required. This can be obtained from in-situ measurements and the development of an advanced numerical sediment transport model.

In the past, already many surveys have been carried out to increase the understanding of the dynamics of fine sediment in the Lower Sea Scheldt. Also, salinity and turbidity is measured continuously at Prosperpolder and Oosterweel. However, none of these measurements have been carried out in the lower 1 m of the water column.

It is expected that temporary layers of soft mud may be formed in this lower part of the water column, which may move independently of the tidal water movement, in particular during slack water. These layers may be remixed during accelerating tide, an indication for which is the observation of mud clouds at the water surface during maximum ebb and flood velocities. If such

[1] Uitbreiding studie denstiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies

layers exist, they may contribute significantly to the siltation rate in the Deurganckdok. This would imply that measures (for instance passive constructions) to minimize siltation in the Deurganckdok can only be successful if the dynamics of these soft mud layers are also affected. Therefore it is important to establish the role of these soft mud layers on the sediment dynamics in the Lower Sea Scheldt, both from a qualitative and quantitative point of view.

The goal of the study is threefold:

1. The primary goal of the study (and the survey is to detect the occurrence of near-bed high-concentration mud suspensions (referred to as **high-concentration benthic suspensions - HCBS**), their dynamic behaviour and the conditions and locations of their occurrence,
2. The second goal is to establish fluxes of fine sediment in the river with the purpose to calibrate a numerical 3D cohesive sediment transport model of the Lower Sea Scheldt,
3. The third goal is to establish the sediment properties required for the cohesive sediment transport model.

## 1.3. Overview of the study

The measurement campaign consists of two separated surveys. The first survey is a test survey to evaluate the suitability of the proposed instruments and procedures. This survey was originally planned in December 2004, but was executed, due to a limited time framework on 2-3 February 2005. The effective measurements had to be carried out prior to the opening of the Deurganckdok, which was originally scheduled on March 1, 2005, but which was realized on 18 February 2005. Therefor this survey was carried out 16-18 February 2005, referred to as the February-survey.

A further survey after opening of the Deurganckdok is scheduled in the second half of 2005. For this survey no activities are reported in this set of reports.

This report, report 2.6, is part of the set of reports, describing the study :

- Report 1 : Test survey 2-3 February 2005 (I/RA/11265/05.008/MSA)
- Report 2.1 : February survey – Deurganckdok 17 February 2005 (I/RA/11265/05.009/MSA)
- Report 2.2 : February survey – Zandvliet 17 February 2005 (I/RA/11265/05.010/MSA)
- Report 2.3 : February survey – Liefkenshoek 17 February 2005 (I/RA/11265/05.011/MSA)
- Report 2.4 : February survey – Schelle 17 February 2005 (I/RA/11265/05.012/MSA)
- Report 2.5 : February survey – Deurganckdok 16 February 2005 (I/RA/11265/05.013/MSA)
- Report 2.6 : February survey – Kallosluis 18 February 2005 (I/RA/11265/05.014/MSA)
- Report 2.7 : February survey – Near bed continuous monitoring (I/RA/11265/05.015/MSA)
- Report 3 : February survey – Settling velocity - INSSEV (I/RA/11265/05.016/MSA)
- Report 4 : February survey – Cohesive sediment properties (I/RA/11265/05.017/MSA)
- Report 5.1 : Overview of ambient conditions in the river Scheldt – January-June 2005 (I/RA/11265/05.018/MSA)
- Report 5.2 : Overview of ambient conditions in the river Scheldt – July-December 2005 (I/RA/11265/05.019/MSA)

## 1.4. Structure of the report

This report is the factual data report of the through tide measurements in the vicinity of Kallo on the 18th of February, 2005. The first chapter comprises an introduction. The second chapter describes the measurement campaign and the equipment. Chapter 3 describes the course of the actual measurements. The measurement results and processed data are presented in Chapter 4.

# 2. THE MEASUREMENT CAMPAIGN

## 2.1. Description of the measurement campaign

Flow velocity, Turbidity, Salinity and Temperature measurements were conducted on the 18th of February from 5h30 MET till 18h00 MET.

The purpose of the measurements was to find fluid mud layers and to determine the cross-section distribution of the suspended sediment concentration, the sediment flux and flow velocity during a complete tidal cycle.

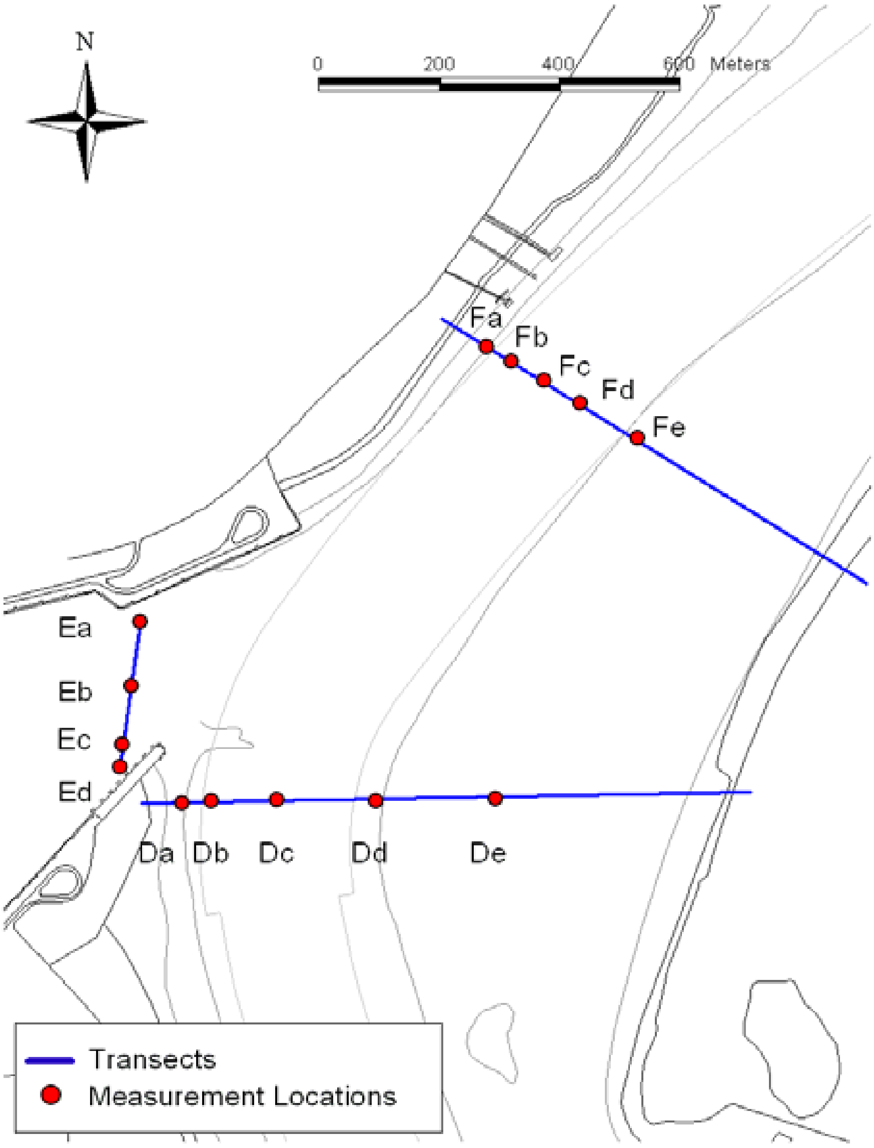


*Figure 2-1: Map of the measurement locations in the vicinity of Kallo.*

From the survey vessel Oostende XI different types of measurements were made at fixed locations. The order in which measurements were made, was decided by the project leader on board. The vessel with a mounted ADCP sailed a fixed transect from the left bank to the right bank during the flood and from the right bank to the left bank during the ebb (Table 2-2).

An overview with all the measurement locations and transects of the HCBS Through Tide measurements can be found in APPENDIX B.

Profiles were collected at fixed points along the transect when sailing back from the right bank to the left bank during the flood and from the left bank to the right bank during the ebb.

*Figure 2-2: Fish mounted with Navitracker density probe, CTD-OBS sensors and watersampler*

Different actions were possible during these profile measurements:

- A fish with a Navitracker density probe, CTD-OBS and watersampler was lowered to the bottom. The downcast was interrupted at two depths, one in the upper half of the water column (between 4 and 7 m from the watersurface), and one at 4 meters above the bottom. At these depths samples were taken for calibration, and are used as ‘ground truth’ for all suspended sediment concentration measurements (SiltProfiler, OBS and Sediview).. The other instruments logged continuously during the downcast. Conductivity, Temperature and Depth was logged by the CTD-probe, while turbidity was recorded by the OBS. The Navitracker measured the density.
- This fish could also be lowered without interruption, which means that everything described above happened, except the interruption at two depths. No samples were collected.

- a Siltprofiler, a high resolution extinction turbidity meter, could be lowered using a crane at maximum speed (0.6 m /s) to collect a high resolution turbidity profile on location.
- The ADCP could be activated to record the velocities on location for Sediview calibration purposes.

There were a variety of combinations that were used during the measurement day (Table 2-1).

*Table 2-1: Summary of all possible measurements conducted simultaneously at 1 profile*

| ***Action*** |
|---|
| Only siltprofiling |
| Only Navitracker-CTD-OBS profiling (excl watersamples) |
| Navitracker-CTD-OBS profiling and siltprofiling at the same time |
| ADCP and Navitracker-CTD-OBS (incl. watersamples) (calibration) |
| ADCP, Navitracker-CTD-OBS (incl. watersamples) and silt profiling |

As mentioned before, during transect sailing, only the ADCP was recording.

*Table 2-2: Transects of the Flow Measurements*

| ***Transect name*** | ***Measurement description*** | ***Left Bank Easting*** | ***Left Bank Northing*** | ***Right Bank Easting*** | ***Right Bank Northing*** | ***Avg Length [m]*** | ***Avg Course [degr.]*** |
|---|---|---|---|---|---|---|---|
| D | Kallo opwaarts | 590,435 | 5,680,153 | 591,408 | 5,680,172 | 457 | 89 |
| E | Kallo ingang | 590,386 | 5,680,184 | 590,428 | 5,680,494 | 242 | 190 |
| F | Kallo Afwaarts | 590,946 | 5,680,947 | 591,596 | 5,680,542 | 441 | 123 |

*Table 2-3: Positions of the Profiling points for 18 February 2005 in the vicinity of Kallo.*

| ***Transect*** | ***Measurement point*** | ***Easting (UTM31 ED50)*** | ***Northing (UTM31 ED50)*** | ***Average Depth [m TAW]*** |
|---|---|---|---|---|
| **D** (opwaarts Kallo) | **a** | 590,492 | 5,680,153 | -10.5 |
| | **b** | 590,542 | 5,680,157 | -12 |
| | **c** | 590,650 | 5,680,160 | -14.6 |
| | **d** | 590,815 | 5,680,157 | -7.5 |
| | **e** | 591,014 | 5,680,161 | -1.9 |
| **E** (Kallo Ingang) | **a** | 590,423 | 5,680,456 | -9.3 |
| | **b** | 590,408 | 5,680,349 | -9.8 |
| | **c** | 590,393 | 5,680,252 | -9.4 |
| | **d** | 590,390 | 5,680,214 | -6.6 |
| **F** (afwaarts Kallo) | **a** | 590,999 | 5,680,913 | -11.1 |
| | **b** | 591,040 | 5,680,889 | -12.3 |
| | **c** | 591,095 | 5,680,856 | -13.4 |
| | **d** | 591,155 | 5,680,820 | -13.7 |
| | **e** | 591,250 | 5,680,760 | -8.8 |

The whole day a Dual Frequency Echosounder logged hard (33kHz) and soft (210 kHz) bottom simultaneously.

APPENDIX B shows an overview of the proceedings of the measurements, including the location, start time and what instruments were measuring.

## 2.2. The equipment

### 2.2.1. ADCP

The current measurements were conducted using an RD Instruments ADCP 600 kHz Workhorse. For positioning the dGPS onboard the vessel Oostende XI was used. For the measurement of the heading a gyrocompass was installed.

This 600 KHz ADCP system was mounted on a steel pole approximately midships the portside. The transducer set was looking vertically downwards to the bottom. Transceiver unit and computer system were connected to peripherals such as the differential GPS-receiver, the heave compensator and the gyrocompass.

During the measurements the ADCP constantly measured upstream from the vessel. The acquisition software of Winriver was used. The main settings are given in Table 2-4.

*Table 2-4: Main Configuration Settings of ADCP 600kHz Workhorse*

| ***Main configuration settings:*** |
|---|
| Cell depth : 0.5 m |
| Number of Water pings per ensemble: 2 |
| Number of Bottom Track pings per ensemble: 2 |
| Time between ensembles: 0 |
| Averaging: None |
| Speed of Sound: Fixed 1500 m/s |
| Salinity 0 psu |
| 3-beam solution: enabled |

APPENDIX A gives technical details on the ADCP.

### 2.2.2. Navitracker

The Navitracker is a patented system to measure the density of fluid mud suspensions, by means of a gamma-density meter. It has been used by the Flemish authorities over 20 years to determine the nautical bed for the port of Zeebrugge.

The Navitracker system van be operated by a computer controlled winch to tow it through the mud. The Navitracker was equipped with the following sensors:

- The Gamma ray density sensor, mounted on a fork-like tow fish, gives density information
- The depth sensor gives information of the depth of the sensor
- The position of the fish is calculated out of the length of the winch cable. Together with the position of the tow fish, following the density level, a dual frequency echosounder is used to map the hard bottom and the top of the mud. With a speed of 2 to 3 knots, large areas can be covered.

For these measurements the Navitracker was used in a vertical profiling mode, with the probe in horizontal position in order to reach as close to the bottom as possible.

The Navitracker was calibrated in the laboratory for measuring high densities, formed by very dense water-mud mixtures. For this reason the Navitracker did not detect subtle changes in density because of changes in salinity. The density deviated from 1.000 ton/m³ only in the presence of high concentration of sediments.

The Navitracker has a sampling frequency of 10 measurements per second.

### 2.2.3. CTD-OBS

An OBS-5 with rapid reading themistor was used in combination with a D&A type OBS-3 to measure conductivity, temperature and turbidity.

Measured parameters by the CTD sensor:

- temperature (°C),
- conductivity (µS/cm)
- absolute pressure (m)

On the Oostende XI a CTD device was mounted on the Navitracker towfish. The resulting record is filled-up with GPS-time, sample number, and planimetric position of the GPS-receiver. CTD-data are logged together with GPS-time reference (UTC). The OBS-5 used as a CTD-unit is mounted on the starboard side of the Navitracker tow fish.

The tow fish is coupled to the stainless steel termination of the Navitracker towcable, and is depth-controlled through the depth sensor information and the remote controlled automated electrical winch on-board the survey vessel.

Sampling frequency is 1 reading per second.

APPENDIX A gives more technical details on the CTD-OBS sensors.

### 2.2.4. Pump Sampler

A water sampler was attached nearby the turbidity sensor taking water samples. Samples were collected in 1 litre sampling bottles. The pumping speed of the water sampler was tested at the start of the measurement campaign on board. Dye was used to time the duration between the intake of the dye and exit at the sampling end of the sampler on board. The duration between intake and exit at the end was 35 seconds.

### 2.2.5. Siltprofiler

For the HCBS measurements on the river Scheldt a new instrument has been developed, the SiltProfiler.

*Figure 2-3: High Resolution SiltProfiler*

The SiltProfiler has the following general specifications. The data collection is executed locally (i.e. on the profiler) by an integrated data logger. Sensor cables are kept very short and connect to the interfacing electronics of the data logger. The data logger collects the sensor signals and records the same in internal memory. Simultaneously the data are transmitted via a serial communication cable (if connected). Emphasis is on fast data collection and less on the absolute accuracy of the sensors.

In case the communication cable is not connected, the data can be retrieved upon recovery of the profiler via a short range wireless connection. As soon as the profiler breaks the water surface the data can be accessed and transferred to the operator's PC, whereupon the profiler is ready for a new profiling session. The retrieved profile data are visualised immediately in depth profile graphs. This operational mode requires no electrical cables to be attached to the profiler. However, a small box (diameter in the order of 20 cm) with electronics, data logger and batteries is attached to the profiler. The hoisting cable is attached to sturdy structure above the electronics box.

The sensors are:

- one C and T sensor with measuring ranges adequate for use in seawater.
- multiple turbidity sensors to cover the entire range of 10 to 50 000 mg/L suspended solids: 2 transmittance sensors (type FOSLIM) are used.
- one pressure sensor.

As such the SiltProfiler is anticipated to rapidly profile the suspended sediment concentration as well as the salinity structure. The Siltprofiler measured every 20 milliseconds, which results 50 measurements per second (50 Hz).

The data collection rate is adjustable to optimise for the required vertical / temporal resolution. Further, the data acquisition rate will be depth dependent in such a way that the rate is low in the upper section of the profile and higher in de lower section. Both rates and the changeover depth are user adjustable. The duration of data retrieval depends upon the amount of collected data and the effective data transfer rate.

### 2.2.6. Dual Frequency Echosounder

The dual frequency echosounder was integrated with the ship's differential GPS (or KART), the gyro-compass (or Aquarius [2]). Two frequencies were used to detect the hard bottom (33 kHz) and the soft bottom (210 kHz). APPENDIX A gives more information on the dual frequency Echosounder.

# 3. COURSE OF THE MEASUREMENTS

## 3.1. Measurement periods

At Kallo tracks and profiles were measured for 12.5 hours. There was no fixed order in which measurements were taken. APPENDIX B gives the order of measurements, referencing the transect location, profile location, start time [MET] and the type of measurement (ADCP, Navitracker-OBS, Sampling & Siltprofiler).

## 3.2. Hydro-meteorological conditions during the measurement campaign

### 3.2.1. Vertical tide during the measurements

The vertical tide was measured at the Zandvliet and Liefkenshoek tidal gauges. Graphs of the tide at Zandvliet and Liefkenshoek on the 18th of February can be found in APPENDIX C. Table 3-1 gives the most important characteristics (high and low tide) of the tide at those gauges on the 18th of February 2005.

*Table 3-1: High and low tide at Liefkenshoek and Kallo on 18/02/2005*

| | ***Time [hh:mm MET]*** | | ***Water level [m TAW]*** | |
|---|---|---|---|---|
| | **Liefkenshoek** | **Kallo** | **Liefkenshoek** | **Kallo** |
| **18/02/2005** | | | | |
| **LW (1)** | 4:30 | 4:20 | 0.48 | 0.44 |
| **HW (2)** | 10:30 | 10:30 | 4.15 | 4.26 |
| **LW (3)** | 16:50 | 16:50 | 0.58 | 0.54 |
| **HW (4)** | 23:30 | 23:50 | 4.60 | 4.66 |

In Table 3-2 the tidal characteristics of the tide on the 18th of February are compared to the average tide over the decade 1991-2000 (AMT, 2003).

*Table 3-2: Comparision of the tidal characteristics of 18/02/2005 with the average tide, the average neap tide and the average spring tide over the decade 1991-2000 for Liefkenshoek (Lie) and Kallo*

| | ***Neap Tide (1991-2000)*** | | ***Avg Tide (1991-2000)*** | | ***Spring Tide (1991-2000)*** | | ***Tide 18/02/2005*** | |
|---|---|---|---|---|---|---|---|---|
| **Water level [mTAW]** | **Lie** | **Kallo** | **Lie** | **Kallo** | **Lie** | **Kallo** | **Lie** | **Kallo** |
| LW (1) | 0.39 | 0.35 | 0.05 | 0.01 | -0.18 | -0.23 | 0.48 | 0.44 |
| HW (2) | 4.63 | 4.69 | 5.19 | 5.26 | 5.63 | 5.73 | 4.15 | 4.26 |
| LW (3) | - | - | - | - | - | - | 0.58 | 0.54 |
| HW (4) | - | - | - | - | - | - | 4.60 | 4.66 |
| **Tidal difference [m]** | **Lie** | **Kallo** | **Lie** | **Kallo** | **Lie** | **Kallo** | **Lie** | **Kallo** |
| Rising (1→2) | 4.24 | 4.34 | 5.14 | 5.25 | 5.81 | 5.96 | 3.67 | 3.82 |
| Falling (2→3) | 4.24 | 4.34 | 5.14 | 5.25 | 5.81 | 5.96 | 3.57 | 3.72 |
| Rising (3→4) | - | - | - | - | - | - | 4.02 | 4.12 |
| **Duration [hh:mm]** | **Lie** | **Kallo** | **Lie** | **Kallo** | **Lie** | **Kallo** | **Lie** | **Kallo** |
| Rising (1→2) | 5:59 | 5:56 | 5:34 | 5:27 | 5:16 | 5:07 | 6:00 | 6:10 |
| Falling (2→3) | 6:40 | 6:43 | 6:50 | 6:57 | 7:02 | 7:12 | 6:20 | 6:20 |
| Rising (3→4) | - | - | - | - | - | - | 6:40 | 6:00 |
| Tide (1→3) | 12:39 | 12:39 | 12:24 | 12 :24 | 12:18 | 12:19 | 12:20 | 12:30 |
| Tide (2→4) | - | - | - | - | - | - | 13:00 | 12:20 |
| **Tidal coefficient** | **Lie** | **Kallo** | **Lie** | **Kallo** | **Lie** | **Kallo** | **Lie** | **Kallo** |
| Rising (1→2) | 0.82 | 0.83 | 1 | 1 | 1.13 | 1.14 | 0.71 | 0.73 |
| Falling (2→3) | 0.82 | 0.83 | 1 | 1 | 1.13 | 1.14 | 0.69 | 0.71 |
| Rising (3→4) | - | - | - | - | - | - | 0.78 | 0.78 |

The tidal coefficients from 0.69 up to 0.78 for the measured tide of the 18$^{th}$ of February indicate that this tide has a smaller tidal range than the average neap tide for the decade of 1991-2000.

### 3.2.2. Meteorological data

Meteorological data at Deurne meteorological station for 18/02/2005 was obtained from KMI (Koninklijk Meteorologisch Instituut = Royal Meteorological Institute of Belgium).

On the 18th of February 2005, the air temperature varied between 0 and 4.6 °C. The wind blew from S-SSW at an average velocity of 14 km/h. There was some cloud cover as well as some snowfall.

## 3.3. Navigation information

An overview of the navigation at the measurement location is given in APPENDIX D.

## 3.4. Remarks on data

All transects of ADCP data were recorded well.

During transect F55, the course of the survey vessel was blocked by navigation, so the transect has been split up in 2 subtransects (55a & 55b). During data processing, shipwakes have been removed by extrapolating data from the neighbouring ensembles, as far as these wakes only occurred in the top 5 meter. Larger and therefore deeper wakes were noticed in transects 53 & 66 and have been left unchanged. Those two transects were both disturbed by a hopper.

# 4. PROCESSING OF DATASETS

## 4.1. Calibration of the turbidity sensors

A crucial aspect of the accuracy and reliability of the data concerns the calibration of the instruments before the measurement campaign.

The turbidity sensors were calibrated with sediment from the proximity of the measurement location. Sediment was taken from the study area (access channels to Zandvliet & Kallo).

The OBS-3 sensor was calibrated by GEMS. In an oven Scheldt mud was dried, preweighed accurately (suspended sediments + all dissolved elements) and dissolved for calibration. The concentration was increased by adding preweighed quantities of dried mud.

The SiltProfiler was calibrated at WL|Delft Hydraulics prior to the first use, again with mud from the study area, with a $D_{50}$ in the range from 3 to 15 µm. SiltProfiler was calibrated with desalinated Scheldt mud, that was dried and pulverized to powder, with most of the particles from 5 to 10 µm. The mud powder (suspended sediments) was preweighed accurately and dissolved for calibration. The concentration was increased by adding preweighed quantities of dried mud. The Silt profiler was calibrated for concentrations from 500 mg/l to 50000 mg/l.

As the measured concentrations generally were lower than 500 mg/l, experience learns that the SiltProfiler can drift for low concentrations. The graphs can be found in APPENDIX E

*Table 4-1: Calibration Equations as derived for both OBS and Siltprofiler sensors (low and high range), x=AD counts, y=sample suspended sediment concentration*

| ***Instrument*** | ***Equation*** | ***R²*** |
|---|---|---|
| **OBS** | $y = 1.5659x$ | $R^2 = 0.9939$ |
| **Siltprofiler – Low range** | $y = 0.00069x^2 + 1.08476x - 514.92112$ | $R^2 = 0.9995$ |
| **Siltprofiler – High range** | $y = 0.00454x^2 + 12.72535x - 3783.16724$ | $R^2 = 0.9998$ |

## 4.2. Cross-calibration of the turbidity sensors

Suspended sediment concentration was measured in 2 different ways using an optical backscatter sensor (OBS) and a transmittance extinction sensor (SiltProfiler). Both instruments were calibrated in a controlled environment (calibration) and compared to truth values, derived from samples collected in the field during the measurement campaign (cross-calibration).

OBS & SiltProfiler readings were compared with the suspended sediment concentration from the samples, taken to calibrate Sediview.

The suspended sediment concentration of the water samples was determined. One-litre samples were filtered over a preweighed desiccated 0.45 micron filter, after which the filter was dried in an oven at 105°C, cooled and weighed.

After the measurement campaign a comparison was done between these suspended sediment concentrations (determined from the watersamples) and both OBS and SiltProfiler estimates for suspended sediment concentration. Discrepancies were found as can be seen in APPENDIX E.

At low concentrations the Siltprofiler did not measure concentrations below a certain treshold value.

It is obvious that the in situ suspended sediment concentration (SSC) is the only “TRUE” value, and that all instruments and methods try to measure this SSC as accurate as possible. Even so it is obvious that the use of multiple sensors gives rise to different estimates of the true SSC. There it was decided to analyse the OBS-estimates ant the Siltprofiler-estimates of the SSC.

It was shown in a comparison that for low concentrations, the SiltProfiler consistently measured higher values than OBS. The different measurement principles and separate pre-calibration could possibly have caused this. In the comparison graph, concentrations were compared for various depths and concentrations when both OBS and SiltProfiler measured simultaneously (APPENDIX E).

Besides the indirect reading of SSC, also samples were taken for the calibration of Sediview (transformation of back scatter intensity). These samples were NOT taken throughout the complete water column due to the unreliable ADCP-information near the bottom. The measured SSC in the samples never exceeded 600-800 mg/l, which is less than the maximum concentration measured by OBS or Siltprofiler. The samples were used to cross-calibrate the different sensors, although this means that the behaviour of both turbidity sensors could not be verified for concentrations over 600-800 mg/l (the calibration curve is a dashed line above this threshold value). It is therefore suggested that during the future HCBS measurement campaign, samples should be collected for higher concentrations, with the purpose of identifying the behaviour of both turbidity sensors at higher concentrations.

The following linear conversion equations were determined (Table 4-2).

*Table 4-2: Conversion formulas determined for OBS and SiltProfiler suspended sediment concentrations to true values based on sampling suspended sediment concentrations*

| ***Instrument*** | ***Legend*** | ***Equation*** | ***$R^2$*** |
|---|---|---|---|
| **OBS** | x = OBS-conc y = True conc. | y = 0.6773x –11.001 | 0.8444 |
| **SiltProfiler** | x = Siltprofile-conc y = True conc. | y = 0.8049x – 90.657 | 0.7515 |

The calibration graphs can be found in APPENDIX E. The comparison graph and both cross-calibration graph also include the 1:1 diagonal as a full grey line.

This cross-calibration was then computed for OBS and SiltProfiler data. **All values given in this report are thus the cross-calibrated values, related to the in situ samples**.

The conversion equations show that the suspended sediment concentrations, as measured by both SiltProfiler and OBS, were consistently higher than the suspended sediment concentrations as derived from the water sample analysis.

## 4.3. Methodology of processing the Siltprofiler data

Siltprofiler data was validated and screened for outliers. Raw data were filtered.

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

Turbidity values were converted to suspended sediment concentration using the equation of the calibration curve determined at the pre-calibration done by WL-Delft, and then the cross-calibration curve as mentioned in § 4.2.

A datasheet was produced that contains a plot showing the change in temperature, salinity and suspended sediment concentration versus depth.

Apart from general metadata (dat, time, time after HT, coordinates, surface elevation) the water-bottom interface is given as it was measured by the deepest position/measurement of the Siltprofiler, and the detection of the soft bottom (210 kHz) and hard bottom (33 kHz) as was measured by the dual frequency echosounder.

A table contains measurements at various depths:

- Water surface – 0.5 m
- Bottom depth + 1/2 of the total water depth
- Bottom depth + 1/3 of the total water depth
- Bottom depth + 0.5 m
- Bottom depth + 0.4 m
- Bottom depth + 0.3 m
- Bottom depth + 0.2 m
- 15 values in the lowest 0.2 m above the bottom

The depth averaged values for temperature, salinity and suspended sediment concentration are calculated.

The “NaN” (Not a Number) –value is used to indicate a no data value (measurement outside range of instrument or not recording).

The Siltprofiler datasheets are given in APPENDIX G.

## 4.4. Methodology of processing the Navitracker-OBS data

Navitracker data was linked to OBS and CTD-data.

Density and turbidity data was validated and screened for outliers. Raw data were filtered.

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

Turbidity values were converted to suspended sediment concentration using the equation of the calibration curve determined at the pre-calibration done by GEMS, and then the cross-calibration curve as mentioned in § 4.2.

A datasheet was produced that contains a plot showing the change in density and suspended sediment concentration versus depth.

The water-mud interface is given at the depth where the density increases because of high sediment concentrations.

The water-bottom interface is given as it was measured by the deepest position/measurement of the Navitracker-OBS, and the detection of the soft bottom (210 kHz) and hard bottom (33 kHz) as was measured by the dual frequency echosounder.

A table contains measurements at various depths. One measurement every meter down to bottom depth + 2 m, and all measurements between the bottom and bottom + 2m.

The depth averaged values for density and suspended sediment concentration are calculated.

The “NaN” (Not a Number) –value is used to indicate a no data value (measurement outside range of instrument or not recording).

The Navitracker-OBS datasheets are shown together with the SiltProfiler datasheets in APPENDIX G.

When comparing the OBS and SiltProfiler data for suspended sediment concentration, it must be stressed that both were corrected by a cross-calibration, with samples as 'truth-values'. Furthermore temporal and spatial variations in nature are a source of differences in measured SSC-values. It must be kept in mind that the SiltProfiler was deployed at the starboard side of the vessel and was probed downcast at maximum speed in 1 minute max. The OBS was deployed at the portside of the vessel and was lowered at low speed and paused at 2 depths for sampling. The downcast measurement of the OBS therefore lasted longer than 2-3 minutes.

## 4.5. Echosounder data

Echosounder data was linked and is shown on SiltProfiler and Navitracker-OBS datasheets. Time was used to link both files. However, computer time discrepancies and moreover spatial discrepancies, different locations of instruments on board, can explain differences in bottom detection by Echosounder, Navitracker-OBS and Siltprofiler.

The echosounder 210 kHz signal detects the soft bottom and is shown in APPENDIX G as a bright red dotted line. The echosounder 33 kHz signal penetrates deeper and reflects somewhere on the hard bottom and is shown in APPENDIX G as a burgundy dashed line.

The Navitracker-OBS bottom detection was defined by the deepest measurement of the pressure sensor (of the CTD-OBS)+ the distance of this sensor to the underside of the Navitracker-OBS construction.

The Siltprofiler bottom detection was defined by the deepest measurement of the pressure sensor of the SiltProfiler + the distance of this sensor to the underside of the SiltProfiler.

## 4.6. Timeseries and Depth Averages

Timeseries were visualised for left bank and right bank locations. Contourplots of Temperature, Salinity and suspended sediment concentration, as measured by OBS & SiltProfiler can be found in APPENDIX I. In these contourplots the bottom is shown as a black surface.

These plots show a contoured timeseries of the measured profiles on each location in time and depth. The detection of the hard bottom or mud-water interface by the instrument is indicated on the contourplot as a black mask.

Also depth-averaged values were tabularized. Depth-averages were computed for SiltProfiler (Suspended Sediment Concentration, Temperature and Salinity) and Navitracker-OBS (Suspended Sediment Concentration) data per location (left bank and right bank).

For each of these parameters the depth-average is given for :

- Total depth
- Top 50% of watercolumn – bottom 50% of watercolumn

This information is illustrated in figures and tables in APPENDIX H.

## 4.7. Methodology of processing of the ADCP data with Sediview

DRL Software's Sediview was used to process the ADCP data. Sediview is designed to derive estimates of suspended sediment concentration throughout the water column using acoustic backscatter data obtained by ADCPs manufactured by RD Instruments of San Diego, California.

### 4.7.1. Acoustic backscatter theory

The acoustic theory governing backscatter from particles suspended in the water column is complex, but the following simplified formula serves to introduce the main factors that are relevant:

$$E = SL + SV + Constant - 20\log(R) - 2\alpha_w R$$

Where:

- $E$ = echo intensity,
- $SL$ = transmitted power,
- SV = backscatter intensity due to the particles suspended in the water column,
- $\alpha_w$ = a coefficient describing the absorption of energy by the water,
- $R$ = the distance from the transducer to the measurement bin.

The term 20log(R) is a simple geometric function, which accounts for the spherical spreading of the beam. The constant is required because each ADCP has specific performance characteristics.

In order to measure the suspended sediment concentration in the water column it is necessary to relate the backscattered sound intensity to the mass concentration in the water. For the purposes of measuring solids concentration on site, it can be shown that the relationship is as follows (derived from Thorne and Campbell, 1992 and Hay, 1991 in DRL (2003)):

$$Log_{10} M_r = S\{dB + 2r(\alpha_w + \alpha_s)\} + K_s$$

Where:

- $M(r)$ = mass concentration per unit volume at range, $r$
- $S$ = relative backscatter coefficient
- $K_s$ = site and instrument constant
- $dB$ = the measured relative backscatter intensity (corrected for beam spreading)
- $\alpha_w$ = water attenuation coefficient
- $\alpha_s$ = sediment attenuation coefficient, which is a function of the effective particle size

In this expression there are four unknowns: $S$, $Ks$, $\alpha_w$ and $\alpha_s$. These parameters are to be determined within Sediview.

### 4.7.2. Water sampling and transect sailing

To calibrate Sediview for suspended sediment concentration, two water samples are taken at the beginning and at the end of each transect. Both samples are taken within the range of reliable data of the ADCP. For the near-surface sample this means in bin 3 or 4, for the near-bed sample this means at about one or two meter above the sidelobe.

Water sampling is done together with CTD-OBS measurement in order to have two independent suspended sediment concentration measurements for each sample. OBS measurements were compared to the water samples and recalibrated as mentioned in § 4.2. These OBS SS concentrations were recalibrated using the conversion equations in Table 4-2. The water samples were used for Sediview calibration, while cross-calibrated OBS measurements were used as a back up check. Salinity and temperature was used to compute the acoustic water absorption (water attenuation coefficient). All water samples were analysed as is described in 4.7.3.1.

Watersamples may not have been taken at the beginning and end of the transect, but within 15 minutes before and after the transect at locations in the transect.

### 4.7.3. Calibration for suspended sediment concentration within Sediview

#### *4.7.3.1. Calibration workset*

The calibration workset consists of ADCP-files, sampling times, sampling depths, SSC obtained from water samples and SSC, temperature and salinity obtained from CTD-OBS readings.

One-litre samples were filtered over a preweighed desiccated 0.45 micron filter, after which the filter is dried in an oven at 105°C, cooled and weighed (NEN 6484).

#### *4.7.3.2. SSC calibration per ensemble pair*

In the Sediview calibration process the following parameters must be defined: the site and instrument constant (Ks), the relative backscatter coefficient (S) and the effective particle size per ensemble-pair (near-surface sample and near-bed sample) in order to fit the Sediview-estimate with the suspended sediment concentration of the water samples. These parameter sets may not differ too much from the previous parameter sets, as the environmental conditions will not change that much over a small time interval. To obtain a smooth progress in time of Ks, S and effective particle size an iterative approach is used.

### 4.7.4. Sediview configuration

#### *4.7.4.1. Discharge and suspended sediment concentration estimates*

The ADCP measures most of the water column from just in front of the ADCP to 6% above the bottom. The shallow layer of water near the bottom is not used to compute discharge and suspended sediment concentration due to side-lobe interference. When the ADCP sends out an acoustic pulse, a small amount of energy is transmitted in side lobes rather than in the direction of the ADCP beam. Side lobe reflection from the bottom can interfere with the water echoes and can give erroneous data. The thickness of the side lobe layer is 6% of the distance from the transducers to the bottom.

Near the banks the water depth is too shallow for the ADCP to profile.

For each of those unmeasured regions, Sediview will make an estimate of the discharges and suspended sediment concentration. The measured and unmeasured regions in the cross sectoin are shown in Figure 4-1and Figure 4-2.

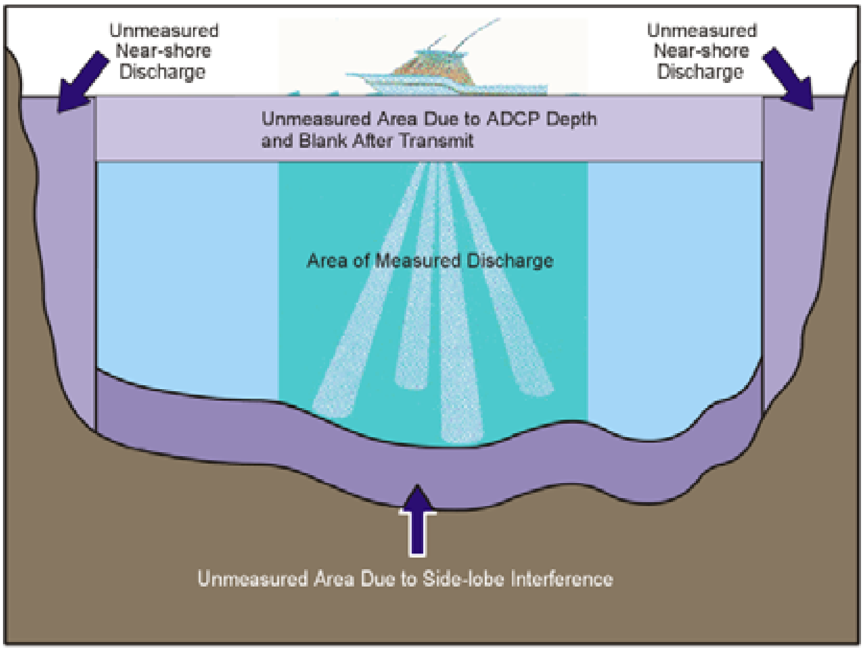


*Figure 4-1: Unmeasured regions in the cross section (from RD Instruments, 2003)*

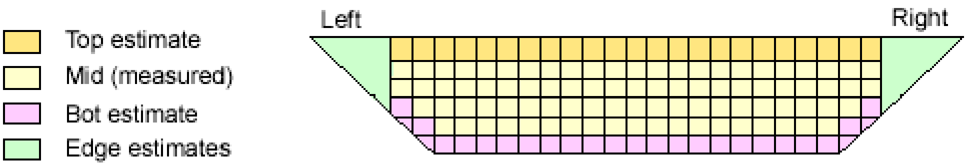


*Figure 4-2: Measured and estimated discharges and sediment fluxes within Sediview (DRL, 2005)*

#### 4.7.4.1.1 Top/bottom estimates

The sediment concentration and discharge at the top of the water column is assumed to be the same as the concentration and discharge in the first measured bin.

The sediment concentration between the bottom and the lowest valid bin is assumed to be 125% of the lowest valid bin: Siltprofiles taken by the siltprofiler show us that the bottom value of the SSC is approximately 150% of the SSC-value at 2 meter above the bottom (position of the sidelobe). As the concentration grows approximately linear from the lowest valid bin to the bottom, and as Sediview uses a constant concentration factor for these deepest bins, we use a concentration factor of 125% (Figure 4-3).

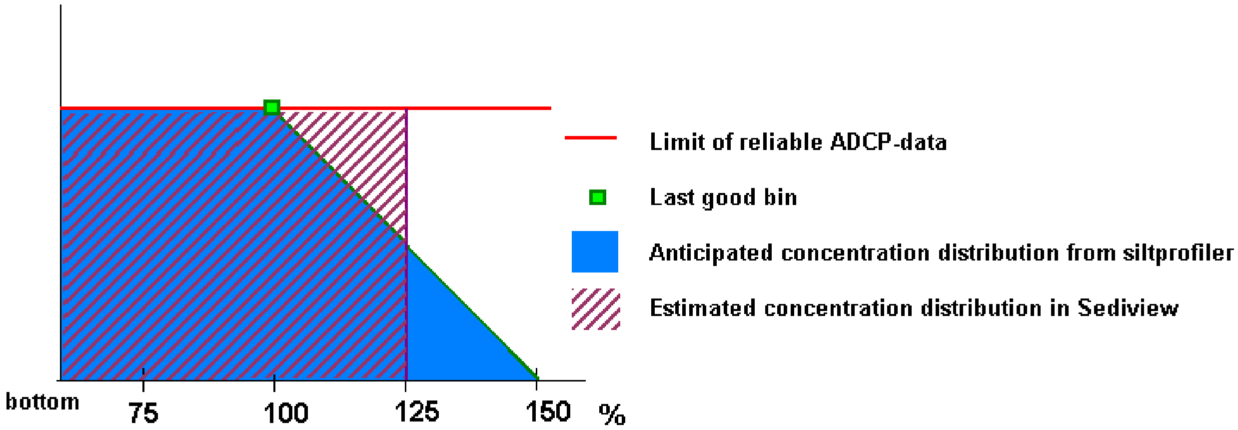


*Figure 4-3: Bottom estimate of the sediment concentration*

*Table 4-3: Extrapolation methods for top and bottom variables*

| ***Variable*** | ***Top*** | ***Bottom*** |
|---|---|---|
| Discharge Method | Constant | Power |
| Concentration factor | 100% | 125% |

The discharge for the bottom water layer is estimated by using the power method. Chen (1991) discusses the theory of power laws for flow resistance. Simpson and Oltmann (1990) discuss Chen's power law equivalent of Manning's formula for open channels (with b=1/6) (RD Instruments, 2003).

$$u / u* = 9.5(z / z_0)^b$$

Where:

- z = Distance to the channel bed [m]
- u = Velocity at distance z from bed [m/s]
- u* = Shear velocity [m/s]
- $z_0$ = Bottom roughness height [m]
- b = Exponent (1/6)

#### 4.7.4.1.2 Edge estimates

The shape of the edges of the cross section is assumed to be triangular (a slope) or rectangular (a quay wall). Five data ensembles are to be averaged to determine the left and right bank mean velocities used for calculation of edge estimates.

*Table 4-4: Shape of the edges of the transects for edge estimates*

| ***Edge estimates*** | ***Left bank*** | ***Right bank*** |
|---|---|---|
| D | Rectangular | Triangular |
| E | Rectangular | Rectangular |
| F | Triangular | Triangular |

The distance from start- and endpoint to the bank is calculated from the theoretical start- and endpoint at the bank to the effective start- and endpoint. The theoretical points are taken at the end of the mud flats.

*Table 4-5: Reference points at the end of the mud flats on left and right bank*

| ***Transect*** | ***Easting Left bank*** | ***Northing Left bank*** | ***Easting Right bank*** | ***Northing Right bank*** |
|---|---|---|---|---|
| D | 590436 | 5680152 | 591401 | 5680167 |
| E | 590385 | 5680178 | 590428 | 5680496 |
| F | 590946 | 5680945 | 591595 | 5680550 |

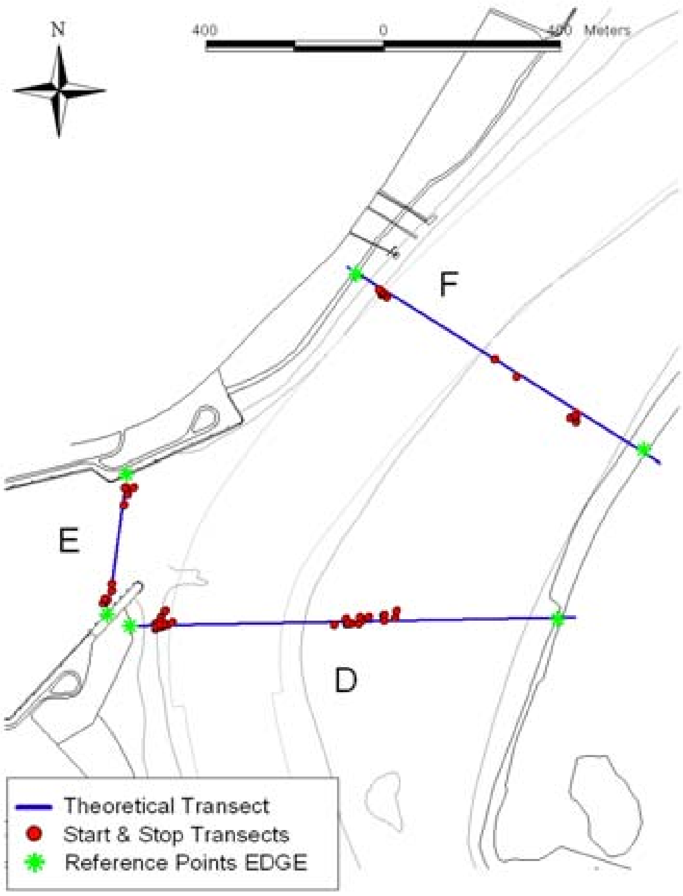


*Figure 4-4: Reference points (green) on left and right bank used for edge estimates.*

The formula for determining the near shore discharge is:

$$Q_{shore} = CV_m L d_m \text{ [m³/s]}$$

Where:

C = Coefficient (0.35 for triangular, 0.91 for rectangular shape)

$V_m$ = Mean water velocity in the first or the last segment [m/s]

L = distance from the shore to the first or the last segment specified by the user [m]

$d_m$ = Depth of the first or the last segment [m]

For D- and F-transects, the coefficients (C) have been set to 0.35 (triangular shape), while the coefficients (C) for the E-transect have been set to 0.91 (rectangular shape).

### *4.7.4.2. Contour plots of the transects*

All contour plots show perpendicular and parallel projected values on the straightened sailed transects. The heading of the straightened sailed transect is defined by picking 2 points in the straight part of the line after having corrected the heading of the ADCP compass. The compass offset is derived from a comparison of the ADCPs bottom track with the external GPS data.

### 4.7.5. Output

General transect information containing start-stop coordinates of each sailed transects with stop time, track length and heading is given in **Error! Reference source not found.**.

In APPENDIX J, four contourplots were generated for each transect showing the distribution of suspended sediment concentration & sediment flux as well as the flow velocity perpendicular and parallel to the transect. The following conventions were used:

- Distances on the X-axis were referenced to the starting point of the transect.
- Left bank is always shown left, right bank on the right side.
- Perpendicular flow velocities and fluxes are positive for downstream flow (ebb), negative for upstream flow (flood).
- Parallel flow velocities are positive for flow going from the left bank to the right bank, and negative for flow going from the right bank to the left bank.
- Absolute Depth is given in meters.

Also a depth-averaged velocity plot was generated for the flow velocity perpendicular to the transect. (See APPENDIX J).

Tables in APPENDIX K give the values for discharges, sediment fluxes and sediment concentrations for the total cross-section:

- Mid = measured part of the cross-section
- Top = top part of the cross-section
- Bottom = bottom part underneath the sidelobe
- Edge (left, right) = edge estimates to left & right bank
- Total = Mid+Top+Bottom+ Edge values

The graph in APPENDIX L gives the temporal variation of the total flux and total discharge for the whole through tide measurement at Kallo.

# 5. REFERENCES

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IMDC (2002).Studie Densiteitsstroming in het kader van LTV Schelde, Stroom- en saliniteitsmeting t.h.v. Deurganckdok uitgevoerd op 12/06/202, I/RA/11216/02.042/CMA, in opdracht van AWZ.

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# APPENDIX A.

# MEASUREMENT EQUIPMENT

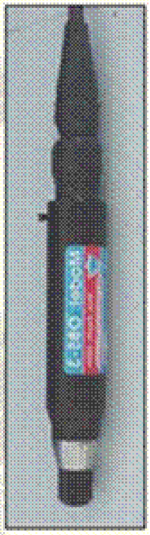
## A.1 Technical details for OBS3

GEMS International

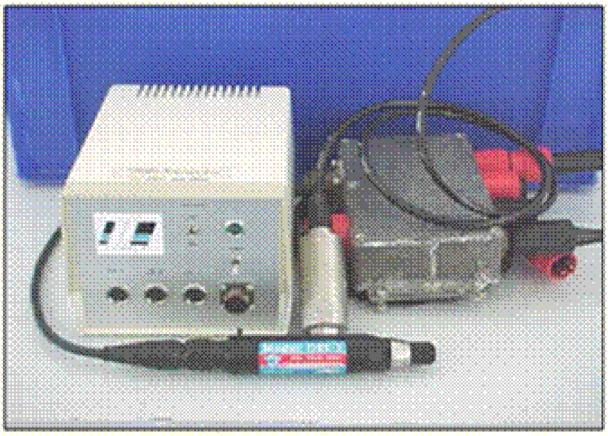
# TURBIDITY SENSOR OBS3

Turbidity data gives an indication of the total suspended solids. This sediment-load is an important parameter to measure and predict sedimentation, sediment disturbance and its influence on the environment.

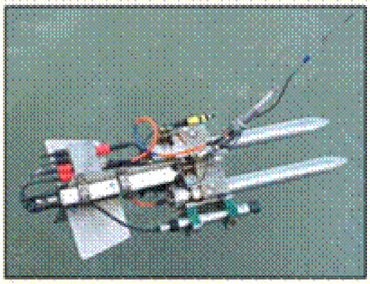
If the amount of the spill (turbidity) during dredging operations is known, precautions can be taken to prevent further spilling. Application of mathematical models on turbidity-data together with current direction and current speed, gives us a good understatnding of erosion and sedimentation of the navigable channels, which is important for the dredging activities.



For the turbidity-measurement, we operate an optical backscatter sensor known as OBS-3 from manufacturer D&A-instruments Company. The principle is based on the backscattering of laser light. An analog output represents the amount of suspended solid.



**Applications:**
The OBS-3 is an ideal solution to a wide range of applications such as environmental data acquisition for a quick vertical and wide horizontal turbidity-scan of the water column, onshore and offshore mooring deployments and profiling.
In Zeebrugge, the sensor is integrated on the towed Vertical Density Profiler, allowing automated profiling of the vertical water column through the Navitracker System. Via an "in-house" build interface, three OBS3 can be monitored through an A/D card directly into the TrackerSoft Software. It is also integrated as 2 channels on the Underwater Marine Instrument (UMI).



GEMS INTERNATIONAL NV • Marcus Gerardsstraat 1 •
• B 8380 Zeebrugge • Belgium
Tel: +32 (0)50 55 95 95 • Fax: +32 (0)50 55 95 57

## A.2 Technical details for OBS5

# OBS-5®

*Sediment Instruments for all Environments*

Innovative monitor of high particle concentrations.

### FEATURES

- Microprocessor-controlled laser system
- Measures concentrations up to 100g/l (specific gravity 1.06)
- Auxiliary pressure, temperature, and conductivity sensors
- Serial data transmission via RS-232 link
- Compact 60 mm (2.4") by 482 mm (19") package

### APPLICATIONS

- Monitor dredging & site-remediation operations
- Survey contaminated sediment
- Determine dredge-head and bucket-wheel efficiencies
- Evaluate containment systems

### DESCRIPTION

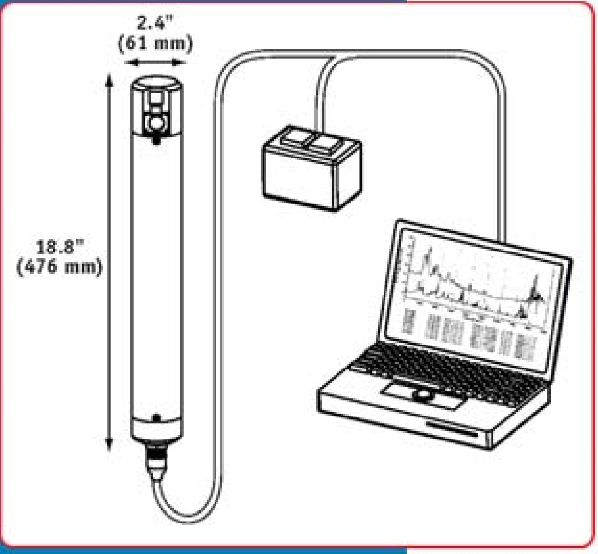
The OBS-5® system monitors high particle concentrations using an infrared laser and two detectors controlled by a microprocessor (U.S. Patent No. 5,796,481). It is uniquely suited for monitoring dredging operations and flood events when very high sediment loads are expected. The probe transmits sediment concentration, turbidity, depth, temperature, and salinity to a PC where data are displayed and recorded. The monitor is operated with software running under Windows® 98, 2000, and XP.

### OPERATIONS

Users can test and calibrate sensors, make pressure and water-density corrections, and set up sampling schedules using the software provided with the system. During a survey the OBS-5 data and instrument depth are displayed on a PC while being recorded. After a survey, data can be processed and graphically displayed using EXCEL or LOTUS.

D&A INSTRUMENT COMPANY

# OBS®-5




## RANGES

| | |
|---|---|
| Concentration | 0–100 g/l (sp. gr. 1.06)[1] |
| Pressure | 0–200 dBar[2] |
| Temperature | 0–40° C |
| Conductivity | 0–65 mS/cm |

[1] Range depends on sediment type.

[2] 1 dBar is equivalent to about 1 meter of water.

## ACCURACY

| | | |
|---|---|---|
| Concentration | Mud | 5.0 mg/l |
| | Sand | 0.5 g/l |
| Pressure | | 0.1 dBar |
| Temperature | | 0.05° C |
| Conductivity | | 0.07 mS/cm |

## OTHER DATA

| | |
|---|---|
| PC interface | RS-232 / 19.2 kbps |
| Maximum data rate | 7 Hz |
| Laser wavelength | 780 nm |
| Supply voltage | 9–16 Vdc |
| Battery life (2-Ah gel cell) | 12 hours |
| Housing Materials | 316 stainless steel, and Hydex |

## ORDERING INFORMATION

- Consult the manufacturer about your application.
- Specify cable length.
- Choose options.

## PAYMENT AND SHIPPING TERMS

VISA and MasterCard accepted. COD, prepay, or LC without credit approval; Net 30 Days otherwise. EXW Port Townsend, Washington, USA

Represented by:

1/04



D & A
INSTRUMENT COMPANY

24 Seton Road, Port Townsend, Washington U.S.A. 98368
Phone: (800) 437-8352 • (360) 385-0272 • Fax: (360) 385-0460
e-mail: products@D-A-Instruments.com • website: www.D-A-Instruments.com

## A.3 Technical details for dual frequency echosounder

The 320M Marine Echosounder was developed to meet demanding requirements of field work. Its low maintenance modular construction, together with advanced features and easy configuration, make the 320M the most flexible sounder available.

Using either the high or low frequency channel, or both simultaneously, the 320M produces a high resolution record accurately depicting bottom profiles and sediment layers with 32 shades of grey. The thermal printer uses easily loaded 21.6cm (8.5") plastic film for permanent, high-quality records. The annotated depth grid is printed with reverse shading for clarity.

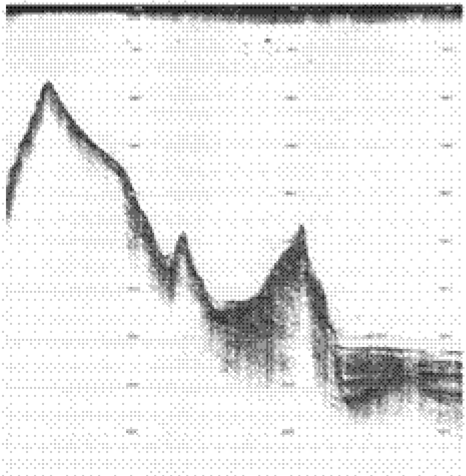
Digitized water depth is shown on two large 4-digit LCD displays, visible in direct sunlight and backlit for night operation. Serial RS232 depth data is continuously available in NMEA format as well as user-defined string formats, and in operator-selectable time and position tagged formats.

An LCD menu display with simple 2-button control provides access to parameters such as sound velocity, draft, TX blanking, serial port assignment, time and date setting, and many more, as well as a variety of self-test, communication and configuration features. All settings are retained in non-volatile memory and recalled on power-up.

Three RS232 ports support communication with personal computers, NMEA input and output devices, GPS receivers, sound velocity sensors, heave sensors, remote depth displays and survey data loggers.

The standard 320M firmware includes drivers for all the devices above and can be field upgraded where firmware can be downloaded through a serial port into "flash" program memory.

In addition to traditional "hands-on" operation, an optional upgrade allows the 320M to be operated remotely through the built in SCSI interface and Windows application software.



**Technical Specifications** *(subject to change without notice)*:

**Main Ranges:**
Metres, Feet or Fathoms

| Range | Scale |
|---|---|
| 10 | 1 : 50 |
| 20 | 1 : 100 |
| 50 | 1 : 250 |
| 100 | 1 : 500 |
| 200 | 1 : 1000 |
| 500 | 1 : 2500 |
| 1000 | 1 : 5000 |
| 2000 | 1 : 10000 |
| 5000 (available via SCSI and serial only) | |

**Phased Ranges:** Multiple 50% overlapped phases of each range (20% overlap optional), manual or automatic selection.

**Paper Speed:** 7 settings.

**Frequencies:** 3.5 kHz to 250 kHz. Standard frequencies include - LF 12, 24, 26, 28, 30, 33, 38, 40, 41, or 50 kHz, - HF 100, 120, 150, 200, 208, or 210 kHz.

**Depth Display:** Two LCD (backlit) 4-digit displays for high and low frequency.

**Power:** 4 selectable levels for each frequency, maximum 1,000 watts RMS into 50 ohms.

**Resolution:** 1 cm (0-99.99), 1 dm (100-999.9), 1 m (>1000)
1/100 ft (0-99.99), 1/10 ft (100-999.9), 1 ft (>1000)
1/100 fm (0-99.99), 1/10 fm (100-999.9), 1 fm (>1000)

**Record width:** 20 cm. Paper width: 21.6 cm (8.5").

**Sound Velocity:** 1300 - 1700 m/s Resolution: 1 m/s
4265 - 5577 ft/s Resolution: 1 ft/s
710 - 929 fm/s Resolution: 1 fm/s

**Clock:** Internal battery backed time and date clock.

**Draft:** 0 - 100 m. Resolution: 1 cm
0 - 328.08 ft Resolution: 0.01 ft
0 - 54.68 fm Resolution: 0.01 fm

**Annotation:** Internal: date, time, GPS position.
External: from RS 232 port.

**Pulse Length:** Automatically selected, with operator override.

**Printer:** Self-test, manual or automatic contrast, high resolution of 1600 pixels per line in a 32 step grey scale, LED status indicators, paper advance control.

**Gain Controls:** AGC, TVG and manual receive gain for each frequency.

**TX Blanking:** 0 - 300 m. Resolution: 0.1 m
0 - 984.3 ft. Resolution: 0.1 ft
0 - 164.0 fm Resolution: 0.1 fm

**Serial Ports:** Three RS 232 ports, 300-38,400 baud, optional RS 422.

**SCSI Port:** Standard. (Advanced Windows application software optional.)
*Note:* Contact manufacturer for PC requirements.

**Heave:** TSS and Seatex compatible.

**Position:** Compatible with all popular GPS receivers.

**Power Supply:** 9 to 36 VDC, 60 watts maximum. (12 or 24VDC nominal)
85 - 240 VAC adaptor available.

**Installation:** Bulkhead or 19" rack mountable. Includes custom Hardigg case.

**Dimensions:** W 432 x H 355 x D 241 mm. (16.5" x 14" x 9.5")

**Weight:** 19 kg. (40 lb)

**Units:** Metres, Feet or Fathoms

**Options:** Windows SCSI Application Software
Custom stand
Single frequency (upgradeable to dual frequency)
Transducer multiplexer
Transducers (many are available)
Transducer 'over the side' mounting brackets
Rackmount brackets
Remote Display
On-site training/installation

Printed in Canada
D10-01837R10

10 Industrial Rd. Perth Ontario Canada K7H 3P2 Phone: (613) 267-1165 US: (315) 393-8861
Fax: (613) 267-7085 Homepage: http://knudsenengineering.com Email: info@knudsenengineering.com

## A.4 Technical details for Workhorse Sentinel ADCP

# Workhorse Sentinel

SELF-CONTAINED 1200, 600, OR 300 kHz ADCP

## Technical Specifications

| Water Profiling | | | | | | |
|---|---|---|---|---|---|---|
| Depth | *Typical Range 12m*[2] | | *Typical Range 50m*[2] | | *Typical Range 110m*[2] | |
| Cell Size[1] | 1200kHz | | 600kHz | | 300kHz | |
| Vertical Resolution | Range[3] | Std. Dev.[4] | Range[3] | Std. Dev.[4] | Range[3] | Std. Dev.[4] |
| *0.25m* | *11–14m* | *12.9cm/s* | | | | |
| *0.5m* | *13–16m* | *6.1cm/s* | *39m* | *12.9cm/s* | *see note*[1] | |
| *1m* | *14–18m* | *3.0cm/s* | *43m* | *6.1cm/s* | *92–71m* | *12.8cm/s* |
| *2m* | *15–20m*[2] | *2.0cm/s* | *47m* | *3.0cm/s* | *102–78m* | *6.1cm/s* |
| *4m* | *see note*[1] | | *52m*[2] | *2.0cm/s* | *113–86m* | *3.0cm/s* |
| *8m* | | | | | *126–95m*[2] | *2.0cm/s* |

[1]User's choice of depth cell size is not limited to the typical values specified; [2]Longer ranges available; [3]Profiling range based on temperature values at 5°C and 20°C, salinity = 35ppt; [4]BroadBand mode single-ping standard deviation (Std. Dev.).

## Long Range Mode

| | Range (m) | Depth Cell Size (m) | Std. Dev. (cm/s) |
|---|---|---|---|
| 1200kHz | 24 | 2 | 3.5 |
| 600kHz | 70 | 4 | 3.8 |
| 300kHz | 165 | 8 | 3.8 |

## Profile Parameters

**Velocity accuracy:**
- 1200, 600: ±0.25% of the water velocity relative to the ADCP ±0.25cm/s
- 300: ±0.5% of the water velocity relative to the ADCP ±0.5cm/s

**Velocity resolution:** 0.1cm/s
**Velocity range:** ±5m/s (default)
±20m/s (maximum)
**Number of depth cells:** 1–128
**Ping rate:** 2Hz (typical)

## Echo Intensity Profile

**Vertical resolution:** Depth cell size
**Dynamic range:** 80dB
**Precision:** ±1.5dB (relative measure)

## Transducer and Hardware

**Beam angle:** 20°
**Configuration:** 4-beam, convex
**Internal memory:** Two PCMCIA card slots; one memory card included
**Communications:** Serial port selectable by switch for RS-232 or RS-422. ASCII or binary output at 1200–115,400 baud.

## Standard Sensors

**Temperature** (mounted on transducer):
Range: -5° to 45°C
Precision: ±0.4°C
Resolution: 0.01°

**Tilt:** Range: ±15°
Accuracy: ±0.5°
Precision: ±0.5°
Resolution: 0.01°

**Compass** (fluxgate type, includes built-in field calibration feature):
Accuracy: ±2° [4]
Precision: ±0.5° [4]
Resolution: 0.01°
Maximum tilt: ±15°

[4]@ 60° magnetic dip angle, 0.5G total field

## Power

**DC input:** 20–60VDC; internal battery pack, external battery pack, or external power supply
**Voltage:** 42VDC new; 28VDC depleted
**Capacity:** @ 0°C: 400 watt hours
**Transmit:**
- 16W @ 35V (1200kHz)
- 37W @ 35V (600kHz)
- 115W @ 35V (300kHz)

## Environmental

**Standard depth rating:** 200m; optional to 6000m
**Operating temperature:** -5° to 45°C
**Storage temperature:** -30° to 75°C
**Weight in air:** 13.0kg
**Weight in water:** 4.5kg

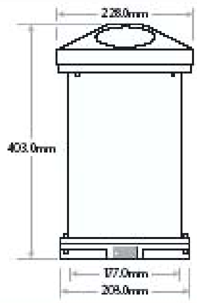
## Software

Use RDI's Windows™-based software for the best results:
- WinSC—Data Acquisition
- WinADCP—Data Display and Export

## Upgrades Available

- Memory: Up to 2 gigabytes
- Pressure sensor
- External battery case
- High-resolution water-profiling modes
- Bottom tracking
- AC/DC power converter, 48VDC output
- Pressure cases for depths up to 6000m

## Dimensions

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Acoustic Doppler Solutions
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*Specifications subject to change without notice. Rev. 0104*

# APPENDIX B.

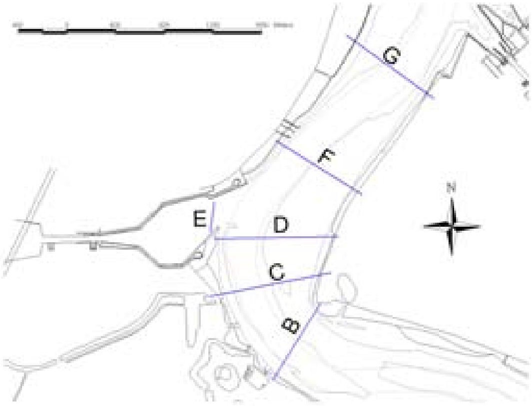
# OVERVIEW OF MEASUREMENTS

## B.1 Overview of the measurement locations for the whole HCBS measurement campaign

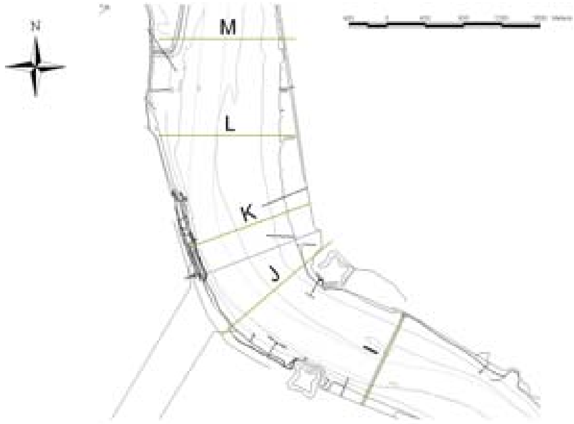
| Through tide measurements | | | | | |
|---|---|---|---|---|---|
| *Location* | *Easting (UTM ED 50)* | | *Northing (UTM ED 50)* | | *Period* |
| Kallo – Test (transect B) | *Left Bank* | *Right Bank* | *Left Bank* | *Right Bank* | 02/02/2005 |
| | 590901 | 591298 | 5678979 | 5679614 | |
| Kallo – Test (transect C) | *Left Bank* | *Right Bank* | *Left Bank* | *Right Bank* | 02/02/2005 |
| | 590394 | 591389 | 5679678 | 5679874 | |
| Kallo – Test (transect D) | *Left Bank* | *Right Bank* | *Left Bank* | *Right Bank* | 02/02/2005 |
| | 590542 | 590815 | 5680157 | 5680157 | |
| Kallo – Test (transect E) | *Left Bank* | *Right Bank* | *Left Bank* | *Right Bank* | 02/02/2005 |
| | 590390 | 590423 | 5680214 | 5680456 | |
| Kallo – Test (transect F) | *Left Bank* | *Right Bank* | *Left Bank* | *Right Bank* | 02/02/2005 |
| | 590999 | 591155 | 5680913 | 5680820 | |
| Kallo – Test (transect G) | *Left Bank* | *Right Bank* | *Left Bank* | *Right Bank* | 02/02/2005 |
| | 591506 | 592214 | 5681824 | 5681310 | |

| *Location* | *Easting (UTM ED 50)* | | *Northing (UTM ED 50)* | | *Period* |
|---|---|---|---|---|---|
| Deurganckdok – Test (transect I) | *Left Bank* | *Right Bank* | *Left Bank* | *Right Bank* | 03/02/2005 |
| | 590400 | 590556 | 5683474 | 5683860 | |
| Deurganckdok – Test (transect J) | *Left Bank* | *Right Bank* | *Left Bank* | *Right Bank* | 03/02/2005 |
| | 589117 | 589395 | 5684243 | 5684489 | |
| Deurganckdok – Test (transect K) | *Left Bank* | *Right Bank* | *Left Bank* | *Right Bank* | 03/02/2005 |
| | 588641 | 589014 | 5684987 | 5685122 | |
| Deurganckdok – Test (transect L) | *Left Bank* | *Right Bank* | *Left Bank* | *Right Bank* | 03/02/2005 |
| | 588350 | 588977 | 5686088 | 5686088 | |
| Deurganckdok – Test (transect M) | *Left Bank* | *Right Bank* | *Left Bank* | *Right Bank* | 03/02/2005 |
| | 588191 | 589627 | 5687088 | 5687088 | |

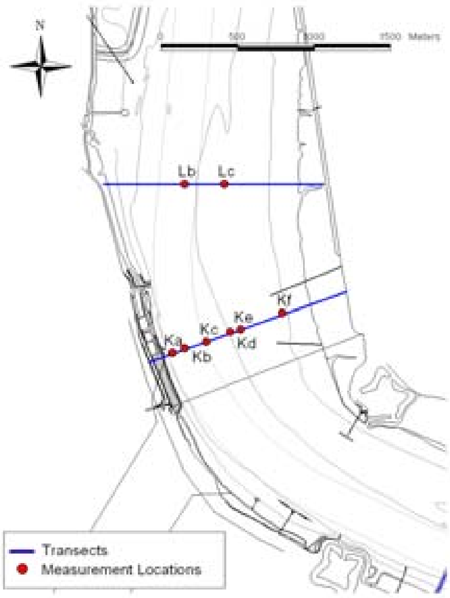
| | | | | | |
|---|---|---|---|---|---|
| Deurganckdok (transect K) | *Left Bank* | *Right Bank* | *Left Bank* | *Right Bank* | 16/02/2005 |
| | 588484 | 589775 | 5684924 | 5685384 | |
| Deurganckdok (transect L) | *Left Bank* | *Right Bank* | *Left Bank* | *Right Bank* | 16/02/2005 |
| | 588216 | 589639 | 5686088 | 589639 | |
| Deurganckdok | *Left Bank* | *Right Bank* | *Left Bank* | *Right Bank* | 17/02/2005 |
| | 588484 | 589775 | 5684924 | 5685383 | |
| Zandvliet | *Left Bank* | *Right Bank* | *Left Bank* | *Right Bank* | 17/02/2005 |
| | 586726 | 587757 | 5688355 | 5689950 | |
| Liefkenshoek | *Left Bank* | *Right Bank* | *Left Bank* | *Right Bank* | 17/02/2005 |
| | 590318 | 590771 | 5683302 | 5684257 | |
| Schelle | *Left Bank* | *Right Bank* | *Left Bank* | *Right Bank* | 17/02/2005 & 19/02/2005 |
| | 592645 | 592953 | 5665794 | 5665682 | |
| Kallo (transect D) | *Left Bank* | *Right Bank* | *Left Bank* | *Right Bank* | 18/02/2005 |
| | 590435 | 591408 | 5680153 | 5680172 | |
| Kallo (transect E) | *Left Bank* | *Right Bank* | *Left Bank* | *Right Bank* | 18/02/2005 |
| | 590386 | 590428 | 5680184 | 5680494 | |
| Kallo (transect F) | *Left Bank* | *Right Bank* | *Left Bank* | *Right Bank* | 18/02/2005 |
| | 590946 | 591596 | 5680947 | 5680542 | |
| **Near bed continuous monitoring** | | | | | |
| *Location* | *Easting (UTM ED 50)* | | *Northing (UTM ED 50)* | | *Period* |
| Kallo | 590767 | | 5680652 | | 03/02/2005 – 11/02/2005 |
| Deurganckdok downstream | 588653 | | 5684906 | | 17/02/2005 – 03/03/2005 |
| Buoy 84 | 589050 | | 5686088 | | 12/03/2005 – 25/03/2005 |
| Deurganckdok upstream | 589100 | | 5684230 | | 24/05/2005 – 08/06/2005 |
| **Settling velocity – INSSEV** | | | | | |
| *Location* | *Easting (UTM ED 50)* | | *Northing (UTM ED 50)* | | *Period* |
| Deurganckdok | 5885578 | | 5684793 | | 17/02/2005 & 18/02/2005 |
| Kallo | 590683 | | 5680551 | | 19/02/2005 |



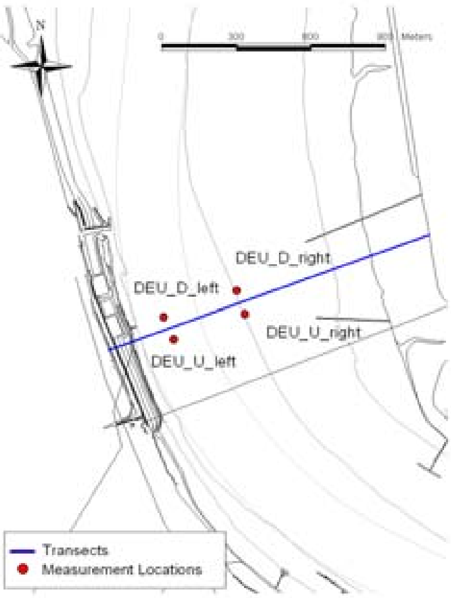

*Through tide measurements - Kallo 02/02/2005 (test)*



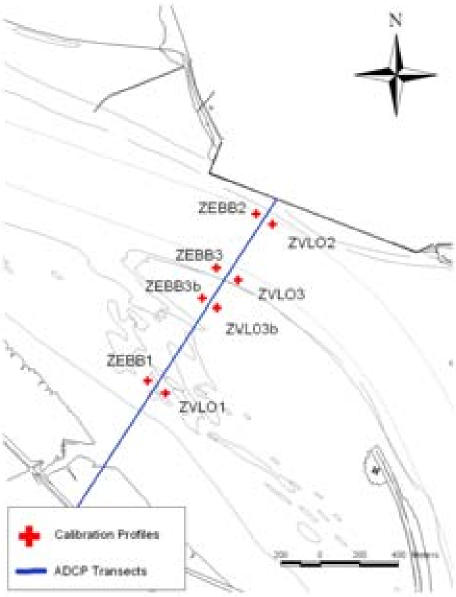

*Through tide measurements – Deurganckdok 03/02/2005 (test)*



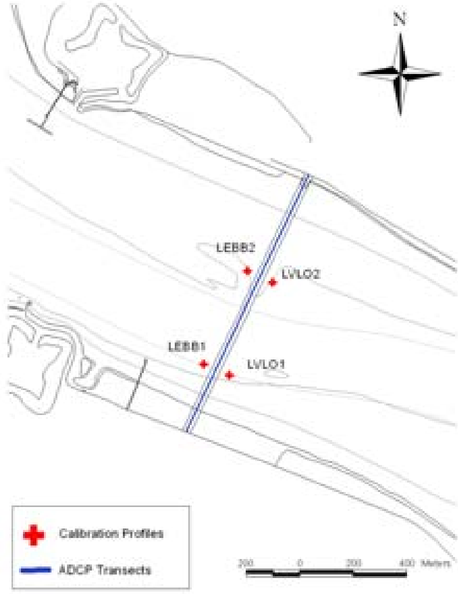

*Through tide measurements - Deurganckdok 16/02/2005*



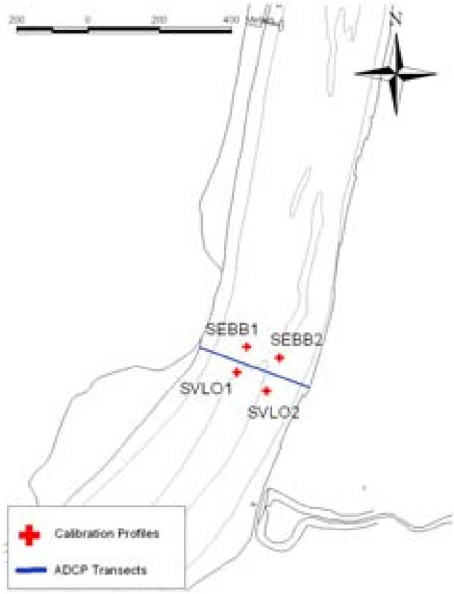

*Through tide measurements - Deurganckdok 17/02/2005*



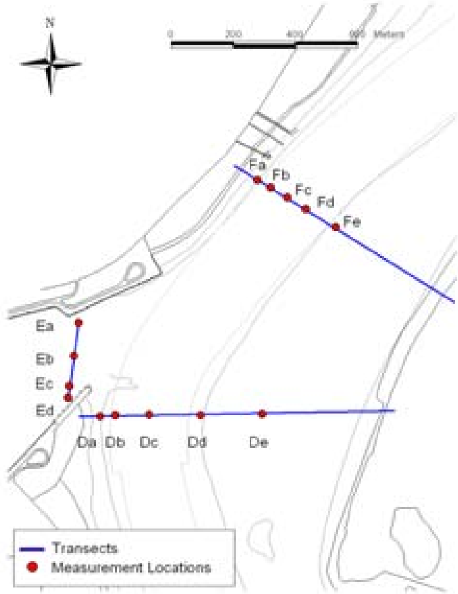

*Through tide measurements – Zandvliet 17/02/2005*



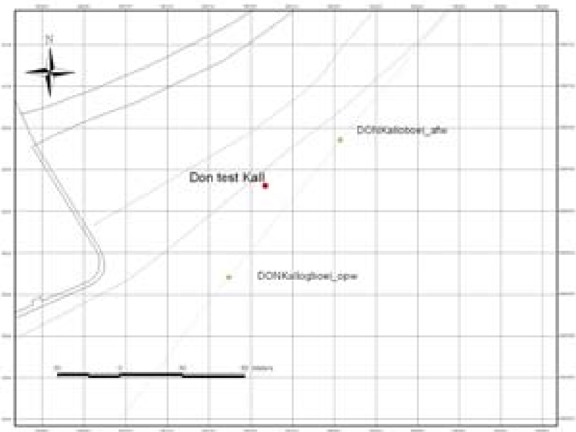

*Through tide measurements - Liefkenshoek 17/02/2005*



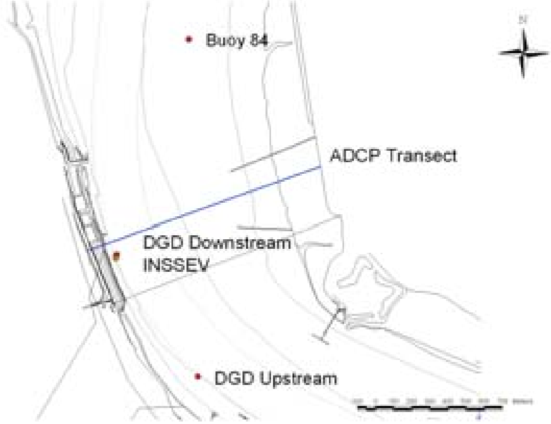

*Through tide measurements - Schelle 17/20/2005*



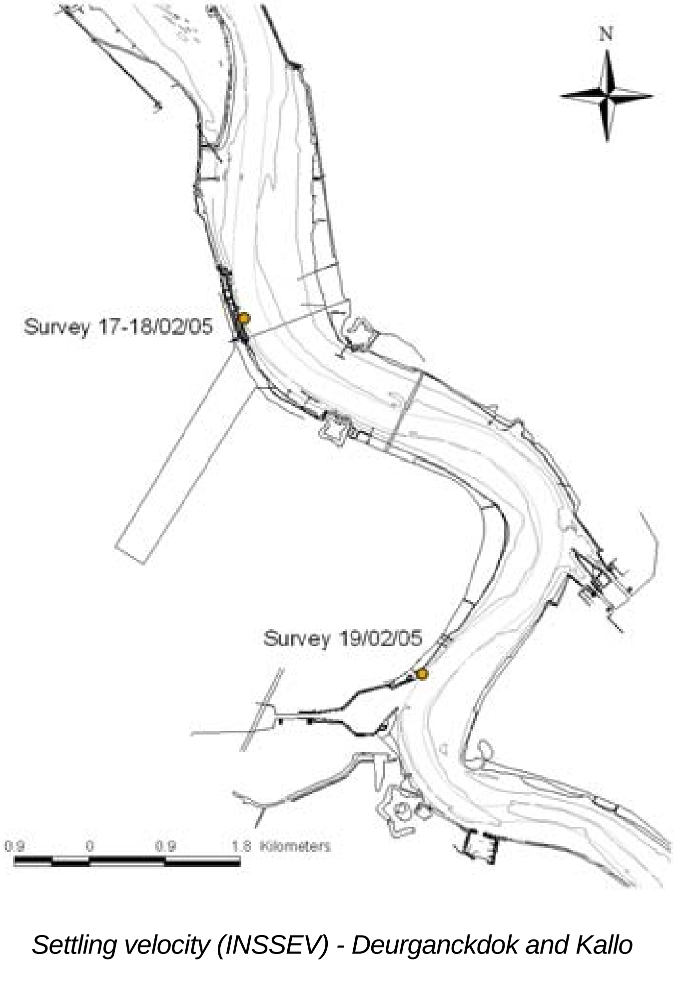

*Through tide measurements - Kallo 18/02/2005*




*Near bed continuous monitoring - Kallo (test)*




*Near bed continuous monitoring - vicinity Deurganckdok*

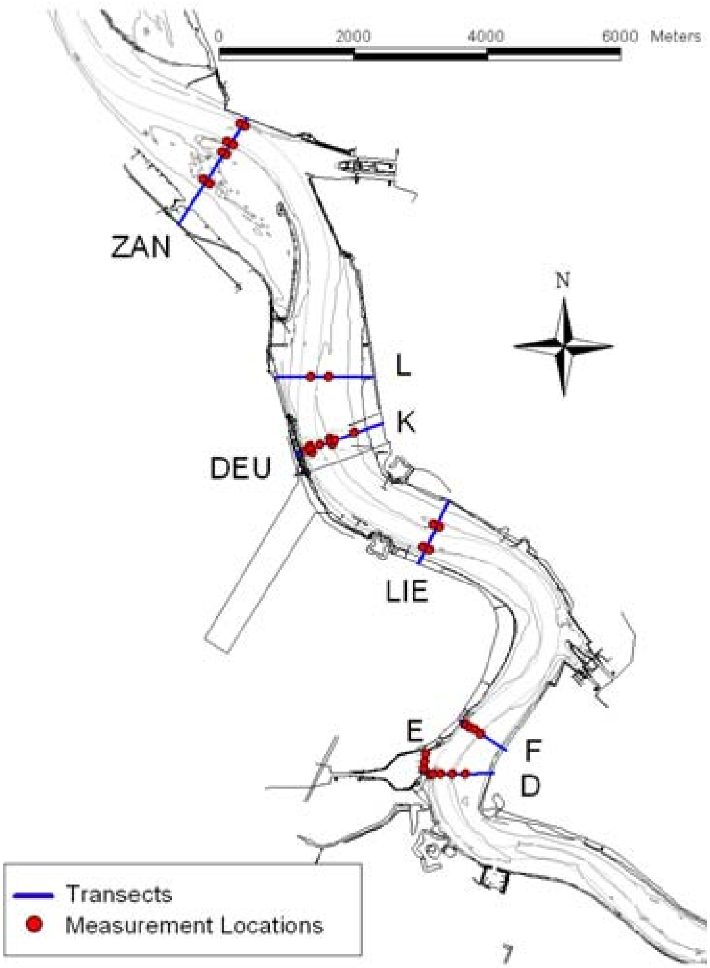


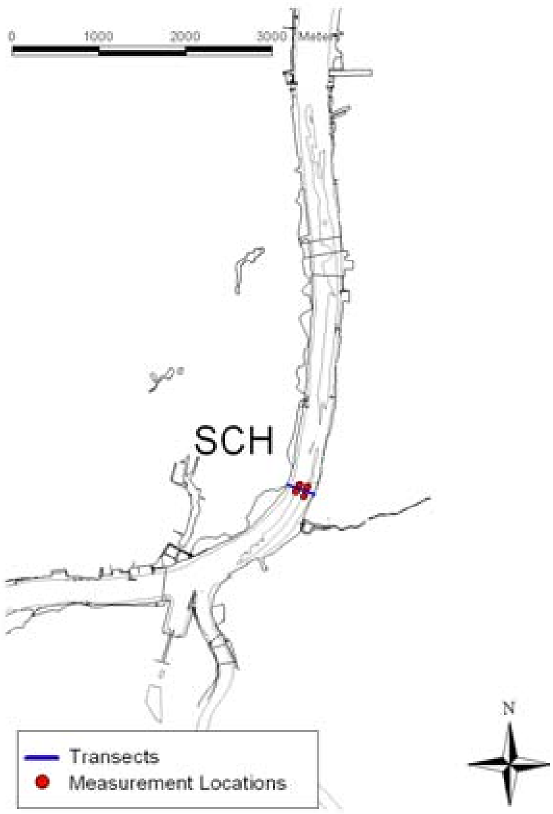

*Settling velocity (INSSEV) - Deurganckdok and Kallo*

## B.2 Overview of all measurement locations HCBS measurement campaign 16-17-18/2

### Transects

| *Name* | *left bank E* | *left bank N* | *right bank E* | *right bank N* | *Avg length* | *Avg Course* |
|---|---|---|---|---|---|---|
| SCH | 592,645 | 5,665,794 | 592,953 | 5,665,682 | 224 | 107 |
| LIE | 590,318 | 5,683,302 | 590,771 | 5,684,257 | 718 | 24 |
| DEU | 588,484 | 5,684,924 | 589,775 | 5,685,383 | 510 | 69 |
| ZAN | 586,726 | 5,688,355 | 587,757 | 5,689,950 | 1074 | 32 |
| D | 590,435 | 5,680,153 | 591,408 | 5,680,172 | 457 | 89 |
| E | 590,386 | 5,680,184 | 590,428 | 5,680,494 | 242 | 190 |
| F | 590,946 | 5,680,947 | 591,596 | 5,680,542 | 441 | 123 |
| K | 588,484 | 5,684,924 | 589,775 | 5,685,384 | 529 | 71 |
| L | 588,216 | 5,686,088 | 589,639 | 5,686,088 | 83 | 90 |



# Measurement points

**DAY 1 (16 febr 2005):** *OOSTENDE XI Deurganckdok*

| ***Trackletter*** | ***Measurement point*** | ***Easting*** | ***Northing*** | ***Average Depth [m TAW]*** |
|---|---|---|---|---|
| **K** | **a** | 588,641 | 5,684,987 | -14.5 |
| | **b** | 588,720 | 5,685,015 | -13 |
| | **c** | 588,861 | 5,685,059 | -13.8 |
| | **d** | 589,014 | 5,685,122 | -9.1 |
| | **e** | 589,084 | 5,685,140 | -5.4 |
| | **f** | 589,354 | 5,685,245 | -2.3 |
| | | | | |
| **L** | **b** | 588,719 | 5,686,088 | -12.9 |
| | **c** | 588,977 | 5,686,088 | -7.9 |

**DAY 2 (17 febr 2005)**

| ***Measurement point*** | **Bank** | ***Easting*** | ***Northing*** | ***Average Depth [m TAW]*** |
|---|---|---|---|---|
| ZEBB1 | left bank | 587,104 | 5,689,033 | -9.84 |
| ZEBB2 | right bank | 587,652 | 5,689,878 | -11.84 |
| ZEBB3 | middle | 587,453 | 5,689,601 | no sampling |
| ZEBB3b | middle | 587,383 | 5,689,450 | -7.14 |
| ZVLO1 | left bank | 587,196 | 5,688,970 | -10.24 |
| ZVLO2 | right bank | 587,736 | 5,689,825 | -12.44 |
| ZVLO3 | middle | 587,561 | 5,689,543 | -11.11 |
| ZVLO3b | middle | 587,455 | 5,689,403 | -6.62 |
| DEU_D | left bank | 588,641 | 5,685,033 | -13.5 |
| DEU_D | right bank | 588,999 | 5,685,160 | -8.7 |
| DEU_U | left bank | 588,672 | 5,684,937 | -14.7 |
| DEU_U | right bank | 589,033 | 5,685,066 | -9.4 |
| LEBB1 | left bank | 590,384 | 5,683,557 | -11.37 |
| LEBB2 | right bank | 590,544 | 5,683,899 | -9.73 |
| LVLO1 | left bank | 590,476 | 5,683,514 | -11.09 |
| LVLO2 | right bank | 590,638 | 5,683,857 | -10.24 |
| SEBB1 | left bank | 592,778 | 5,665,797 | -8.1 |
| SEBB2 | right bank | 592,868 | 5,665,766 | -7.44 |
| SVLO1 | left bank | 592,750 | 5,665,725 | -9.1 |
| SVLO2 | right bank | 592,833 | 5,665,673 | -6.58 |

**DAY 3 (18 febr 2005):** *OOSTENDE XI Kallo*

| *Trackletter* | *Measurement point* | *Easting* | *Northing* | *Average Depth [m TAW]* |
|---|---|---|---|---|
| **D** | **a** | 590,492 | 5,680,153 | -10.5 |
| | **b** | 590,542 | 5,680,157 | -12 |
| | **c** | 590,650 | 5,680,160 | -14.6 |
| | **d** | 590,815 | 5,680,157 | -7.5 |
| | **e** | 591,014 | 5,680,161 | -1.9 |
| | | | | |
| **E** | **a** | 590,423 | 5,680,456 | -9.3 |
| | **b** | 590,408 | 5,680,349 | -9.8 |
| | **c** | 590,393 | 5,680,252 | -9.4 |
| | **d** | 590,390 | 5,680,214 | -6.6 |
| | | | | |
| **F** | **a** | 590,999 | 5,680,913 | -11.1 |
| | **b** | 591,040 | 5,680,889 | -12.3 |
| | **c** | 591,095 | 5,680,856 | -13.4 |
| | **d** | 591,155 | 5,680,820 | -13.7 |
| | **e** | 591,250 | 5,680,760 | -8.8 |

## B.3 Measurement overview Kallo 18/02/05

| Nr | Trans. | Loc. | Start Time (MET) | Time b/a HW | Navi-OBS | Siltprofiler | ADCP | Samples |
|---|---|---|---|---|---|---|---|---|
| 1 | F | a | 5:26 | -5:04 | X | X | | |
| 2 | F | b | 5:31 | -4:59 | X | X | X | X |
| 3 | F | c | 5:46 | -4:44 | X | X | | |
| 4 | F | d | 5:51 | -4:39 | X | X | | |
| 5 | F | e | 5:56 | -4:34 | X | X | X | X |
| 6 | F | transect | 6:03 | -4:27 | | | X | |
| 7 | F | a | 6:10 | -4:20 | X | X | | |
| 8 | F | b | 6:14 | -4:16 | X | X | X | X |
| 9 | F | c | 6:19 | -4:11 | X | X | | |
| 10 | F | d | 6:23 | -4:07 | X | X | | |
| 11 | F | e | 6:27 | -4:03 | X | X | X | X |
| 12 | F | transect | 6:32 | -3:58 | | | X | |
| 13 | F | a | 6:39 | -3:51 | X | X | | |
| 14 | F | b | 6:42 | -3:48 | X | X | X | X |
| 15 | F | c | 6:48 | -3:42 | X | X | | |
| 16 | F | d | 6:52 | -3:38 | X | X | | |
| 17 | F | e | 6:56 | -3:34 | X | X | X | X |
| 18 | F | transect | 7:00 | -3:30 | | | X | |
| 19 | F | a | 7:10 | -3:20 | X | X | | |
| 20 | F | b | 7:19 | -3:11 | X | X | X | X |
| 21 | F | c | 7:24 | -3:06 | X | X | | |
| 22 | F | d | 7:30 | -3:00 | X | X | | |
| 23 | F | e | 7:36 | -2:54 | X | X | X | X |
| 24 | F | transect | 7:41 | -2:49 | | | X | |
| 25 | F | a | 7:51 | -2:39 | X | X | | |
| 26 | F | b | 7:54 | -2:36 | X | X | X | X |
| 27 | F | c | 7:59 | -2:31 | X | X | | |
| 28 | F | e | 8:07 | -2:23 | X | X | X | X |
| 29 | F | transect | 8:16 | -2:14 | | | X | |
| 30 | F | e | 8:18 | -2:12 | | X | | |
| 31 | F | transect | 8:20 | -2:10 | | | X | |
| 32 | F | b | 8:26 | -2:04 | X | X | X | X |
| 33 | E | d | 8:38 | -1:52 | X | X | | |
| 34 | E | c | 8:42 | -1:48 | X | X | X | X |
| 35 | E | b | 8:49 | -1:41 | X | X | | |
| 36 | E | a | 8:52 | -1:38 | X | X | | |
| 37 | E | transect | 8:55 | -1:35 | | | X | |

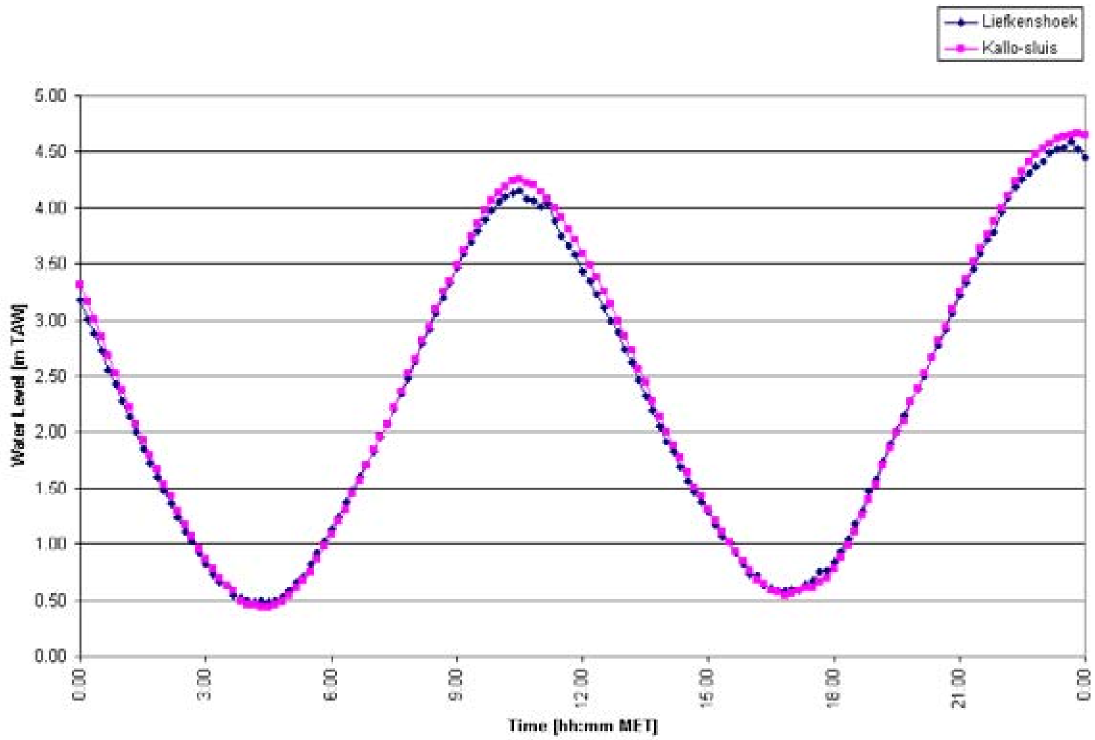
| Nr | Trans. | Loc. | Start Time (MET) | Time b/a HW | Navi-OBS | Siltprofiler | ADCP | Samples |
|---|---|---|---|---|---|---|---|---|
| 38 | E | d | 9:00 | -1:30 | X | X | | |
| 39 | E | c | 9:02 | -1:28 | X | X | | |
| 40 | E | b | 9:07 | -1:23 | X | X | X | X |
| 41 | E | a | 9:12 | -1:18 | X | X | | |
| 42 | E | transect | 9:15 | -1:15 | | | X | |
| 43 | E | d | 9:19 | -1:11 | X | X | | |
| 44 | E | c | 9:24 | -1:06 | X | X | | |
| 45 | E | b | 9:30 | -1:00 | X | X | | |
| 46 | E | a | 9:34 | -0:56 | X | X | X | X |
| 47 | E | transect | 9:39 | -0:51 | | | X | |
| 48 | E | d | 9:44 | -0:46 | | | X | |
| 49 | E | c | 9:49 | -0:41 | X | X | X | X |
| 50 | E | c | | N/A | | X | | |
| 51 | E | b | 10:02 | -0:28 | X | X | | |
| 52 | E | a | 10:02 | -0:28 | X | X | | |
| 53 | E | transect | 10:07 | -0:23 | | | X | |
| 54 | E | d | 10:13 | -0:17 | X | X | | |
| 55 | E | c | 10:17 | -0:13 | X | X | | |
| 56 | E | b | 10:20 | -0:10 | X | X | X | X |
| 57 | E | a | 10:26 | -0:04 | X | X | | |
| 58 | E | transect | 10:28 | -0:02 | | | X | |
| 59 | E | d | 10:42 | 0:12 | X | X | | |
| 60 | E | c | 10:46 | 0:16 | X | X | | |
| 61 | E | b | 10:54 | 0:24 | X | X | | |
| 62 | E | a | 10:57 | 0:27 | X | X | X | X |
| 63 | E | transect | 11:03 | 0:33 | | | X | |
| 64 | D | a | 11:24 | 0:54 | X | X | | |
| 65 | D | b | 11:29 | 0:59 | X | X | X | X |
| 66 | D | c | 11:32 | 1:02 | X | X | | |
| 67 | D | d | 11:37 | 1:07 | X | X | | |
| 68 | D | e | 11:41 | 1:11 | X | X | | |
| 69 | D | transect | 11:43 | 1:13 | | | X | |
| 70 | D | a | 11:49 | 1:19 | X | X | | |
| 71 | D | b | 11:51 | 1:21 | X | X | | |
| 72 | D | c | 11:55 | 1:25 | X | X | X | X |
| 73 | D | d | 12:01 | 1:31 | X | X | | |
| 74 | D | e | 12:05 | 1:35 | X | X | | |
| 75 | D | transect | 12:07 | 1:37 | | | X | |
| 76 | D | a | 12:29 | 1:59 | X | X | | |
| 77 | D | b | 12:33 | 2:03 | X | X | | |

| Nr | Trans. | Loc. | Start Time (MET) | Time b/a HW | Navi-OBS | Siltprofiler | ADCP | Samples |
|---|---|---|---|---|---|---|---|---|
| 78 | D | c | 12:36 | 2:06 | X | X | | |
| 79 | D | d | 12:41 | 2:11 | X | X | X | X |
| 80 | D | e | 12:46 | 2:16 | X | X | | |
| 81 | D | transect | 12:49 | 2:19 | | | X | |
| 82 | D | a | 12:55 | 2:25 | X | X | | |
| 83 | D | b | 12:59 | 2:29 | X | X | X | X |
| 84 | D | b | 13:06 | 2:36 | X | | X | X |
| 85 | D | b | 13:08 | 2:38 | X | | X | X |
| 86 | D | c | 13:13 | 2:43 | X | X | | |
| 87 | D | d | 13:19 | 2:49 | X | X | | |
| 88 | D | e | 13:23 | 2:53 | X | X | | |
| 89 | D | transect | 13:27 | 2:57 | | | X | |
| 90 | D | a | 13:34 | 3:04 | X | X | | |
| 91 | D | b | 13:38 | 3:08 | X | X | | |
| 92 | D | c | 13:44 | 3:14 | X | X | X | X |
| 93 | D | d | 13:52 | 3:22 | X | X | | |
| 94 | D | e | 13:58 | 3:28 | X | X | | |
| 94bis | D | transect | | | | | X | |
| 95 | D | a | 14:12 | 3:42 | X | | X | X |
| 96 | D | b | 14:19 | 3:49 | X | | X | X |
| 97 | D | c | 14:25 | 3:55 | X | X | | |
| 98 | D | d | 14:31 | 4:01 | X | X | X | X |
| 99 | D | transect | 14:37 | 4:07 | | | X | |
| 100 | D | a | 14:43 | 4:13 | X | | X | X |
| 101 | D | b | 14:48 | 4:18 | X | | X | X |
| 102 | D | c | 14:56 | 4:26 | X | X | | |
| 103 | D | d | 15:04 | 4:34 | X | X | | |
| 104 | D | transect | | N/A | | | X | |
| 105 | D | a | 15:17 | 4:47 | X | X | | |
| 106 | D | b | 15:21 | 4:51 | | X | | |
| 107 | D | c | 15:28 | 4:58 | X | X | X | X |
| 108 | D | d | 15:33 | 5:03 | X | X | | |
| 109 | D | transect | 15:36 | 5:06 | | | X | |
| 110 | D | a | 15:44 | 5:14 | X | X | | |
| 111 | D | b | 15:47 | 5:17 | X | X | | |
| 112 | D | c | 15:52 | 5:22 | X | X | | |
| 113 | D | d | 15:56 | 5:26 | X | X | X | X |
| 114 | D | transect | | N/A | | | X | |
| 115 | D | a | 16:06 | 5:36 | X | X | | |
| 116 | D | b | 16:09 | 5:39 | X | X | X | X |

| Nr | Trans. | Loc. | Start Time (MET) | Time b/a HW | Navi-OBS | Siltprofiler | ADCP | Samples |
|---|---|---|---|---|---|---|---|---|
| 117 | D | c | 16:14 | 5:44 | X | X | X | X |
| 118 | D | d | 16:20 | 5:50 | X | X | | |
| 119 | D | transect | 16:23 | 5:53 | | | X | |
| 120 | D | a | 16:30 | 6:00 | X | X | | |
| 121 | D | b | 16:32 | 6:02 | X | X | X | X |
| 122 | D | c | 16:38 | 6:08 | X | X | | |
| 123 | D | d | 16:42 | 6:12 | X | X | | |
| 124 | D | transect | 16:45 | 6:15 | | | X | |
| 125 | D | a | 16:51 | -6:49 | X | X | | |
| 126 | D | b | 16:54 | -6:46 | X | X | | |
| 127 | D | c | 16:57 | -6:43 | X | X | | |
| 128 | D | d | 17:00 | -6:40 | X | X | X | X |
| 129 | D | transect | 17:04 | -6:36 | | | X | |
| 130 | D | a | 17:09 | -6:31 | X | X | | |
| 131 | D | b | 17:12 | -6:28 | X | X | X | X |
| 132 | D | c | 17:18 | -6:22 | X | X | | |
| 133 | D | d | 17:22 | -6:18 | X | X | | |
| 134 | D | transect | | N/A | | | X | |
| 135 | D | a | 17:30 | -6:10 | X | X | | |
| 136 | D | b | 17:32 | -6:08 | X | X | | |
| 137 | D | c | 17:35 | -6:05 | X | X | X | X |
| 138 | D | d | 17:42 | -5:58 | X | X | | |
| 139 | D | transect | 17:45 | -5:55 | | | X | |
| 140 | D | d | 17:53 | -5:47 | X | X | X | X |
| 141 | D | c | 18:00 | -5:40 | X | X | | |
| 142 | D | b | 18:04 | -5:36 | X | X | X | X |
| 143 | D | a | 18:08 | -5:32 | X | X | | |
| 144 | D | transect | | N/A | | | X | |

# APPENDIX C. TIDAL DATA

11265 HCBS - FEBRUARY 2005 SURVEY




| Measured tide on 18/02/2005 | | Data processed by: |
|---|---|---|
| Location: River Scheldt | Date: 18/02/2005 | In association with: I/RA/11265/05.014MSA |

# APPENDIX D.

# NAVIGATION INFORMATION AS RECORDED ON SITE

| *Ship:* | **Oostende XI** |
|---|---|
| ***Location:*** | **Kallo** |

| *Nr.* | *Time (MET)* | *Type ship* | *Direction (upstream, downstream)* |
|---|---|---|---|
| *1* | 5:36 | jade river | *downstream* |
| *2* | 5:42 | seaship | *upstream* |
| *3* | 6:54 | inland ship | *upstream* |
| *4* | 6:56 | inland ship | *upstream* |
| *5* | 7:01 | jade river | *upstream* |
| *6* | 6:59 | 2 inland ships | *upstream* |
| *7* | 7:02 | inland ship | *downstream* |
| *8* | 7:09 | inland ship | *downstream* |
| *9* | 7:12 | tug boat | *upstream* |
| *10* | 7:16 | coaster | *upstream* |
| *11* | 7:23 | coaster | *downstream* |
| *12* | 7:45 | inland ship | *downstream* |
| *13* | 8:02 | 5 x inland ship | *downstream* |
| *14* | 8:10 | seaship | *upstream* |
| *15* | 8:12 | seaship | *downstream* |
| *16* | 8:13 | inland ship | *upstream* |
| *17* | 8:40 | tug boat | *downstream* |
| *18* | 8:50 | tug boat | *downstream* |
| *19* | 9:05 | jade river | *upstream* |
| *20* | 9:13 | 2 inland ships | *upstream* |
| *21* | 9:17 | 3 inland ships | *upstream* |
| *22* | 9:30 | jade river | *downstream* |
| *23* | 9:54 | 4 inland ships | *downstream* |
| *24* | 10:22 | inland ship | *upstream* |
| *25* | 10:43 | inland ship | *upstream* |

| Nr. | Time (MET) | Type ship | Direction (upstream, downstream) |
|---|---|---|---|
| 26 | 10:48 | 3 inland ships | downstream |
| 27 | 11:00 | jade river | upstream |
| 28 | 11:01 | 2 inland ships | upstream |
| 29 | 11:03 | coaster | upstream |
| 30 | 11:21 | inland ship | upstream |
| 31 | 11:24 | jade river | downstream |
| 32 | 12:47 | 1 inland ship + 1 tugboat | downstream |
| 33 | 12:57 | jade river | upstream |
| 34 | 13:20 | inland ship | downstream |
| 35 | 13:47 | 3 inland ship | upstream |
| 36 | 13:52 | jade river | downstream |
| 37 | 13:55 | 2 inland ships | downstream |
| 38 | 14:10 | dijle | upstream |
| 39 | 14:12 | bumkerboot | downstream |
| 40 | 14:53 | inland ship | upstream |
| 41 | 15:03 | inland ship | downstream |
| 42 | 15:06 | 2 inland ships | downstream |
| 43 | 15:07 | 2 inland ships | downstream |
| 44 | 15:08 | hefponton | downstream |
| 45 | 15:16 | 2 inland ships | downstream |
| 46 | 15:22 | 2 inland ships | downstream |
| 47 | 15:26 | jade river | upstream |
| 48 | 15:29 | inland ship | upstream |
| 49 | 15:37 | inland ship | downstream |
| 50 | 15:43 | tug boat | upstream |
| 51 | 15:46 | coaster | upstream |
| 52 | 15:58 | inland ship | downstream |
| 53 | 16:02 | vessel | downstream |
| 54 | 16:40 | inland ship | downstream |
| 55 | 16:54 | inland ship | downstream |
| 56 | 16:57 | inland ship | downstream |
| 57 | 17:17 | inland ship | downstream |
| 58 | 17:21 | 2 inland ships | upstream |

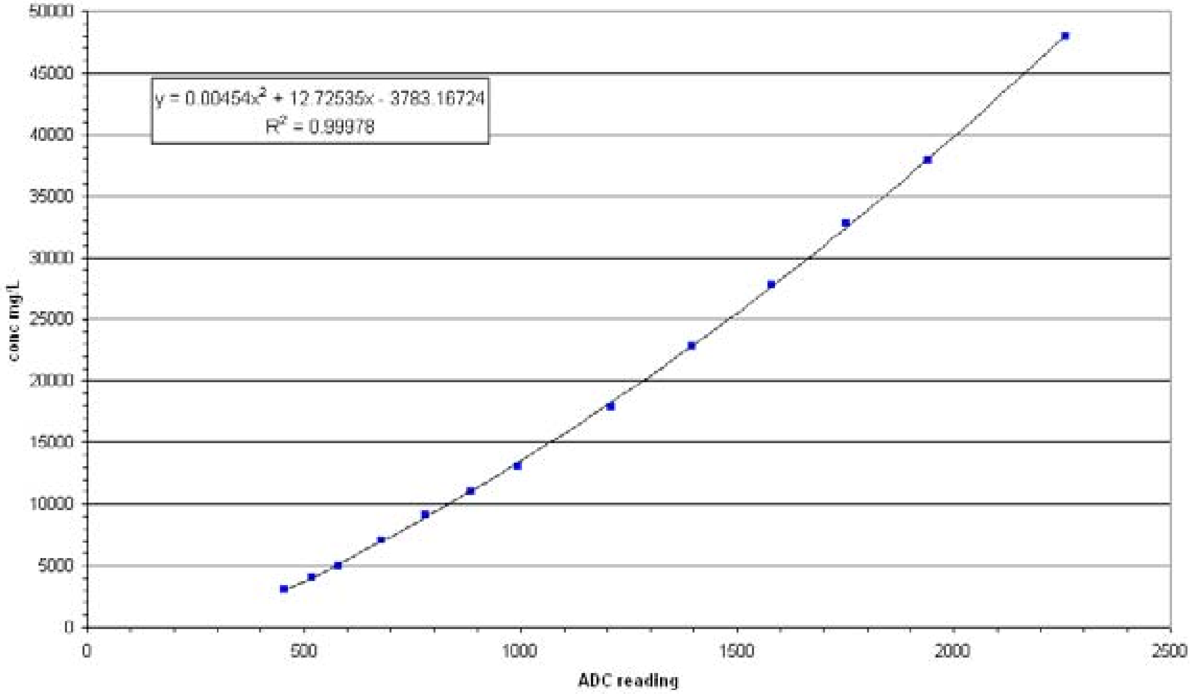
| ***Nr.*** | ***Time (MET)*** | ***Type ship*** | ***Direction (upstream, downstream)*** |
|---|---|---|---|
| ***59*** | 17:25 | 2 inland ships | ***upstream*** |
| ***60*** | 17:43 | tug boat | ***downstream*** |
| ***61*** | 17:45 | inland ship | ***upstream*** |
| ***62*** | 17:58 | jade river | ***upstream*** |
| ***63*** | 18:03 | inland ship | ***upstream*** |

# APPENDIX E.

# CALIBRATION AND CROSS-CALIBRATION GRAPHS

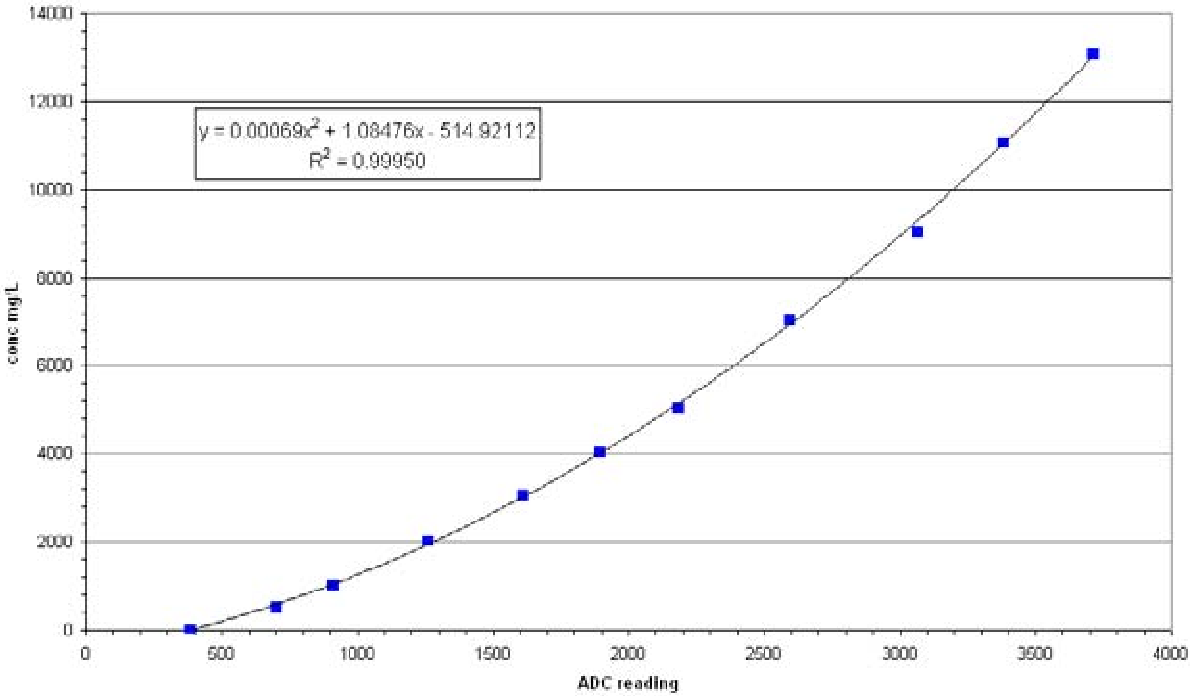
# FOR OBS DATA

# 11265 HCBS - FEBRUARY 2005 SURVEY




| Calibration Graph of Siltprofiler High Range | | Data processed by: IMDC |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | In association with: WL \| delft hydraulics, GEMS International |
| | | I/RA/11265/05.014MSA |

# 11265 HCBS - FEBRUARY 2005 SURVEY




Calibration Graph of Siltprofiler Low Range

Location: Kallo

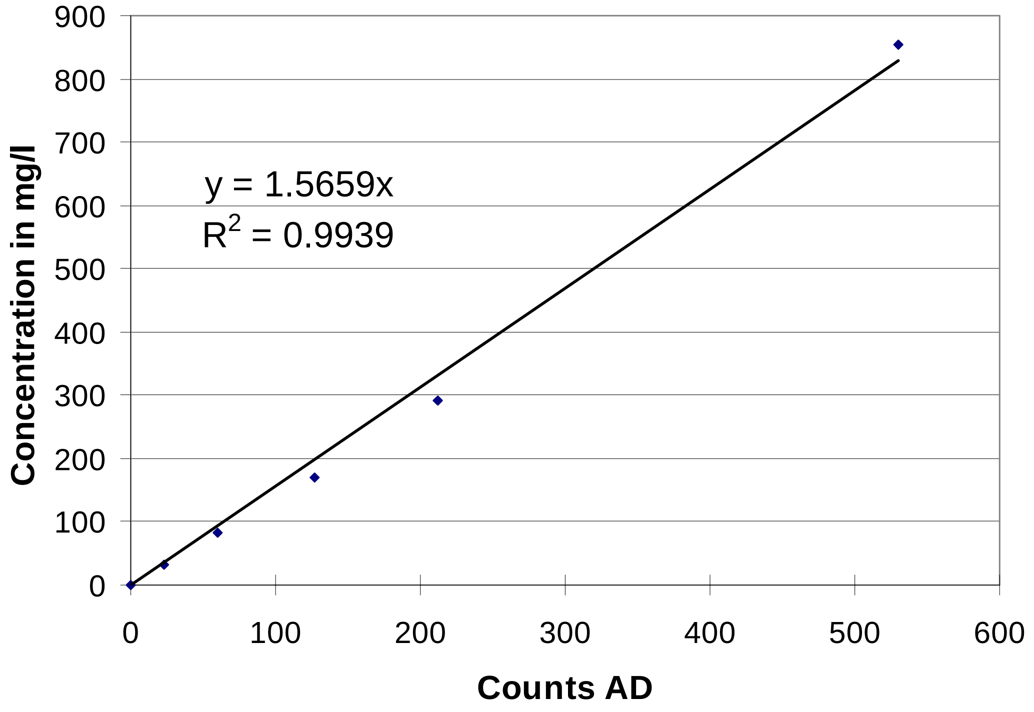
Date: 18/02/2005

*Data processed by:*

*In association with:*

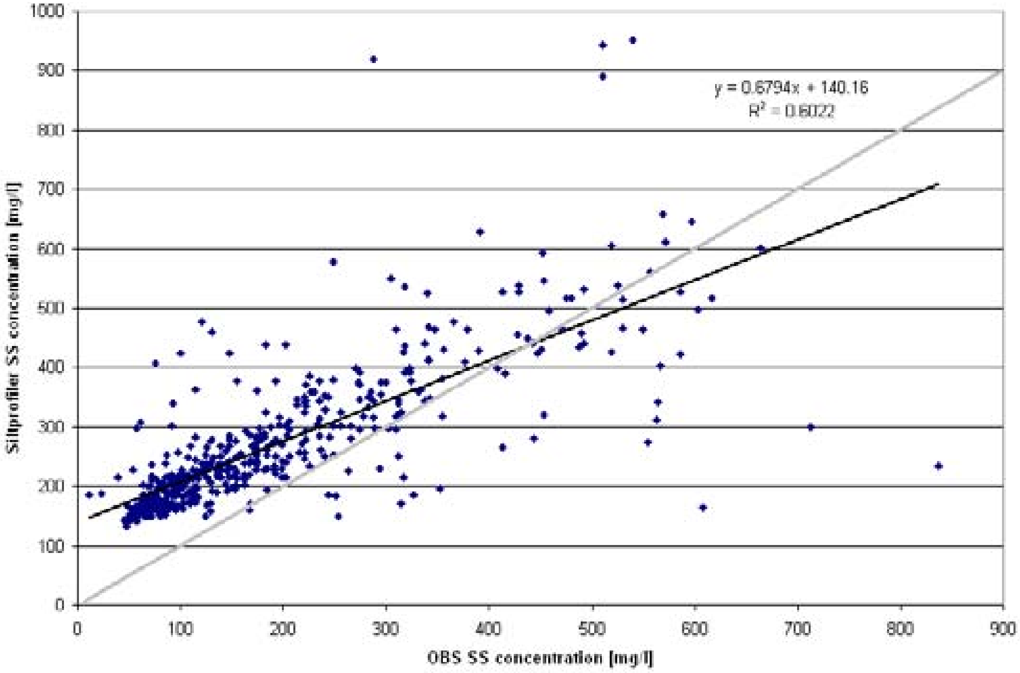
*I/RA/11265/05.014MSA*

## 11265 HCBS - FEBRUARY 2005 SURVEY




| Calibration Graph of OBS- Oostende XI | | Data processed by: |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | In association with: |
| | | I/RA/11265/05.014MSA |

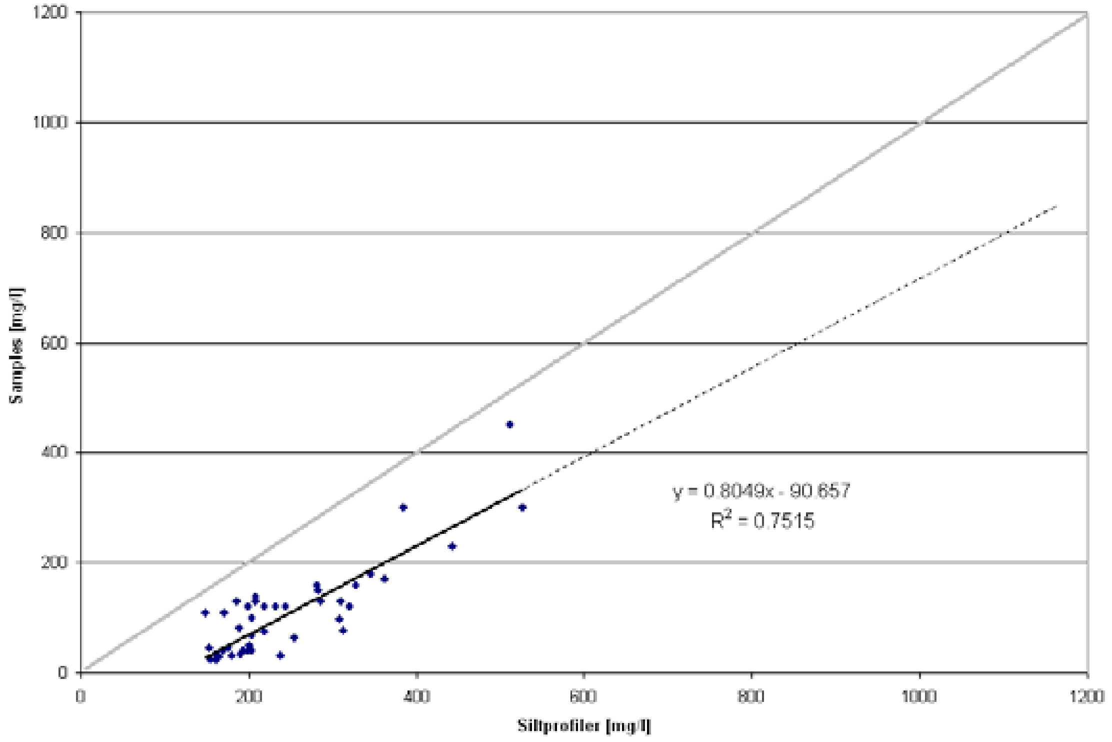
# 11265 HCBS - FEBRUARY 2005 SURVEY




Comparison of precalibrated OBS SS concentrations vs precalibrated Siltprofiler SS concentrations

| Location: Kallo | Date: 18/02/2005 | *Data processed by:* IMDC<br>*In association with:* wl \| delft hydraulics, GEMS International<br>*I/RA/11265/05.014MSA* |
| --- | --- | --- |

# 11265 HCBS - FEBRUARY 2005 SURVEY




Cross-calibration for Siltprofiler suspended sediment concentration

Location: Kallo

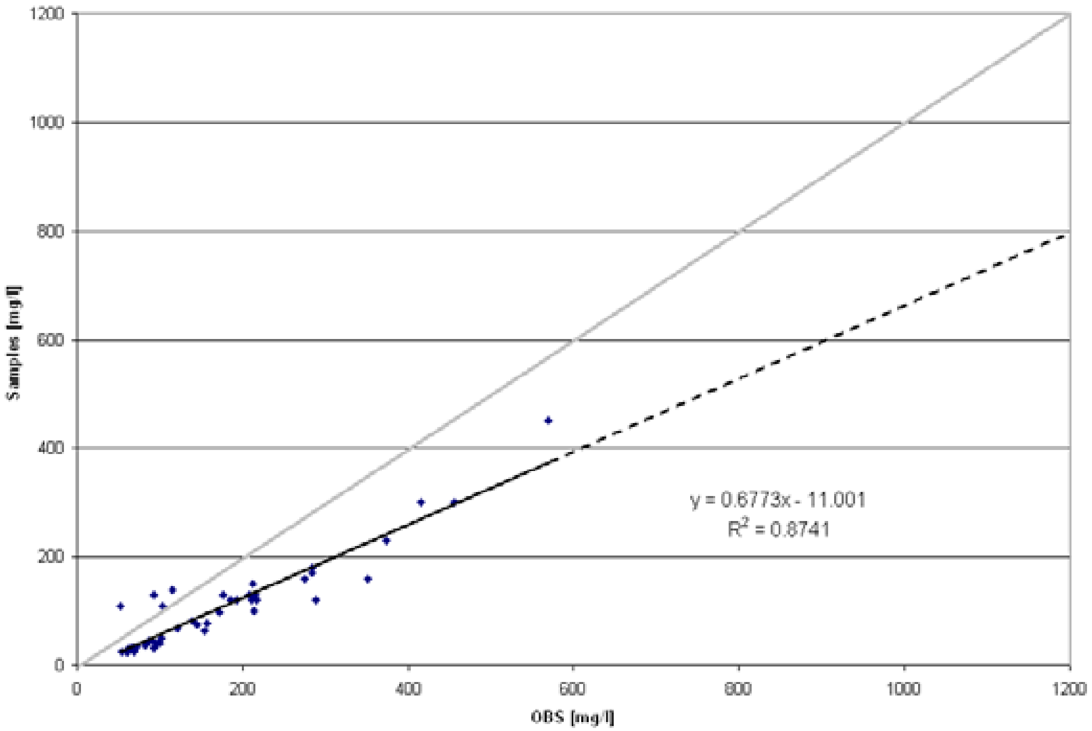
Date: 18/02/2005

*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

# 11265 HCBS - FEBRUARY 2005 SURVEY




| Cross-calibration for OBS suspended sediment concentration | | *Data processed by:* IMDC |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* wl \| delft hydraulics, GEMS International<br>*I/RA/11265/05.014MSA* |

# APPENDIX F.

# UNESCO PPS-78 FORMULA FOR CALCULATING SALINITY

## Practical Salinity Scale (PPS 78) Salinity in the range of 2 to 42

**Constants from the 19th Edition of Standard Methods**

| | | |
|---|---|---|
| R cond.ratio | 0.0117 | $R = \frac{C}{42.914 mS/cm}$ |
| **C Cond at t** | **0.5** | **Input conductivity in mS/cm of sample** |
| **t deg. C** | **22.00** | **Input temperature of sample solution** |
| **P dBar** | **20** | **Input pressure at which sample is measured in decibars** |
| Rp | 1.0020845 | $R_p = 1 + \frac{p(e_1 + e_2 p + e_3 p^2)}{1 + d_1 t + d_2 t^2 + (d_3 + d_4 t)R}$ |
| rt | 1.1641102 | $r_t = c_0 + c_1 t + c_2 t^2 + c_3 t^3 + c_4 t^4$ |
| Rt | 0.0099879 | $R_t = \frac{R}{R_p \times r_t}$ |
| Delta S | -0.0010 | $\text{Delta S} = \frac{(t-15)}{1+k(t-15)}(b_0 + b_1 R_t^{1/2} + b_2 R_t + b_3 R_t^{3/2} + b_4 R_t^2 + b_5 R_t^{5/2})$ |
| **S = Salinity** | **0.257** | $S = a_0 + a_1 R_t^{1/2} + a_2 R_t + a_3 R_t^{3/2} + a_4 R_t^2 + a_5 R_t^{5/2} + \text{delta S}$ |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| a0 | 0.0080 | b0 | 0.0005 | c0 | 0.6766097 | d1 | 3.426E-02 | e1 | 2.070E-04 |
| a1 | -0.1692 | b1 | -0.0056 | c1 | 2.00564E-02 | d2 | 4.464E-04 | e2 | -6.370E-08 |
| a2 | 25.3851 | b2 | -0.0066 | c2 | 1.104259E-04 | d3 | 4.215E-01 | e3 | 3.989E-12 |
| a3 | 14.0941 | b3 | -0.0375 | c3 | -6.9698E-07 | d4 | -3.107E-03 | | |
| a4 | -7.0261 | b4 | 0.0636 | c4 | 1.0031E-09 | | | | |
| a5 | 2.7081 | b5 | -0.0144 | | | | | | |
| | | k | 0.0162 | | | | | | |

**R** = ratio of measured conductivity to the conductivity of the Standard Seawater Solution

Conductivity Ratio R is a function of salinity, temperature, and hydraulic pressure. So that we can factor R into three parts i.e.

**R = Rt x Rp x rt**

**R = C(S,t,p)/C(35,15,0)**

**C = 42.914 mS/cm at 15 deg C and 0 dbar pressure ie C(35,15,0) where 35 is the salinity**

**Ocean pressure is usually measured in decibars. 1 dbar = 10^-1 bar = 10^5 dyne/cm^2 = 10^4 Pascal.**

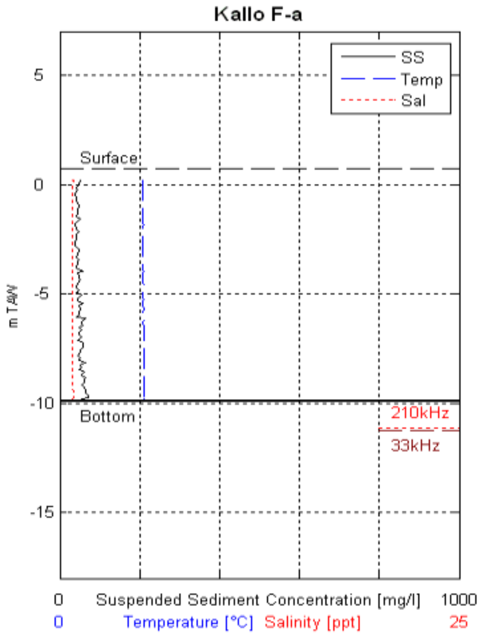
# APPENDIX G.

# NAVITRACKER-OBS AND SILTPROFILER GRAPHS

## G.1 Transect F

### G.1.1. Measurement location a

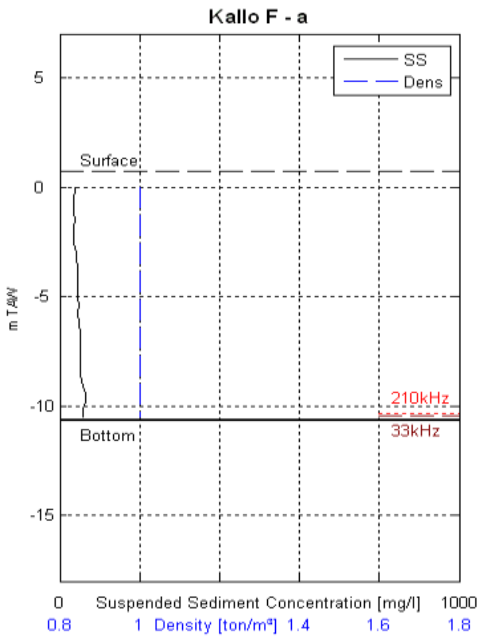
| 11265 HCBS - FEBRUARY 2005 SURVEY | 1 Fa |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 05:27 |
| Time after/before HT [MET]: | -5:02 |
| Coordinates [UTM-ED50] Easting: | 590983 |
| Coordinates [UTM-ED50] Northing: | 5680902 |
| Water-Bottom Interface Siltpr. [m TAW]: | -9.91 |
| Waterdepth 210 kHz Echo [m TAW]: | -11.13 |
| Waterdepth 33 kHz Echo [m TAW]: | -11.26 |
| Surface elevation [m TAW]: | 0.73 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.21 | 5.2 | 0.8 | 52 |
| -4.46 | 5.2 | 0.8 | 55 |
| -6.35 | 5.2 | 0.8 | 49 |
| -9.28 | 5.3 | 0.8 | 58 |
| -9.39 | 5.3 | 0.8 | 50 |
| -9.50 | 5.3 | 0.8 | 56 |
| -9.60 | 5.3 | 0.8 | 50 |
| -9.63 | 5.3 | 0.8 | 88 |
| -9.64 | 5.3 | 0.9 | 77 |
| -9.65 | 5.3 | 0.8 | 65 |
| -9.67 | 5.3 | 0.9 | 48 |
| -9.68 | 5.3 | 0.8 | 60 |
| -9.69 | 5.3 | 0.8 | 56 |
| -9.70 | 5.3 | 0.9 | 58 |
| -9.71 | 5.3 | 0.9 | 69 |
| -9.72 | 5.3 | 0.9 | 75 |
| -9.73 | 5.3 | 0.8 | 67 |
| -9.74 | 5.3 | 0.9 | 73 |
| -9.75 | 5.3 | 0.8 | 75 |
| -9.76 | 5.3 | 0.8 | 79 |
| -9.77 | 5.3 | 0.8 | 75 |
| -9.80 | 5.3 | 0.8 | 56 |
| **Depth Avg** | **5.2** | **0.8** | **49** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -10.35 |
| Waterdepth 33 kHz Echo [m TAW]: | -10.42 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -10.67 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| -0.01 | 42 | NaN |
| -1.13 | 36 | 1.000 |
| -2.18 | 36 | 1.000 |
| -3.29 | 42 | 1.000 |
| -4.33 | 46 | 1.000 |
| -5.38 | 45 | 1.000 |
| -6.40 | 46 | 1.000 |
| -7.40 | 51 | 1.000 |
| -8.41 | 53 | 1.000 |
| -8.75 | 48 | 1.000 |
| -9.08 | 56 | 1.000 |
| -9.42 | 65 | 1.000 |
| -9.79 | 63 | 1.000 |
| -10.10 | 59 | 1.000 |
| -10.44 | 59 | 1.000 |
| -10.57 | 56 | 1.000 |
| **Depth Avg** | **46** | **1.000** |

Siltprofiler & Navitracker-OBS

Location: Kallo

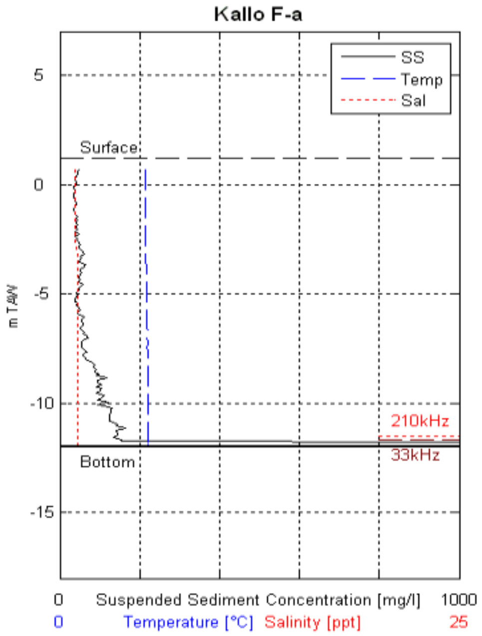
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

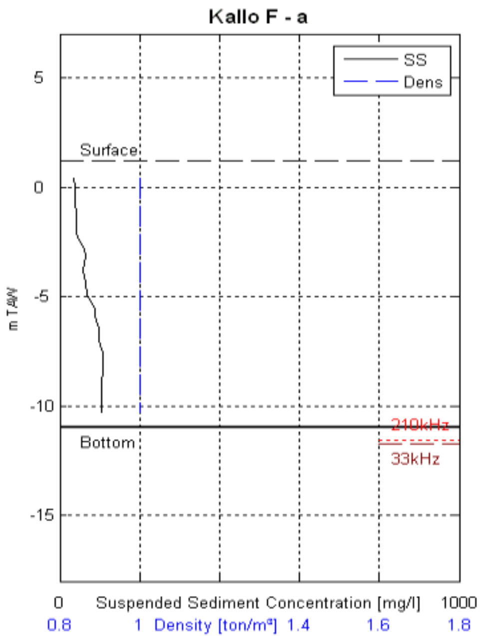
# 11265 HCBS - FEBRUARY 2005 SURVEY | 7 Fa




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 06:11 |
| Time after/before HT [MET]: | -4:18 |
| Coordinates [UTM-ED50] Easting: | 591004 |
| Coordinates [UTM-ED50] Northing: | 5680907 |
| Water-Bottom Interface Siltpr. [m TAW]: | -12.01 |
| Waterdepth 210 kHz Echo [m TAW]: | -11.52 |
| Waterdepth 33 kHz Echo [m TAW]: | -11.68 |
| Surface elevation [m TAW]: | 1.21 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.70 | 5.3 | 0.9 | 55 |
| -5.66 | 5.5 | 1.2 | 50 |
| -8.06 | 5.5 | 1.2 | 79 |
| -11.40 | 5.5 | 1.2 | 155 |
| -11.49 | 5.5 | 1.2 | 134 |
| -11.59 | 5.5 | 1.2 | 145 |
| -11.70 | 5.5 | 1.2 | 142 |
| -11.73 | 5.5 | 1.2 | 188 |
| -11.74 | 5.5 | 1.2 | 115 |
| -11.75 | 5.5 | 1.2 | 124 |
| -11.77 | 5.5 | 1.2 | 184 |
| -11.78 | 5.5 | 1.2 | 190 |
| -11.80 | 5.5 | 1.2 | 202 |
| -11.81 | 5.5 | 1.2 | 187 |
| -11.82 | 5.5 | 1.2 | 137 |
| -11.84 | 5.5 | 1.2 | 86 |
| -11.85 | 5.5 | 1.2 | 128 |
| -11.86 | 5.5 | 1.2 | 170 |
| -11.87 | 5.5 | 1.2 | 143 |
| -11.88 | 5.5 | 1.2 | 154 |
| -11.89 | 5.5 | 1.2 | 205 |
| -11.90 | 5.5 | 1.2 | 2335 |
| **Depth Avg** | **5.4** | **1.1** | **83** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -11.58 |
| Waterdepth 33 kHz Echo [m TAW]: | -11.7 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -10.99 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.45 | 38 | 1.000 |
| -0.68 | 40 | 1.000 |
| -1.73 | 43 | 1.000 |
| -2.78 | 59 | 1.000 |
| -3.84 | 59 | 1.000 |
| -4.88 | 67 | 1.000 |
| -5.90 | 84 | 1.000 |
| -6.92 | 97 | 1.000 |
| -8.25 | 106 | 1.000 |
| -8.91 | 103 | 1.000 |
| -9.27 | 106 | 1.000 |
| -9.60 | 104 | 1.000 |
| -9.95 | 103 | 1.000 |
| -10.28 | 103 | 1.000 |
| -10.61 | 108 | 1.000 |
| -10.86 | 113 | 1.000 |
| -10.88 | 123 | 1.000 |
| -10.89 | 114 | 1.000 |
| **Depth Avg** | **72** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location:
Kallo

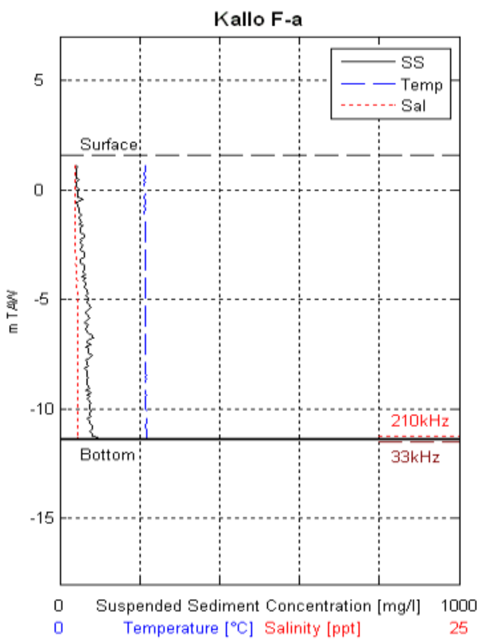
Date:
18/02/2005

*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

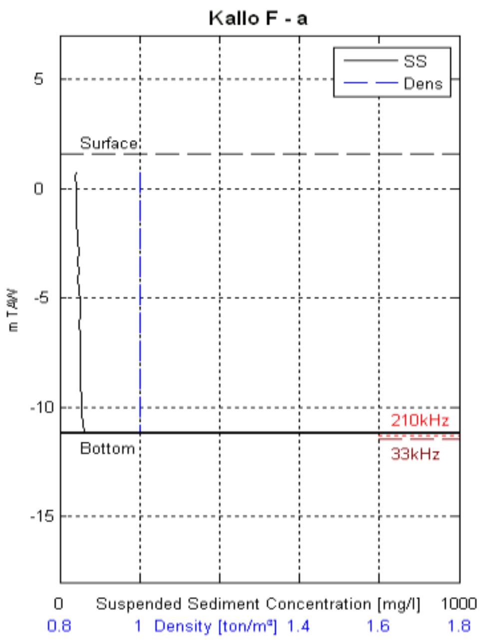
| 11265 HCBS - FEBRUARY 2005 SURVEY | 13 Fa |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 06:39 |
| Time after/before HT [MET]: | -3:50 |
| Coordinates [UTM-ED50] Easting: | 591002 |
| Coordinates [UTM-ED50] Northing: | 5680913 |
| Water-Bottom Interface Siltpr. [m TAW]: | -11.41 |
| Waterdepth 210 kHz Echo [m TAW]: | -11.25 |
| Waterdepth 33 kHz Echo [m TAW]: | -11.51 |
| Surface elevation [m TAW]: | 1.56 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 1.13 | 5.3 | 1.0 | 39 |
| -4.32 | 5.3 | 1.1 | 77 |
| -6.75 | 5.4 | 1.1 | 122 |
| -10.80 | 5.4 | 1.1 | 88 |
| -10.90 | 5.4 | 1.1 | 79 |
| -11.00 | 5.4 | 1.1 | 62 |
| -11.10 | 5.4 | 1.1 | 70 |
| -11.12 | 5.4 | 1.1 | 63 |
| -11.13 | 5.4 | 1.1 | 85 |
| -11.14 | 5.4 | 1.1 | 73 |
| -11.16 | 5.4 | 1.1 | 75 |
| -11.17 | 5.4 | 1.1 | 96 |
| -11.18 | 5.4 | 1.1 | 92 |
| -11.19 | 5.4 | 1.1 | 76 |
| -11.22 | 5.4 | 1.1 | 82 |
| -11.23 | 5.4 | 1.1 | 69 |
| -11.24 | 5.4 | 1.1 | 85 |
| -11.25 | 5.4 | 1.1 | 85 |
| -11.26 | 5.4 | 1.1 | 75 |
| -11.27 | 5.4 | 1.1 | 88 |
| -11.29 | 5.4 | 1.1 | 80 |
| -11.30 | 5.4 | 1.1 | 93 |
| **Depth Avg** | **5.4** | **1.0** | **62** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -11.32 |
| Waterdepth 33 kHz Echo [m TAW]: | -11.44 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -11.21 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.73 | 45 | 1.000 |
| -0.33 | 42 | 1.000 |
| -1.61 | 42 | 1.000 |
| -2.88 | 48 | 1.000 |
| -4.16 | 43 | 1.000 |
| -5.38 | 52 | 1.000 |
| -6.63 | 51 | 1.000 |
| -7.86 | 53 | 1.000 |
| -9.07 | 53 | 1.000 |
| -9.47 | 55 | 1.000 |
| -9.89 | 55 | 1.000 |
| -10.28 | 56 | 1.000 |
| -10.69 | 56 | 1.000 |
| -11.11 | 61 | 1.000 |
| **Depth Avg** | **48** | **1.000** |

Siltprofiler & Navitracker-OBS

Location: Kallo

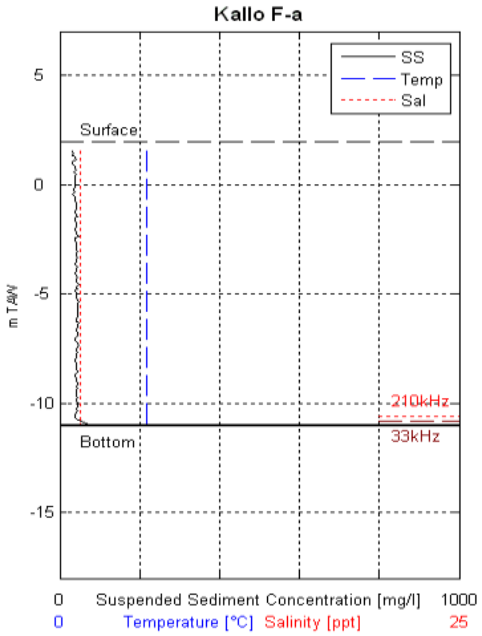
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

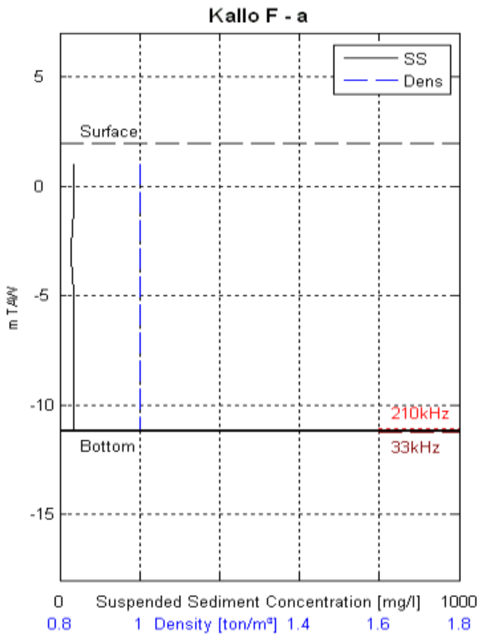
# 11265 HCBS - FEBRUARY 2005 SURVEY — 19 Fa




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 07:10 |
| Time after/before HT [MET]: | -3:19 |
| Coordinates [UTM-ED50] Easting: | 590996 |
| Coordinates [UTM-ED50] Northing: | 5680909 |
| Water-Bottom Interface Siltpr. [m TAW]: | -11.05 |
| Waterdepth 210 kHz Echo [m TAW]: | -10.59 |
| Waterdepth 33 kHz Echo [m TAW]: | -10.82 |
| Surface elevation [m TAW]: | 1.96 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 1.55 | 5.4 | 1.3 | 34 |
| -4.74 | 5.4 | 1.3 | 42 |
| -6.75 | 5.4 | 1.3 | 45 |
| -10.39 | 5.4 | 1.3 | 42 |
| -10.53 | 5.4 | 1.3 | 45 |
| -10.63 | 5.4 | 1.3 | 39 |
| -10.73 | 5.4 | 1.3 | 43 |
| -10.73 | 5.4 | 1.3 | 43 |
| -10.76 | 5.4 | 1.3 | 42 |
| -10.78 | 5.4 | 1.3 | 46 |
| -10.79 | 5.4 | 1.3 | 55 |
| -10.80 | 5.4 | 1.3 | 35 |
| -10.81 | 5.4 | 1.3 | 38 |
| -10.84 | 5.4 | 1.3 | 35 |
| -10.86 | 5.5 | 1.3 | 41 |
| -10.94 | 5.4 | 1.3 | 67 |
| **Depth Avg** | **5.4** | **1.3** | **41** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -11.09 |
| Waterdepth 33 kHz Echo [m TAW]: | -11.26 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -11.19 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 1.07 | 35 | 1.000 |
| -0.01 | 36 | 1.000 |
| -1.29 | 35 | 1.000 |
| -2.58 | 31 | 1.000 |
| -3.86 | 30 | 1.000 |
| -5.09 | 35 | 1.000 |
| -6.30 | 38 | 1.000 |
| -7.49 | 36 | 1.000 |
| -8.74 | 35 | 1.000 |
| -9.16 | 33 | 1.000 |
| -9.55 | 35 | 1.000 |
| -9.97 | 36 | 1.000 |
| -10.37 | 36 | 1.000 |
| -10.78 | 38 | 1.000 |
| -11.08 | 35 | 1.000 |
| -11.09 | 38 | 1.000 |
| **Depth Avg** | **35** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: **Kallo**

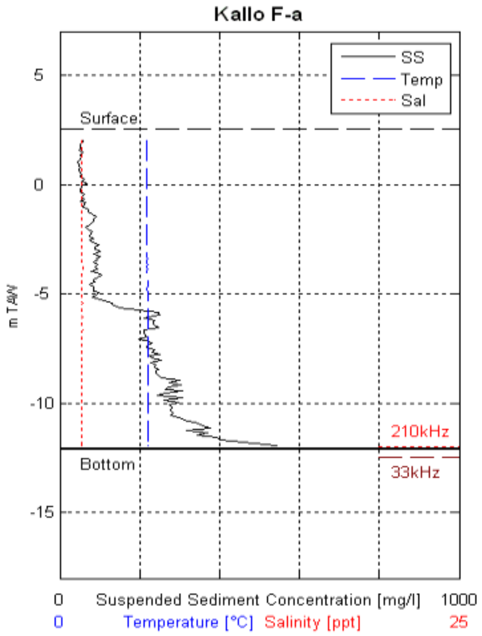
Date: **18/02/2005**

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

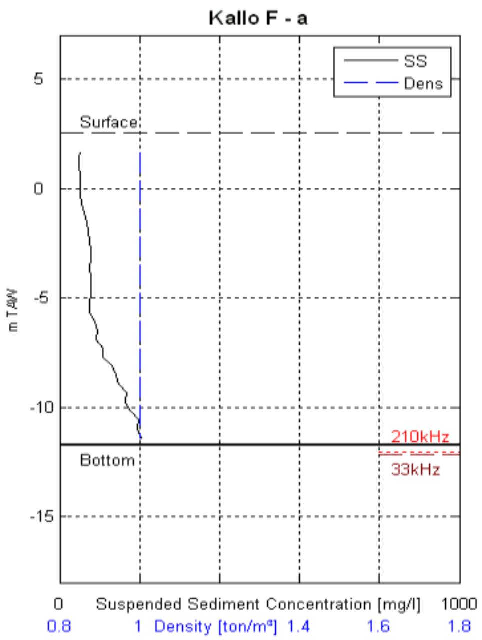
# 11265 HCBS - FEBRUARY 2005 SURVEY | 25 Fa




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 07:52 |
| Time after/before HT [MET]: | -2:37 |
| Coordinates [UTM-ED50] Easting: | 591010 |
| Coordinates [UTM-ED50] Northing: | 5680904 |
| Water-Bottom Interface Siltpr. [m TAW]: | -12.09 |
| Waterdepth 210 kHz Echo [m TAW]: | -12.00 |
| Waterdepth 33 kHz Echo [m TAW]: | -12.49 |
| Surface elevation [m TAW]: | 2.54 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 2.06 | 5.4 | 1.3 | 58 |
| -4.91 | 5.5 | 1.3 | 115 |
| -7.46 | 5.5 | 1.4 | 200 |
| -11.48 | 5.5 | 1.3 | 377 |
| -11.58 | 5.5 | 1.3 | 464 |
| -11.67 | 5.5 | 1.3 | 396 |
| -11.76 | 5.5 | 1.3 | 406 |
| -11.80 | 5.5 | 1.3 | 413 |
| -11.82 | 5.5 | 1.3 | 403 |
| -11.83 | 5.5 | 1.3 | 405 |
| -11.85 | 5.5 | 1.3 | 567 |
| -11.86 | 5.5 | 1.3 | 512 |
| -11.87 | 5.5 | 1.3 | 524 |
| -11.89 | 5.5 | 1.4 | 523 |
| -11.90 | 5.5 | 1.4 | 559 |
| -11.91 | 5.5 | 1.3 | 535 |
| -11.92 | 5.5 | 1.3 | 533 |
| -11.94 | 5.5 | 1.3 | 502 |
| -11.95 | 5.5 | 1.3 | 530 |
| -11.96 | 5.5 | 1.4 | 563 |
| -11.97 | 5.5 | 1.4 | 516 |
| -11.98 | 5.5 | 1.3 | 902 |
| **Depth Avg** | **5.5** | **1.4** | **161** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -12.03 |
| Waterdepth 33 kHz Echo [m TAW]: | -12.15 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -11.71 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 1.67 | 52 | 1.000 |
| 0.62 | 52 | 1.000 |
| -0.67 | 52 | 1.000 |
| -1.93 | 67 | 1.000 |
| -3.22 | 78 | 1.000 |
| -4.44 | 77 | 1.000 |
| -5.66 | 73 | 1.000 |
| -6.90 | 92 | 1.000 |
| -8.11 | 114 | 1.000 |
| -9.33 | 173 | 1.000 |
| -9.75 | 162 | 1.000 |
| -10.16 | 180 | 1.000 |
| -10.57 | 204 | 1.000 |
| -10.96 | 198 | 1.000 |
| -11.39 | 196 | 1.000 |
| -11.61 | 235 | 1.000 |
| **Depth Avg** | **95** | **1.000** |

Siltprofiler & Navitracker-OBS

Location: Kallo

Date: 18/02/2005

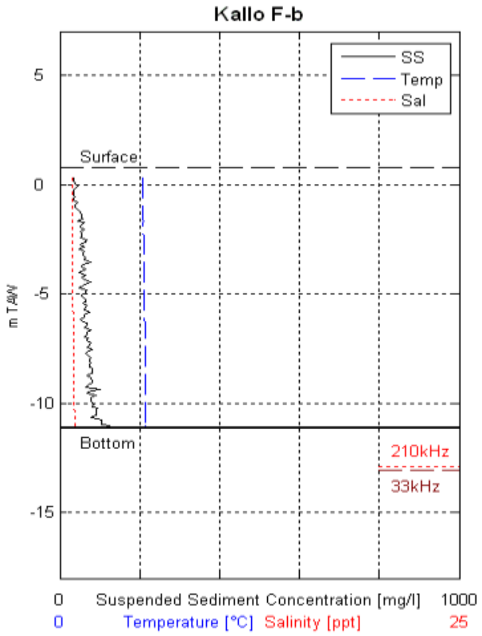
*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

### G.1.2. Measurement location b

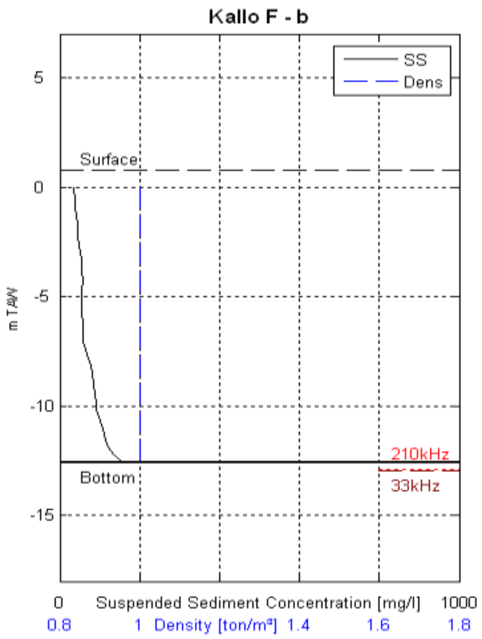
# 11265 HCBS - FEBRUARY 2005 SURVEY | 2 Fb




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 05:32 |
| Time after/before HT [MET]: | -4:57 |
| Coordinates [UTM-ED50] Easting: | 591040 |
| Coordinates [UTM-ED50] Northing: | 5680882 |
| Water-Bottom Interface Siltpr. [m TAW]: | -11.14 |
| Waterdepth 210 kHz Echo [m TAW]: | -12.92 |
| Waterdepth 33 kHz Echo [m TAW]: | -13.08 |
| Surface elevation [m TAW]: | 0.77 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.33 | 5.2 | 0.8 | 38 |
| -4.63 | 5.3 | 0.8 | 52 |
| -6.76 | 5.3 | 0.9 | 69 |
| -10.52 | 5.4 | 1.0 | 49 |
| -10.62 | 5.4 | 1.0 | 65 |
| -10.71 | 5.4 | 1.0 | 75 |
| -10.82 | 5.4 | 1.0 | 143 |
| -10.82 | 5.4 | 1.0 | 143 |
| -10.83 | 5.4 | 1.0 | 139 |
| -10.84 | 5.4 | 1.0 | 103 |
| -10.86 | 5.4 | 1.0 | 146 |
| -10.88 | 5.4 | 1.0 | 117 |
| -10.89 | 5.4 | 1.0 | 96 |
| -10.93 | 5.4 | 1.0 | 121 |
| -10.94 | 5.4 | 1.0 | 82 |
| -10.96 | 5.4 | 1.0 | 88 |
| -10.97 | 5.4 | 1.0 | 122 |
| -10.98 | 5.4 | 1.0 | 105 |
| -10.99 | 5.4 | 1.0 | 140 |
| -11.02 | 5.4 | 1.0 | 121 |
| -11.03 | 5.4 | 1.0 | 130 |
| **Depth Avg** | **5.3** | **0.9** | **64** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -12.9 |
| Waterdepth 33 kHz Echo [m TAW]: | -12.97 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -12.56 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.00 | 35 | 1.000 |
| -1.29 | 41 | 1.000 |
| -2.37 | 46 | 1.000 |
| -3.63 | 57 | 1.000 |
| -4.70 | 56 | 1.000 |
| -5.72 | 53 | 1.000 |
| -7.05 | 61 | 1.000 |
| -8.17 | 81 | 1.000 |
| -9.18 | 86 | 1.000 |
| -10.18 | 94 | 1.000 |
| -10.51 | 96 | 1.000 |
| -10.87 | 103 | 1.000 |
| -11.19 | 107 | 1.000 |
| -11.54 | 114 | 1.000 |
| -11.89 | 119 | 1.000 |
| -12.21 | 123 | 1.000 |
| -12.44 | 144 | 1.000 |
| -12.46 | 157 | 1.000 |
| **Depth Avg** | **67** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

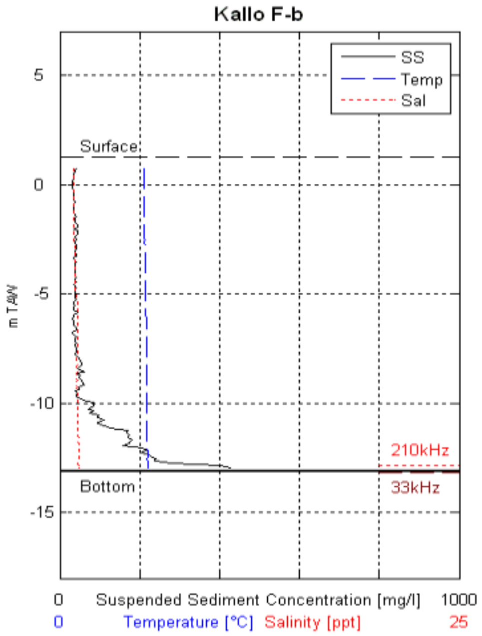
Date: 18/02/2005

*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

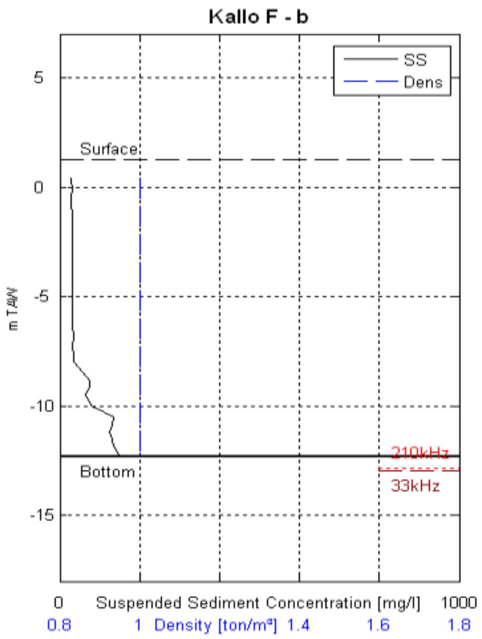
# 11265 HCBS - FEBRUARY 2005 SURVEY | 8 Fb




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 06:14 |
| Time after/before HT [MET]: | -4:15 |
| Coordinates [UTM-ED50] Easting: | 591040 |
| Coordinates [UTM-ED50] Northing: | 5680887 |
| Water-Bottom Interface Siltpr. [m TAW]: | -13.11 |
| Waterdepth 210 kHz Echo [m TAW]: | -12.86 |
| Waterdepth 33 kHz Echo [m TAW]: | -13.14 |
| Surface elevation [m TAW]: | 1.25 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.78 | 5.3 | 0.9 | 43 |
| -5.68 | 5.4 | 1.1 | 53 |
| -8.14 | 5.5 | 1.2 | 48 |
| -12.49 | 5.5 | 1.2 | 203 |
| -12.60 | 5.5 | 1.2 | 203 |
| -12.68 | 5.5 | 1.2 | 225 |
| -12.79 | 5.5 | 1.2 | 310 |
| -12.85 | 5.5 | 1.2 | 375 |
| -12.87 | 5.5 | 1.2 | 341 |
| -12.88 | 5.5 | 1.3 | 437 |
| -12.89 | 5.5 | 1.3 | 423 |
| -12.90 | 5.5 | 1.2 | 406 |
| -12.91 | 5.5 | 1.2 | 401 |
| -12.92 | 5.5 | 1.3 | 454 |
| -12.93 | 5.5 | 1.2 | 425 |
| -12.94 | 5.5 | 1.3 | 435 |
| -12.95 | 5.5 | 1.2 | 445 |
| -12.96 | 5.5 | 1.2 | 433 |
| -12.97 | 5.5 | 1.2 | 411 |
| -12.98 | 5.5 | 1.3 | 432 |
| -12.99 | 5.5 | 1.2 | 445 |
| -13.00 | 5.5 | 1.3 | 417 |
| **Depth Avg** | **5.4** | **1.0** | **67** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -12.83 |
| Waterdepth 33 kHz Echo [m TAW]: | -12.93 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -12.31 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.48 | 30 | 1.000 |
| -0.85 | 30 | 1.000 |
| -1.89 | 32 | 1.000 |
| -2.95 | 33 | 1.000 |
| -3.98 | 32 | 1.000 |
| -5.32 | 32 | 1.000 |
| -6.64 | 33 | 1.000 |
| -7.64 | 33 | 1.000 |
| -8.83 | 76 | 1.000 |
| -9.84 | 59 | 1.000 |
| -10.50 | 127 | 1.000 |
| -10.85 | 133 | 1.000 |
| -11.17 | 127 | 1.000 |
| -11.53 | 123 | 1.000 |
| -12.21 | 148 | 1.000 |
| **Depth Avg** | **52** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location:
Kallo

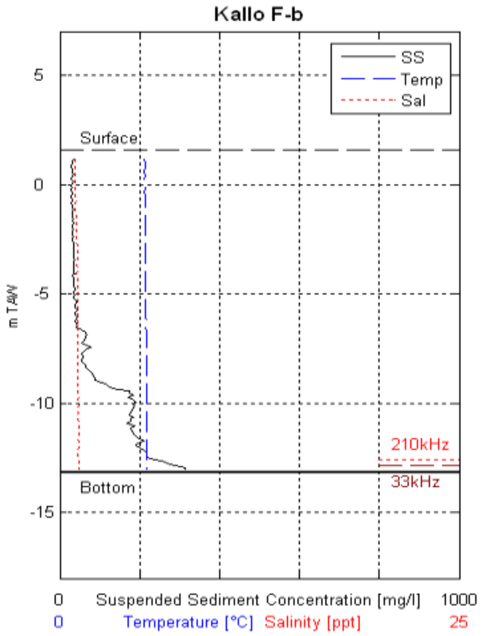
Date:
18/02/2005

*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

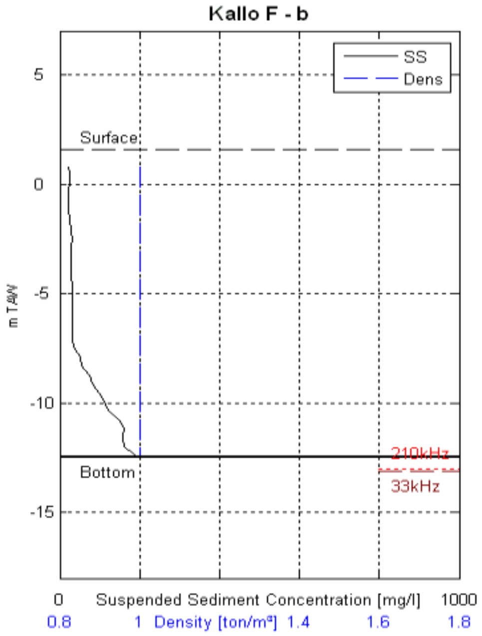
# 11265 HCBS - FEBRUARY 2005 SURVEY | 14 Fb




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 06:43 |
| Time after/before HT [MET]: | -3:46 |
| Coordinates [UTM-ED50] Easting: | 591037 |
| Coordinates [UTM-ED50] Northing: | 5680885 |
| Water-Bottom Interface Siltpr. [m TAW]: | -13.16 |
| Waterdepth 210 kHz Echo [m TAW]: | -12.57 |
| Waterdepth 33 kHz Echo [m TAW]: | -12.87 |
| Surface elevation [m TAW]: | 1.60 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 1.19 | 5.3 | 1.0 | 39 |
| -6.09 | 5.4 | 1.1 | 46 |
| -8.49 | 5.4 | 1.2 | 72 |
| -12.55 | 5.4 | 1.2 | 217 |
| -12.65 | 5.4 | 1.3 | 264 |
| -12.75 | 5.4 | 1.2 | 254 |
| -12.85 | 5.4 | 1.2 | 310 |
| -12.90 | 5.4 | 1.2 | 307 |
| -12.91 | 5.4 | 1.2 | 320 |
| -12.92 | 5.4 | 1.2 | 324 |
| -12.95 | 5.4 | 1.2 | 299 |
| -12.96 | 5.4 | 1.2 | 311 |
| -12.97 | 5.4 | 1.2 | 289 |
| -12.98 | 5.4 | 1.2 | 324 |
| -12.99 | 5.4 | 1.2 | 307 |
| -13.00 | 5.4 | 1.2 | 337 |
| -13.01 | 5.4 | 1.2 | 324 |
| -13.02 | 5.4 | 1.2 | 297 |
| -13.03 | 5.5 | 1.2 | 326 |
| -13.04 | 5.4 | 1.2 | 318 |
| -13.05 | 5.5 | 1.2 | 308 |
| **Depth Avg** | **5.4** | **1.1** | **83** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -13 |
| Waterdepth 33 kHz Echo [m TAW]: | -13.12 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -12.45 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.79 | 22 | 1.000 |
| -0.29 | 23 | 1.000 |
| -1.58 | 25 | 1.000 |
| -2.91 | 30 | 1.000 |
| -4.18 | 28 | 1.000 |
| -5.43 | 30 | 1.000 |
| -6.65 | 30 | 1.000 |
| -7.86 | 36 | 1.000 |
| -9.11 | 81 | 1.000 |
| -10.33 | 117 | 1.000 |
| -10.74 | 138 | 1.000 |
| -11.14 | 158 | 1.000 |
| -11.56 | 160 | 1.000 |
| -11.98 | 148 | 1.000 |
| -12.35 | 189 | 1.000 |
| **Depth Avg** | **57** | **1.000** |

Siltprofiler & Navitracker-OBS

Location: Kallo

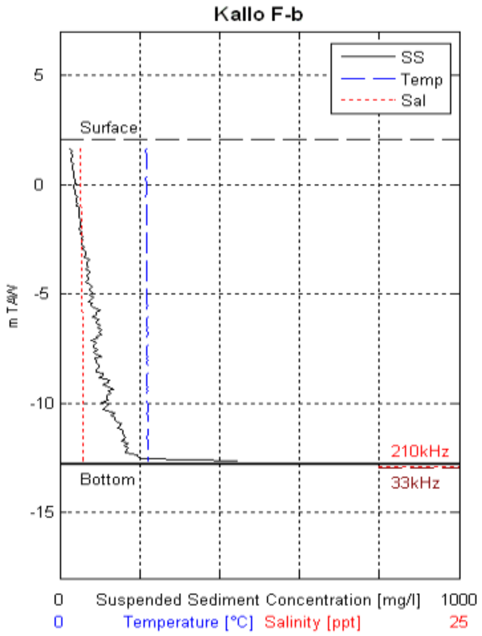
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

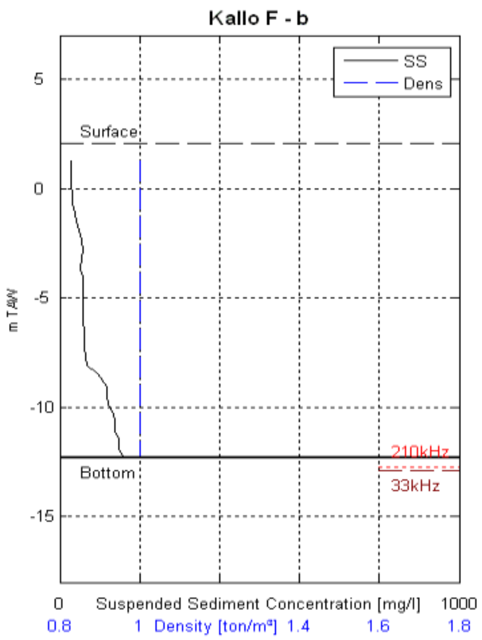
# 11265 HCBS - FEBRUARY 2005 SURVEY | 20 Fb




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 07:20 |
| Time after/before HT [MET]: | -3:09 |
| Coordinates [UTM-ED50] Easting: | 591046 |
| Coordinates [UTM-ED50] Northing: | 5680888 |
| Water-Bottom Interface Siltpr. [m TAW]: | -12.78 |
| Waterdepth 210 kHz Echo [m TAW]: | -12.88 |
| Waterdepth 33 kHz Echo [m TAW]: | -12.95 |
| Surface elevation [m TAW]: | 2.07 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 1.65 | 5.4 | 1.3 | 24 |
| -5.95 | 5.5 | 1.4 | 99 |
| -8.36 | 5.5 | 1.4 | 122 |
| -12.16 | 5.5 | 1.4 | 166 |
| -12.23 | 5.5 | 1.4 | 164 |
| -12.35 | 5.5 | 1.4 | 164 |
| -12.46 | 5.5 | 1.4 | 181 |
| -12.46 | 5.5 | 1.4 | 181 |
| -12.47 | 5.5 | 1.4 | 196 |
| -12.48 | 5.5 | 1.4 | 213 |
| -12.50 | 5.5 | 1.4 | 206 |
| -12.55 | 5.5 | 1.4 | 197 |
| -12.56 | 5.5 | 1.4 | 179 |
| -12.57 | 5.5 | 1.4 | 213 |
| -12.58 | 5.5 | 1.4 | 230 |
| -12.60 | 5.5 | 1.4 | 213 |
| -12.61 | 5.5 | 1.4 | 237 |
| -12.62 | 5.5 | 1.4 | 226 |
| -12.63 | 5.5 | 1.4 | 243 |
| -12.64 | 5.5 | 1.4 | 225 |
| -12.65 | 5.5 | 1.4 | 226 |
| -12.67 | 5.5 | 1.4 | 615 |
| **Depth Avg** | **5.5** | **1.4** | **86** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -12.72 |
| Waterdepth 33 kHz Echo [m TAW]: | -12.88 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -12.33 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 1.26 | 27 | 1.000 |
| 0.18 | 28 | 1.000 |
| -1.08 | 36 | 1.000 |
| -2.35 | 52 | 1.000 |
| -3.63 | 51 | 1.000 |
| -4.83 | 59 | 1.000 |
| -6.06 | 59 | 1.000 |
| -7.27 | 63 | 1.000 |
| -8.43 | 83 | 1.000 |
| -9.45 | 119 | 1.000 |
| -10.26 | 129 | 1.000 |
| -12.23 | 157 | 1.000 |
| **Depth Avg** | **70** | **1.000** |

Siltprofiler & Navitracker-OBS

Location: Kallo

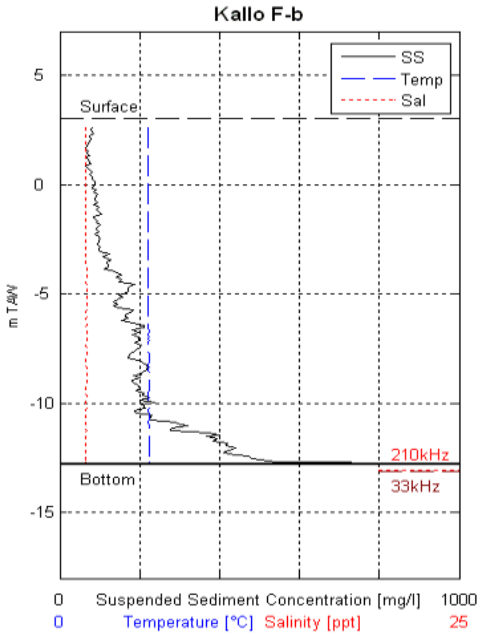
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

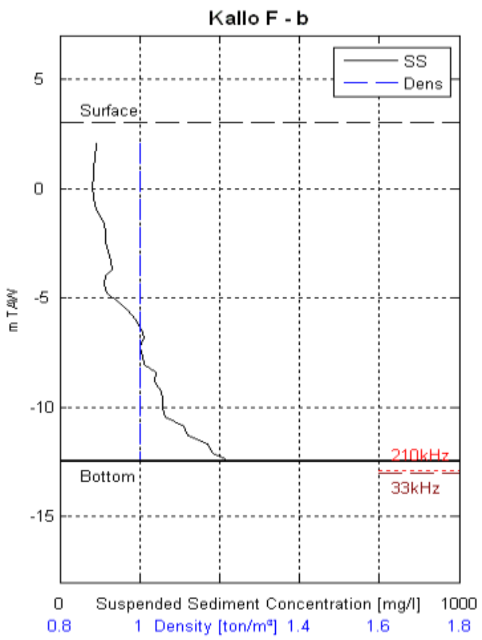
| 11265 HCBS - FEBRUARY 2005 SURVEY | 32 Fb |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 08:27 |
| Time after/before HT [MET]: | -2:02 |
| Coordinates [UTM-ED50] Easting: | 591041 |
| Coordinates [UTM-ED50] Northing: | 5680891 |
| Water-Bottom Interface Siltpr. [m TAW]: | -12.81 |
| Waterdepth 210 kHz Echo [m TAW]: | -13.04 |
| Waterdepth 33 kHz Echo [m TAW]: | -13.12 |
| Surface elevation [m TAW]: | 3.04 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 2.62 | 5.5 | 1.6 | 82 |
| -4.04 | 5.5 | 1.6 | 114 |
| -7.02 | 5.6 | 1.6 | 128 |
| -12.20 | 5.6 | 1.6 | 347 |
| -12.29 | 5.6 | 1.7 | 435 |
| -12.39 | 5.6 | 1.7 | 442 |
| -12.48 | 5.6 | 1.6 | 502 |
| -12.53 | 5.6 | 1.6 | 449 |
| -12.54 | 5.6 | 1.7 | 528 |
| -12.56 | 5.5 | 1.6 | 486 |
| -12.57 | 5.6 | 1.6 | 449 |
| -12.59 | 5.6 | 1.7 | 524 |
| -12.60 | 5.6 | 1.6 | 533 |
| -12.61 | 5.5 | 1.7 | 472 |
| -12.63 | 5.6 | 1.6 | 467 |
| -12.64 | 5.6 | 1.6 | 500 |
| -12.65 | 5.5 | 1.6 | 495 |
| -12.66 | 5.6 | 1.7 | 490 |
| -12.67 | 5.6 | 1.7 | 510 |
| -12.68 | 5.6 | 1.7 | 498 |
| -12.69 | 5.6 | 1.7 | 547 |
| -12.70 | 5.6 | 1.6 | 731 |
| **Depth Avg** | **5.5** | **1.6** | **168** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -12.92 |
| Waterdepth 33 kHz Echo [m TAW]: | -12.98 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -12.46 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 2.15 | 86 | 1.000 |
| 0.96 | 84 | 1.000 |
| -0.33 | 83 | 1.000 |
| -1.60 | 106 | 1.000 |
| -2.88 | 116 | 1.000 |
| -3.99 | 117 | 1.000 |
| -5.20 | 144 | 1.000 |
| -6.41 | 198 | 1.000 |
| -7.65 | 202 | 1.000 |
| -8.82 | 234 | 1.000 |
| -10.05 | 260 | 1.000 |
| -10.46 | 256 | 1.000 |
| -10.87 | 307 | 1.000 |
| -11.29 | 296 | 1.000 |
| -11.67 | 378 | 1.000 |
| -12.11 | 374 | 1.000 |
| -12.36 | 413 | 1.000 |
| **Depth Avg** | **172** | **1.000** |

Siltprofiler & Navitracker-OBS

Location: Kallo

Date: 18/02/2005

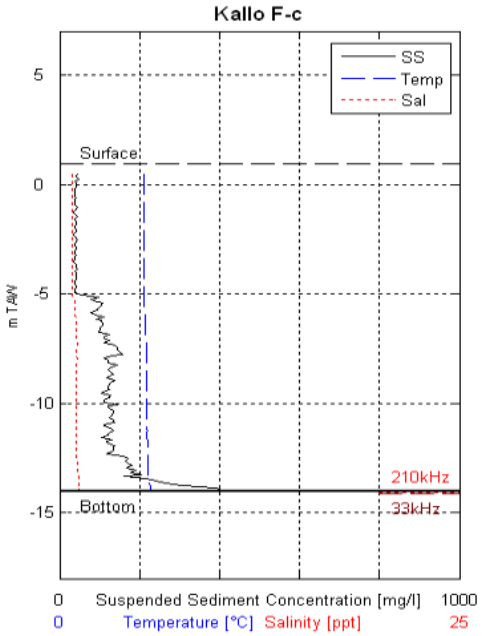
*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

### G.1.3. Measurement location c

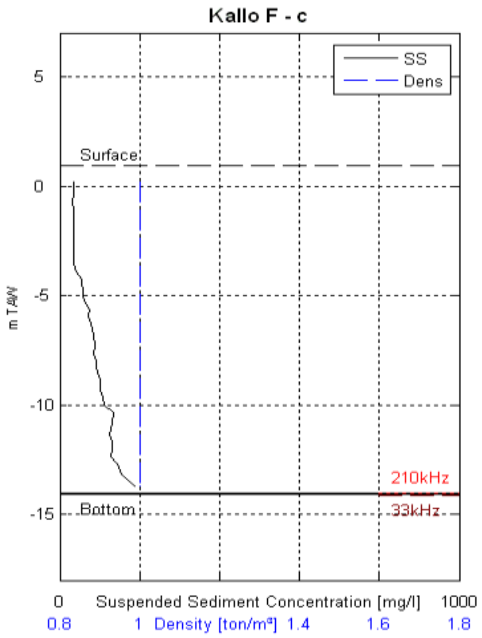
# 11265 HCBS - FEBRUARY 2005 SURVEY | 3 Fc




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 05:47 |
| Time after/before HT [MET]: | -4:42 |
| Coordinates [UTM-ED50] Easting: | 591080 |
| Coordinates [UTM-ED50] Northing: | 5680852 |
| Water-Bottom Interface Siltpr. [m TAW]: | -14.04 |
| Waterdepth 210 kHz Echo [m TAW]: | -14.10 |
| Waterdepth 33 kHz Echo [m TAW]: | -14.14 |
| Surface elevation [m TAW]: | 0.94 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.50 | 5.3 | 0.8 | 48 |
| -6.52 | 5.4 | 1.1 | 162 |
| -9.14 | 5.5 | 1.0 | 161 |
| -13.41 | 5.6 | 1.2 | 231 |
| -13.51 | 5.6 | 1.2 | 211 |
| -13.62 | 5.6 | 1.2 | 214 |
| -13.70 | 5.7 | 1.2 | 288 |
| -13.77 | 5.6 | 1.2 | 300 |
| -13.78 | 5.6 | 1.2 | 403 |
| -13.81 | 5.7 | 1.2 | 398 |
| -13.82 | 5.6 | 1.2 | 295 |
| -13.83 | 5.7 | 1.2 | 381 |
| -13.84 | 5.7 | 1.2 | 357 |
| -13.85 | 5.7 | 1.2 | 460 |
| -13.86 | 5.7 | 1.2 | 372 |
| -13.87 | 5.6 | 1.2 | 422 |
| -13.88 | 5.7 | 1.2 | 349 |
| -13.89 | 5.7 | 1.2 | 422 |
| -13.90 | 5.7 | 1.2 | 332 |
| -13.91 | 5.7 | 1.2 | 396 |
| -13.92 | 5.7 | 1.2 | 417 |
| -13.93 | 5.8 | 1.2 | 380 |
| **Depth Avg** | **5.4** | **1.0** | **97** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -14.03 |
| Waterdepth 33 kHz Echo [m TAW]: | -14.14 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -14.06 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.21 | 33 | 1.000 |
| -1.10 | 35 | 1.000 |
| -2.14 | 35 | 1.000 |
| -3.19 | 36 | 1.000 |
| -4.26 | 49 | 1.000 |
| -5.28 | 57 | 1.000 |
| -6.28 | 81 | 1.000 |
| -7.31 | 91 | 1.000 |
| -8.32 | 92 | 1.000 |
| -9.32 | 99 | 1.000 |
| -10.32 | 127 | 1.000 |
| -11.34 | 124 | 1.000 |
| -12.01 | 138 | 1.000 |
| -12.34 | 131 | 1.000 |
| -12.68 | 143 | 1.000 |
| -13.02 | 148 | 1.000 |
| -13.36 | 152 | 1.000 |
| -13.72 | 179 | 1.000 |
| -13.94 | 196 | 1.000 |
| -13.95 | 250 | 1.000 |
| -13.96 | 342 | NaN |
| **Depth Avg** | **80** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location:
Kallo

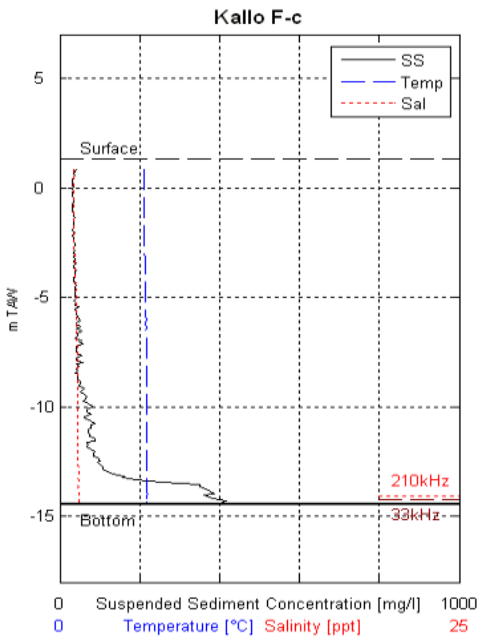
Date:
18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

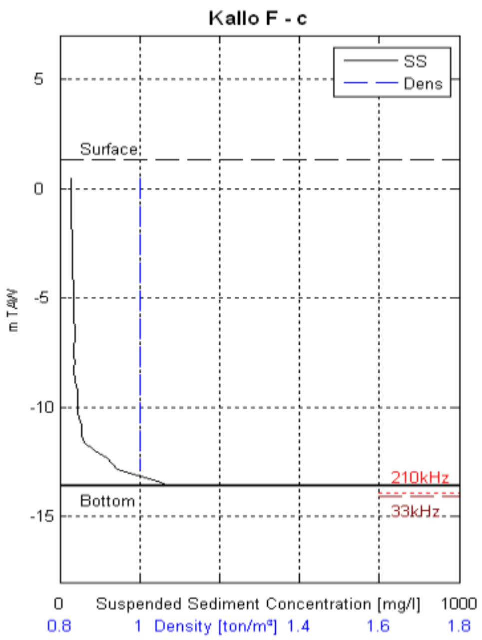
| 11265 HCBS - FEBRUARY 2005 SURVEY | 9 Fc |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 06:20 |
| Time after/before HT [MET]: | -4:09 |
| Coordinates [UTM-ED50] Easting: | 591096 |
| Coordinates [UTM-ED50] Northing: | 5680854 |
| Water-Bottom Interface Siltpr. [m TAW]: | -14.47 |
| Waterdepth 210 kHz Echo [m TAW]: | -14.10 |
| Waterdepth 33 kHz Echo [m TAW]: | -14.22 |
| Surface elevation [m TAW]: | 1.30 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.84 | 5.3 | 0.9 | 41 |
| -6.27 | 5.4 | 1.1 | 39 |
| -8.97 | 5.4 | 1.1 | 46 |
| -13.86 | 5.5 | 1.2 | 405 |
| -13.94 | 5.5 | 1.2 | 352 |
| -14.04 | 5.5 | 1.3 | 329 |
| -14.14 | 5.5 | 1.2 | 417 |
| -14.20 | 5.5 | 1.3 | 358 |
| -14.22 | 5.5 | 1.3 | 415 |
| -14.24 | 5.5 | 1.2 | 422 |
| -14.25 | 5.4 | 1.2 | 417 |
| -14.26 | 5.5 | 1.2 | 408 |
| -14.27 | 5.5 | 1.2 | 354 |
| -14.28 | 5.5 | 1.2 | 481 |
| -14.29 | 5.5 | 1.2 | 427 |
| -14.30 | 5.5 | 1.2 | 415 |
| -14.31 | 5.5 | 1.2 | 388 |
| -14.32 | 5.5 | 1.3 | 395 |
| -14.33 | 5.5 | 1.3 | 403 |
| -14.34 | 5.5 | 1.2 | 398 |
| -14.35 | 5.5 | 1.2 | 406 |
| -14.36 | 5.5 | 1.2 | 427 |
| **Depth Avg** | **5.4** | **1.0** | **72** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -13.91 |
| Waterdepth 33 kHz Echo [m TAW]: | -14.09 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -13.61 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.55 | 27 | 1.000 |
| -0.71 | 27 | 1.000 |
| -1.78 | 30 | 1.000 |
| -2.83 | 31 | 1.000 |
| -3.88 | 32 | 1.000 |
| -4.90 | 33 | 1.000 |
| -5.91 | 36 | 1.000 |
| -6.93 | 38 | 1.000 |
| -7.93 | 38 | 1.000 |
| -8.93 | 40 | 1.000 |
| -9.94 | 46 | 1.000 |
| -10.97 | 56 | 1.000 |
| -11.63 | 57 | 1.000 |
| -11.98 | 82 | 1.000 |
| -12.31 | 114 | 1.000 |
| -12.66 | 126 | 1.000 |
| -12.99 | 169 | 1.000 |
| -13.51 | 260 | NaN |
| **Depth Avg** | **49** | **1.000** |

Siltprofiler & Navitracker-OBS

Location: Kallo

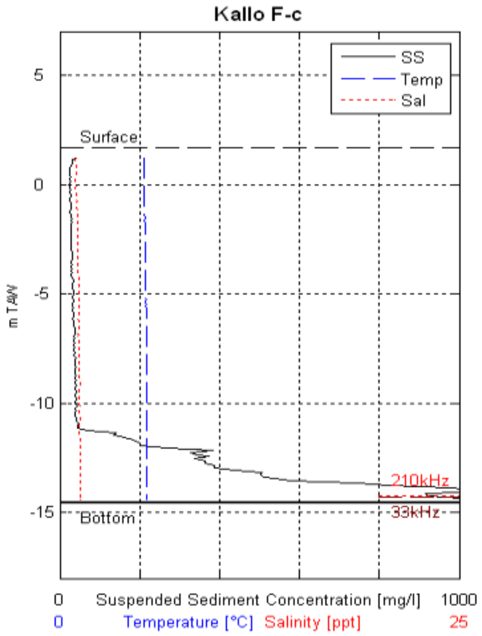
Date: 18/02/2005

*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

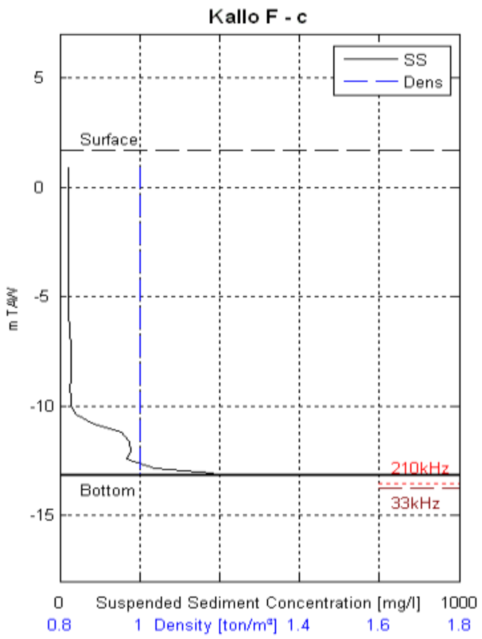
| 11265 HCBS - FEBRUARY 2005 SURVEY | 15 Fc |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 06:49 |
| Time after/before HT [MET]: | -3:40 |
| Coordinates [UTM-ED50] Easting: | 591090 |
| Coordinates [UTM-ED50] Northing: | 5680854 |
| Water-Bottom Interface Siltpr. [m TAW]: | -14.56 |
| Waterdepth 210 kHz Echo [m TAW]: | -14.24 |
| Waterdepth 33 kHz Echo [m TAW]: | -14.30 |
| Surface elevation [m TAW]: | 1.68 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 1.20 | 5.3 | 1.0 | 41 |
| -6.42 | 5.4 | 1.3 | 38 |
| -9.10 | 5.4 | 1.3 | 49 |
| -13.94 | 5.4 | 1.3 | 973 |
| -14.04 | 5.5 | 1.3 | 1010 |
| -14.14 | 5.5 | 1.3 | 939 |
| -14.24 | 5.4 | 1.3 | 870 |
| -14.27 | 5.5 | 1.3 | 898 |
| -14.30 | 5.4 | 1.3 | 1063 |
| -14.33 | 5.5 | 1.3 | 880 |
| -14.34 | 5.5 | 1.3 | 992 |
| -14.36 | 5.5 | 1.3 | 1127 |
| -14.38 | 5.5 | 1.3 | 1038 |
| -14.39 | 5.5 | 1.3 | 1057 |
| -14.40 | 5.5 | 1.3 | 1119 |
| -14.41 | 5.4 | 1.3 | 1000 |
| -14.42 | 5.5 | 1.3 | 992 |
| -14.43 | 5.4 | 1.3 | 1084 |
| -14.44 | 5.5 | 1.3 | 951 |
| -14.45 | 5.5 | 1.3 | 2741 |
| **Depth Avg** | **5.4** | **1.2** | **124** |



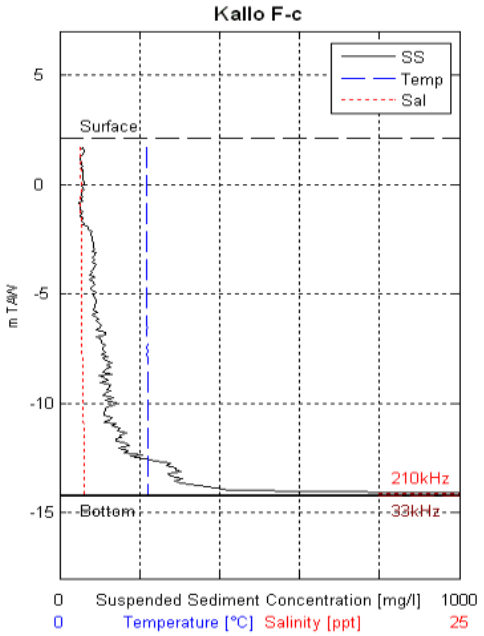

**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -13.52 |
| Waterdepth 33 kHz Echo [m TAW]: | -13.75 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -13.17 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.90 | 21 | 1.000 |
| -0.49 | 21 | 1.000 |
| -1.77 | 22 | 1.000 |
| -3.04 | 22 | 1.000 |
| -4.31 | 22 | 1.000 |
| -5.54 | 23 | 1.000 |
| -6.75 | 25 | 1.000 |
| -7.95 | 28 | 1.000 |
| -9.16 | 27 | 1.000 |
| -10.38 | 31 | 1.000 |
| -11.19 | 148 | 1.000 |
| -11.64 | 169 | 1.000 |
| -12.02 | 182 | 1.000 |
| -12.43 | 157 | 1.000 |
| -13.07 | 340 | NaN |
| **Depth Avg** | **49** | **1.000** |

| Siltprofiler & Navitracker-OBS | | *Data processed by:* IMDC |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* wl \| delft hydraulics, GEMS International |
| | | I/RA/11265/05.014MSA |

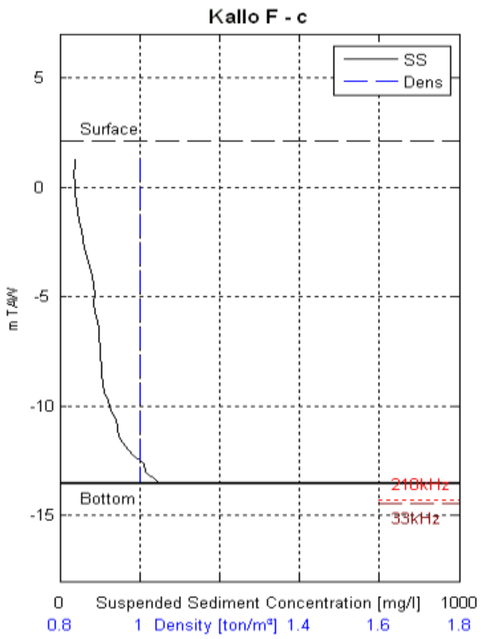
# 11265 HCBS - FEBRUARY 2005 SURVEY | 21 Fc




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 07:25 |
| Time after/before HT [MET]: | -3:04 |
| Coordinates [UTM-ED50] Easting: | 591104 |
| Coordinates [UTM-ED50] Northing: | 5680854 |
| Water-Bottom Interface Siltpr. [m TAW]: | -14.24 |
| Waterdepth 210 kHz Echo [m TAW]: | -14.13 |
| Waterdepth 33 kHz Echo [m TAW]: | -14.22 |
| Surface elevation [m TAW]: | 2.13 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 1.72 | 5.4 | 1.3 | 60 |
| -6.59 | 5.5 | 1.4 | 106 |
| -9.16 | 5.5 | 1.4 | 130 |
| -13.62 | 5.5 | 1.5 | 265 |
| -13.73 | 5.5 | 1.5 | 321 |
| -13.83 | 5.5 | 1.5 | 329 |
| -13.90 | 5.6 | 1.5 | 403 |
| -13.98 | 5.5 | 1.5 | 375 |
| -13.99 | 5.5 | 1.5 | 433 |
| -14.01 | 5.5 | 1.7 | 432 |
| -14.02 | 5.5 | 1.5 | 484 |
| -14.03 | 5.5 | 1.6 | 452 |
| -14.04 | 5.5 | 1.5 | 401 |
| -14.05 | 5.5 | 1.5 | 467 |
| -14.06 | 5.5 | 1.5 | 403 |
| -14.07 | 5.5 | 1.5 | 484 |
| -14.08 | 5.5 | 1.5 | 590 |
| -14.09 | 5.5 | 1.6 | 442 |
| -14.10 | 5.5 | 1.6 | 423 |
| -14.11 | 5.5 | 1.5 | 455 |
| -14.12 | 5.5 | 1.5 | 3778 |
| -14.13 | 5.5 | 1.5 | 5102 |
| **Depth Avg** | **5.5** | **1.4** | **119** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -14.29 |
| Waterdepth 33 kHz Echo [m TAW]: | -14.44 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -13.56 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 1.32 | 38 | NaN |
| 0.18 | 38 | 1.000 |
| -1.11 | 42 | 1.000 |
| -2.35 | 56 | 1.000 |
| -3.63 | 74 | 1.000 |
| -4.87 | 86 | 1.000 |
| -6.09 | 94 | 1.000 |
| -7.31 | 98 | 1.000 |
| -8.54 | 104 | 1.000 |
| -9.76 | 124 | 1.000 |
| -10.99 | 141 | 1.000 |
| -11.81 | 173 | 1.000 |
| -13.46 | 249 | 1.000 |
| **Depth Avg** | **96** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

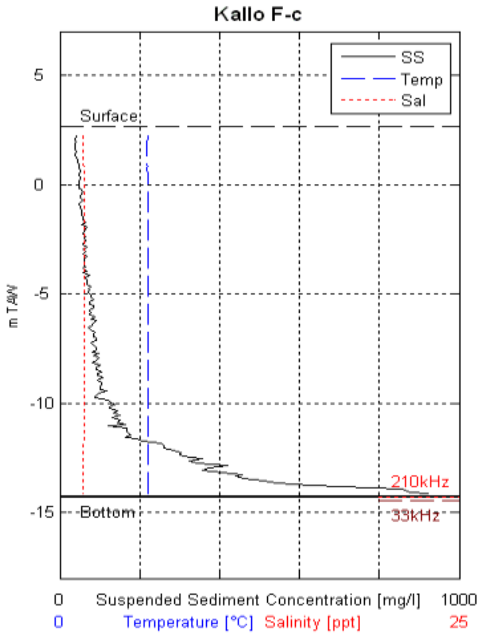
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

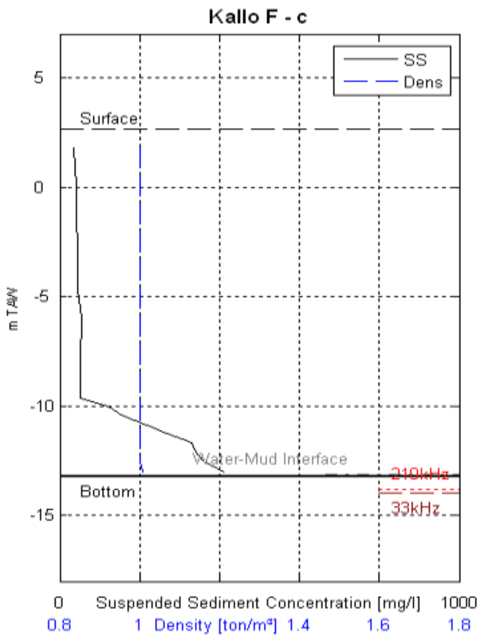
# 11265 HCBS - FEBRUARY 2005 SURVEY | 27 Fc




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 08:00 |
| Time after/before HT [MET]: | -2:29 |
| Coordinates [UTM-ED50] Easting: | 591088 |
| Coordinates [UTM-ED50] Northing: | 5680853 |
| Water-Bottom Interface Siltpr. [m TAW]: | -14.3 |
| Waterdepth 210 kHz Echo [m TAW]: | -14.30 |
| Waterdepth 33 kHz Echo [m TAW]: | -14.45 |
| Surface elevation [m TAW]: | 2.65 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 2.22 | 5.5 | 1.4 | 38 |
| -5.87 | 5.5 | 1.5 | 75 |
| -8.77 | 5.5 | 1.5 | 108 |
| -13.69 | 5.6 | 1.4 | 671 |
| -13.79 | 5.5 | 1.4 | 770 |
| -13.88 | 5.5 | 1.4 | 795 |
| -13.97 | 5.5 | 1.4 | 859 |
| -14.03 | 5.5 | 1.4 | 804 |
| -14.05 | 5.5 | 1.4 | 870 |
| -14.06 | 5.5 | 1.4 | 933 |
| -14.08 | 5.5 | 1.4 | 874 |
| -14.09 | 5.5 | 1.4 | 886 |
| -14.10 | 5.5 | 1.4 | 835 |
| -14.11 | 5.5 | 1.4 | 933 |
| -14.12 | 5.5 | 1.4 | 892 |
| -14.13 | 5.5 | 1.4 | 870 |
| -14.14 | 5.5 | 1.4 | 892 |
| -14.15 | 5.5 | 1.4 | 929 |
| -14.16 | 5.5 | 1.4 | 906 |
| -14.17 | 5.6 | 1.4 | 917 |
| -14.18 | 5.5 | 1.4 | 998 |
| -14.19 | 5.5 | 1.4 | 900 |
| **Depth Avg** | **5.5** | **1.5** | **131** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -13.81 |
| Waterdepth 33 kHz Echo [m TAW]: | -13.95 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -13.23 |
| Water-Mud Interface Navitracker [m TAW]: | -13.13 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 1.80 | 32 | 1.000 |
| 0.74 | 40 | 1.000 |
| -0.54 | 43 | 1.000 |
| -1.82 | 43 | 1.000 |
| -3.11 | 42 | 1.000 |
| -4.31 | 46 | 1.000 |
| -5.55 | 52 | 1.000 |
| -6.78 | 55 | 1.000 |
| -8.01 | 51 | 1.000 |
| -9.21 | 51 | 1.000 |
| -10.44 | 180 | 1.000 |
| -11.25 | 286 | 1.000 |
| -11.68 | 306 | 1.000 |
| -12.08 | 319 | 1.000 |
| -12.50 | 366 | 1.000 |
| -12.92 | 393 | 1.000 |
| -13.13 | 436 | 1.019 |
| **Depth Avg** | **91** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

Date: 18/02/2005

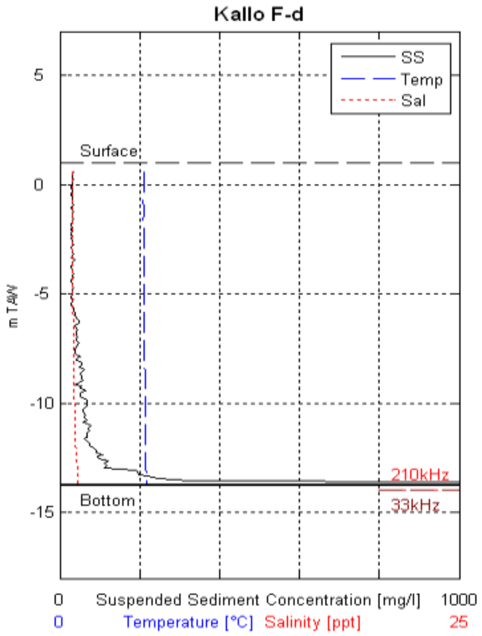
*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

### G.1.4. Measurement location d

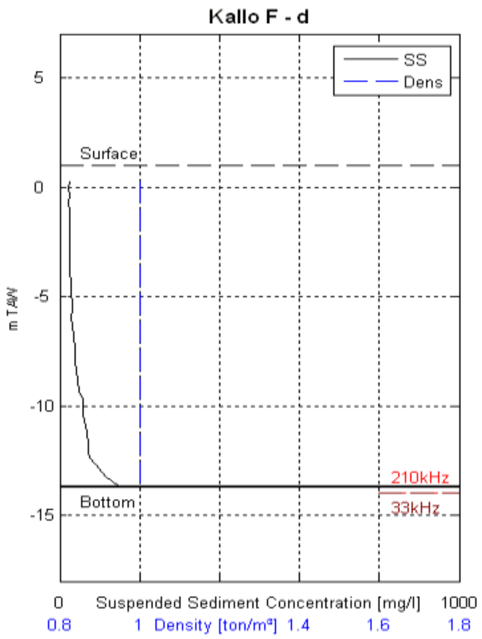
# 11265 HCBS - FEBRUARY 2005 SURVEY | 4 Fd




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 05:52 |
| Time after/before HT [MET]: | -4:37 |
| Coordinates [UTM-ED50] Easting: | 591164 |
| Coordinates [UTM-ED50] Northing: | 5680823 |
| Water-Bottom Interface Siltpr. [m TAW]: | -13.77 |
| Waterdepth 210 kHz Echo [m TAW]: | -13.95 |
| Waterdepth 33 kHz Echo [m TAW]: | -13.98 |
| Surface elevation [m TAW]: | 1.00 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.59 | 5.2 | 0.8 | 31 |
| -5.49 | 5.2 | 0.8 | 31 |
| -8.29 | 5.3 | 0.9 | 60 |
| -13.16 | 5.4 | 1.1 | 261 |
| -13.23 | 5.4 | 1.1 | 188 |
| -13.35 | 5.4 | 1.2 | 234 |
| -13.45 | 5.4 | 1.2 | 223 |
| -13.50 | 5.5 | 1.2 | 315 |
| -13.52 | 5.4 | 1.2 | 283 |
| -13.53 | 5.4 | 1.2 | 315 |
| -13.55 | 5.4 | 1.2 | 297 |
| -13.56 | 5.4 | 1.2 | 300 |
| -13.57 | 5.4 | 1.2 | 310 |
| -13.58 | 5.5 | 1.2 | 337 |
| -13.59 | 5.4 | 1.2 | 336 |
| -13.60 | 5.4 | 1.2 | 288 |
| -13.61 | 5.4 | 1.2 | 313 |
| -13.62 | 5.4 | 1.2 | 339 |
| -13.63 | 5.4 | 1.2 | 1452 |
| -13.64 | 5.4 | 1.2 | 2769 |
| -13.65 | 5.4 | 1.2 | 2461 |
| -13.66 | 5.4 | 1.2 | 4345 |
| **Depth Avg** | **5.3** | **0.9** | **60** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -13.95 |
| Waterdepth 33 kHz Echo [m TAW]: | -13.98 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -13.72 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.24 | 25 | 1.000 |
| -1.10 | 23 | 1.000 |
| -2.16 | 25 | 1.000 |
| -3.20 | 25 | 1.000 |
| -4.26 | 27 | 1.000 |
| -5.30 | 31 | 1.000 |
| -6.66 | 32 | 1.000 |
| -7.66 | 40 | 1.000 |
| -9.00 | 46 | 1.000 |
| -10.01 | 59 | 1.000 |
| -11.02 | 66 | 1.000 |
| -11.70 | 71 | 1.000 |
| -13.62 | 147 | 1.000 |
| **Depth Avg** | **44** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

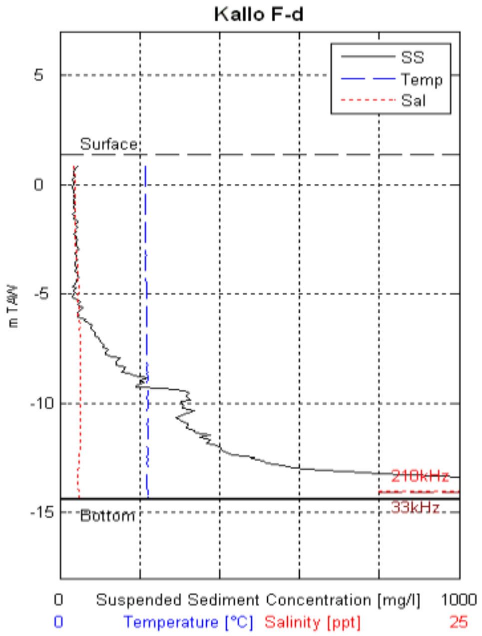
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

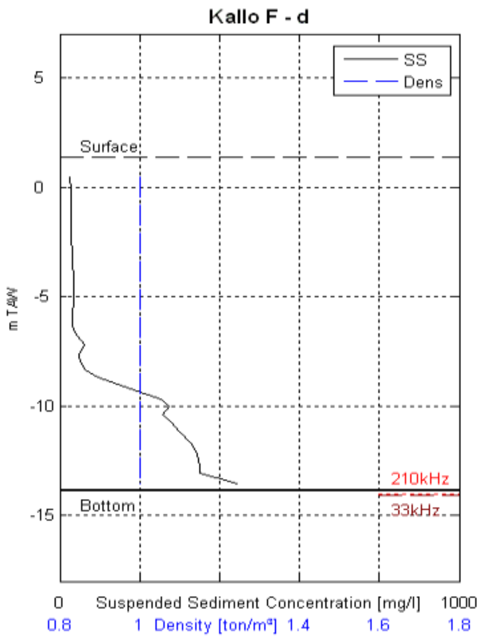
| 11265 HCBS - FEBRUARY 2005 SURVEY | 10 Fd |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 06:24 |
| Time after/before HT [MET]: | -4:05 |
| Coordinates [UTM-ED50] Easting: | 591155 |
| Coordinates [UTM-ED50] Northing: | 5680816 |
| Water-Bottom Interface Siltpr. [m TAW]: | -14.42 |
| Waterdepth 210 kHz Echo [m TAW]: | -14.02 |
| Waterdepth 33 kHz Echo [m TAW]: | -14.08 |
| Surface elevation [m TAW]: | 1.35 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.83 | 5.3 | 0.9 | 35 |
| -6.92 | 5.4 | 1.3 | 96 |
| -9.64 | 5.5 | 1.3 | 275 |
| -13.54 | 5.5 | 1.2 | 2464 |
| -13.54 | 5.5 | 1.2 | 2464 |
| -13.54 | 5.5 | 1.2 | 2464 |
| -13.54 | 5.5 | 1.2 | 2464 |
| -14.27 | 5.5 | 1.2 | 1022 |
| -14.29 | 5.5 | 1.2 | 1534 |
| -14.30 | 5.5 | 1.2 | 1516 |
| -14.31 | 5.5 | 1.2 | 1184 |
| **Depth Avg** | **5.4** | **1.1** | **243** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -14.01 |
| Waterdepth 33 kHz Echo [m TAW]: | -14.05 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -13.84 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.54 | 25 | 1.000 |
| -0.47 | 28 | 1.000 |
| -1.51 | 28 | 1.000 |
| -2.57 | 30 | 1.000 |
| -3.63 | 33 | 1.000 |
| -4.66 | 36 | 1.000 |
| -5.66 | 32 | 1.000 |
| -6.67 | 28 | 1.000 |
| -7.68 | 49 | 1.000 |
| -8.68 | 83 | 1.000 |
| -9.69 | 249 | 1.000 |
| -10.71 | 275 | 1.000 |
| -11.73 | 327 | 1.000 |
| -12.06 | 345 | 1.000 |
| -12.40 | 346 | 1.000 |
| -12.73 | 348 | 1.000 |
| -13.08 | 355 | 1.000 |
| -13.41 | 362 | 1.000 |
| -13.74 | 514 | 1.000 |
| **Depth Avg** | **118** | **1.000** |

Siltprofiler & Navitracker-OBS

Location: Kallo

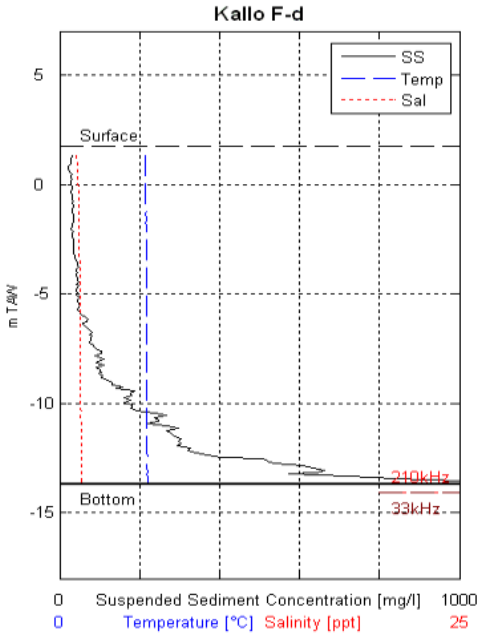
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

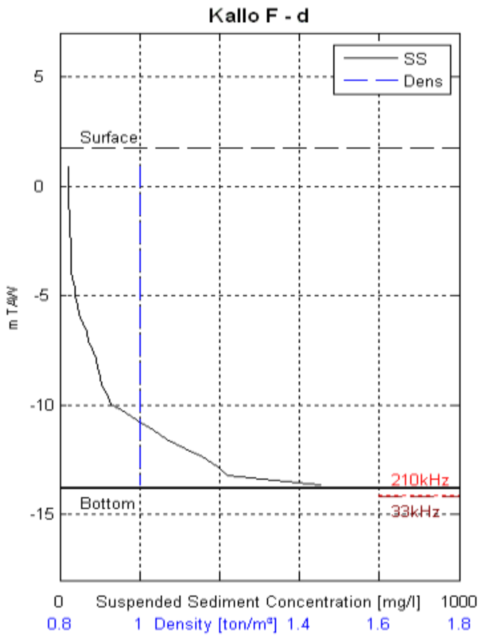
# 11265 HCBS - FEBRUARY 2005 SURVEY | 16 Fd




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 06:53 |
| Time after/before HT [MET]: | -3:36 |
| Coordinates [UTM-ED50] Easting: | 591156 |
| Coordinates [UTM-ED50] Northing: | 5680818 |
| Water-Bottom Interface Siltpr. [m TAW]: | -13.71 |
| Waterdepth 210 kHz Echo [m TAW]: | -14.08 |
| Waterdepth 33 kHz Echo [m TAW]: | -14.10 |
| Surface elevation [m TAW]: | 1.73 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 1.32 | 5.3 | 1.0 | 36 |
| -5.76 | 5.4 | 1.3 | 58 |
| -8.34 | 5.5 | 1.3 | 92 |
| -13.09 | 5.5 | 1.3 | 727 |
| -13.20 | 5.5 | 1.3 | 568 |
| -13.29 | 5.5 | 1.3 | 717 |
| -13.38 | 5.5 | 1.3 | 761 |
| -13.43 | 5.5 | 1.3 | 804 |
| -13.44 | 5.5 | 1.3 | 937 |
| -13.45 | 5.5 | 1.3 | 882 |
| -13.48 | 5.5 | 1.3 | 818 |
| -13.49 | 5.5 | 1.3 | 919 |
| -13.51 | 5.5 | 1.3 | 855 |
| -13.52 | 5.5 | 1.3 | 921 |
| -13.53 | 5.5 | 1.3 | 793 |
| -13.54 | 5.5 | 1.3 | 941 |
| -13.55 | 5.5 | 1.3 | 870 |
| -13.56 | 5.5 | 1.4 | 949 |
| -13.57 | 5.5 | 1.3 | 829 |
| -13.58 | 5.5 | 1.4 | 923 |
| -13.59 | 5.5 | 1.3 | 2712 |
| -13.60 | 5.5 | 1.3 | 3395 |
| **Depth Avg** | **5.4** | **1.2** | **142** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -14.15 |
| Waterdepth 33 kHz Echo [m TAW]: | -14.2 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -13.81 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.93 | 21 | 1.000 |
| -0.41 | 23 | 1.000 |
| -1.67 | 25 | 1.000 |
| -2.95 | 27 | 1.000 |
| -4.23 | 32 | 1.000 |
| -5.44 | 40 | 1.000 |
| -6.65 | 66 | 1.000 |
| -7.89 | 88 | 1.000 |
| -9.13 | 103 | 1.000 |
| -10.33 | 159 | 1.000 |
| -11.55 | 264 | 1.000 |
| -12.01 | 294 | 1.000 |
| -12.39 | 365 | 1.000 |
| -12.82 | 377 | 1.000 |
| -13.23 | 335 | 1.000 |
| -13.64 | 630 | 1.000 |
| -13.71 | 691 | 1.000 |
| **Depth Avg** | **111** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

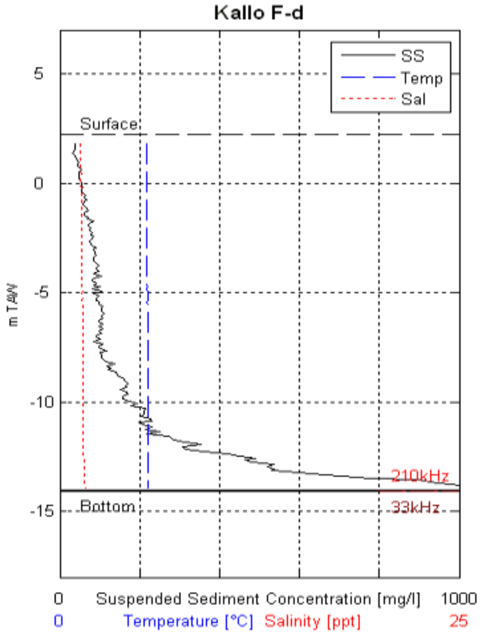
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

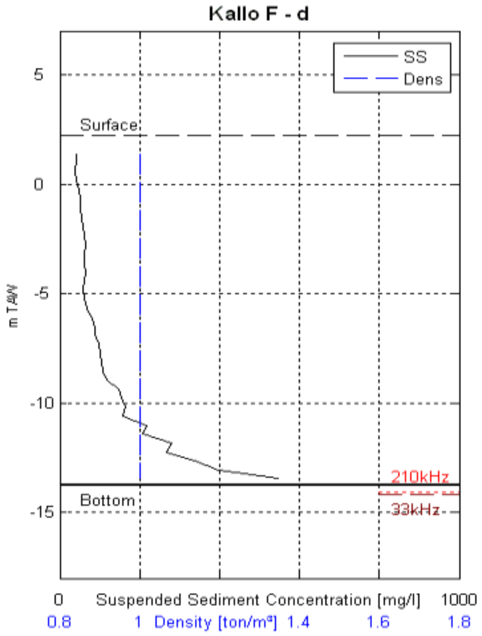
# 11265 HCBS - FEBRUARY 2005 SURVEY | 22 Fd




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 07:30 |
| Time after/before HT [MET]: | -2:59 |
| Coordinates [UTM-ED50] Easting: | 591154 |
| Coordinates [UTM-ED50] Northing: | 5680819 |
| Water-Bottom Interface Siltpr. [m TAW]: | -14.05 |
| Waterdepth 210 kHz Echo [m TAW]: | -14.08 |
| Waterdepth 33 kHz Echo [m TAW]: | -14.10 |
| Surface elevation [m TAW]: | 2.22 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 1.81 | 5.4 | 1.3 | 42 |
| -5.44 | 5.5 | 1.4 | 101 |
| -8.01 | 5.5 | 1.4 | 90 |
| -13.44 | 5.5 | 1.5 | 774 |
| -13.53 | 5.5 | 1.5 | 878 |
| -13.61 | 5.5 | 1.5 | 951 |
| -13.73 | 5.5 | 1.5 | 822 |
| -13.73 | 5.5 | 1.5 | 822 |
| -13.75 | 5.5 | 1.5 | 1077 |
| -13.76 | 5.5 | 1.5 | 953 |
| -13.77 | 5.5 | 1.5 | 1117 |
| -13.78 | 5.5 | 1.5 | 1125 |
| -13.80 | 5.5 | 1.6 | 987 |
| -13.84 | 5.5 | 1.6 | 1057 |
| -13.86 | 5.5 | 1.5 | 1049 |
| -13.94 | 5.5 | 1.6 | 1014 |
| **Depth Avg** | **5.5** | **1.4** | **169** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -14.08 |
| Waterdepth 33 kHz Echo [m TAW]: | -14.16 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -13.74 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 1.39 | 43 | 1.000 |
| 0.19 | 41 | 1.000 |
| -1.09 | 51 | 1.000 |
| -2.34 | 61 | 1.000 |
| -3.63 | 59 | 1.000 |
| -4.83 | 59 | 1.000 |
| -6.09 | 78 | 1.000 |
| -7.29 | 98 | 1.000 |
| -8.58 | 107 | 1.000 |
| -9.77 | 147 | 1.000 |
| -11.02 | 218 | 1.000 |
| -11.81 | 288 | 1.000 |
| -12.25 | 254 | 1.000 |
| -12.62 | 332 | 1.000 |
| -13.64 | 610 | 1.000 |
| **Depth Avg** | **116** | **1.000** |

Siltprofiler & Navitracker-OBS

Location: Kallo

Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

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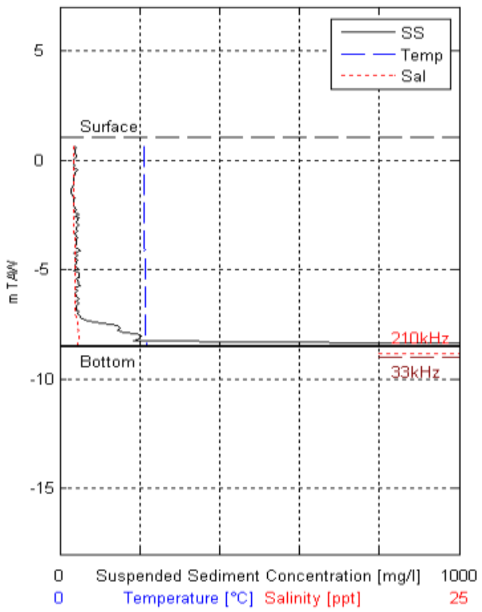
### G.1.5. Measurement location e

# 11265 HCBS - FEBRUARY 2005 SURVEY | 5 Fe

Kallo F-e

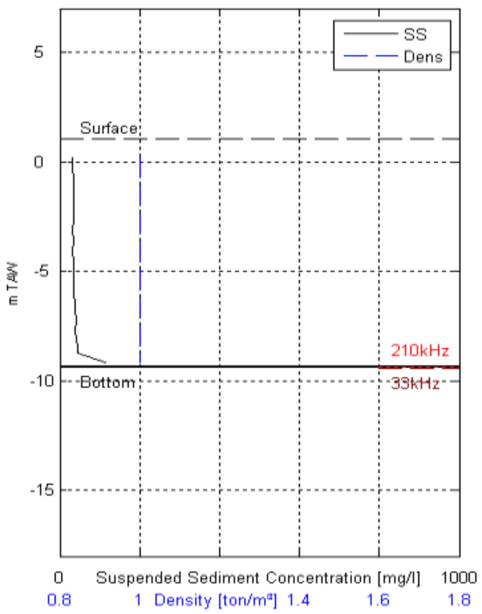



**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 05:57 |
| Time after/before HT [MET]: | -4:32 |
| Coordinates [UTM-ED50] Easting: | 591243 |
| Coordinates [UTM-ED50] Northing: | 5680756 |
| Water-Bottom Interface Siltpr. [m TAW]: | -8.53 |
| Waterdepth 210 kHz Echo [m TAW]: | -8.86 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.98 |
| Surface elevation [m TAW]: | 1.05 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.61 | 5.3 | 0.9 | 36 |
| -3.83 | 5.3 | 0.9 | 38 |
| -5.72 | 5.3 | 1.0 | 34 |
| -7.92 | 5.4 | 1.2 | 188 |
| -8.01 | 5.4 | 1.2 | 185 |
| -8.12 | 5.4 | 1.2 | 208 |
| -8.21 | 5.4 | 1.2 | 160 |
| -8.27 | 5.4 | 1.2 | 209 |
| -8.28 | 5.4 | 1.2 | 161 |
| -8.29 | 5.4 | 1.2 | 149 |
| -8.30 | 5.4 | 1.2 | 170 |
| -8.32 | 5.4 | 1.2 | 178 |
| -8.33 | 5.4 | 1.2 | 137 |
| -8.34 | 5.5 | 1.2 | 4590 |
| -8.35 | 5.4 | 1.2 | 223 |
| -8.36 | 5.4 | 1.2 | 170 |
| -8.37 | 5.4 | 1.2 | 193 |
| -8.38 | 5.4 | 1.2 | 187 |
| -8.39 | 5.4 | 1.2 | 216 |
| -8.40 | 5.4 | 1.2 | 223 |
| -8.41 | 5.4 | 1.2 | 209 |
| -8.42 | 5.5 | 1.2 | 4363 |
| **Depth Avg** | **5.3** | **1.0** | **63** |

Kallo F - e




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -9.35 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.4 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -9.39 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.21 | 33 | NaN |
| -1.05 | 36 | 1.000 |
| -2.11 | 35 | 1.000 |
| -3.42 | 33 | 1.000 |
| -4.49 | 35 | 1.000 |
| -5.72 | 36 | 1.000 |
| -6.72 | 38 | 1.000 |
| -7.39 | 40 | 1.000 |
| -7.73 | 38 | 1.000 |
| -8.08 | 40 | 1.000 |
| -8.41 | 43 | 1.000 |
| -8.74 | 49 | 1.000 |
| -9.10 | 88 | 1.000 |
| -9.29 | 133 | 1.000 |
| **Depth Avg** | **38** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

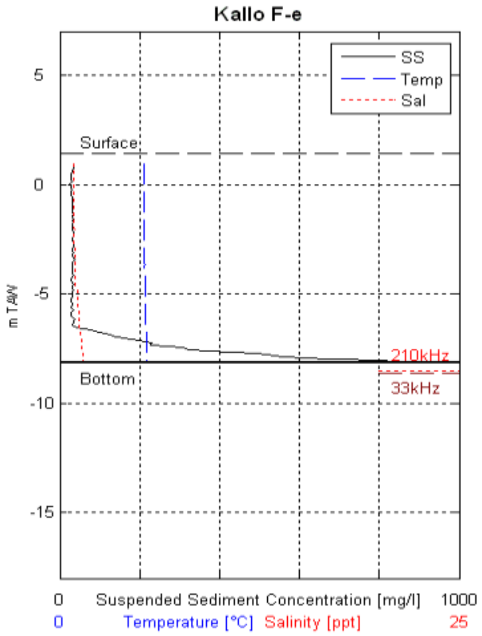
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

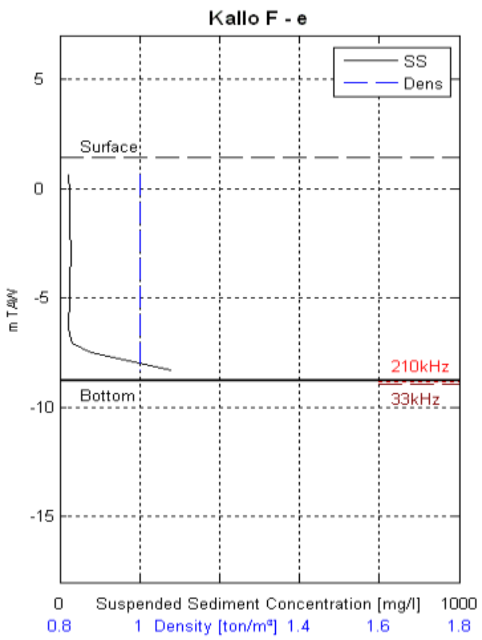
# 11265 HCBS - FEBRUARY 2005 SURVEY | 11 Fe




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 06:28 |
| Time after/before HT [MET]: | -4:01 |
| Coordinates [UTM-ED50] Easting: | 591252 |
| Coordinates [UTM-ED50] Northing: | 5680754 |
| Water-Bottom Interface Siltpr. [m TAW]: | -8.17 |
| Waterdepth 210 kHz Echo [m TAW]: | -8.54 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.60 |
| Surface elevation [m TAW]: | 1.41 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.93 | 5.3 | 0.8 | 34 |
| -3.31 | 5.3 | 1.0 | 29 |
| -5.08 | 5.3 | 1.1 | 31 |
| -7.56 | 5.4 | 1.4 | 300 |
| -7.66 | 5.4 | 1.4 | 481 |
| -7.76 | 5.4 | 1.4 | 493 |
| -7.86 | 5.4 | 1.4 | 533 |
| -7.89 | 5.4 | 1.4 | 582 |
| -7.92 | 5.4 | 1.4 | 593 |
| -7.94 | 5.5 | 1.4 | 635 |
| -7.95 | 5.5 | 1.4 | 638 |
| -7.96 | 5.4 | 1.4 | 701 |
| -7.97 | 5.5 | 1.4 | 626 |
| -7.98 | 5.5 | 1.4 | 671 |
| -7.99 | 5.4 | 1.4 | 699 |
| -8.00 | 5.5 | 1.4 | 635 |
| -8.01 | 5.5 | 1.4 | 671 |
| -8.02 | 5.5 | 1.4 | 757 |
| -8.03 | 5.5 | 1.4 | 657 |
| -8.04 | 5.5 | 1.4 | 708 |
| -8.05 | 5.5 | 1.4 | 776 |
| -8.06 | 5.4 | 1.4 | 1294 |
| **Depth Avg** | **5.3** | **1.0** | **73** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -8.83 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.95 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -8.80 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.61 | 23 | NaN |
| -0.42 | 25 | 1.000 |
| -1.70 | 27 | 1.000 |
| -2.98 | 27 | 1.000 |
| -4.24 | 27 | 1.000 |
| -5.47 | 25 | 1.000 |
| -6.68 | 25 | 1.000 |
| -7.10 | 25 | 1.000 |
| -8.70 | 367 | 1.000 |
| **Depth Avg** | **39** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

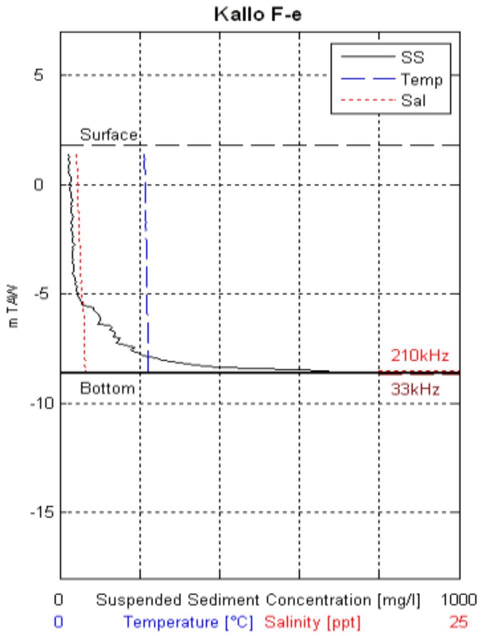
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

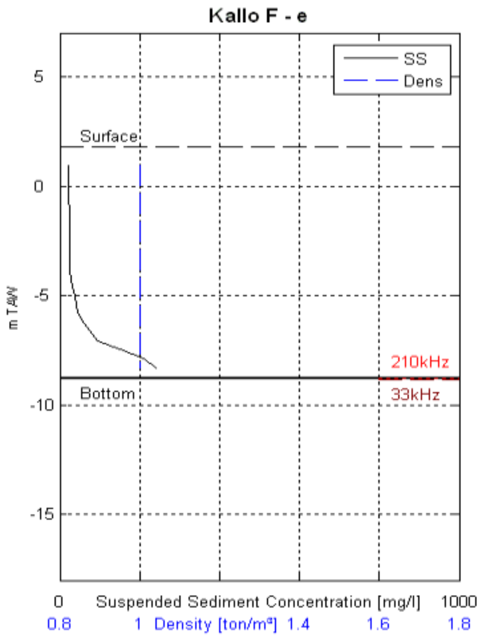
# 11265 HCBS - FEBRUARY 2005 SURVEY | 17 Fe




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 06:58 |
| Time after/before HT [MET]: | -3:31 |
| Coordinates [UTM-ED50] Easting: | 591250 |
| Coordinates [UTM-ED50] Northing: | 5680754 |
| Water-Bottom Interface Siltpr. [m TAW]: | -8.62 |
| Waterdepth 210 kHz Echo [m TAW]: | -8.54 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.67 |
| Surface elevation [m TAW]: | 1.78 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 1.37 | 5.3 | 1.0 | 18 |
| -3.91 | 5.5 | 1.3 | 32 |
| -5.61 | 5.4 | 1.4 | 77 |
| -8.00 | 5.5 | 1.6 | 242 |
| -8.11 | 5.5 | 1.6 | 299 |
| -8.20 | 5.5 | 1.6 | 334 |
| -8.29 | 5.5 | 1.6 | 391 |
| -8.34 | 5.5 | 1.6 | 383 |
| -8.36 | 5.5 | 1.5 | 367 |
| -8.37 | 5.5 | 1.6 | 395 |
| -8.38 | 5.5 | 1.6 | 422 |
| -8.40 | 5.5 | 1.6 | 403 |
| -8.41 | 5.5 | 1.6 | 977 |
| -8.42 | 5.5 | 1.6 | 418 |
| -8.43 | 5.5 | 1.6 | 430 |
| -8.44 | 5.5 | 1.6 | 401 |
| -8.45 | 5.5 | 1.6 | 385 |
| -8.46 | 5.5 | 1.6 | 417 |
| -8.47 | 5.5 | 1.6 | 400 |
| -8.49 | 5.5 | 1.6 | 405 |
| -8.50 | 5.5 | 1.6 | 517 |
| -8.51 | 5.5 | 1.6 | 827 |
| **Depth Avg** | **5.4** | **1.3** | **75** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -8.76 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.82 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -8.80 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 1.00 | 21 | 1.000 |
| -0.17 | 22 | 1.000 |
| -1.48 | 23 | 1.000 |
| -2.83 | 25 | 1.000 |
| -3.83 | 27 | 1.000 |
| -5.01 | 35 | 1.000 |
| -6.25 | 56 | 1.000 |
| -7.07 | 78 | 1.000 |
| -7.47 | 118 | 1.000 |
| -7.87 | 204 | 1.000 |
| -8.30 | 225 | 1.000 |
| -8.70 | 286 | 1.000 |
| **Depth Avg** | **50** | **1.000** |

Siltprofiler & Navitracker-OBS

Location: Kallo

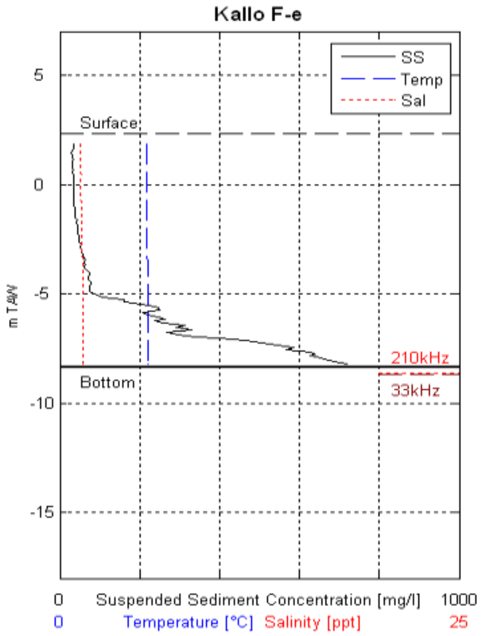
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

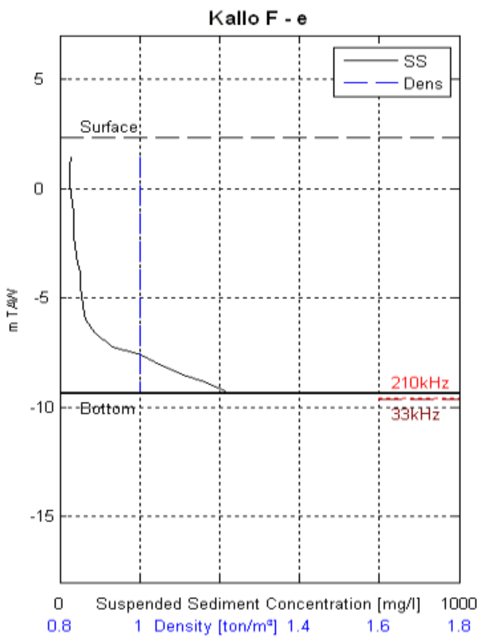
| 11265 HCBS - FEBRUARY 2005 SURVEY | 23 Fe |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 07:36 |
| Time after/before HT [MET]: | -2:53 |
| Coordinates [UTM-ED50] Easting: | 591248 |
| Coordinates [UTM-ED50] Northing: | 5680755 |
| Water-Bottom Interface Siltpr. [m TAW]: | -8.37 |
| Waterdepth 210 kHz Echo [m TAW]: | -8.64 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.70 |
| Surface elevation [m TAW]: | 2.30 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 1.89 | 5.4 | 1.3 | 38 |
| -3.24 | 5.5 | 1.4 | 60 |
| -4.97 | 5.5 | 1.4 | 77 |
| -7.75 | 5.5 | 1.4 | 660 |
| -7.85 | 5.5 | 1.4 | 646 |
| -7.94 | 5.5 | 1.4 | 658 |
| -8.05 | 5.5 | 1.4 | 668 |
| -8.06 | 5.5 | 1.4 | 653 |
| -8.07 | 5.5 | 1.4 | 680 |
| -8.09 | 5.5 | 1.4 | 660 |
| -8.11 | 5.5 | 1.4 | 675 |
| -8.12 | 5.5 | 1.4 | 668 |
| -8.14 | 5.5 | 1.4 | 657 |
| -8.15 | 5.5 | 1.4 | 677 |
| -8.18 | 5.5 | 1.4 | 751 |
| -8.19 | 5.5 | 1.4 | 699 |
| -8.20 | 5.5 | 1.4 | 662 |
| -8.21 | 5.5 | 1.4 | 732 |
| -8.22 | 5.5 | 1.4 | 688 |
| -8.23 | 5.5 | 1.4 | 759 |
| -8.24 | 5.5 | 1.4 | 699 |
| -8.26 | 5.5 | 1.4 | 725 |
| **Depth Avg** | **5.5** | **1.4** | **145** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -9.58 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.63 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -9.39 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 1.40 | 27 | 1.000 |
| 0.18 | 25 | 1.000 |
| -1.08 | 35 | 1.000 |
| -2.17 | 36 | 1.000 |
| -3.43 | 43 | 1.000 |
| -4.44 | 51 | 1.000 |
| -5.58 | 57 | 1.000 |
| -6.79 | 77 | 1.000 |
| -7.61 | 183 | 1.000 |
| -8.08 | 233 | 1.000 |
| -9.29 | 412 | 1.000 |
| **Depth Avg** | **87** | **1.000** |

Siltprofiler & Navitracker-OBS

Location: Kallo

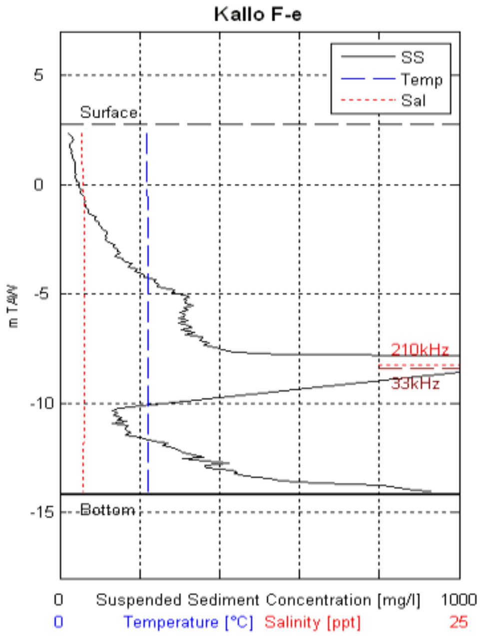
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

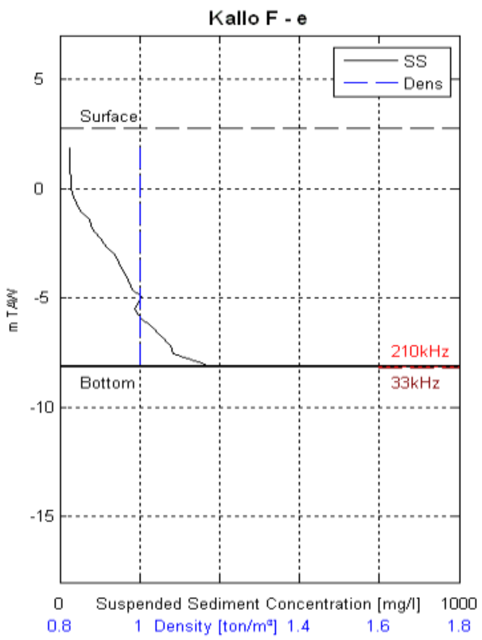
# 11265 HCBS - FEBRUARY 2005 SURVEY | 28 Fe




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 08:09 |
| Time after/before HT [MET]: | -2:20 |
| Coordinates [UTM-ED50] Easting: | 591253 |
| Coordinates [UTM-ED50] Northing: | 5680749 |
| Water-Bottom Interface Siltpr. [m TAW]: | -14.18 |
| Waterdepth 210 kHz Echo [m TAW]: | -8.27 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.41 |
| Surface elevation [m TAW]: | 2.77 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 2.36 | 5.5 | 1.3 | 21 |
| -5.97 | 5.6 | 1.5 | 352 |
| -7.74 | 5.6 | 1.5 | 565 |
| -13.57 | 5.6 | 1.4 | 671 |
| -13.67 | 5.5 | 1.4 | 770 |
| -13.77 | 5.6 | 1.4 | 816 |
| -13.85 | 5.5 | 1.4 | 859 |
| -13.91 | 5.5 | 1.4 | 804 |
| -13.93 | 5.5 | 1.4 | 870 |
| -13.94 | 5.5 | 1.4 | 933 |
| -13.96 | 5.5 | 1.4 | 874 |
| -13.97 | 5.5 | 1.4 | 886 |
| -13.98 | 5.5 | 1.4 | 835 |
| -13.99 | 5.5 | 1.4 | 933 |
| -14.00 | 5.5 | 1.4 | 892 |
| -14.01 | 5.5 | 1.4 | 870 |
| -14.02 | 5.5 | 1.4 | 892 |
| -14.03 | 5.5 | 1.4 | 929 |
| -14.04 | 5.5 | 1.4 | 906 |
| -14.05 | 5.6 | 1.4 | 917 |
| -14.06 | 5.5 | 1.4 | 998 |
| -14.07 | 5.5 | 1.4 | 900 |
| **Depth Avg** | **5.5** | **1.5** | **292** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -8.13 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.2 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -8.17 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 1.89 | 27 | 1.000 |
| 0.88 | 27 | 1.000 |
| -0.41 | 32 | 1.000 |
| -1.49 | 96 | 1.000 |
| -2.51 | 99 | 1.000 |
| -3.53 | 162 | 1.000 |
| -4.78 | 182 | 1.000 |
| -5.95 | 203 | 1.000 |
| -6.34 | 220 | 1.000 |
| -6.76 | 251 | 1.000 |
| -7.18 | 271 | 1.000 |
| -7.58 | 263 | 1.000 |
| -8.01 | 356 | 1.000 |
| -8.07 | 360 | 1.000 |
| **Depth Avg** | **127** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

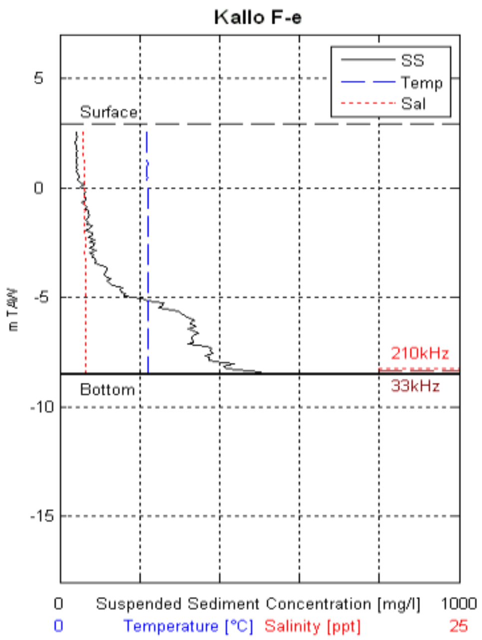
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

| 11265 HCBS - FEBRUARY 2005 SURVEY | 30 Fe |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 08:19 |
| Time after/before HT [MET]: | -2:10 |
| Coordinates [UTM-ED50] Easting: | 591250 |
| Coordinates [UTM-ED50] Northing: | 5680760 |
| Water-Bottom Interface Siltpr. [m TAW]: | -8.53 |
| Waterdepth 210 kHz Echo [m TAW]: | -8.26 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.36 |
| Surface elevation [m TAW]: | 2.94 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 2.53 | 5.5 | 1.8 | 42 |
| -2.92 | 5.5 | 1.6 | 66 |
| -4.85 | 5.5 | 1.6 | 182 |
| -7.90 | 5.6 | 1.6 | 354 |
| -8.00 | 5.6 | 1.6 | 443 |
| -8.11 | 5.6 | 1.6 | 420 |
| -8.21 | 5.5 | 1.6 | 420 |
| -8.23 | 5.6 | 1.6 | 390 |
| -8.25 | 5.6 | 1.6 | 428 |
| -8.26 | 5.6 | 1.6 | 403 |
| -8.27 | 5.6 | 1.6 | 452 |
| -8.29 | 5.5 | 1.6 | 452 |
| -8.30 | 5.6 | 1.6 | 440 |
| -8.32 | 5.5 | 1.6 | 490 |
| -8.33 | 5.5 | 1.6 | 488 |
| -8.34 | 5.5 | 1.6 | 490 |
| -8.35 | 5.5 | 1.6 | 405 |
| -8.36 | 5.5 | 1.6 | 449 |
| -8.37 | 5.5 | 1.6 | 488 |
| -8.39 | 5.5 | 1.6 | 466 |
| -8.40 | 5.5 | 1.6 | 454 |
| -8.42 | 5.6 | 1.6 | 577 |
| **Depth Avg** | **5.5** | **1.6** | **152** |

Data Not Recorded

| Siltprofiler & Navitracker-OBS | |
|---|---|
| Location: Kallo | Date: 18/02/2005 |

*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

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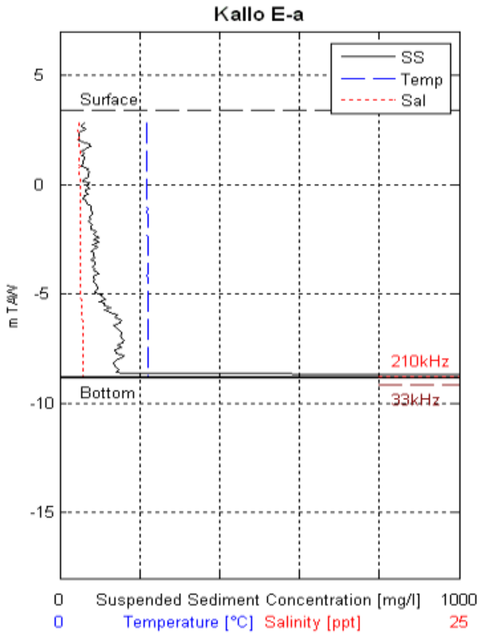
## G.2 Transect E

### G.2.1. Measurement location a

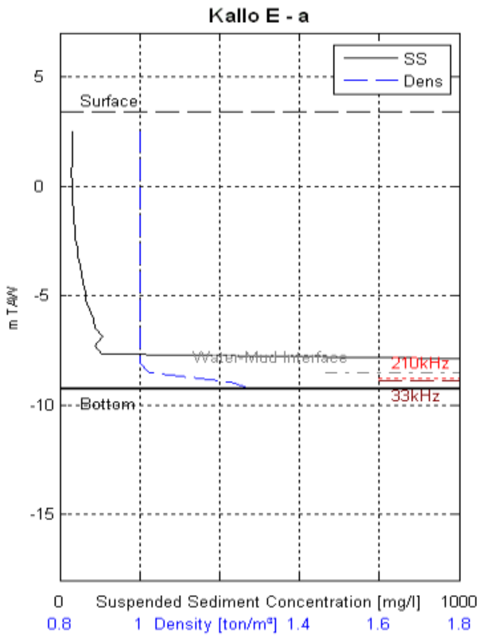
# 11265 HCBS - FEBRUARY 2005 SURVEY | 36 Ea




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 08:53 |
| Time after/before HT [MET]: | -1:36 |
| Coordinates [UTM-ED50] Easting: | 590419 |
| Coordinates [UTM-ED50] Northing: | 5680455 |
| Water-Bottom Interface Siltpr. [m TAW]: | -8.84 |
| Waterdepth 210 kHz Echo [m TAW]: | -8.79 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.16 |
| Surface elevation [m TAW]: | 3.39 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 2.81 | 5.4 | 1.2 | 59 |
| -2.43 | 5.5 | 1.3 | 92 |
| -4.56 | 5.5 | 1.3 | 83 |
| -8.23 | 5.5 | 1.4 | 133 |
| -8.33 | 5.5 | 1.4 | 148 |
| -8.43 | 5.5 | 1.4 | 128 |
| -8.53 | 5.5 | 1.4 | 133 |
| -8.53 | 5.5 | 1.4 | 133 |
| -8.55 | 5.5 | 1.4 | 146 |
| -8.56 | 5.5 | 1.4 | 139 |
| -8.57 | 5.5 | 1.4 | 137 |
| -8.59 | 5.5 | 1.4 | 142 |
| -8.61 | 5.5 | 1.4 | 155 |
| -8.62 | 5.5 | 1.4 | 151 |
| -8.63 | 5.5 | 1.4 | 115 |
| -8.65 | 5.5 | 1.4 | 170 |
| -8.67 | 5.5 | 1.4 | 146 |
| -8.68 | 5.5 | 1.4 | 175 |
| -8.72 | 5.5 | 1.4 | 152 |
| -8.73 | 5.5 | 1.4 | 170 |
| **Depth Avg** | **5.5** | **1.3** | **99** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -8.81 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.88 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -9.24 |
| Water-Mud Interface Navitracker [m TAW]: | -8.53 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 2.57 | 32 | 1.000 |
| 1.46 | 32 | 1.000 |
| 0.18 | 31 | 1.000 |
| -1.08 | 33 | 1.000 |
| -2.37 | 38 | 1.000 |
| -3.61 | 48 | 1.000 |
| -4.83 | 65 | 1.000 |
| -6.04 | 74 | 1.000 |
| -7.28 | 88 | 1.000 |
| -7.67 | 107 | 1.000 |
| -8.09 | 1889 | 1.000 |
| -8.53 | NaN | 1.000 |
| -8.94 | NaN | 1.191 |
| -9.14 | NaN | 1.265 |
| **Depth Avg** | **85** | **1.008** |

Siltprofiler & Navitracker-OBS

Location: Kallo

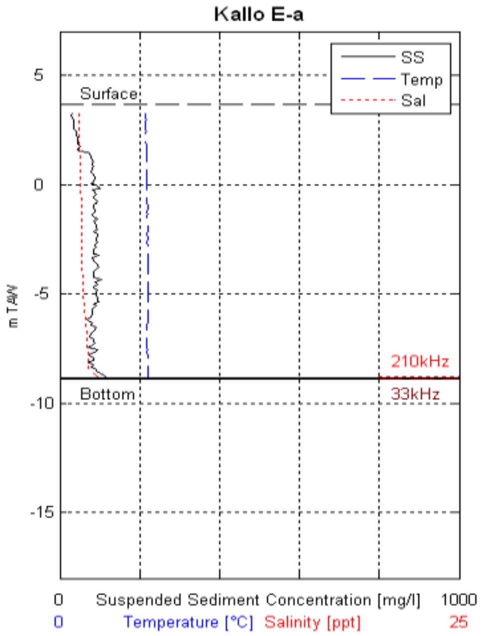
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

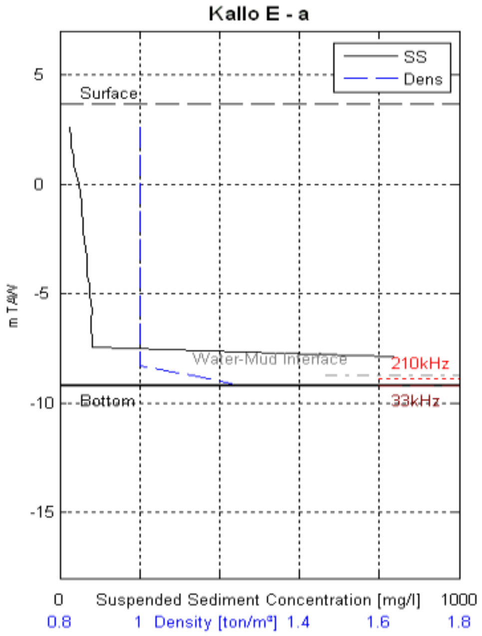
| 11265 HCBS - FEBRUARY 2005 SURVEY | 41 Ea |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 09:12 |
| Time after/before HT [MET]: | -1:17 |
| Coordinates [UTM-ED50] Easting: | 590426 |
| Coordinates [UTM-ED50] Northing: | 5680458 |
| Water-Bottom Interface Siltpr. [m TAW]: | -8.9 |
| Waterdepth 210 kHz Echo [m TAW]: | -8.79 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.87 |
| Surface elevation [m TAW]: | 3.65 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.24 | 5.4 | 1.2 | 29 |
| -2.90 | 5.5 | 1.3 | 98 |
| -4.84 | 5.5 | 1.4 | 131 |
| -8.27 | 5.5 | 1.8 | 118 |
| -8.38 | 5.5 | 1.9 | 102 |
| -8.48 | 5.5 | 2.0 | 90 |
| -8.58 | 5.5 | 2.0 | 89 |
| -8.58 | 5.5 | 2.0 | 89 |
| -8.60 | 5.5 | 2.0 | 89 |
| -8.61 | 5.5 | 2.0 | 77 |
| -8.63 | 5.5 | 2.0 | 99 |
| -8.64 | 5.5 | 2.0 | 83 |
| -8.65 | 5.5 | 2.1 | 106 |
| -8.68 | 5.5 | 2.2 | 99 |
| -8.69 | 5.5 | 2.1 | 122 |
| -8.73 | 5.5 | 2.3 | 102 |
| -8.74 | 5.5 | 2.1 | 112 |
| -8.75 | 5.5 | 2.4 | 103 |
| -8.77 | 5.5 | 2.4 | 128 |
| -8.78 | 5.5 | 2.5 | 105 |
| -8.79 | 5.5 | 2.5 | 124 |
| **Depth Avg** | **5.5** | **1.4** | **78** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -8.88 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.19 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -9.23 |
| Water-Mud Interface Navitracker [m TAW]: | -8.71 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 2.57 | 27 | 1.000 |
| 1.29 | 32 | 1.000 |
| 0.04 | 46 | 1.000 |
| -1.27 | 55 | 1.000 |
| -2.54 | 61 | 1.000 |
| -3.76 | 67 | 1.000 |
| -5.00 | 73 | 1.000 |
| -6.24 | 76 | 1.000 |
| -7.46 | 83 | 1.000 |
| -7.86 | 83 | 1.000 |
| -8.28 | NaN | 1.000 |
| -8.71 | NaN | 1.076 |
| -9.13 | NaN | 1.231 |
| **Depth Avg** | **70** | **1.008** |

## Siltprofiler & Navitracker-OBS

Location:
Kallo

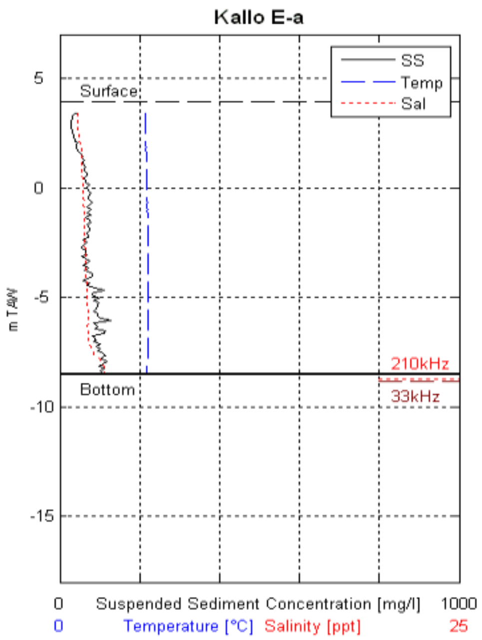
Date:
18/02/2005

*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

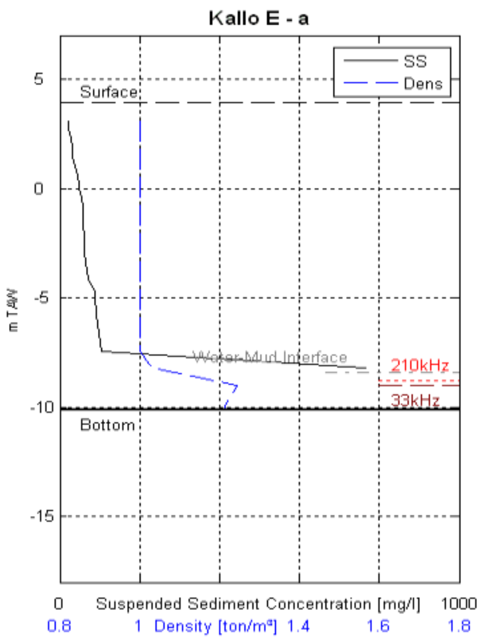
# 11265 HCBS - FEBRUARY 2005 SURVEY | 46 Ea




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 09:35 |
| Time after/before HT [MET]: | -0:54 |
| Coordinates [UTM-ED50] Easting: | 590421 |
| Coordinates [UTM-ED50] Northing: | 5680459 |
| Water-Bottom Interface Siltpr. [m TAW]: | -8.51 |
| Waterdepth 210 kHz Echo [m TAW]: | -8.74 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.83 |
| Surface elevation [m TAW]: | 3.91 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.40 | 5.4 | 1.1 | 39 |
| -1.98 | 5.5 | 1.5 | 62 |
| -4.13 | 5.5 | 1.6 | 76 |
| -7.90 | 5.5 | 2.5 | 85 |
| -8.00 | 5.5 | 2.7 | 89 |
| -8.09 | 5.5 | 2.8 | 88 |
| -8.17 | 5.4 | 2.8 | 98 |
| -8.21 | 5.5 | 2.8 | 139 |
| -8.22 | 5.5 | 2.7 | 96 |
| -8.24 | 5.5 | 2.8 | 96 |
| -8.27 | 5.5 | 2.7 | 105 |
| -8.28 | 5.4 | 2.9 | 122 |
| -8.29 | 5.5 | 2.8 | 149 |
| -8.32 | 5.5 | 2.8 | 117 |
| -8.35 | 5.4 | 2.8 | 79 |
| -8.37 | 5.5 | 2.8 | 155 |
| -8.38 | 5.4 | 2.7 | 105 |
| -8.40 | 5.5 | 2.8 | 73 |
| **Depth Avg** | **5.5** | **1.6** | **72** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -8.78 |
| Waterdepth 33 kHz Echo [m TAW]: | -9 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -10.13 |
| Water-Mud Interface Navitracker [m TAW]: | -8.40 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 3.11 | 23 | 1.000 |
| 1.92 | 33 | 1.000 |
| 0.60 | 45 | 1.000 |
| -0.42 | 52 | 1.000 |
| -1.69 | 59 | 1.000 |
| -2.93 | 63 | 1.000 |
| -4.16 | 72 | 1.000 |
| -5.63 | 91 | 1.000 |
| -6.75 | 97 | 1.000 |
| -8.03 | 106 | 1.000 |
| -8.40 | NaN | 1.006 |
| -8.87 | NaN | 1.187 |
| -9.17 | NaN | 1.277 |
| -9.48 | NaN | 1.224 |
| -9.78 | NaN | 1.218 |
| -10.03 | NaN | 1.212 |
| **Depth Avg** | **83** | **1.025** |

## Siltprofiler & Navitracker-OBS

Location:
Kallo

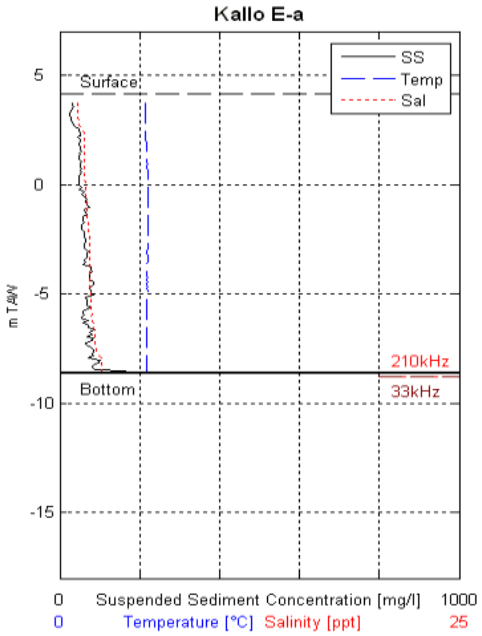
Date:
18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

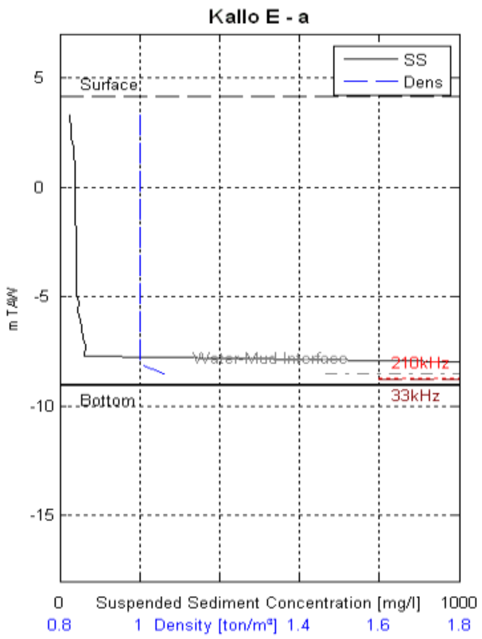
# 11265 HCBS - FEBRUARY 2005 SURVEY | 52 Ea




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 10:07 |
| Time after/before HT [MET]: | -0:22 |
| Coordinates [UTM-ED50] Easting: | 590428 |
| Coordinates [UTM-ED50] Northing: | 5680463 |
| Water-Bottom Interface Siltpr. [m TAW]: | -8.65 |
| Waterdepth 210 kHz Echo [m TAW]: | -8.77 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.80 |
| Surface elevation [m TAW]: | 4.16 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.71 | 5.4 | 1.1 | 31 |
| -2.87 | 5.5 | 1.9 | 62 |
| -5.32 | 5.5 | 2.0 | 56 |
| -8.03 | 5.5 | 2.6 | 118 |
| -8.12 | 5.5 | 2.6 | 145 |
| -8.23 | 5.5 | 2.6 | 73 |
| -8.33 | 5.4 | 2.6 | 89 |
| -8.33 | 5.4 | 2.6 | 89 |
| -8.35 | 5.4 | 2.6 | 70 |
| -8.36 | 5.5 | 2.6 | 80 |
| -8.37 | 5.4 | 2.6 | 73 |
| -8.39 | 5.4 | 2.6 | 67 |
| -8.41 | 5.4 | 2.6 | 82 |
| -8.42 | 5.4 | 2.6 | 79 |
| -8.44 | 5.4 | 2.6 | 79 |
| -8.45 | 5.4 | 2.6 | 73 |
| -8.48 | 5.4 | 2.7 | 79 |
| -8.50 | 5.4 | 2.6 | 72 |
| -8.51 | 5.4 | 2.6 | 90 |
| -8.53 | 5.4 | 2.6 | 65 |
| -8.54 | 5.4 | 2.6 | 677 |
| **Depth Avg** | **5.5** | **1.8** | **61** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -8.74 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.81 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -9.06 |
| Water-Mud Interface Navitracker [m TAW]: | -8.51 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 3.33 | 23 | 1.000 |
| 2.28 | 28 | 1.000 |
| 1.02 | 36 | 1.000 |
| -0.31 | 38 | 1.000 |
| -1.54 | 42 | 1.000 |
| -2.76 | 41 | 1.000 |
| -4.03 | 43 | 1.000 |
| -5.25 | 48 | 1.000 |
| -6.42 | 51 | 1.000 |
| -7.23 | 65 | 1.000 |
| -7.70 | 66 | 1.000 |
| -8.09 | 1258 | 1.000 |
| -8.51 | NaN | 1.000 |
| -8.96 | NaN | 1.215 |
| **Depth Avg** | **60** | **1.001** |

## Siltprofiler & Navitracker-OBS

Location:
Kallo

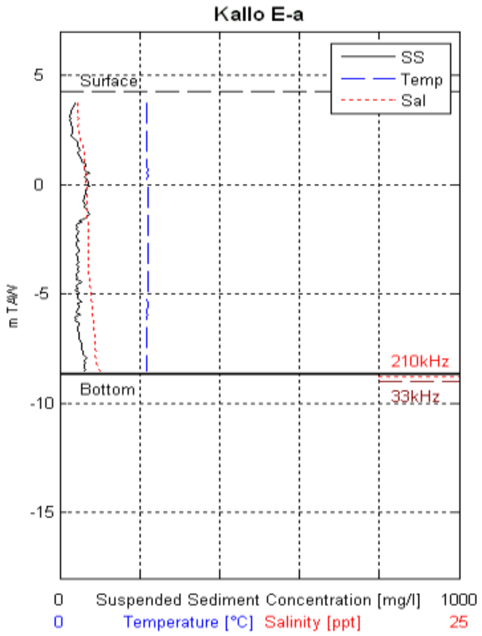
Date:
18/02/2005

*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

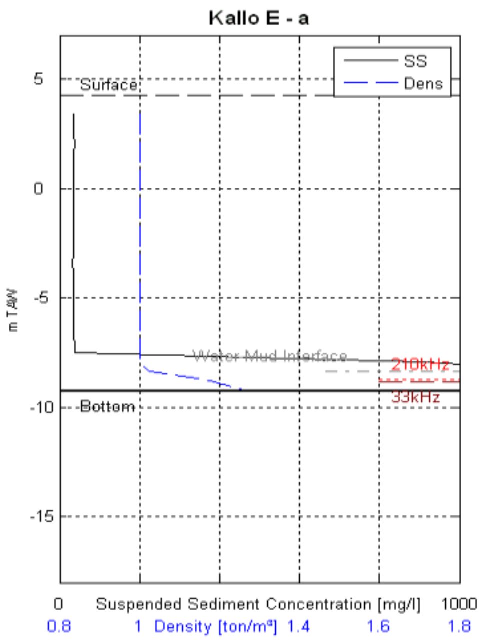
# 11265 HCBS - FEBRUARY 2005 SURVEY — 57 Ea




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 10:26 |
| Time after/before HT [MET]: | -0:03 |
| Coordinates [UTM-ED50] Easting: | 590426 |
| Coordinates [UTM-ED50] Northing: | 5680455 |
| Water-Bottom Interface Siltpr. [m TAW]: | -8.68 |
| Waterdepth 210 kHz Echo [m TAW]: | -8.78 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.98 |
| Surface elevation [m TAW]: | 4.25 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.75 | 5.5 | 1.2 | 41 |
| -1.78 | 5.5 | 1.8 | 60 |
| -4.03 | 5.5 | 1.8 | 39 |
| -8.07 | 5.4 | 2.2 | 62 |
| -8.16 | 5.4 | 2.3 | 56 |
| -8.27 | 5.5 | 2.4 | 59 |
| -8.34 | 5.4 | 2.4 | 67 |
| -8.38 | 5.4 | 2.5 | 55 |
| -8.39 | 5.5 | 2.4 | 69 |
| -8.41 | 5.5 | 2.5 | 65 |
| -8.43 | 5.5 | 2.4 | 80 |
| -8.44 | 5.5 | 2.4 | 59 |
| -8.45 | 5.5 | 2.5 | 60 |
| -8.48 | 5.4 | 2.4 | 62 |
| -8.49 | 5.5 | 2.5 | 65 |
| -8.51 | 5.5 | 2.5 | 66 |
| -8.52 | 5.5 | 2.4 | 58 |
| -8.53 | 5.5 | 2.5 | 58 |
| -8.54 | 5.4 | 2.5 | 53 |
| -8.55 | 5.4 | 2.5 | 70 |
| -8.57 | 5.4 | 2.6 | 55 |
| **Depth Avg** | **5.5** | **1.7** | **49** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -8.75 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.82 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -9.27 |
| Water-Mud Interface Navitracker [m TAW]: | -8.35 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 3.44 | 32 | NaN |
| 2.02 | 36 | 1.000 |
| 0.74 | 33 | 1.000 |
| -0.55 | 35 | 1.000 |
| -1.83 | 35 | 1.000 |
| -3.02 | 35 | 1.000 |
| -4.25 | 33 | 1.000 |
| -5.47 | 33 | 1.000 |
| -6.71 | 35 | 1.000 |
| -7.52 | 36 | 1.000 |
| -7.95 | 55 | 1.000 |
| -8.35 | 1301 | 1.000 |
| -8.75 | NaN | 1.120 |
| -9.17 | NaN | 1.254 |
| **Depth Avg** | **84** | **1.010** |

Siltprofiler & Navitracker-OBS

Location: Kallo

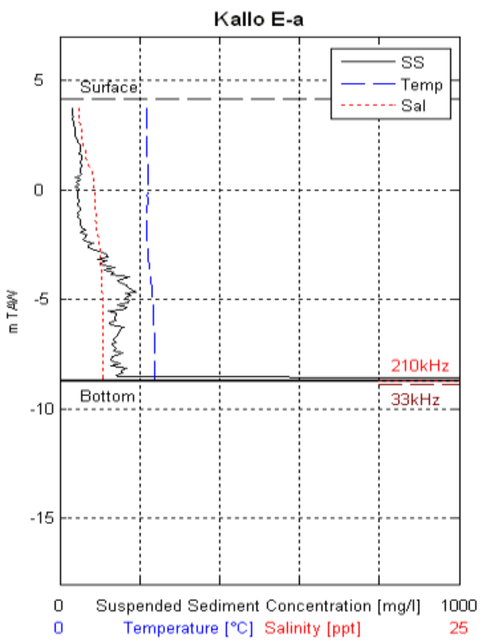
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

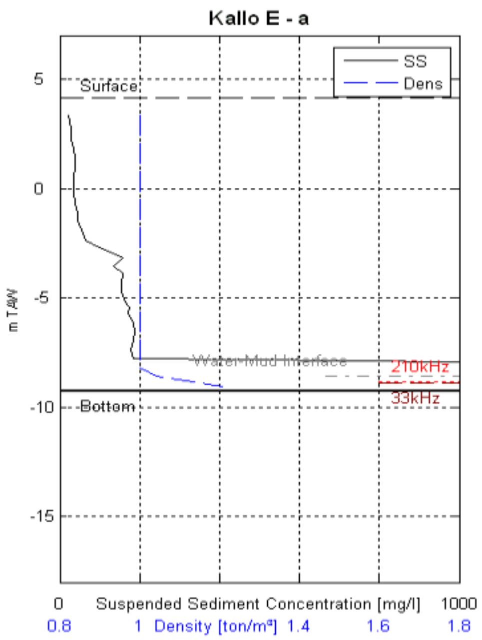
# 11265 HCBS - FEBRUARY 2005 SURVEY | 62 Ea




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 10:58 |
| Time after/before HT [MET]: | 0:28 |
| Coordinates [UTM-ED50] Easting: | 590426 |
| Coordinates [UTM-ED50] Northing: | 5680459 |
| Water-Bottom Interface Siltpr. [m TAW]: | -8.72 |
| Waterdepth 210 kHz Echo [m TAW]: | -8.74 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.88 |
| Surface elevation [m TAW]: | 4.15 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.74 | 5.4 | 1.2 | 31 |
| -1.65 | 5.5 | 2.3 | 41 |
| -4.12 | 5.7 | 2.6 | 162 |
| -8.11 | 5.9 | 2.7 | 151 |
| -8.20 | 6.0 | 2.7 | 175 |
| -8.29 | 5.9 | 2.7 | 125 |
| -8.40 | 5.9 | 2.7 | 155 |
| -8.41 | 6.0 | 2.6 | 112 |
| -8.42 | 6.0 | 2.7 | 140 |
| -8.44 | 5.9 | 2.7 | 213 |
| -8.45 | 5.9 | 2.7 | 121 |
| -8.46 | 6.0 | 2.6 | 158 |
| -8.47 | 6.0 | 2.6 | 158 |
| -8.48 | 6.0 | 2.7 | 143 |
| -8.50 | 6.0 | 2.6 | 190 |
| -8.51 | 6.0 | 2.7 | 89 |
| -8.52 | 6.0 | 2.6 | 137 |
| -8.54 | 5.9 | 2.6 | 199 |
| -8.55 | 6.0 | 2.6 | 143 |
| -8.56 | 6.0 | 2.7 | 160 |
| -8.58 | 5.9 | 2.6 | 124 |
| -8.61 | 5.9 | 2.7 | 121 |
| **Depth Avg** | **5.6** | **2.2** | **98** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -8.83 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.91 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -9.26 |
| Water-Mud Interface Navitracker [m TAW]: | -8.59 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 3.38 | 23 | 1.000 |
| 2.29 | 30 | 1.000 |
| 1.01 | 38 | 1.000 |
| -0.19 | 36 | 1.000 |
| -1.47 | 49 | 1.000 |
| -2.66 | 104 | 1.000 |
| -3.88 | 152 | 1.000 |
| -5.19 | 158 | 1.000 |
| -6.55 | 189 | 1.000 |
| -7.39 | 169 | 1.000 |
| -7.76 | 188 | 1.000 |
| -8.18 | 2941 | 1.000 |
| -8.59 | NaN | 1.000 |
| -9.02 | NaN | 1.152 |
| -9.16 | NaN | 1.224 |
| **Depth Avg** | **133** | **1.005** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

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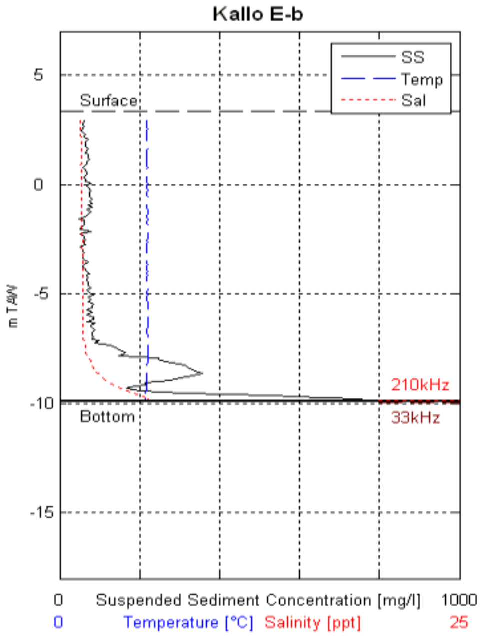
### G.2.2. Measurement location b

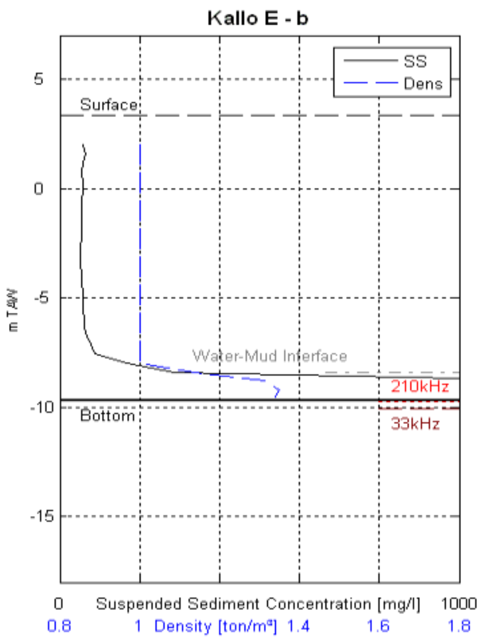
# 11265 HCBS - FEBRUARY 2005 SURVEY | 35 Eb




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 08:50 |
| Time after/before HT [MET]: | -1:39 |
| Coordinates [UTM-ED50] Easting: | 590406 |
| Coordinates [UTM-ED50] Northing: | 5680358 |
| Water-Bottom Interface Siltpr. [m TAW]: | -9.92 |
| Waterdepth 210 kHz Echo [m TAW]: | -9.86 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.98 |
| Surface elevation [m TAW]: | 3.34 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 2.93 | 5.5 | 1.3 | 65 |
| -3.00 | 5.5 | 1.4 | 56 |
| -5.30 | 5.5 | 1.4 | 55 |
| -9.31 | 5.4 | 3.7 | 145 |
| -9.41 | 5.4 | 4.3 | 190 |
| -9.51 | 5.4 | 4.6 | 278 |
| -9.61 | 5.4 | 4.9 | 481 |
| -9.62 | 5.4 | 4.7 | 466 |
| -9.63 | 5.4 | 4.7 | 563 |
| -9.64 | 5.4 | 5.2 | 575 |
| -9.67 | 5.4 | 5.2 | 593 |
| -9.69 | 5.4 | 5.5 | 528 |
| -9.71 | 5.4 | 5.4 | 396 |
| -9.72 | 5.4 | 5.3 | 554 |
| -9.73 | 5.3 | 5.5 | 559 |
| -9.74 | 5.3 | 5.5 | 651 |
| -9.75 | 5.3 | 5.3 | 556 |
| -9.76 | 5.3 | 5.5 | 660 |
| -9.77 | 5.3 | 5.3 | 755 |
| -9.79 | 5.3 | 5.3 | 787 |
| -9.80 | 5.3 | 5.5 | 757 |
| -9.81 | 5.3 | 5.6 | 751 |
| **Depth Avg** | **5.5** | **1.6** | **108** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -9.75 |
| Waterdepth 33 kHz Echo [m TAW]: | -10.05 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -9.69 |
| Water-Mud Interface Navitracker [m TAW]: | -8.39 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 2.01 | 55 | 1.000 |
| 0.72 | 53 | 1.000 |
| -0.56 | 57 | 1.000 |
| -1.82 | 56 | 1.000 |
| -3.06 | 53 | 1.000 |
| -4.32 | 55 | 1.000 |
| -5.55 | 57 | 1.000 |
| -6.75 | 62 | 1.000 |
| -7.97 | 126 | 1.000 |
| -8.39 | 279 | 1.000 |
| -9.59 | NaN | 1.326 |
| **Depth Avg** | **148** | **1.029** |

Siltprofiler & Navitracker-OBS

Location: Kallo

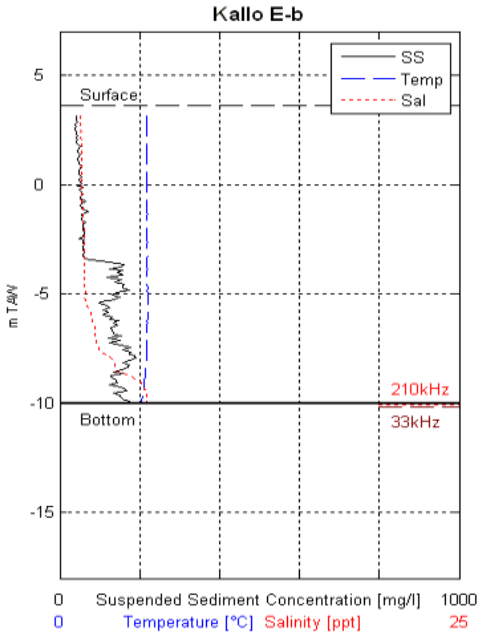
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

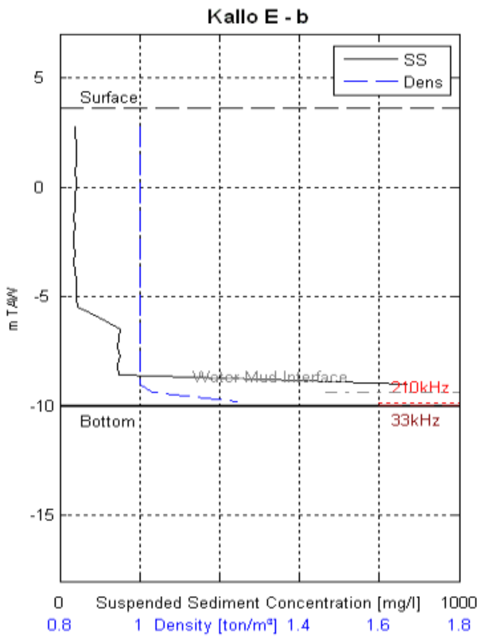
| 11265 HCBS - FEBRUARY 2005 SURVEY | 40 Eb |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 09:08 |
| Time after/before HT [MET]: | -1:21 |
| Coordinates [UTM-ED50] Easting: | 590407 |
| Coordinates [UTM-ED50] Northing: | 5680343 |
| Water-Bottom Interface Siltpr. [m TAW]: | -10.04 |
| Waterdepth 210 kHz Echo [m TAW]: | -10.06 |
| Waterdepth 33 kHz Echo [m TAW]: | -10.19 |
| Surface elevation [m TAW]: | 3.59 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.18 | 5.5 | 1.3 | 41 |
| -3.59 | 5.5 | 1.5 | 148 |
| -5.66 | 5.5 | 1.8 | 111 |
| -9.43 | 5.2 | 5.5 | 111 |
| -9.53 | 5.2 | 5.6 | 109 |
| -9.62 | 5.2 | 5.4 | 190 |
| -9.72 | 5.2 | 5.4 | 137 |
| -9.74 | 5.1 | 5.5 | 114 |
| -9.76 | 5.2 | 5.5 | 149 |
| -9.77 | 5.2 | 5.4 | 250 |
| -9.79 | 5.2 | 5.5 | 136 |
| -9.80 | 5.2 | 5.6 | 109 |
| -9.81 | 5.2 | 5.4 | 164 |
| -9.85 | 5.1 | 5.5 | 137 |
| -9.87 | 5.1 | 5.6 | 190 |
| -9.88 | 5.2 | 5.3 | 175 |
| -9.90 | 5.1 | 5.5 | 194 |
| -9.91 | 5.1 | 5.6 | 160 |
| -9.93 | 5.1 | 5.5 | 148 |
| **Depth Avg** | **5.4** | **2.0** | **96** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -9.84 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.94 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -9.99 |
| Water-Mud Interface Navitracker [m TAW]: | -9.37 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 2.77 | 36 | 1.000 |
| 1.56 | 43 | 1.000 |
| 0.27 | 40 | 1.000 |
| -0.92 | 40 | 1.000 |
| -2.22 | 36 | 1.000 |
| -3.47 | 36 | 1.000 |
| -4.67 | 42 | 1.000 |
| -5.87 | 49 | 1.000 |
| -6.94 | 151 | 1.000 |
| -8.15 | 141 | 1.000 |
| -9.89 | NaN | 1.350 |
| **Depth Avg** | **77** | **1.005** |

Siltprofiler & Navitracker-OBS

Location: Kallo

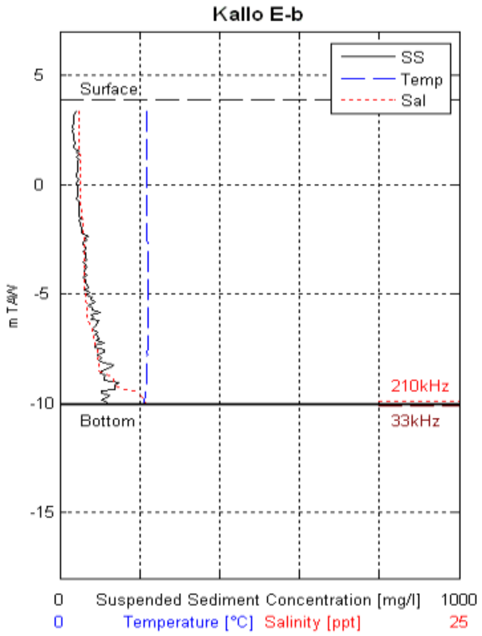
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

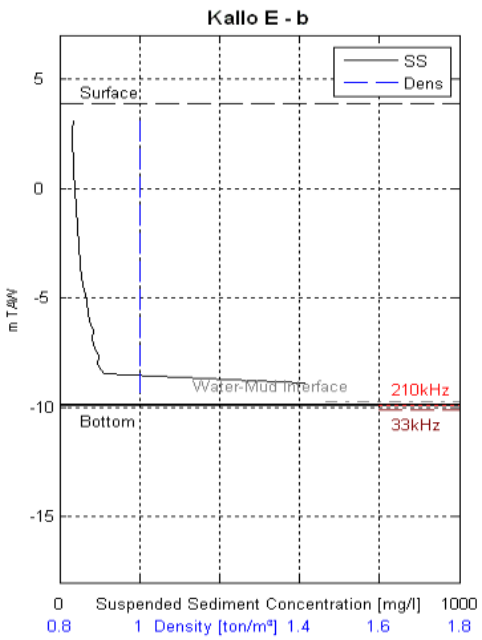
| 11265 HCBS - FEBRUARY 2005 SURVEY | 45 Eb |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 09:30 |
| Time after/before HT [MET]: | -0:59 |
| Coordinates [UTM-ED50] Easting: | 590412 |
| Coordinates [UTM-ED50] Northing: | 5680348 |
| Water-Bottom Interface Siltpr. [m TAW]: | -10.09 |
| Waterdepth 210 kHz Echo [m TAW]: | -9.93 |
| Waterdepth 33 kHz Echo [m TAW]: | -10.12 |
| Surface elevation [m TAW]: | 3.86 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.39 | 5.4 | 1.2 | 39 |
| -2.82 | 5.5 | 1.5 | 58 |
| -5.15 | 5.5 | 1.6 | 56 |
| -9.48 | 5.4 | 5.0 | 56 |
| -9.58 | 5.3 | 5.2 | 99 |
| -9.68 | 5.3 | 5.1 | 108 |
| -9.78 | 5.3 | 5.3 | 134 |
| -9.79 | 5.3 | 5.3 | 106 |
| -9.82 | 5.3 | 5.2 | 149 |
| -9.83 | 5.3 | 5.2 | 98 |
| -9.85 | 5.3 | 5.4 | 63 |
| -9.86 | 5.3 | 5.3 | 59 |
| -9.87 | 5.3 | 5.2 | 143 |
| -9.89 | 5.3 | 5.4 | 75 |
| -9.91 | 5.3 | 5.4 | 114 |
| -9.93 | 5.3 | 5.3 | 102 |
| -9.94 | 5.2 | 5.4 | 143 |
| -9.95 | 5.3 | 5.5 | 108 |
| -9.96 | 5.3 | 5.2 | 105 |
| -9.98 | 5.3 | 5.5 | 86 |
| **Depth Avg** | **5.5** | **1.8** | **68** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -9.93 |
| Waterdepth 33 kHz Echo [m TAW]: | -10.13 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -9.93 |
| Water-Mud Interface Navitracker [m TAW]: | -9.73 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 3.06 | 33 | 1.000 |
| 1.88 | 33 | 1.000 |
| 0.60 | 36 | 1.000 |
| -0.68 | 41 | 1.000 |
| -1.95 | 45 | 1.000 |
| -3.21 | 49 | 1.000 |
| -4.42 | 57 | 1.000 |
| -5.63 | 73 | 1.000 |
| -6.84 | 82 | 1.000 |
| -8.06 | 94 | 1.000 |
| -8.48 | 112 | 1.000 |
| -8.90 | 118 | 1.000 |
| -9.31 | NaN | 1.000 |
| -9.73 | NaN | 1.115 |
| -9.83 | NaN | 1.341 |
| **Depth Avg** | **64** | **1.000** |

Siltprofiler & Navitracker-OBS

Location: Kallo

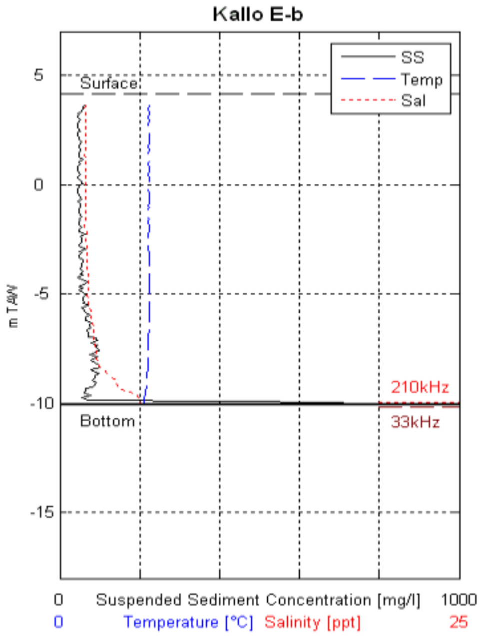
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

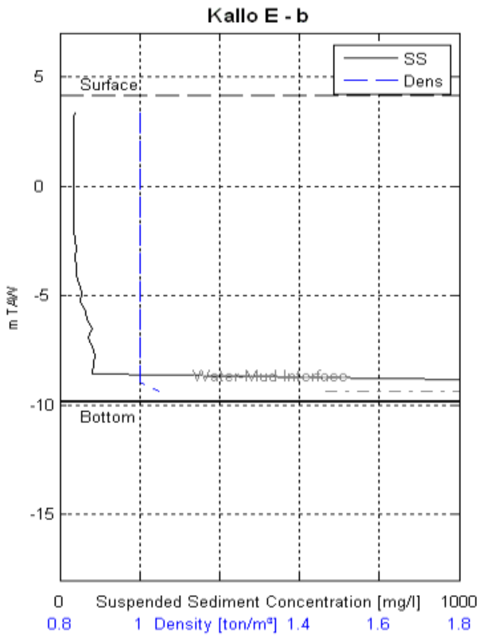
| 11265 HCBS - FEBRUARY 2005 SURVEY | 51 Eb |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 10:02 |
| Time after/before HT [MET]: | -0:27 |
| Coordinates [UTM-ED50] Easting: | 590408 |
| Coordinates [UTM-ED50] Northing: | 5680349 |
| Water-Bottom Interface Siltpr. [m TAW]: | -10.09 |
| Waterdepth 210 kHz Echo [m TAW]: | -9.95 |
| Waterdepth 33 kHz Echo [m TAW]: | -10.17 |
| Surface elevation [m TAW]: | 4.14 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.66 | 5.6 | 1.6 | 58 |
| -3.42 | 5.6 | 1.7 | 49 |
| -5.83 | 5.6 | 2.0 | 101 |
| -9.48 | 5.4 | 4.3 | 49 |
| -9.57 | 5.4 | 4.7 | 41 |
| -9.68 | 5.4 | 4.7 | 83 |
| -9.77 | 5.3 | 5.0 | 55 |
| -9.82 | 5.3 | 5.0 | 75 |
| -9.83 | 5.3 | 5.1 | 114 |
| -9.84 | 5.3 | 5.1 | 63 |
| -9.85 | 5.3 | 5.1 | 85 |
| -9.86 | 5.3 | 5.2 | 120 |
| -9.87 | 5.3 | 5.0 | 85 |
| -9.88 | 5.3 | 5.1 | 76 |
| -9.89 | 5.3 | 5.1 | 86 |
| -9.90 | 5.3 | 5.0 | 83 |
| -9.92 | 5.3 | 5.0 | 142 |
| -9.93 | 5.3 | 5.0 | 95 |
| -9.94 | 5.3 | 5.3 | 101 |
| -9.95 | 5.3 | 5.1 | 127 |
| -9.97 | 5.3 | 5.1 | 117 |
| -9.98 | 5.2 | 5.1 | 6631 |
| **Depth Avg** | **5.5** | **2.0** | **62** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | 18.13 |
| Waterdepth 33 kHz Echo [m TAW]: | 18.21 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -9.87 |
| Water-Mud Interface Navitracker [m TAW]: | -9.39 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 3.34 | 36 | 1.000 |
| 2.23 | 35 | 1.000 |
| 0.96 | 36 | 1.000 |
| -0.37 | 35 | 1.000 |
| -1.62 | 35 | 1.000 |
| -2.85 | 40 | 1.000 |
| -4.09 | 43 | 1.000 |
| -5.31 | 53 | 1.000 |
| -6.51 | 82 | 1.000 |
| -7.71 | 84 | 1.000 |
| -8.15 | 88 | 1.000 |
| -8.57 | 81 | 1.000 |
| -8.96 | 87 | 1.000 |
| -9.39 | NaN | 1.048 |
| -9.77 | NaN | 1.171 |
| **Depth Avg** | **70** | **1.001** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

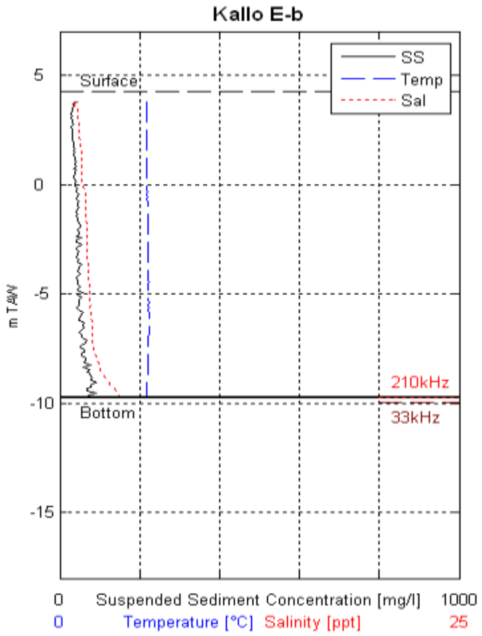
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

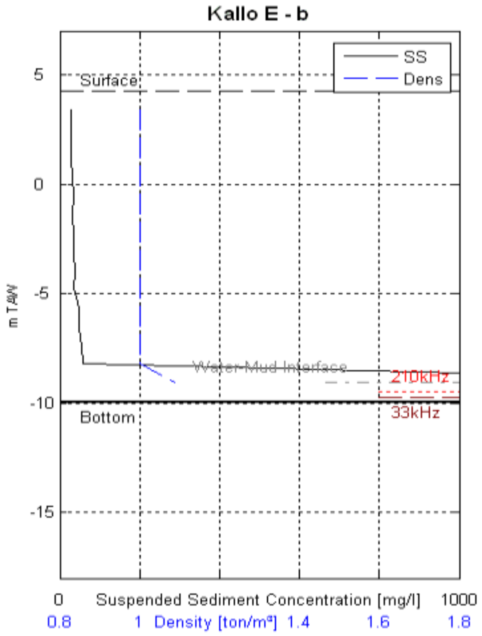
# 11265 HCBS - FEBRUARY 2005 SURVEY | 56 Eb




**Siltprofiler**

Date & Time [MET]: 18/2/2005 10:20
Time after/before HT [MET]: -0:09
Coordinates [UTM-ED50] Easting: 590409
Coordinates [UTM-ED50] Northing: 5680353
Water-Bottom Interface Siltpr. [m TAW]: -9.75
Waterdepth 210 kHz Echo [m TAW]: -9.75
Waterdepth 33 kHz Echo [m TAW]: -9.97
Surface elevation [m TAW]: 4.24

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.79 | 5.4 | 1.2 | 35 |
| -2.97 | 5.5 | 1.7 | 41 |
| -5.46 | 5.6 | 1.9 | 41 |
| -9.13 | 5.5 | 3.0 | 58 |
| -9.22 | 5.5 | 3.3 | 58 |
| -9.34 | 5.5 | 3.6 | 60 |
| -9.44 | 5.4 | 3.5 | 60 |
| -9.45 | 5.4 | 3.4 | 62 |
| -9.47 | 5.5 | 3.5 | 88 |
| -9.48 | 5.4 | 3.5 | 82 |
| -9.49 | 5.4 | 3.5 | 56 |
| -9.50 | 5.4 | 3.5 | 92 |
| -9.52 | 5.5 | 3.5 | 83 |
| -9.53 | 5.4 | 3.5 | 90 |
| -9.54 | 5.4 | 3.5 | 80 |
| -9.55 | 5.4 | 3.5 | 63 |
| -9.56 | 5.4 | 3.6 | 117 |
| -9.59 | 5.5 | 3.6 | 56 |
| -9.60 | 5.4 | 3.6 | 65 |
| -9.61 | 5.4 | 3.6 | 55 |
| -9.63 | 5.4 | 3.7 | 88 |
| -9.64 | 5.4 | 3.8 | 65 |
| **Depth Avg** | **5.5** | **1.8** | **48** |




**Navitracker-OBS**

Waterdepth 210 kHz Echo [m TAW]: -9.47
Waterdepth 33 kHz Echo [m TAW]: -9.76
Water-Bottom Interface CTD-OBS [m TAW]: -9.98
Water-Mud Interface Navitracker [m TAW]: -9.07

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 3.40 | 30 | NaN |
| 1.94 | 30 | 1.000 |
| 0.51 | 30 | 1.000 |
| -0.54 | 32 | 1.000 |
| -2.27 | 33 | 1.000 |
| -3.96 | 36 | 1.000 |
| -5.34 | 46 | 1.000 |
| -6.55 | 46 | 1.000 |
| -8.22 | 53 | 1.000 |
| -9.07 | 2165 | 1.000 |
| -9.78 | NaN | 1.262 |
| -9.83 | NaN | 1.332 |
| -9.86 | NaN | 1.337 |
| -9.88 | NaN | 1.350 |
| **Depth Avg** | **105** | **1.003** |

Siltprofiler & Navitracker-OBS

*Data processed by:* IMDC

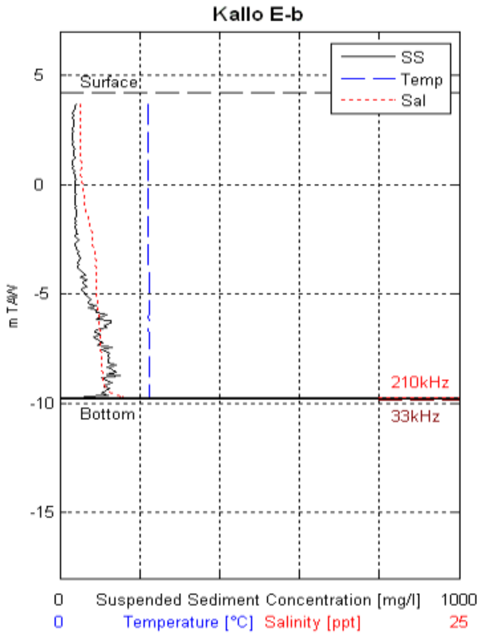
*In association with:* WL | delft hydraulics, GEMS International

Location: Kallo

Date: 18/02/2005

*I/RA/11265/05.014MSA*

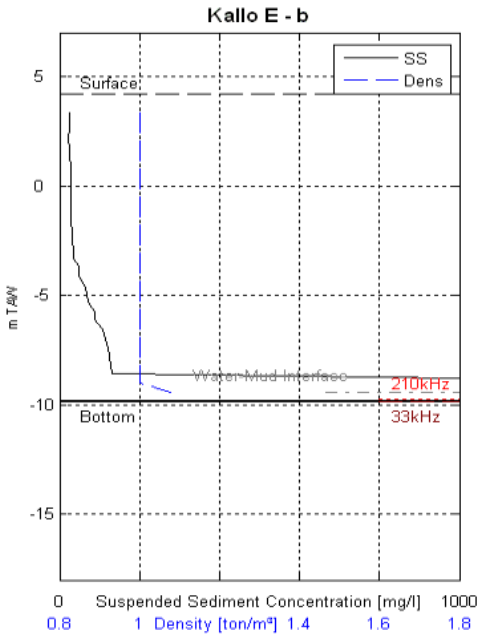
# 11265 HCBS - FEBRUARY 2005 SURVEY | 61 Eb




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 10:55 |
| Time after/before HT [MET]: | 0:25 |
| Coordinates [UTM-ED50] Easting: | 590403 |
| Coordinates [UTM-ED50] Northing: | 5680350 |
| Water-Bottom Interface Siltpr. [m TAW]: | -9.81 |
| Waterdepth 210 kHz Echo [m TAW]: | -9.77 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.88 |
| Surface elevation [m TAW]: | 4.18 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.69 | 5.5 | 1.3 | 38 |
| -2.46 | 5.5 | 2.0 | 42 |
| -4.86 | 5.6 | 2.3 | 43 |
| -9.20 | 5.6 | 2.9 | 114 |
| -9.29 | 5.6 | 2.9 | 157 |
| -9.39 | 5.6 | 3.1 | 88 |
| -9.49 | 5.6 | 3.0 | 148 |
| -9.50 | 5.6 | 3.0 | 169 |
| -9.53 | 5.6 | 3.0 | 59 |
| -9.57 | 5.6 | 3.2 | 93 |
| -9.58 | 5.6 | 3.1 | 88 |
| -9.61 | 5.6 | 3.2 | 160 |
| -9.63 | 5.6 | 3.2 | 200 |
| -9.64 | 5.6 | 3.4 | 63 |
| -9.67 | 5.6 | 3.5 | 96 |
| -9.69 | 5.6 | 4.1 | 112 |
| -9.70 | 5.6 | 4.0 | 60 |
| **Depth Avg** | **5.5** | **2.0** | **64** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -9.74 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.85 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -9.83 |
| Water-Mud Interface Navitracker [m TAW]: | -9.40 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 3.41 | 25 | 1.000 |
| 2.19 | 23 | 1.000 |
| 0.92 | 28 | 1.000 |
| -0.37 | 28 | 1.000 |
| -1.64 | 28 | 1.000 |
| -2.89 | 35 | 1.000 |
| -4.09 | 43 | 1.000 |
| -5.33 | 69 | 1.000 |
| -6.56 | 99 | 1.000 |
| -7.75 | 122 | 1.000 |
| -8.18 | 127 | 1.000 |
| -8.59 | 129 | 1.000 |
| -8.99 | 2054 | 1.000 |
| -9.40 | NaN | 1.000 |
| -9.68 | NaN | 1.303 |
| -9.73 | NaN | 1.316 |
| **Depth Avg** | **85** | **1.001** |

Siltprofiler & Navitracker-OBS

Location: Kallo

Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

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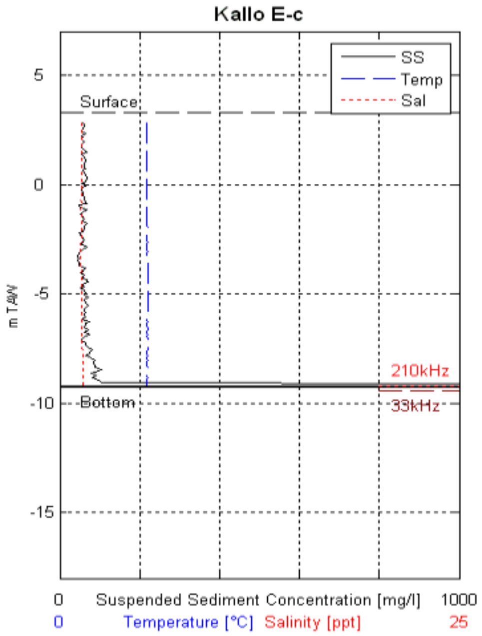
### G.2.3. Measurement location c

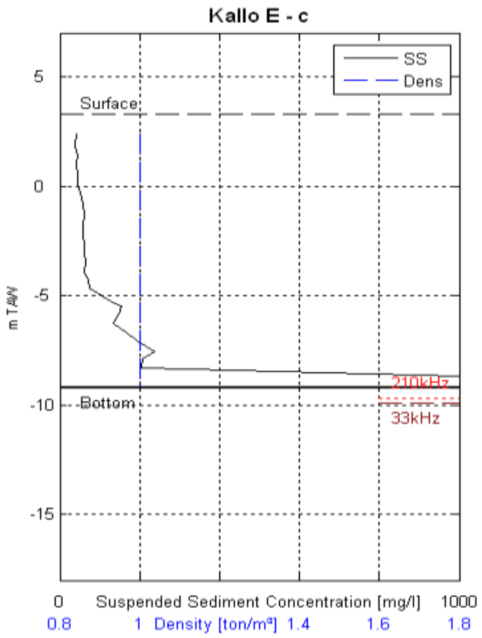
# 11265 HCBS - FEBRUARY 2005 SURVEY | 34 Ec




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 08:42 |
| Time after/before HT [MET]: | -1:47 |
| Coordinates [UTM-ED50] Easting: | 590390 |
| Coordinates [UTM-ED50] Northing: | 5680248 |
| Water-Bottom Interface Siltpr. [m TAW]: | -9.27 |
| Waterdepth 210 kHz Echo [m TAW]: | -9.23 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.41 |
| Surface elevation [m TAW]: | 3.27 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 2.82 | 5.5 | 1.3 | 59 |
| -2.47 | 5.5 | 1.3 | 58 |
| -4.72 | 5.5 | 1.3 | 38 |
| -8.65 | 5.5 | 1.4 | 62 |
| -8.76 | 5.5 | 1.4 | 79 |
| -8.85 | 5.5 | 1.4 | 95 |
| -8.94 | 5.5 | 1.4 | 99 |
| -8.96 | 5.5 | 1.4 | 83 |
| -8.97 | 5.5 | 1.4 | 106 |
| -8.98 | 5.5 | 1.4 | 120 |
| -8.99 | 5.5 | 1.4 | 82 |
| -9.00 | 5.5 | 1.4 | 122 |
| -9.01 | 5.5 | 1.4 | 59 |
| -9.03 | 5.5 | 1.5 | 99 |
| -9.05 | 5.5 | 1.4 | 137 |
| -9.06 | 5.5 | 1.4 | 125 |
| -9.07 | 5.5 | 1.4 | 118 |
| -9.09 | 5.5 | 1.5 | 96 |
| -9.12 | 5.5 | 1.5 | 82 |
| -9.13 | 5.5 | 1.4 | 143 |
| -9.14 | 5.5 | 1.4 | 118 |
| -9.16 | 5.5 | 1.5 | 5998 |
| **Depth Avg** | **5.5** | **1.4** | **68** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -9.71 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.91 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -9.19 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 2.41 | 38 | 1.000 |
| 1.40 | 41 | 1.000 |
| 0.14 | 45 | 1.000 |
| -0.94 | 67 | 1.000 |
| -2.21 | 56 | 1.000 |
| -3.45 | 69 | 1.000 |
| -4.69 | 77 | 1.000 |
| -5.86 | 157 | 1.000 |
| -7.07 | 190 | 1.000 |
| -7.53 | 228 | 1.000 |
| -7.87 | 211 | 1.000 |
| -8.31 | 203 | 1.000 |
| -8.71 | 189 | 1.000 |
| -9.09 | NaN | 1.000 |
| **Depth Avg** | **108** | **1.000** |

Siltprofiler & Navitracker-OBS

Location: Kallo

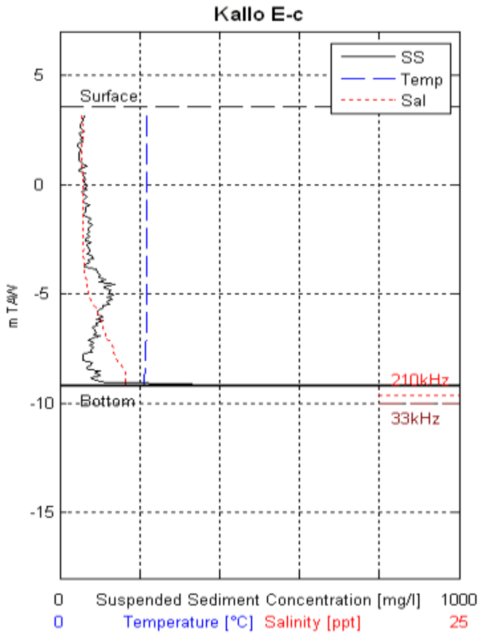
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

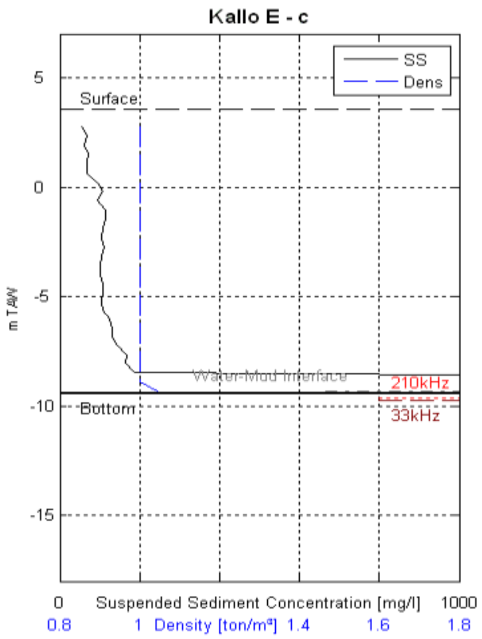
| 11265 HCBS - FEBRUARY 2005 SURVEY | 39 Ec |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 09:04 |
| Time after/before HT [MET]: | -1:25 |
| Coordinates [UTM-ED50] Easting: | 590384 |
| Coordinates [UTM-ED50] Northing: | 5680253 |
| Water-Bottom Interface Siltpr. [m TAW]: | -9.23 |
| Waterdepth 210 kHz Echo [m TAW]: | -9.65 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.99 |
| Surface elevation [m TAW]: | 3.53 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.12 | 5.4 | 1.4 | 50 |
| -2.55 | 5.5 | 1.4 | 60 |
| -4.76 | 5.5 | 1.7 | 176 |
| -8.62 | 5.3 | 4.2 | 115 |
| -8.71 | 5.3 | 4.0 | 76 |
| -8.81 | 5.3 | 4.2 | 55 |
| -8.91 | 5.3 | 4.2 | 72 |
| -8.92 | 5.3 | 4.0 | 59 |
| -8.93 | 5.3 | 4.1 | 140 |
| -8.94 | 5.3 | 4.1 | 112 |
| -8.95 | 5.3 | 4.1 | 83 |
| -8.96 | 5.3 | 4.1 | 73 |
| -8.99 | 5.3 | 4.1 | 82 |
| -9.00 | 5.3 | 4.1 | 86 |
| -9.01 | 5.3 | 4.1 | 86 |
| -9.02 | 5.3 | 4.1 | 90 |
| -9.03 | 5.3 | 4.1 | 128 |
| -9.04 | 5.3 | 4.1 | 157 |
| -9.05 | 5.3 | 4.2 | 149 |
| -9.06 | 5.3 | 4.1 | 112 |
| -9.09 | 5.3 | 4.1 | 105 |
| -9.12 | 5.3 | 4.1 | 329 |
| **Depth Avg** | **5.4** | **2.0** | **77** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -9.63 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.75 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -9.40 |
| Water-Mud Interface Navitracker [m TAW]: | -9.30 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 2.75 | 55 | NaN |
| 1.50 | 69 | 1.000 |
| 0.21 | 99 | 1.000 |
| -1.05 | 92 | 1.000 |
| -2.34 | 102 | 1.000 |
| -3.58 | 104 | 1.000 |
| -4.81 | 108 | 1.000 |
| -6.01 | 113 | 1.000 |
| -7.24 | 128 | 1.000 |
| -7.65 | 178 | 1.000 |
| -8.05 | 160 | 1.000 |
| -8.47 | 189 | 1.000 |
| -8.87 | 2876 | 1.000 |
| -9.30 | NaN | 1.044 |
| **Depth Avg** | **150** | **1.001** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

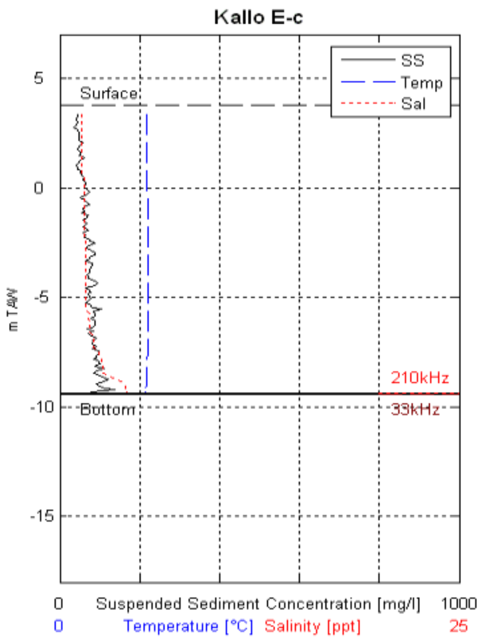
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

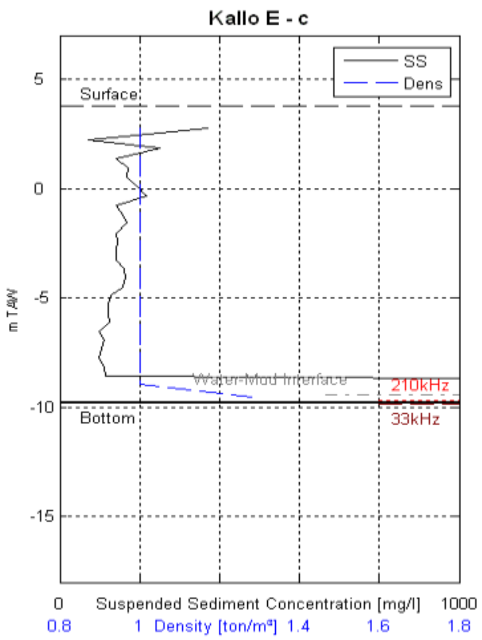
# 11265 HCBS - FEBRUARY 2005 SURVEY | 44 Ec




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 09:25 |
| Time after/before HT [MET]: | -1:04 |
| Coordinates [UTM-ED50] Easting: | 590397 |
| Coordinates [UTM-ED50] Northing: | 5680254 |
| Water-Bottom Interface Siltpr. [m TAW]: | -9.41 |
| Waterdepth 210 kHz Echo [m TAW]: | -9.38 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.44 |
| Surface elevation [m TAW]: | 3.79 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.38 | 5.5 | 1.3 | 49 |
| -3.07 | 5.5 | 1.6 | 102 |
| -5.12 | 5.5 | 1.6 | 60 |
| -8.80 | 5.4 | 3.4 | 86 |
| -8.90 | 5.4 | 4.2 | 93 |
| -8.99 | 5.4 | 3.9 | 80 |
| -9.09 | 5.4 | 4.2 | 111 |
| -9.09 | 5.4 | 4.2 | 111 |
| -9.13 | 5.4 | 4.2 | 151 |
| -9.16 | 5.4 | 4.1 | 101 |
| -9.17 | 5.4 | 4.1 | 118 |
| -9.18 | 5.4 | 4.1 | 79 |
| -9.20 | 5.4 | 4.1 | 137 |
| -9.21 | 5.4 | 4.2 | 118 |
| -9.22 | 5.4 | 4.3 | 160 |
| -9.24 | 5.4 | 4.3 | 170 |
| -9.25 | 5.4 | 4.2 | 125 |
| -9.28 | 5.3 | 4.3 | 133 |
| -9.30 | 5.4 | 4.1 | 99 |
| **Depth Avg** | **5.5** | **1.8** | **71** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -9.71 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.83 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -9.82 |
| Water-Mud Interface Navitracker [m TAW]: | -9.45 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 2.98 | 701 | 1.000 |
| 1.83 | 254 | 1.000 |
| 0.53 | 225 | 1.000 |
| -0.75 | 126 | 1.000 |
| -2.03 | 135 | 1.000 |
| -3.27 | 165 | 1.000 |
| -4.49 | 165 | 1.000 |
| -5.68 | 133 | 1.000 |
| -6.90 | 118 | 1.000 |
| -7.75 | 96 | 1.000 |
| -8.16 | 102 | 1.000 |
| -8.56 | 126 | 1.000 |
| -8.96 | 2598 | 1.000 |
| -9.45 | NaN | 1.032 |
| -9.58 | NaN | 1.394 |
| -9.72 | NaN | 1.321 |
| **Depth Avg** | **205** | **1.006** |

## Siltprofiler & Navitracker-OBS

Location:
Kallo

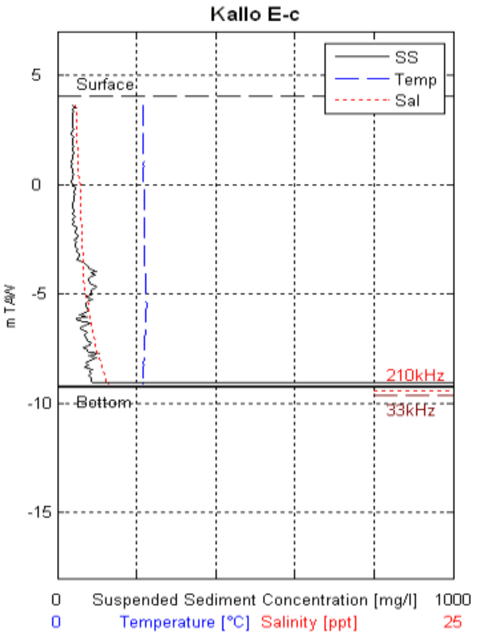
Date:
18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

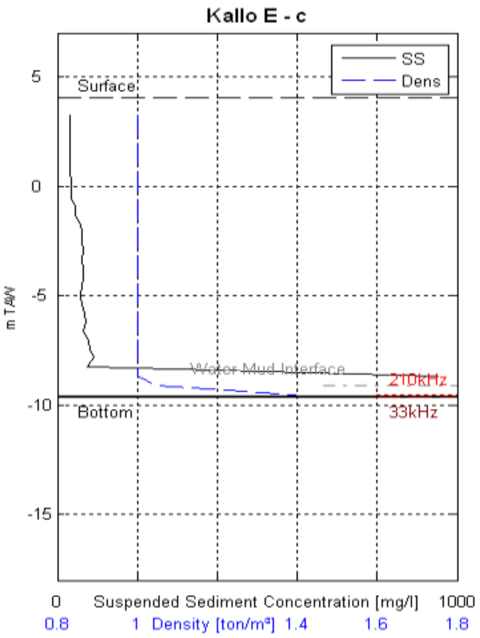
# 11265 HCBS - FEBRUARY 2005 SURVEY — 59 Ec




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 09:50 |
| Time after/before HT [MET]: | -0:39 |
| Coordinates [UTM-ED50] Easting: | 590390 |
| Coordinates [UTM-ED50] Northing: | 5680253 |
| Water-Bottom Interface Siltpr. [m TAW]: | -9.25 |
| Waterdepth 210 kHz Echo [m TAW]: | -9.45 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.64 |
| Surface elevation [m TAW]: | 4.06 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.60 | 5.4 | 1.2 | 39 |
| -2.96 | 5.5 | 1.5 | 62 |
| -4.97 | 5.6 | 1.8 | 95 |
| -8.64 | 5.4 | 3.0 | 106 |
| -8.74 | 5.4 | 3.0 | 48 |
| -8.84 | 5.4 | 3.0 | 79 |
| -8.94 | 5.4 | 3.0 | 73 |
| -8.94 | 5.4 | 3.0 | 73 |
| -8.95 | 5.4 | 3.1 | 63 |
| -8.97 | 5.4 | 3.2 | 109 |
| -8.99 | 5.4 | 3.1 | 65 |
| -9.00 | 5.4 | 3.1 | 67 |
| -9.02 | 5.4 | 3.2 | 66 |
| -9.03 | 5.4 | 3.2 | 115 |
| -9.05 | 5.4 | 3.1 | 103 |
| -9.07 | 5.4 | 3.1 | 115 |
| -9.08 | 5.4 | 3.3 | 103 |
| -9.10 | 5.4 | 3.1 | 108 |
| -9.12 | 5.4 | 3.3 | 48 |
| -9.14 | 5.4 | 3.4 | 61940 |
| **Depth Avg** | **5.5** | **1.7** | **95** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -9.55 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.66 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -9.64 |
| Water-Mud Interface Navitracker [m TAW]: | -9.08 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 3.27 | 33 | NaN |
| 1.88 | 31 | 1.000 |
| 0.59 | 33 | 1.000 |
| -0.54 | 33 | 1.000 |
| -1.69 | 61 | 1.000 |
| -2.92 | 63 | 1.000 |
| -4.18 | 71 | 1.000 |
| -5.41 | 63 | 1.000 |
| -6.59 | 66 | 1.000 |
| -7.83 | 91 | 1.000 |
| -8.23 | 78 | 1.000 |
| -8.67 | 219 | 1.000 |
| -9.08 | NaN | 1.000 |
| -9.47 | NaN | 1.201 |
| -9.51 | NaN | 1.422 |
| -9.53 | NaN | 1.474 |
| -9.54 | NaN | 1.467 |
| **Depth Avg** | **69** | **1.008** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

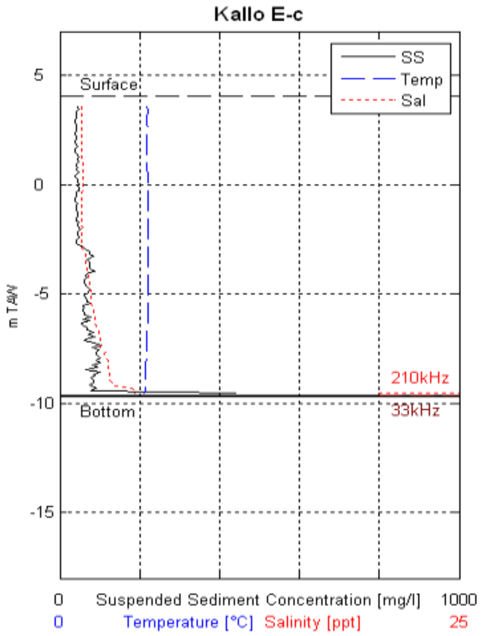
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

| 11265 HCBS - FEBRUARY 2005 SURVEY | 50 Ec |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 09:52 |
| Time after/before HT [MET]: | -0:37 |
| Coordinates [UTM-ED50] Easting: | 590393 |
| Coordinates [UTM-ED50] Northing: | 5680252 |
| Water-Bottom Interface Siltpr. [m TAW]: | -9.67 |
| Waterdepth 210 kHz Echo [m TAW]: | -9.54 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.66 |
| Surface elevation [m TAW]: | 4.06 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.57 | 5.5 | 1.3 | 50 |
| -3.47 | 5.5 | 1.7 | 62 |
| -5.93 | 5.5 | 2.2 | 42 |
| -9.06 | 5.3 | 3.3 | 103 |
| -9.16 | 5.3 | 3.4 | 95 |
| -9.26 | 5.3 | 3.5 | 148 |
| -9.35 | 5.3 | 4.1 | 89 |
| -9.39 | 5.3 | 4.4 | 228 |
| -9.40 | 5.4 | 4.7 | 102 |
| -9.41 | 5.3 | 4.7 | 43 |
| -9.43 | 5.3 | 4.8 | 95 |
| -9.44 | 5.4 | 5.0 | 82 |
| -9.46 | 5.3 | 4.8 | 160 |
| -9.47 | 5.3 | 4.9 | 95 |
| -9.49 | 5.3 | 4.6 | 55 |
| -9.50 | 5.3 | 4.6 | 77 |
| -9.51 | 5.3 | 4.7 | 55 |
| -9.52 | 5.3 | 4.6 | 125 |
| -9.53 | 5.3 | 4.8 | 55 |
| -9.54 | 5.3 | 4.7 | 92 |
| -9.55 | 5.3 | 4.7 | 53 |
| -9.56 | 5.3 | 4.9 | 42 |
| **Depth Avg** | **5.5** | **1.9** | **61** |

Data Not Recorded

Siltprofiler & Navitracker-OBS

Location:
Kallo

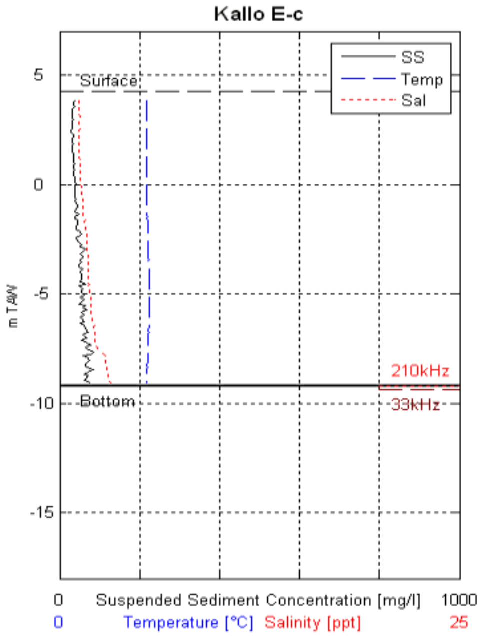
Date:
18/02/2005

*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

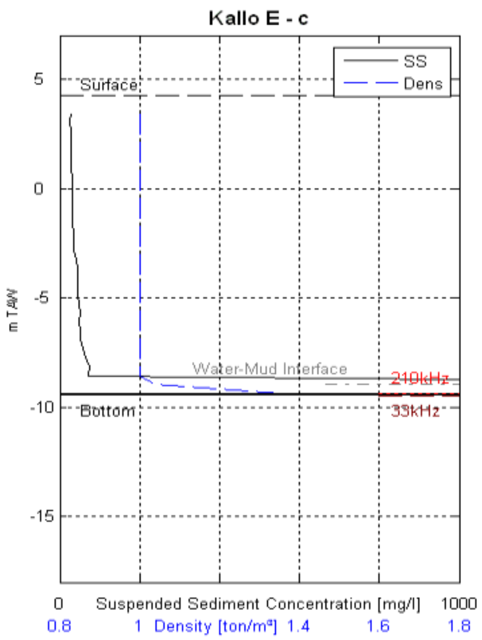
# 11265 HCBS - FEBRUARY 2005 SURVEY | 55 Ec




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 10:17 |
| Time after/before HT [MET]: | -0:12 |
| Coordinates [UTM-ED50] Easting: | 590391 |
| Coordinates [UTM-ED50] Northing: | 5680249 |
| Water-Bottom Interface Siltpr. [m TAW]: | -9.19 |
| Waterdepth 210 kHz Echo [m TAW]: | -9.22 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.36 |
| Surface elevation [m TAW]: | 4.23 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.82 | 5.4 | 1.3 | 36 |
| -1.89 | 5.5 | 1.6 | 43 |
| -4.29 | 5.6 | 1.8 | 43 |
| -8.58 | 5.5 | 2.9 | 46 |
| -8.67 | 5.5 | 3.0 | 82 |
| -8.77 | 5.4 | 3.1 | 50 |
| -8.87 | 5.4 | 3.1 | 58 |
| -8.88 | 5.5 | 3.1 | 56 |
| -8.89 | 5.5 | 3.1 | 83 |
| -8.91 | 5.4 | 3.1 | 60 |
| -8.93 | 5.5 | 3.1 | 53 |
| -8.95 | 5.5 | 3.1 | 82 |
| -8.96 | 5.4 | 3.1 | 70 |
| -8.98 | 5.4 | 3.1 | 48 |
| -9.00 | 5.4 | 3.3 | 95 |
| -9.01 | 5.4 | 3.1 | 56 |
| -9.02 | 5.4 | 3.1 | 69 |
| -9.04 | 5.4 | 3.3 | 43 |
| -9.05 | 5.4 | 3.1 | 46 |
| -9.06 | 5.4 | 3.1 | 105 |
| -9.07 | 5.5 | 3.1 | 82 |
| -9.08 | 5.4 | 3.1 | 90 |
| **Depth Avg** | **5.5** | **1.7** | **49** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -9.37 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.49 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -9.45 |
| Water-Mud Interface Navitracker [m TAW]: | -8.95 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 3.39 | 27 | NaN |
| 2.24 | 28 | 1.000 |
| 0.96 | 28 | 1.000 |
| -0.31 | 30 | 1.000 |
| -1.59 | 33 | 1.000 |
| -2.85 | 33 | 1.000 |
| -4.05 | 45 | 1.000 |
| -5.27 | 48 | 1.000 |
| -6.50 | 49 | 1.000 |
| -7.72 | 62 | 1.000 |
| -8.12 | 73 | 1.000 |
| -8.55 | 72 | 1.000 |
| -8.95 | 2050 | 1.000 |
| -9.35 | NaN | 1.353 |
| **Depth Avg** | **76** | **1.006** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

Date: 18/02/2005

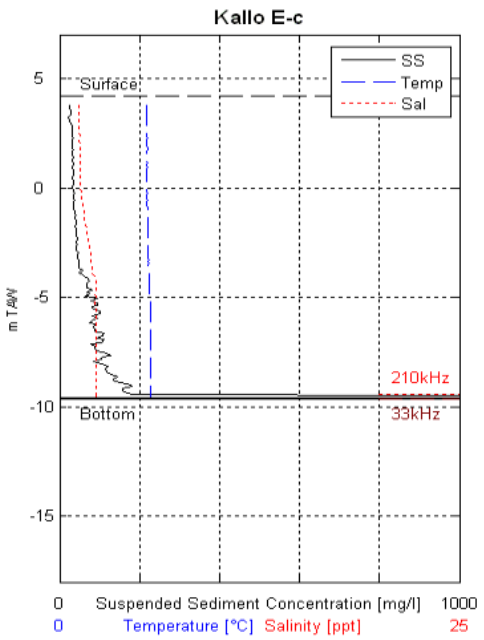
*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

# 11265 HCBS - FEBRUARY 2005 SURVEY

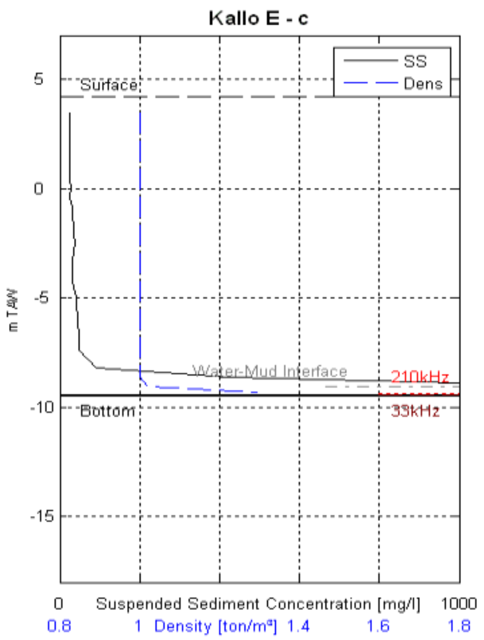
# 60 Ec




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 10:47 |
| Time after/before HT [MET]: | 0:17 |
| Coordinates [UTM-ED50] Easting: | 590399 |
| Coordinates [UTM-ED50] Northing: | 5680256 |
| Water-Bottom Interface Siltpr. [m TAW]: | -9.63 |
| Waterdepth 210 kHz Echo [m TAW]: | -9.40 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.65 |
| Surface elevation [m TAW]: | 4.21 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.80 | 5.4 | 1.2 | 24 |
| -3.47 | 5.6 | 2.0 | 46 |
| -5.69 | 5.7 | 2.3 | 136 |
| -9.02 | 5.7 | 2.3 | 181 |
| -9.12 | 5.7 | 2.3 | 200 |
| -9.20 | 5.7 | 2.3 | 101 |
| -9.31 | 5.7 | 2.3 | 225 |
| -9.33 | 5.7 | 2.3 | 127 |
| -9.36 | 5.7 | 2.3 | 203 |
| -9.37 | 5.7 | 2.3 | 194 |
| -9.38 | 5.7 | 2.3 | 146 |
| -9.39 | 5.7 | 2.3 | 184 |
| -9.40 | 5.7 | 2.3 | 133 |
| -9.42 | 5.7 | 2.3 | 193 |
| -9.43 | 5.7 | 2.3 | 178 |
| -9.44 | 5.7 | 2.3 | 171 |
| -9.46 | 5.7 | 2.3 | 278 |
| -9.47 | 5.7 | 2.3 | 117 |
| -9.48 | 5.7 | 2.3 | 130 |
| -9.49 | 5.7 | 2.3 | 158 |
| -9.50 | 5.7 | 2.3 | 151 |
| -9.52 | 5.7 | 2.3 | 11306 |
| **Depth Avg** | **5.6** | **1.8** | **75** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -9.35 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.45 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -9.50 |
| Water-Mud Interface Navitracker [m TAW]: | -9.05 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 3.47 | 27 | 1.000 |
| 2.17 | 25 | 1.000 |
| 0.88 | 25 | 1.000 |
| -0.42 | 25 | 1.000 |
| -1.72 | 33 | 1.000 |
| -2.93 | 33 | 1.000 |
| -4.13 | 33 | 1.000 |
| -5.34 | 42 | 1.000 |
| -6.57 | 46 | 1.000 |
| -7.81 | 66 | 1.000 |
| -8.21 | 94 | 1.000 |
| -8.60 | 93 | 1.000 |
| -9.05 | 1245 | 1.000 |
| -9.31 | NaN | 1.239 |
| -9.40 | NaN | 1.305 |
| **Depth Avg** | **69** | **1.004** |

## Siltprofiler & Navitracker-OBS

Location:
Kallo

Date:
18/02/2005

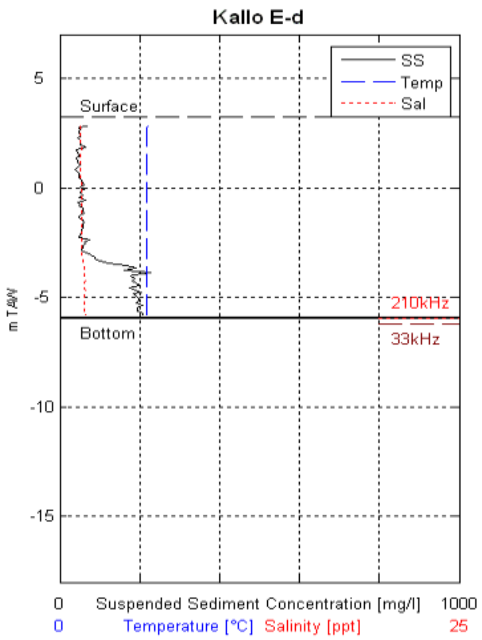
*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

### G.2.4. Measurement location d

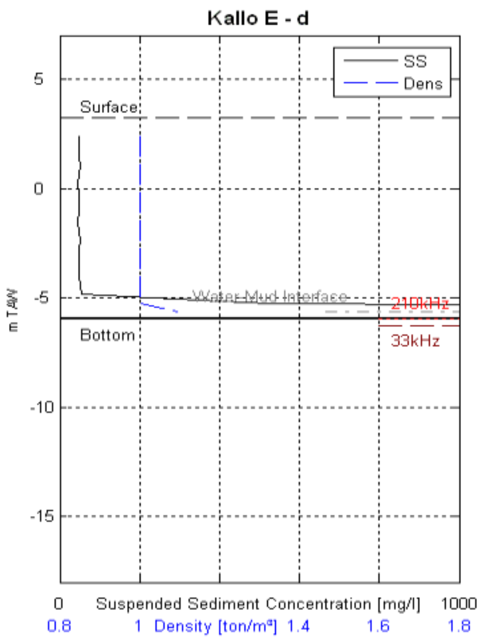
# 11265 HCBS - FEBRUARY 2005 SURVEY — 33 Ed




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 08:39 |
| Time after/before HT [MET]: | -1:50 |
| Coordinates [UTM-ED50] Easting: | 590386 |
| Coordinates [UTM-ED50] Northing: | 5680216 |
| Water-Bottom Interface Siltpr. [m TAW]: | -5.94 |
| Waterdepth 210 kHz Echo [m TAW]: | -5.98 |
| Waterdepth 33 kHz Echo [m TAW]: | -6.20 |
| Surface elevation [m TAW]: | 3.23 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 2.81 | 5.5 | 1.3 | 67 |
| -0.71 | 5.4 | 1.3 | 50 |
| -2.35 | 5.4 | 1.3 | 82 |
| -5.33 | 5.4 | 1.5 | 225 |
| -5.43 | 5.5 | 1.5 | 211 |
| -5.51 | 5.4 | 1.5 | 193 |
| -5.63 | 5.5 | 1.5 | 216 |
| -5.65 | 5.4 | 1.5 | 171 |
| -5.67 | 5.5 | 1.5 | 179 |
| -5.68 | 5.4 | 1.5 | 193 |
| -5.69 | 5.5 | 1.5 | 184 |
| -5.70 | 5.4 | 1.5 | 211 |
| -5.73 | 5.5 | 1.6 | 188 |
| -5.74 | 5.5 | 1.6 | 208 |
| -5.76 | 5.5 | 1.6 | 187 |
| -5.77 | 5.4 | 1.6 | 272 |
| -5.78 | 5.4 | 1.6 | 202 |
| -5.80 | 5.4 | 1.6 | 205 |
| -5.83 | 5.5 | 1.6 | 231 |
| **Depth Avg** | **5.5** | **1.4** | **91** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -5.98 |
| Waterdepth 33 kHz Echo [m TAW]: | -6.29 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -5.98 |
| Water-Mud Interface Navitracker [m TAW]: | -5.65 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 2.38 | 46 | 1.000 |
| 1.04 | 49 | 1.000 |
| -0.24 | 51 | 1.000 |
| -1.54 | 46 | 1.000 |
| -2.80 | 49 | 1.000 |
| -4.02 | 48 | 1.000 |
| -4.43 | 53 | 1.000 |
| -4.83 | 48 | 1.000 |
| -5.24 | 66 | 1.000 |
| -5.65 | 2922 | 1.000 |
| -5.88 | 3096 | 1.322 |
| **Depth Avg** | **135** | **1.002** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

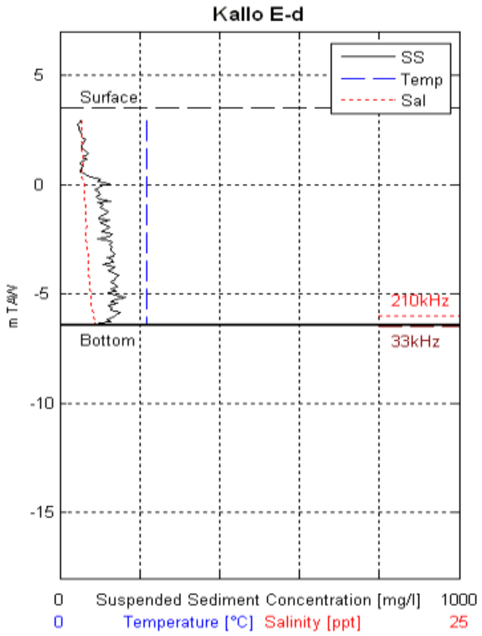
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

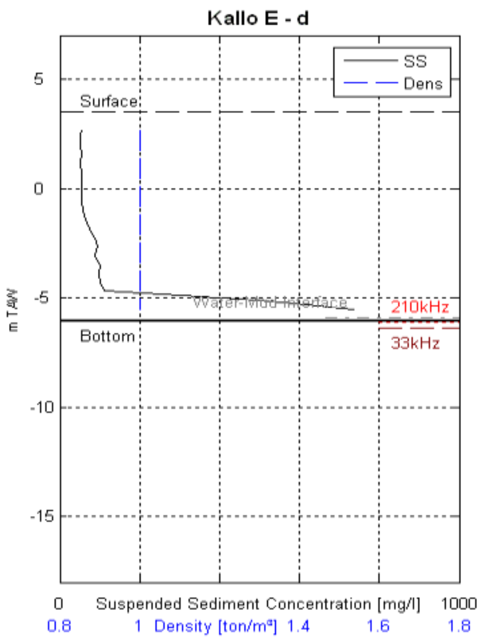
# 11265 HCBS - FEBRUARY 2005 SURVEY | 38 Ed




**Siltprofiler**

Date & Time [MET]: 18/2/2005 09:01
Time after/before HT [MET]: -1:28
Coordinates [UTM-ED50] Easting: 590383
Coordinates [UTM-ED50] Northing: 5680213
Water-Bottom Interface Siltpr. [m TAW]: -6.43
Waterdepth 210 kHz Echo [m TAW]: -6.03
Waterdepth 33 kHz Echo [m TAW]: -6.47
Surface elevation [m TAW]: 3.49

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 2.97 | 5.5 | 1.3 | 52 |
| -1.02 | 5.5 | 1.6 | 99 |
| -2.74 | 5.5 | 1.7 | 75 |
| -5.82 | 5.4 | 2.0 | 137 |
| -5.92 | 5.4 | 2.1 | 121 |
| -6.02 | 5.4 | 2.1 | 122 |
| -6.10 | 5.4 | 2.2 | 105 |
| -6.10 | 5.4 | 2.2 | 105 |
| -6.13 | 5.4 | 2.2 | 114 |
| -6.14 | 5.4 | 2.1 | 92 |
| -6.16 | 5.4 | 2.1 | 140 |
| -6.19 | 5.4 | 2.2 | 117 |
| -6.22 | 5.4 | 2.2 | 178 |
| -6.26 | 5.4 | 2.2 | 86 |
| -6.27 | 5.4 | 2.2 | 111 |
| -6.29 | 5.4 | 2.2 | 111 |
| -6.31 | 5.4 | 2.2 | 83 |
| -6.32 | 5.4 | 2.2 | 114 |
| **Depth Avg** | **5.5** | **1.6** | **101** |




**Navitracker-OBS**

Waterdepth 210 kHz Echo [m TAW]: -6.12
Waterdepth 33 kHz Echo [m TAW]: -6.36
Water-Bottom Interface CTD-OBS [m TAW]: -6.05
Water-Mud Interface Navitracker [m TAW]: -5.91

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 2.67 | 53 | NaN |
| 1.59 | 53 | 1.000 |
| 0.31 | 56 | 1.000 |
| -0.97 | 57 | 1.000 |
| -2.27 | 82 | 1.000 |
| -3.49 | 107 | 1.000 |
| -4.30 | 94 | 1.000 |
| -4.69 | 109 | 1.000 |
| -5.12 | 109 | 1.000 |
| -5.52 | 556 | 1.000 |
| -5.91 | 274 | 1.268 |
| -5.94 | 323 | 1.434 |
| -5.95 | 1153 | 1.424 |
| **Depth Avg** | **105** | **1.000** |

Siltprofiler & Navitracker-OBS

Location: Kallo

Date: 18/02/2005

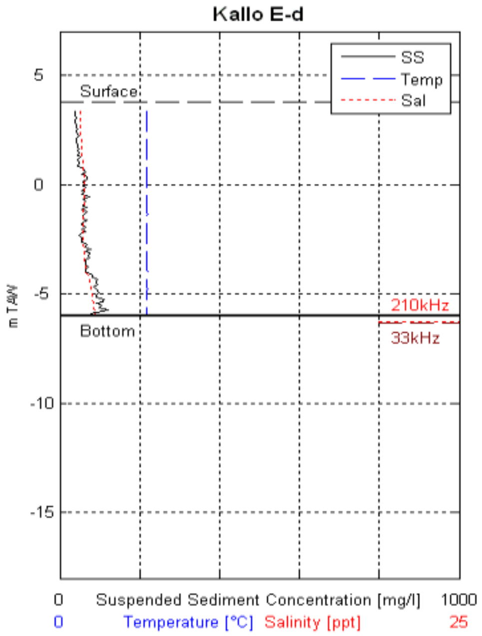
*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

# 11265 HCBS - FEBRUARY 2005 SURVEY

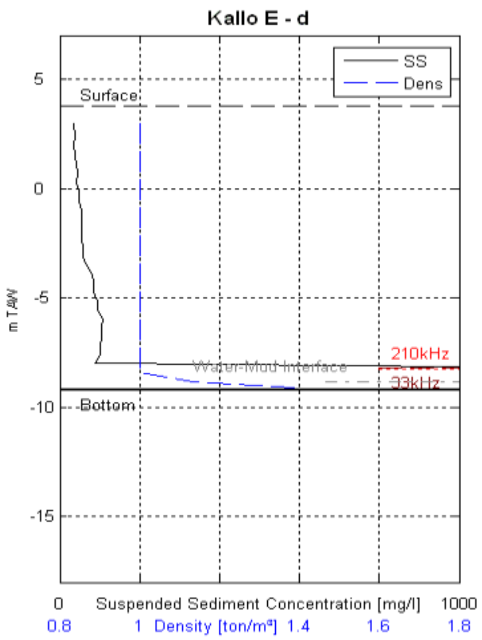
43 Ed




## Siltprofiler

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 09:20 |
| Time after/before HT [MET]: | -1:09 |
| Coordinates [UTM-ED50] Easting: | 590388 |
| Coordinates [UTM-ED50] Northing: | 5680221 |
| Water-Bottom Interface Siltpr. [m TAW]: | -6.02 |
| Waterdepth 210 kHz Echo [m TAW]: | -6.25 |
| Waterdepth 33 kHz Echo [m TAW]: | -6.34 |
| Surface elevation [m TAW]: | 3.75 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.34 | 5.4 | 1.3 | 35 |
| -1.35 | 5.5 | 1.4 | 58 |
| -2.84 | 5.5 | 1.5 | 53 |
| -5.41 | 5.5 | 2.1 | 88 |
| -5.51 | 5.5 | 2.1 | 98 |
| -5.60 | 5.5 | 2.1 | 154 |
| -5.70 | 5.5 | 2.1 | 182 |
| -5.70 | 5.5 | 2.1 | 182 |
| -5.72 | 5.5 | 2.1 | 133 |
| -5.73 | 5.5 | 2.1 | 154 |
| -5.75 | 5.5 | 2.1 | 127 |
| -5.76 | 5.4 | 2.2 | 93 |
| -5.77 | 5.5 | 2.1 | 101 |
| -5.78 | 5.5 | 2.2 | 106 |
| -5.80 | 5.5 | 2.2 | 115 |
| -5.85 | 5.5 | 2.2 | 89 |
| -5.86 | 5.5 | 2.1 | 60 |
| -5.88 | 5.4 | 2.1 | 90 |
| -5.89 | 5.5 | 2.2 | 73 |
| -5.91 | 5.5 | 2.2 | 85 |
| **Depth Avg** | **5.5** | **1.5** | **63** |




## Navitracker-OBS

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -8.26 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.18 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -9.22 |
| Water-Mud Interface Navitracker [m TAW]: | -8.86 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 3.00 | 35 | 1.000 |
| 1.98 | 36 | 1.000 |
| 0.71 | 46 | 1.000 |
| -0.58 | 43 | 1.000 |
| -1.88 | 52 | 1.000 |
| -3.12 | 61 | 1.000 |
| -4.31 | 83 | 1.000 |
| -5.59 | 96 | 1.000 |
| -6.80 | 103 | 1.000 |
| -7.18 | 102 | 1.000 |
| -7.60 | 103 | 1.000 |
| -8.01 | 92 | 1.000 |
| -8.43 | 2530 | 1.000 |
| -8.86 | NaN | 1.018 |
| -9.12 | NaN | 1.386 |
| **Depth Avg** | **108** | **1.007** |

## Siltprofiler & Navitracker-OBS

Location:
Kallo

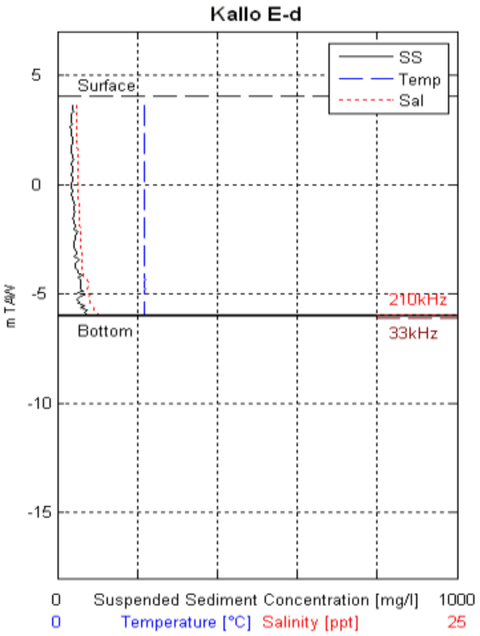
Date:
18/02/2005

*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

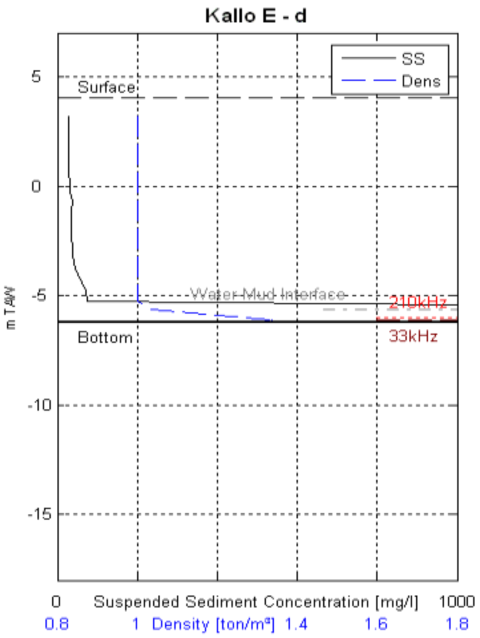
| 11265 HCBS - FEBRUARY 2005 SURVEY | 48 Ed |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 09:44 |
| Time after/before HT [MET]: | -0:45 |
| Coordinates [UTM-ED50] Easting: | 590383 |
| Coordinates [UTM-ED50] Northing: | 5680211 |
| Water-Bottom Interface Siltpr. [m TAW]: | -6.02 |
| Waterdepth 210 kHz Echo [m TAW]: | -5.97 |
| Waterdepth 33 kHz Echo [m TAW]: | -6.13 |
| Surface elevation [m TAW]: | 4.01 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.60 | 5.5 | 1.2 | 38 |
| -0.50 | 5.5 | 1.3 | 41 |
| -2.28 | 5.4 | 1.4 | 36 |
| -5.41 | 5.5 | 2.0 | 45 |
| -5.51 | 5.5 | 2.1 | 122 |
| -5.59 | 5.5 | 2.1 | 60 |
| -5.70 | 5.5 | 2.3 | 75 |
| -5.74 | 5.5 | 2.3 | 66 |
| -5.75 | 5.4 | 2.3 | 53 |
| -5.77 | 5.5 | 2.3 | 125 |
| -5.78 | 5.5 | 2.3 | 46 |
| -5.79 | 5.5 | 2.3 | 102 |
| -5.80 | 5.5 | 2.4 | 66 |
| -5.81 | 5.5 | 2.3 | 67 |
| -5.83 | 5.5 | 2.3 | 63 |
| -5.84 | 5.5 | 2.3 | 41 |
| -5.85 | 5.5 | 2.3 | 73 |
| -5.86 | 5.5 | 2.3 | 62 |
| -5.87 | 5.5 | 2.4 | 63 |
| -5.88 | 5.4 | 2.5 | 80 |
| -5.90 | 5.4 | 2.6 | 76 |
| -5.91 | 5.5 | 2.5 | 67 |
| **Depth Avg** | **5.5** | **1.4** | **44** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -6.01 |
| Waterdepth 33 kHz Echo [m TAW]: | -6.14 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -6.24 |
| Water-Mud Interface Navitracker [m TAW]: | -5.62 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 3.19 | 28 | 1.000 |
| 1.85 | 28 | 1.000 |
| 0.58 | 30 | 1.000 |
| -0.69 | 38 | 1.000 |
| -1.95 | 35 | 1.000 |
| -3.18 | 35 | 1.000 |
| -4.41 | 49 | 1.000 |
| -4.80 | 71 | 1.000 |
| -5.24 | 76 | 1.000 |
| -5.62 | 1818 | 1.000 |
| -6.04 | NaN | 1.284 |
| -6.13 | NaN | 1.327 |
| -6.14 | NaN | 1.383 |
| **Depth Avg** | **73** | **1.009** |

Siltprofiler & Navitracker-OBS

Location: Kallo

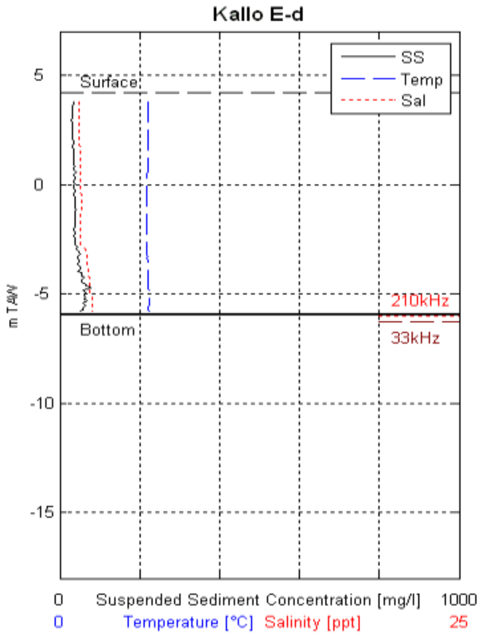
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

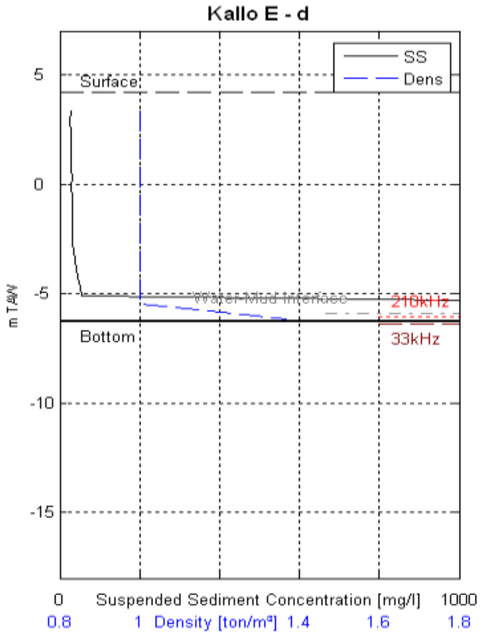
| 11265 HCBS - FEBRUARY 2005 SURVEY | 54 Ed |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 10:13 |
| Time after/before HT [MET]: | -0:16 |
| Coordinates [UTM-ED50] Easting: | 590381 |
| Coordinates [UTM-ED50] Northing: | 5680209 |
| Water-Bottom Interface Siltpr. [m TAW]: | -5.93 |
| Waterdepth 210 kHz Echo [m TAW]: | -6.02 |
| Waterdepth 33 kHz Echo [m TAW]: | -6.30 |
| Surface elevation [m TAW]: | 4.20 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.79 | 5.5 | 1.3 | 42 |
| -1.37 | 5.5 | 1.3 | 42 |
| -3.06 | 5.5 | 1.6 | 56 |
| -5.32 | 5.6 | 2.0 | 65 |
| -5.42 | 5.6 | 2.0 | 55 |
| -5.51 | 5.6 | 2.0 | 66 |
| -5.62 | 5.6 | 2.0 | 73 |
| -5.63 | 5.6 | 2.0 | 42 |
| -5.64 | 5.6 | 2.0 | 67 |
| -5.65 | 5.5 | 2.0 | 55 |
| -5.67 | 5.6 | 2.0 | 36 |
| -5.68 | 5.6 | 2.0 | 67 |
| -5.69 | 5.6 | 2.1 | 35 |
| -5.70 | 5.6 | 2.0 | 53 |
| -5.71 | 5.5 | 2.1 | 41 |
| -5.72 | 5.6 | 2.1 | 53 |
| -5.74 | 5.5 | 2.0 | 62 |
| -5.75 | 5.6 | 2.1 | 50 |
| -5.78 | 5.6 | 2.0 | 66 |
| -5.79 | 5.5 | 2.0 | 42 |
| -5.81 | 5.6 | 2.0 | 46 |
| -5.82 | 5.6 | 2.1 | 43 |
| **Depth Avg** | **5.5** | **1.4** | **42** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -6.05 |
| Waterdepth 33 kHz Echo [m TAW]: | -6.4 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -6.27 |
| Water-Mud Interface Navitracker [m TAW]: | -5.90 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 3.39 | 27 | 1.000 |
| 2.00 | 28 | 1.000 |
| 0.74 | 30 | 1.000 |
| -0.55 | 30 | 1.000 |
| -1.82 | 33 | 1.000 |
| -3.05 | 33 | 1.000 |
| -4.26 | 46 | 1.000 |
| -4.68 | 51 | 1.000 |
| -5.08 | 53 | 1.000 |
| -5.49 | 210 | 1.000 |
| -5.90 | NaN | 1.107 |
| -6.17 | NaN | 1.366 |
| **Depth Avg** | **69** | **1.012** |

Siltprofiler & Navitracker-OBS

Location: Kallo

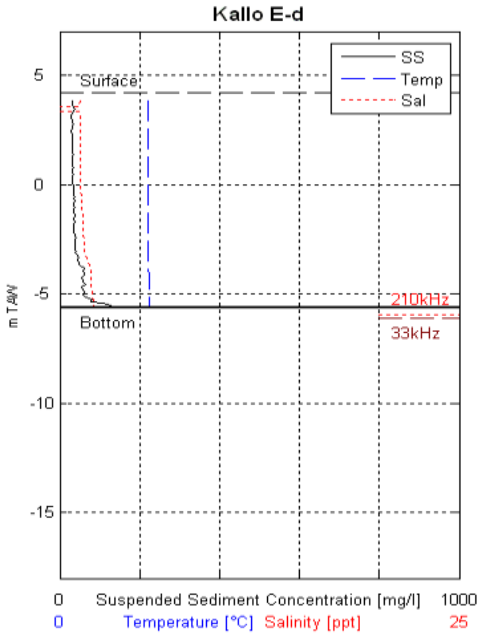
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* wl | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

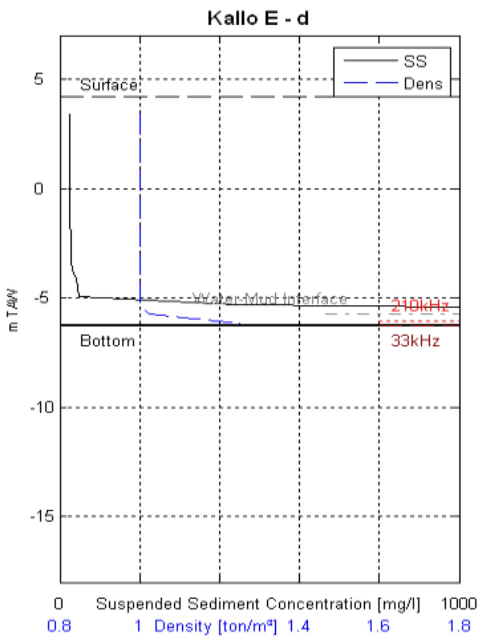
# 11265 HCBS - FEBRUARY 2005 SURVEY — 59 Ed




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 10:43 |
| Time after/before HT [MET]: | 0:13 |
| Coordinates [UTM-ED50] Easting: | 590386 |
| Coordinates [UTM-ED50] Northing: | 5680214 |
| Water-Bottom Interface Siltpr. [m TAW]: | -5.61 |
| Waterdepth 210 kHz Echo [m TAW]: | -5.95 |
| Waterdepth 33 kHz Echo [m TAW]: | -6.09 |
| Surface elevation [m TAW]: | 4.22 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.81 | 5.6 | 1.3 | 34 |
| 0.86 | 5.5 | 1.3 | 38 |
| -1.24 | 5.5 | 1.4 | 41 |
| -4.98 | 5.6 | 2.0 | 56 |
| -5.10 | 5.6 | 2.0 | 59 |
| -5.19 | 5.6 | 2.0 | 62 |
| -5.30 | 5.6 | 2.1 | 58 |
| -5.30 | 5.6 | 2.1 | 58 |
| -5.32 | 5.6 | 2.1 | 56 |
| -5.33 | 5.6 | 2.1 | 76 |
| -5.34 | 5.6 | 2.1 | 92 |
| -5.36 | 5.6 | 2.1 | 59 |
| -5.39 | 5.6 | 2.1 | 73 |
| -5.40 | 5.6 | 2.1 | 99 |
| -5.41 | 5.6 | 2.1 | 88 |
| -5.43 | 5.6 | 2.1 | 99 |
| -5.45 | 5.6 | 2.1 | 122 |
| -5.47 | 5.6 | 2.1 | 140 |
| -5.48 | 5.6 | 2.1 | 114 |
| -5.49 | 5.6 | 2.1 | 102 |
| -5.50 | 5.7 | 2.0 | 111 |
| **Depth Avg** | **5.5** | **1.2** | **40** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -6.07 |
| Waterdepth 33 kHz Echo [m TAW]: | -6.28 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -6.26 |
| Water-Mud Interface Navitracker [m TAW]: | -5.73 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 3.41 | 25 | 1.000 |
| 2.17 | 25 | 1.000 |
| 0.90 | 27 | 1.000 |
| -0.39 | 27 | 1.000 |
| -1.64 | 27 | 1.000 |
| -2.88 | 27 | 1.000 |
| -4.12 | 41 | 1.000 |
| -4.49 | 43 | 1.000 |
| -4.92 | 46 | 1.000 |
| -6.16 | 1247 | 1.251 |
| **Depth Avg** | **159** | **1.006** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

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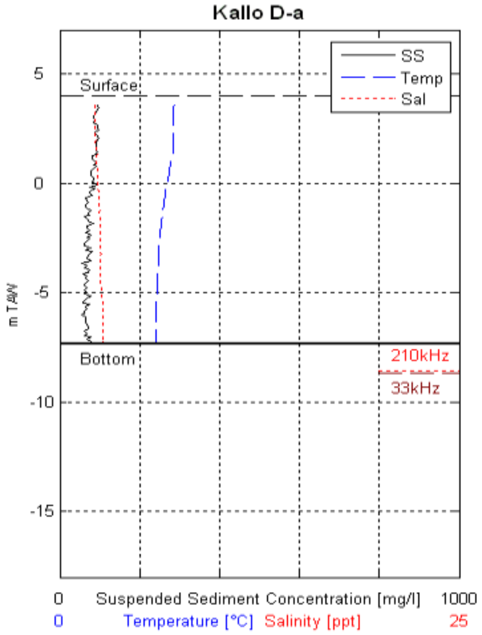
## G.3 Transect D

### G.3.1. Measurement location a

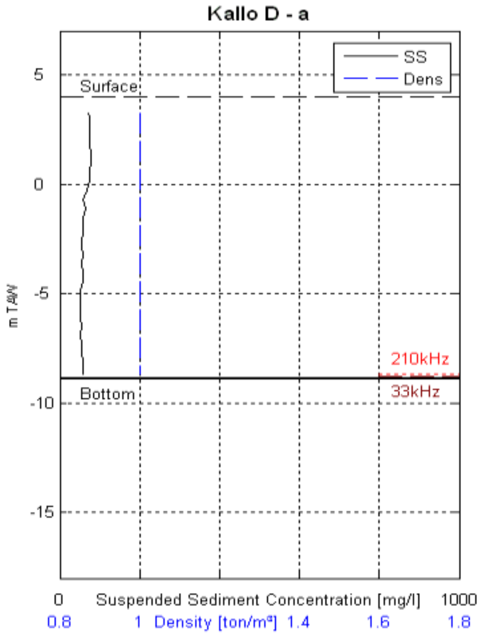
# 11265 HCBS - FEBRUARY 2005 SURVEY | 64 Da




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 11:24 |
| Time after/before HT [MET]: | 0:54 |
| Coordinates [UTM-ED50] Easting: | 590493 |
| Coordinates [UTM-ED50] Northing: | 5680148 |
| Water-Bottom Interface Siltpr. [m TAW]: | -7.36 |
| Waterdepth 210 kHz Echo [m TAW]: | -8.59 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.66 |
| Surface elevation [m TAW]: | 3.97 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.56 | 7.2 | 2.2 | 99 |
| -1.08 | 6.5 | 2.4 | 55 |
| -3.11 | 6.2 | 2.5 | 93 |
| -6.74 | 6.0 | 2.7 | 52 |
| -6.85 | 6.0 | 2.6 | 52 |
| -6.94 | 6.0 | 2.6 | 73 |
| -7.05 | 6.0 | 2.7 | 58 |
| -7.05 | 6.0 | 2.7 | 58 |
| -7.06 | 6.0 | 2.7 | 63 |
| -7.09 | 6.0 | 2.7 | 65 |
| -7.11 | 6.0 | 2.7 | 65 |
| -7.13 | 6.0 | 2.7 | 70 |
| -7.15 | 6.0 | 2.7 | 69 |
| -7.17 | 6.0 | 2.7 | 79 |
| -7.18 | 6.0 | 2.7 | 73 |
| -7.19 | 6.0 | 2.7 | 75 |
| -7.24 | 6.0 | 2.7 | 77 |
| -7.25 | 6.0 | 2.7 | 77 |
| **Depth Avg** | **6.5** | **2.5** | **76** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -8.7 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.77 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -8.91 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 3.26 | 72 | 1.000 |
| 1.85 | 74 | 1.000 |
| 0.56 | 76 | 1.000 |
| -0.74 | 59 | 1.000 |
| -2.02 | 59 | 1.000 |
| -3.25 | 62 | 1.000 |
| -4.47 | 59 | 1.000 |
| -5.66 | 53 | 1.000 |
| -6.88 | 51 | 1.000 |
| -7.28 | 57 | 1.000 |
| -7.72 | 52 | 1.000 |
| -8.10 | 55 | 1.000 |
| -8.53 | 59 | 1.000 |
| -8.80 | 53 | 1.000 |
| -8.81 | 62 | 1.000 |
| **Depth Avg** | **63** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: **Kallo**

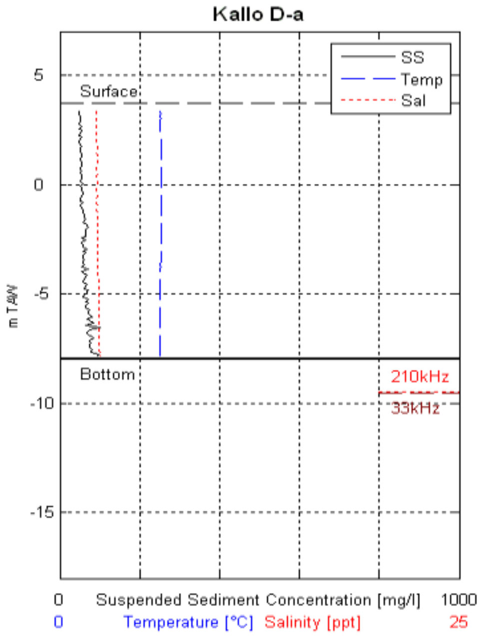
Date: **18/02/2005**

*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

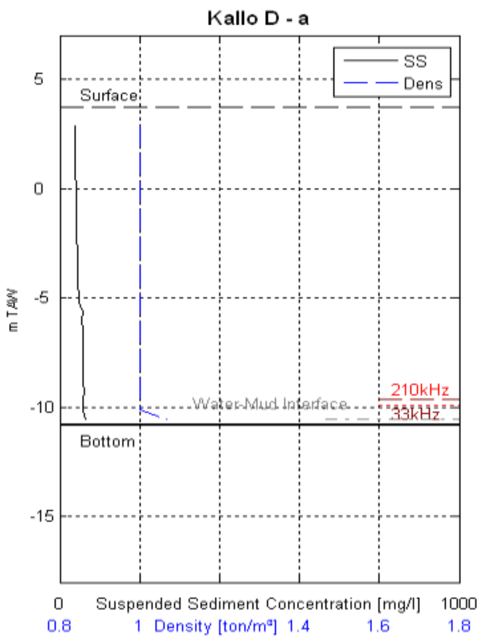
| 11265 HCBS - FEBRUARY 2005 SURVEY | 70 Da |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 11:50 |
| Time after/before HT [MET]: | 1:20 |
| Coordinates [UTM-ED50] Easting: | 590497 |
| Coordinates [UTM-ED50] Northing: | 5680152 |
| Water-Bottom Interface Siltpr. [m TAW]: | -7.98 |
| Waterdepth 210 kHz Echo [m TAW]: | -9.48 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.54 |
| Surface elevation [m TAW]: | 3.73 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.32 | 6.3 | 2.3 | 53 |
| -2.59 | 6.3 | 2.4 | 53 |
| -4.58 | 6.3 | 2.4 | 59 |
| -7.37 | 6.3 | 2.5 | 73 |
| -7.47 | 6.3 | 2.4 | 66 |
| -7.56 | 6.2 | 2.5 | 95 |
| -7.65 | 6.2 | 2.5 | 58 |
| -7.72 | 6.3 | 2.4 | 105 |
| -7.74 | 6.3 | 2.4 | 83 |
| -7.75 | 6.2 | 2.5 | 96 |
| -7.76 | 6.3 | 2.5 | 77 |
| -7.77 | 6.3 | 2.5 | 88 |
| -7.78 | 6.3 | 2.4 | 79 |
| -7.79 | 6.2 | 2.5 | 190 |
| -7.80 | 6.3 | 2.4 | 88 |
| -7.81 | 6.3 | 2.5 | 105 |
| -7.82 | 6.3 | 2.5 | 89 |
| -7.83 | 6.2 | 2.5 | 80 |
| -7.84 | 6.3 | 2.5 | 99 |
| -7.85 | 6.3 | 2.5 | 102 |
| -7.86 | 6.2 | 2.5 | 90 |
| -7.87 | 6.3 | 2.4 | 92 |
| **Depth Avg** | **6.3** | **2.4** | **61** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -9.89 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.64 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -10.84 |
| Water-Mud Interface Navitracker [m TAW]: | -10.54 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 2.92 | 40 | NaN |
| 1.89 | 38 | 1.000 |
| 0.61 | 38 | 1.000 |
| -0.68 | 42 | 1.000 |
| -1.94 | 43 | 1.000 |
| -3.19 | 48 | 1.000 |
| -4.40 | 45 | 1.000 |
| -5.63 | 56 | 1.000 |
| -6.84 | 59 | 1.000 |
| -8.07 | 57 | 1.000 |
| -8.90 | 57 | 1.000 |
| -9.29 | 63 | 1.000 |
| -9.72 | 57 | 1.000 |
| -10.11 | 59 | 1.000 |
| -10.54 | 57 | 1.000 |
| -10.74 | 159 | 1.286 |
| **Depth Avg** | **48** | **1.001** |

Siltprofiler & Navitracker-OBS

Location:
Kallo

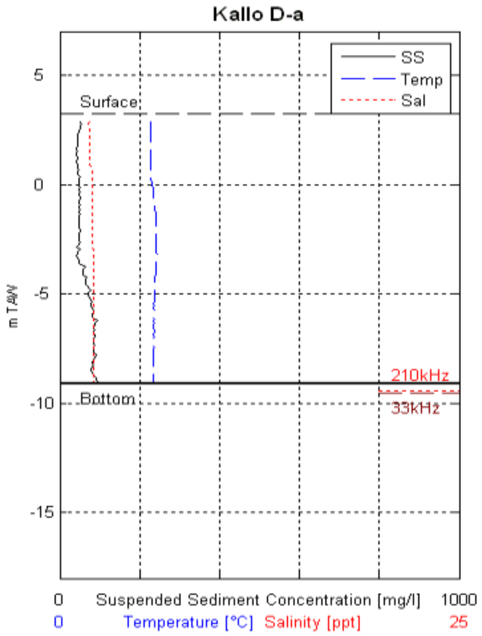
Date:
18/02/2005

*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

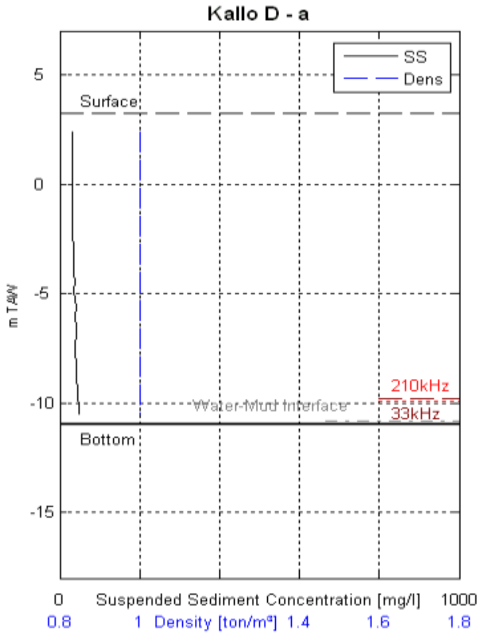
# 11265 HCBS - FEBRUARY 2005 SURVEY | 76 Da




**Siltprofiler**

Date & Time [MET]: 18/2/2005 12:30
Time after/before HT [MET]: 2:00
Coordinates [UTM-ED50] Easting: 590498
Coordinates [UTM-ED50] Northing: 5680159
Water-Bottom Interface Siltpr. [m TAW]: -9.12
Waterdepth 210 kHz Echo [m TAW]: -9.42
Waterdepth 33 kHz Echo [m TAW]: -9.54
Surface elevation [m TAW]: 3.26

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 2.85 | 5.7 | 2.4 | 53 |
| -3.26 | 6.0 | 2.1 | 43 |
| -5.30 | 5.9 | 2.1 | 79 |
| -8.50 | 5.8 | 2.1 | 73 |
| -8.61 | 5.9 | 2.1 | 82 |
| -8.70 | 5.9 | 2.1 | 75 |
| -8.80 | 5.9 | 2.1 | 89 |
| -8.82 | 5.8 | 2.1 | 88 |
| -8.84 | 5.9 | 2.1 | 90 |
| -8.86 | 5.9 | 2.1 | 101 |
| -8.87 | 5.9 | 2.1 | 88 |
| -8.88 | 5.9 | 2.1 | 101 |
| -8.90 | 5.9 | 2.0 | 95 |
| -8.91 | 5.9 | 2.1 | 89 |
| -8.92 | 5.9 | 2.1 | 85 |
| -8.93 | 5.9 | 2.1 | 90 |
| -8.95 | 5.9 | 2.1 | 102 |
| -8.96 | 5.8 | 2.1 | 77 |
| -8.97 | 5.9 | 2.1 | 98 |
| -8.98 | 5.8 | 2.1 | 92 |
| -8.99 | 5.9 | 2.1 | 77 |
| -9.01 | 5.8 | 2.1 | 93 |
| **Depth Avg** | **5.9** | **2.0** | **62** |




**Navitracker-OBS**

Waterdepth 210 kHz Echo [m TAW]: -9.93
Waterdepth 33 kHz Echo [m TAW]: -9.82
Water-Bottom Interface CTD-OBS [m TAW]: -10.96
Water-Mud Interface Navitracker [m TAW]: -10.82

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 2.46 | 32 | 1.000 |
| 1.45 | 32 | 1.000 |
| 0.16 | 33 | 1.000 |
| -1.12 | 33 | 1.000 |
| -2.39 | 33 | 1.000 |
| -3.62 | 35 | 1.000 |
| -4.85 | 36 | 1.000 |
| -6.07 | 40 | 1.000 |
| -7.31 | 41 | 1.000 |
| -8.50 | 41 | 1.000 |
| -8.91 | 43 | 1.000 |
| -9.34 | 42 | 1.000 |
| -9.73 | 46 | 1.000 |
| -10.12 | 48 | 1.000 |
| -10.52 | 46 | 1.000 |
| -10.82 | 57 | 1.058 |
| -10.85 | 484 | 1.282 |
| -10.86 | 284 | 1.338 |
| **Depth Avg** | **37** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

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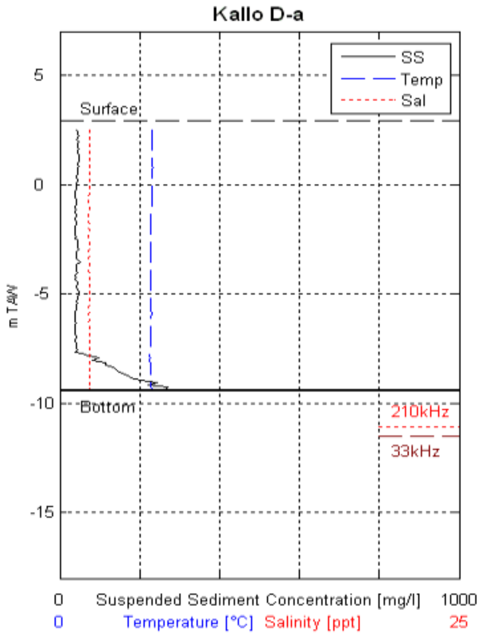
# 11265 HCBS - FEBRUARY 2005 SURVEY

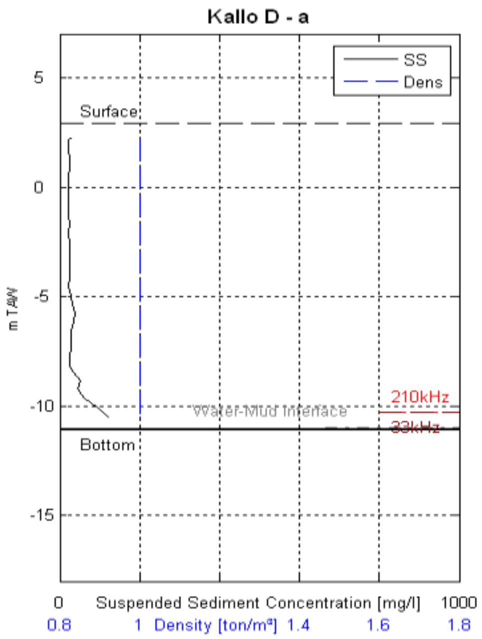
# 82 Da




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 12:55 |
| Time after/before HT [MET]: | 2:25 |
| Coordinates [UTM-ED50] Easting: | 590507 |
| Coordinates [UTM-ED50] Northing: | 5680157 |
| Water-Bottom Interface Siltpr. [m TAW]: | -9.45 |
| Waterdepth 210 kHz Echo [m TAW]: | -11.07 |
| Waterdepth 33 kHz Echo [m TAW]: | -11.51 |
| Surface elevation [m TAW]: | 2.93 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 2.51 | 5.8 | 1.9 | 39 |
| -3.75 | 5.7 | 1.8 | 39 |
| -5.74 | 5.8 | 1.9 | 41 |
| -8.84 | 5.7 | 1.9 | 171 |
| -8.94 | 5.7 | 1.9 | 181 |
| -9.03 | 5.7 | 1.9 | 253 |
| -9.13 | 5.7 | 1.9 | 222 |
| -9.17 | 5.7 | 1.9 | 211 |
| -9.18 | 5.7 | 1.9 | 197 |
| -9.19 | 5.7 | 1.9 | 200 |
| -9.20 | 5.7 | 1.9 | 272 |
| -9.23 | 5.7 | 2.3 | 245 |
| -9.24 | 5.7 | 1.9 | 270 |
| -9.25 | 5.7 | 1.9 | 262 |
| -9.26 | 5.7 | 1.9 | 281 |
| -9.27 | 5.7 | 1.9 | 313 |
| -9.28 | 5.7 | 1.9 | 248 |
| -9.29 | 5.7 | 1.9 | 267 |
| -9.30 | 5.7 | 1.9 | 261 |
| -9.31 | 5.7 | 1.9 | 262 |
| -9.32 | 5.7 | 1.9 | 259 |
| -9.34 | 5.7 | 1.9 | 251 |
| **Depth Avg** | **5.7** | **1.8** | **57** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -10.26 |
| Waterdepth 33 kHz Echo [m TAW]: | -10.27 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -11.08 |
| Water-Mud Interface Navitracker [m TAW]: | -10.95 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 2.22 | 28 | NaN |
| 0.89 | 25 | 1.000 |
| -0.39 | 23 | 1.000 |
| -1.70 | 23 | 1.000 |
| -2.93 | 25 | 1.000 |
| -4.12 | 25 | 1.000 |
| -5.34 | 30 | 1.000 |
| -6.55 | 30 | 1.000 |
| -7.74 | 25 | 1.000 |
| -8.86 | 59 | 1.000 |
| -9.23 | 43 | 1.000 |
| -9.65 | 56 | 1.000 |
| -10.07 | 73 | 1.000 |
| -10.51 | 88 | 1.000 |
| -10.95 | 889 | 1.077 |
| -10.97 | 1413 | 1.316 |
| -10.98 | NaN | NaN |
| **Depth Avg** | **32** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

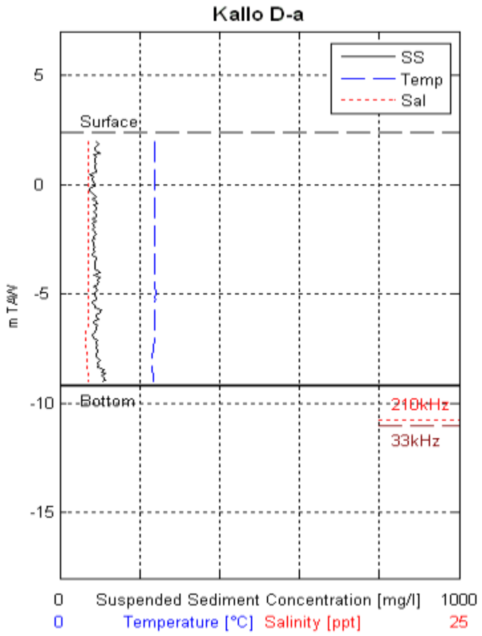
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* wL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

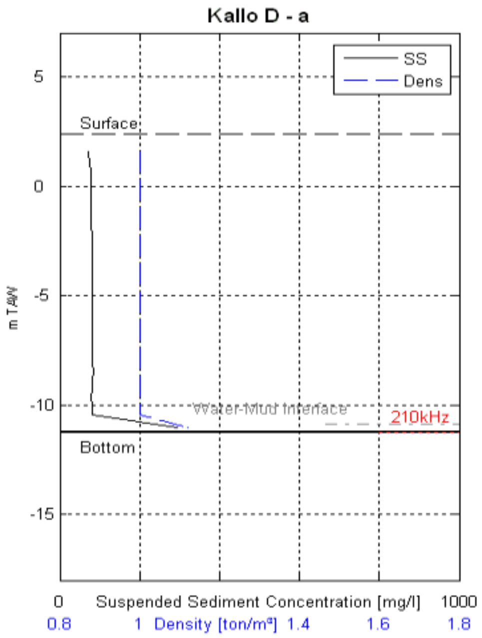
# 11265 HCBS - FEBRUARY 2005 SURVEY | 90 Da




**Siltprofiler**

Date & Time [MET]: 18/2/2005 13:35
Time after/before HT [MET]: 3:05
Coordinates [UTM-ED50] Easting: 590505
Coordinates [UTM-ED50] Northing: 5680150
Water-Bottom Interface Siltpr. [m TAW]: -9.19
Waterdepth 210 kHz Echo [m TAW]: -10.78
Waterdepth 33 kHz Echo [m TAW]: -11.04
Surface elevation [m TAW]: 2.37

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 1.96 | 5.9 | 1.8 | 90 |
| -3.52 | 5.9 | 1.8 | 98 |
| -5.31 | 6.0 | 1.8 | 75 |
| -8.58 | 5.8 | 1.8 | 118 |
| -8.68 | 5.8 | 1.8 | 103 |
| -8.78 | 5.8 | 1.8 | 106 |
| -8.86 | 5.8 | 1.8 | 109 |
| -8.86 | 5.8 | 1.8 | 109 |
| -8.88 | 5.8 | 1.8 | 130 |
| -8.91 | 5.8 | 1.8 | 101 |
| -8.93 | 5.8 | 1.8 | 114 |
| -8.94 | 5.9 | 1.8 | 130 |
| -8.98 | 5.8 | 1.8 | 137 |
| -8.99 | 5.8 | 1.8 | 125 |
| -9.00 | 5.8 | 1.8 | 111 |
| -9.01 | 5.9 | 1.7 | 112 |
| -9.08 | 5.8 | 1.8 | 99 |
| **Depth Avg** | **5.9** | **1.7** | **91** |




**Navitracker-OBS**

Waterdepth 210 kHz Echo [m TAW]: -11.23
Waterdepth 33 kHz Echo [m TAW]: -653.31
Water-Bottom Interface CTD-OBS [m TAW]: -11.24
Water-Mud Interface Navitracker [m TAW]: -10.89

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 1.56 | 73 | 1.000 |
| 0.21 | 81 | 1.000 |
| -0.99 | 78 | 1.000 |
| -2.24 | 81 | 1.000 |
| -3.46 | 81 | 1.000 |
| -4.80 | 82 | 1.000 |
| -5.99 | 81 | 1.000 |
| -7.24 | 81 | 1.000 |
| -8.45 | 84 | 1.000 |
| -9.24 | 82 | 1.000 |
| -9.63 | 81 | 1.000 |
| -10.04 | 83 | 1.000 |
| -10.45 | 82 | 1.000 |
| -10.89 | 86 | 1.000 |
| -11.14 | 278 | NaN |
| **Depth Avg** | **84** | **1.002** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

Date: 18/02/2005

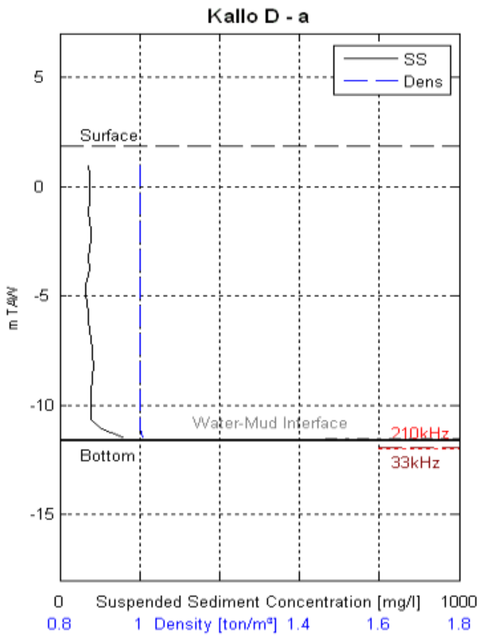
*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

| 11265 HCBS - FEBRUARY 2005 SURVEY | 95 Da |
|---|---|

Data Not Recorded




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -12 |
| Waterdepth 33 kHz Echo [m TAW]: | -11.93 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -11.59 |
| Water-Mud Interface Navitracker [m TAW]: | -11.49 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.94 | 72 | 1.000 |
| -0.31 | 73 | 1.000 |
| -1.55 | 74 | 1.000 |
| -2.83 | 77 | 1.000 |
| -4.11 | 73 | 1.000 |
| -5.35 | 66 | 1.000 |
| -6.56 | 72 | 1.000 |
| -7.76 | 82 | 1.000 |
| -8.99 | 81 | 1.000 |
| -9.85 | 81 | 1.000 |
| -10.24 | 78 | 1.000 |
| -10.65 | 78 | 1.000 |
| -11.07 | 122 | 1.000 |
| -11.44 | 117 | 1.000 |
| -11.49 | 148 | 1.021 |
| **Depth Avg** | **77** | **1.000** |

Siltprofiler & Navitracker-OBS

*Data processed by:*

*In association with:*

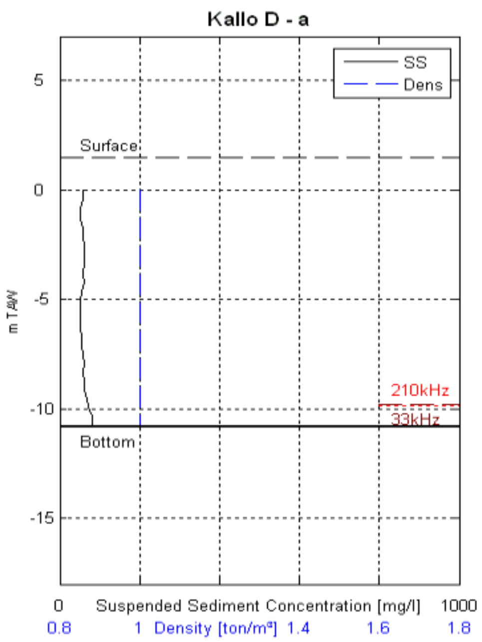
Location: Kallo

Date: 18/02/2005

*I/RA/11265/05.014MSA*

| 11265 HCBS - FEBRUARY 2005 SURVEY | 100 Da |
|---|---|

Data Not Recorded



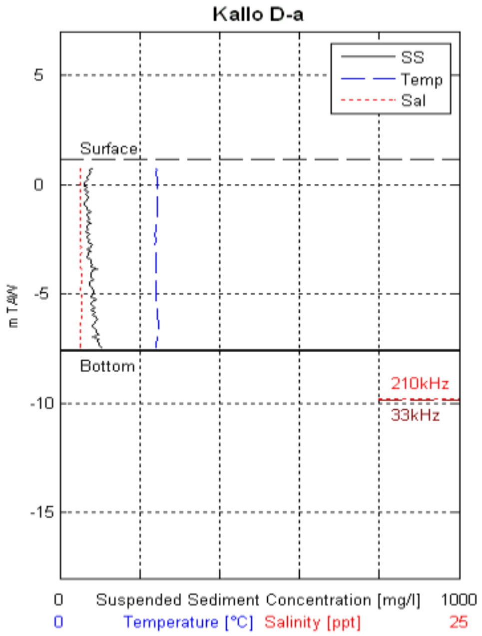

**Navitracker-OBS**

Waterdepth 210 kHz Echo [m TAW]: -9.86
Waterdepth 33 kHz Echo [m TAW]: -9.82
Water-Bottom Interface CTD-OBS [m TAW]: -10.83
Water-Mud Interface Navitracker [m TAW]: NaN

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| -0.01 | 57 | 1.000 |
| -1.28 | 52 | 1.000 |
| -2.56 | 62 | 1.000 |
| -3.84 | 59 | 1.000 |
| -5.09 | 52 | 1.000 |
| -6.31 | 52 | 1.000 |
| -7.52 | 57 | 1.000 |
| -8.73 | 62 | 1.000 |
| -9.14 | 59 | 1.000 |
| -9.54 | 66 | 1.000 |
| -9.93 | 71 | 1.000 |
| -10.36 | 78 | 1.000 |
| -10.73 | 81 | 1.000 |
| **Depth Avg** | **59** | **1.000** |

| Siltprofiler & Navitracker-OBS | | Data processed by: IMDC |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | In association with: WL \| delft hydraulics, GEMS International |
| | | I/RA/11265/05.014MSA |

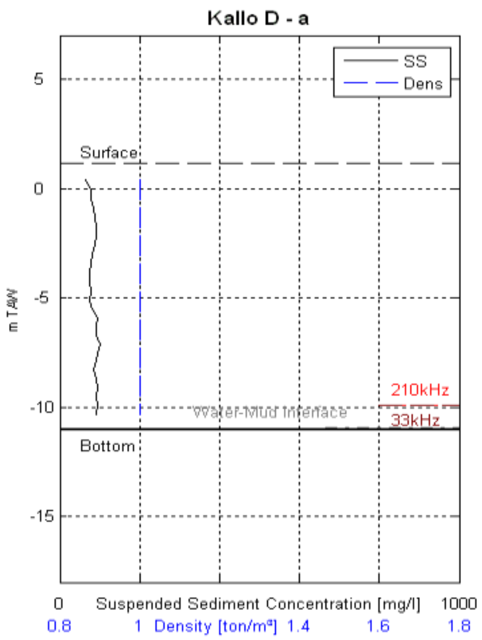
# 11265 HCBS - FEBRUARY 2005 SURVEY | 105 Da




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 15:17 |
| Time after/before HT [MET]: | 4:47 |
| Coordinates [UTM-ED50] Easting: | 590496 |
| Coordinates [UTM-ED50] Northing: | 5680151 |
| Water-Bottom Interface Siltpr. [m TAW]: | -7.59 |
| Waterdepth 210 kHz Echo [m TAW]: | -9.80 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.84 |
| Surface elevation [m TAW]: | 1.15 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.74 | 6.0 | 1.3 | 80 |
| -3.41 | 6.0 | 1.3 | 92 |
| -4.75 | 6.0 | 1.3 | 66 |
| -6.98 | 6.1 | 1.3 | 77 |
| -7.07 | 6.1 | 1.3 | 117 |
| -7.18 | 6.1 | 1.3 | 95 |
| -7.28 | 6.0 | 1.3 | 95 |
| -7.31 | 6.1 | 1.3 | 103 |
| -7.33 | 6.0 | 1.3 | 89 |
| -7.35 | 6.0 | 1.3 | 121 |
| -7.36 | 6.1 | 1.3 | 96 |
| -7.37 | 6.0 | 1.3 | 99 |
| -7.38 | 6.0 | 1.3 | 102 |
| -7.39 | 6.0 | 1.3 | 105 |
| -7.40 | 6.0 | 1.3 | 103 |
| -7.42 | 6.0 | 1.3 | 90 |
| -7.43 | 6.0 | 1.3 | 109 |
| -7.44 | 6.0 | 1.3 | 112 |
| -7.45 | 6.0 | 1.3 | 112 |
| -7.46 | 6.0 | 1.3 | 82 |
| -7.47 | 6.0 | 1.3 | 85 |
| -7.48 | 6.0 | 1.3 | 101 |
| **Depth Avg** | **6.1** | **1.3** | **78** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -9.9 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.89 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -11.05 |
| Water-Mud Interface Navitracker [m TAW]: | -10.93 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.42 | 65 | 1.000 |
| -0.88 | 86 | 1.000 |
| -2.15 | 92 | 1.000 |
| -3.41 | 77 | 1.000 |
| -4.70 | 77 | 1.000 |
| -5.91 | 94 | 1.000 |
| -7.12 | 99 | 1.000 |
| -8.27 | 86 | 1.000 |
| -9.12 | 97 | 1.000 |
| -9.52 | 91 | 1.000 |
| -9.92 | 94 | 1.000 |
| -10.31 | 92 | 1.000 |
| -10.73 | 96 | 1.000 |
| -10.93 | 99 | 1.079 |
| -10.95 | 119 | 1.274 |
| **Depth Avg** | **85** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location:
Kallo

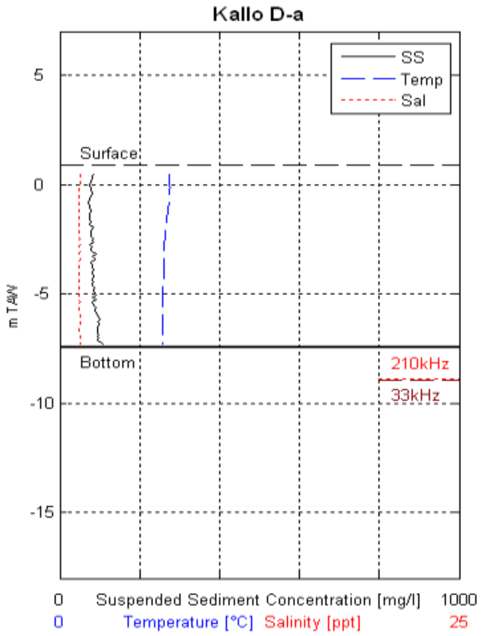
Date:
18/02/2005

*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

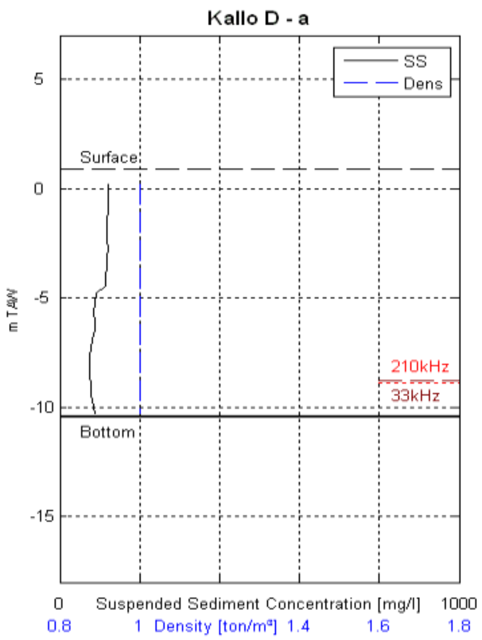
# 11265 HCBS - FEBRUARY 2005 SURVEY | 110 Da




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 15:43 |
| Time after/before HT [MET]: | 5:13 |
| Coordinates [UTM-ED50] Easting: | 590506 |
| Coordinates [UTM-ED50] Northing: | 5680158 |
| Water-Bottom Interface Siltpr. [m TAW]: | -7.46 |
| Waterdepth 210 kHz Echo [m TAW]: | -8.91 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.96 |
| Surface elevation [m TAW]: | 0.90 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.47 | 6.9 | 1.3 | 83 |
| -3.84 | 6.5 | 1.3 | 83 |
| -5.23 | 6.5 | 1.2 | 85 |
| -6.85 | 6.4 | 1.3 | 102 |
| -6.93 | 6.5 | 1.2 | 85 |
| -7.04 | 6.4 | 1.3 | 85 |
| -7.14 | 6.5 | 1.3 | 77 |
| -7.17 | 6.5 | 1.2 | 96 |
| -7.19 | 6.5 | 1.3 | 73 |
| -7.20 | 6.4 | 1.3 | 88 |
| -7.21 | 6.4 | 1.3 | 115 |
| -7.22 | 6.4 | 1.3 | 103 |
| -7.24 | 6.5 | 1.2 | 83 |
| -7.25 | 6.4 | 1.3 | 90 |
| -7.27 | 6.4 | 1.3 | 98 |
| -7.29 | 6.5 | 1.3 | 89 |
| -7.30 | 6.4 | 1.2 | 88 |
| -7.31 | 6.5 | 1.3 | 122 |
| -7.32 | 6.4 | 1.3 | 99 |
| -7.33 | 6.5 | 1.3 | 106 |
| -7.34 | 6.4 | 1.3 | 106 |
| -7.35 | 6.5 | 1.3 | 105 |
| **Depth Avg** | **6.6** | **1.2** | **84** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -8.87 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.8 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -10.43 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.21 | 123 | 1.000 |
| -1.01 | 118 | 1.000 |
| -2.32 | 119 | 1.000 |
| -3.62 | 119 | 1.000 |
| -4.80 | 93 | 1.000 |
| -6.08 | 91 | 1.000 |
| -7.28 | 78 | 1.000 |
| -8.57 | 76 | 1.000 |
| -8.90 | 77 | 1.000 |
| -9.40 | 78 | 1.000 |
| -9.71 | 78 | 1.000 |
| -10.22 | 83 | 1.000 |
| -10.32 | 84 | 1.000 |
| -10.33 | 94 | 1.000 |
| **Depth Avg** | **100** | **1.000** |

Siltprofiler & Navitracker-OBS

Location: Kallo

Date: 18/02/2005

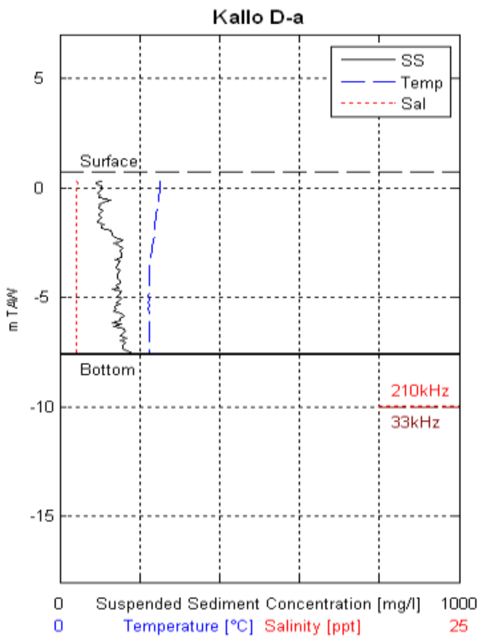
*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

# 11265 HCBS - FEBRUARY 2005 SURVEY

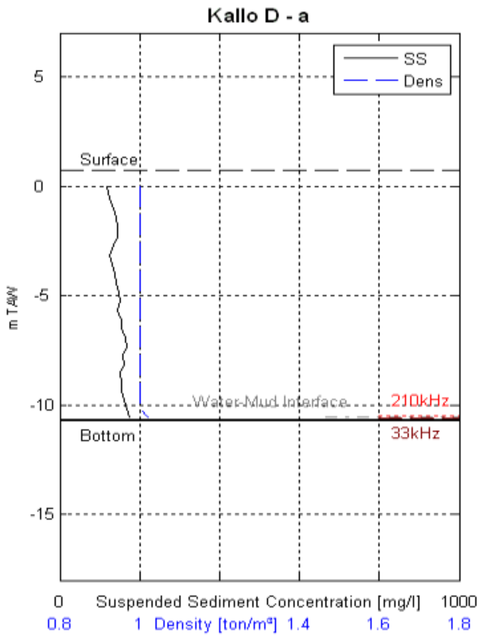
# 115 Da




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 16:07 |
| Time after/before HT [MET]: | 5:37 |
| Coordinates [UTM-ED50] Easting: | 590497 |
| Coordinates [UTM-ED50] Northing: | 5680149 |
| Water-Bottom Interface Siltpr. [m TAW]: | -7.63 |
| Waterdepth 210 kHz Echo [m TAW]: | -9.98 |
| Waterdepth 33 kHz Echo [m TAW]: | -10.00 |
| Surface elevation [m TAW]: | 0.72 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.31 | 6.3 | 1.1 | 103 |
| -3.90 | 5.6 | 1.1 | 120 |
| -5.27 | 5.6 | 1.1 | 143 |
| -7.02 | 5.6 | 1.1 | 200 |
| -7.11 | 5.6 | 1.1 | 124 |
| -7.21 | 5.6 | 1.1 | 176 |
| -7.30 | 5.6 | 1.1 | 131 |
| -7.36 | 5.6 | 1.1 | 148 |
| -7.37 | 5.6 | 1.1 | 155 |
| -7.38 | 5.6 | 1.1 | 179 |
| -7.39 | 5.6 | 1.2 | 182 |
| -7.41 | 5.6 | 1.1 | 112 |
| -7.42 | 5.6 | 1.1 | 164 |
| -7.43 | 5.6 | 1.1 | 203 |
| -7.45 | 5.6 | 1.1 | 197 |
| -7.46 | 5.6 | 1.1 | 173 |
| -7.47 | 5.6 | 1.2 | 161 |
| -7.48 | 5.6 | 1.1 | 191 |
| -7.49 | 5.7 | 1.1 | 161 |
| -7.50 | 5.6 | 1.1 | 196 |
| -7.51 | 5.6 | 1.1 | 167 |
| -7.52 | 5.6 | 1.1 | 152 |
| **Depth Avg** | **5.8** | **1.1** | **134** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -10.5 |
| Waterdepth 33 kHz Echo [m TAW]: | -10.58 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -10.70 |
| Water-Mud Interface Navitracker [m TAW]: | -10.56 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.01 | 99 | NaN |
| -1.04 | 133 | 1.000 |
| -2.31 | 144 | 1.000 |
| -3.56 | 133 | 1.000 |
| -4.83 | 147 | 1.000 |
| -6.09 | 154 | 1.000 |
| -7.33 | 169 | 1.000 |
| -8.54 | 157 | 1.000 |
| -8.92 | 157 | 1.000 |
| -9.36 | 149 | 1.000 |
| -9.75 | 157 | 1.000 |
| -10.19 | 168 | 1.000 |
| -10.56 | 172 | 1.005 |
| -10.60 | 179 | 1.035 |
| **Depth Avg** | **145** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location:
Kallo

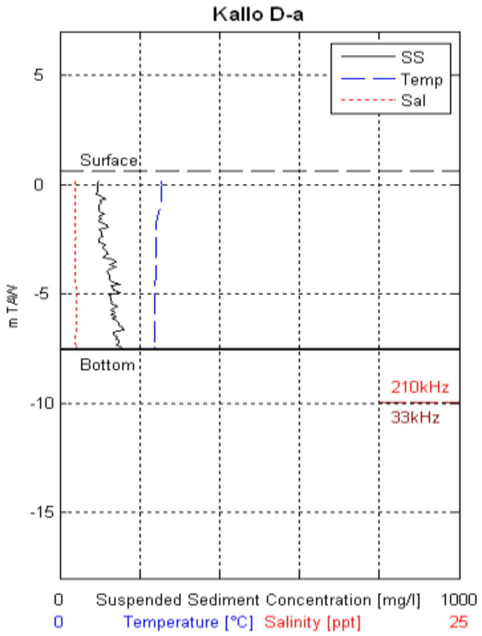
Date:
18/02/2005

*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

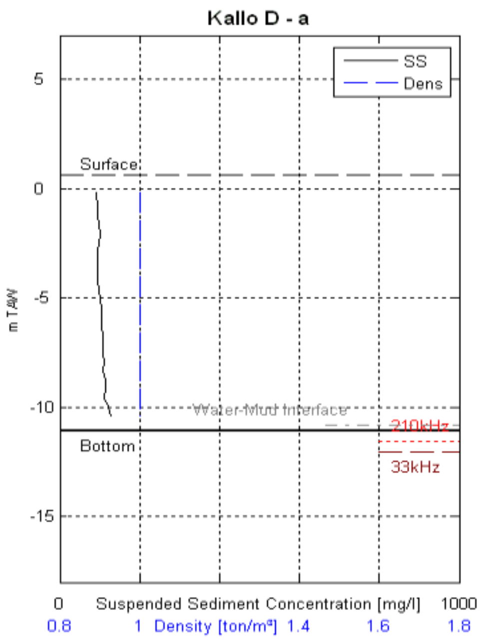
| 11265 HCBS - FEBRUARY 2005 SURVEY | 120 Da |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 16:29 |
| Time after/before HT [MET]: | 5:59 |
| Coordinates [UTM-ED50] Easting: | 590496 |
| Coordinates [UTM-ED50] Northing: | 5680142 |
| Water-Bottom Interface Siltpr. [m TAW]: | -7.57 |
| Waterdepth 210 kHz Echo [m TAW]: | -9.95 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.96 |
| Surface elevation [m TAW]: | 0.59 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.18 | 6.4 | 1.0 | 80 |
| -3.66 | 6.0 | 1.0 | 112 |
| -4.89 | 6.0 | 1.0 | 105 |
| -6.93 | 6.0 | 1.1 | 128 |
| -7.05 | 5.9 | 1.0 | 122 |
| -7.14 | 6.0 | 1.0 | 166 |
| -7.26 | 6.0 | 1.0 | 145 |
| -7.27 | 6.0 | 1.1 | 133 |
| -7.29 | 6.0 | 1.0 | 152 |
| -7.30 | 5.9 | 1.0 | 151 |
| -7.33 | 6.0 | 1.0 | 131 |
| -7.34 | 6.0 | 1.1 | 139 |
| -7.35 | 6.0 | 1.1 | 117 |
| -7.36 | 6.0 | 1.0 | 140 |
| -7.38 | 6.0 | 1.0 | 130 |
| -7.39 | 6.0 | 1.1 | 173 |
| -7.41 | 6.0 | 1.0 | 128 |
| -7.42 | 6.0 | 1.0 | 171 |
| -7.43 | 6.0 | 1.0 | 157 |
| -7.44 | 6.0 | 1.0 | 173 |
| -7.45 | 6.0 | 1.0 | 170 |
| -7.46 | 6.0 | 1.0 | 161 |
| **Depth Avg** | **6.1** | **1.0** | **120** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -11.55 |
| Waterdepth 33 kHz Echo [m TAW]: | -12.04 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -11.10 |
| Water-Mud Interface Navitracker [m TAW]: | -10.81 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| -0.09 | 92 | 1.000 |
| -1.22 | 94 | 1.000 |
| -2.50 | 99 | 1.000 |
| -3.78 | 96 | 1.000 |
| -5.05 | 102 | 1.000 |
| -6.29 | 103 | 1.000 |
| -7.52 | 107 | 1.000 |
| -8.75 | 113 | 1.000 |
| -9.15 | 116 | 1.000 |
| -9.57 | 112 | 1.000 |
| -9.98 | 117 | 1.000 |
| -10.39 | 131 | 1.000 |
| -10.81 | 143 | 1.000 |
| -11.00 | 1047 | 1.021 |
| **Depth Avg** | **103** | **1.000** |

Siltprofiler & Navitracker-OBS

*Data processed by:*

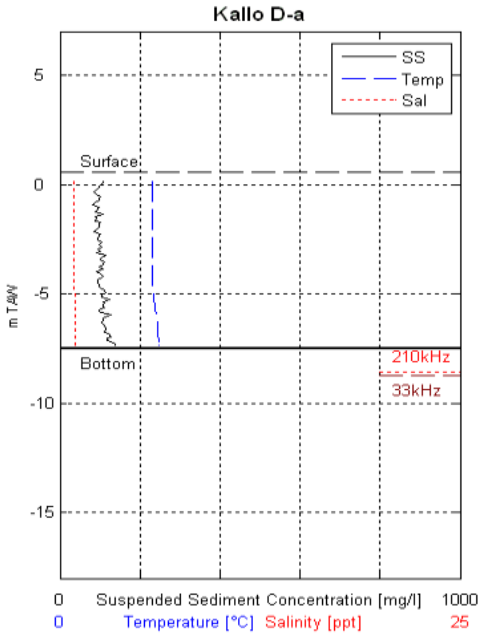
*In association with:*

Location: Kallo

Date: 18/02/2005

*I/RA/11265/05.014MSA*

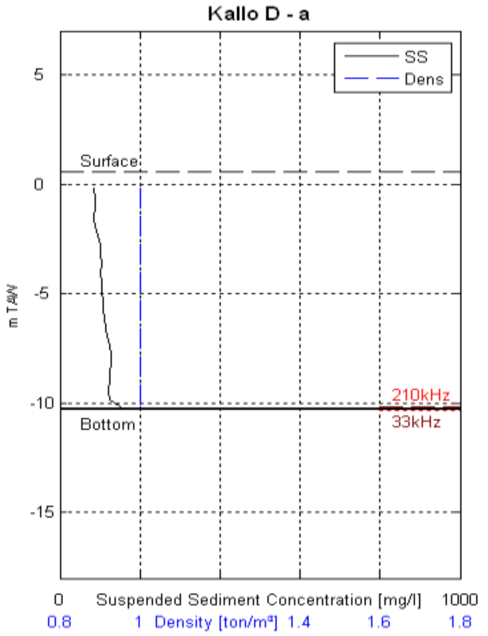
| 11265 HCBS - FEBRUARY 2005 SURVEY | 125 Da |
|---|---|




**Siltprofiler**

Date & Time [MET]: 18/2/2005 16:51
Time after/before HT [MET]: -6:48
Coordinates [UTM-ED50] Easting: 590490
Coordinates [UTM-ED50] Northing: 5680147
Water-Bottom Interface Siltpr. [m TAW]: -7.48
Waterdepth 210 kHz Echo [m TAW]: -8.58
Waterdepth 33 kHz Echo [m TAW]: -8.75
Surface elevation [m TAW]: 0.54

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.13 | 5.7 | 0.9 | 86 |
| -3.53 | 5.8 | 0.9 | 83 |
| -4.93 | 5.8 | 1.0 | 105 |
| -6.87 | 6.1 | 1.0 | 117 |
| -6.97 | 6.2 | 1.0 | 117 |
| -7.05 | 6.2 | 1.0 | 140 |
| -7.16 | 6.2 | 1.0 | 122 |
| -7.23 | 6.2 | 1.0 | 145 |
| -7.24 | 6.2 | 1.0 | 130 |
| -7.25 | 6.2 | 1.0 | 161 |
| -7.26 | 6.2 | 1.0 | 121 |
| -7.27 | 6.2 | 1.0 | 127 |
| -7.28 | 6.2 | 1.0 | 161 |
| -7.29 | 6.2 | 1.0 | 148 |
| -7.30 | 6.2 | 1.0 | 131 |
| -7.31 | 6.2 | 1.0 | 124 |
| -7.32 | 6.2 | 1.0 | 124 |
| -7.33 | 6.2 | 1.0 | 146 |
| -7.34 | 6.2 | 1.0 | 161 |
| -7.35 | 6.2 | 1.0 | 140 |
| -7.36 | 6.2 | 1.0 | 121 |
| -7.37 | 6.3 | 1.0 | 152 |
| **Depth Avg** | **5.8** | **0.9** | **103** |




**Navitracker-OBS**

Waterdepth 210 kHz Echo [m TAW]: -10.35
Waterdepth 33 kHz Echo [m TAW]: -10.15
Water-Bottom Interface CTD-OBS [m TAW]: -10.30
Water-Mud Interface Navitracker [m TAW]: NaN

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| -0.14 | 86 | 1.000 |
| -1.51 | 86 | 1.000 |
| -2.78 | 98 | 1.000 |
| -4.06 | 103 | 1.000 |
| -5.31 | 106 | 1.000 |
| -6.54 | 116 | 1.000 |
| -7.75 | 126 | 1.000 |
| -8.57 | 124 | 1.000 |
| -8.99 | 128 | 1.000 |
| -9.42 | 119 | 1.000 |
| -9.84 | 123 | 1.000 |
| -10.12 | 144 | 1.000 |
| -10.15 | 151 | 1.000 |
| -10.20 | 162 | 1.000 |
| **Depth Avg** | **107** | **1.000** |

Siltprofiler & Navitracker-OBS

Location: Kallo

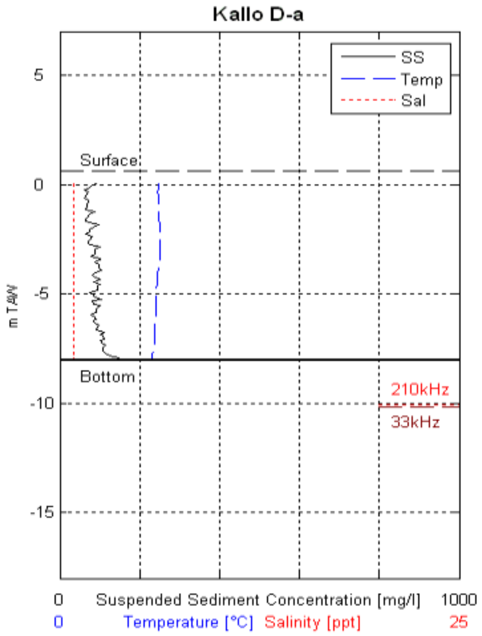
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

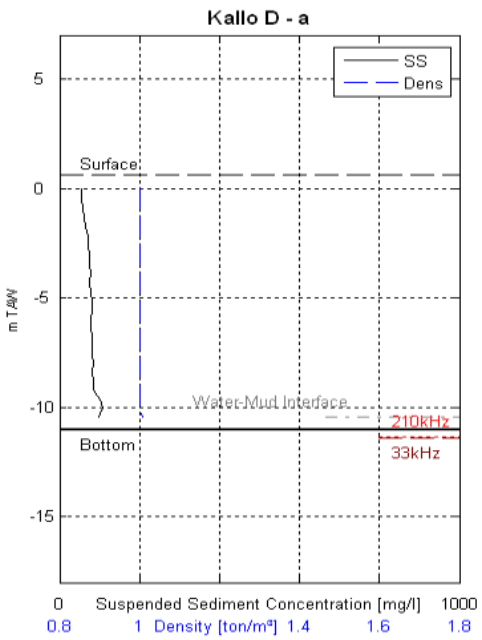
| 11265 HCBS - FEBRUARY 2005 SURVEY | 130 Da |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 17:10 |
| Time after/before HT [MET]: | -6:29 |
| Coordinates [UTM-ED50] Easting: | 590496 |
| Coordinates [UTM-ED50] Northing: | 5680142 |
| Water-Bottom Interface Siltpr. [m TAW]: | -8.06 |
| Waterdepth 210 kHz Echo [m TAW]: | -10.05 |
| Waterdepth 33 kHz Echo [m TAW]: | -10.16 |
| Surface elevation [m TAW]: | 0.59 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.09 | 6.1 | 0.9 | 83 |
| -6.16 | 6.0 | 0.9 | 93 |
| -7.81 | 5.7 | 0.9 | 128 |
| -7.44 | 5.9 | 0.9 | 92 |
| -7.55 | 5.9 | 0.9 | 99 |
| -7.64 | 5.9 | 0.9 | 101 |
| -7.73 | 5.9 | 0.9 | 106 |
| -7.81 | 5.8 | 0.9 | 95 |
| -7.82 | 5.8 | 0.9 | 148 |
| -7.83 | 5.9 | 0.8 | 109 |
| -7.84 | 5.9 | 0.9 | 103 |
| -7.85 | 5.9 | 0.9 | 103 |
| -7.86 | 5.8 | 0.9 | 160 |
| -7.87 | 5.9 | 0.9 | 120 |
| -7.88 | 5.8 | 0.8 | 142 |
| -7.89 | 5.8 | 0.8 | 131 |
| -7.90 | 5.8 | 0.8 | 121 |
| -7.91 | 5.8 | 0.8 | 108 |
| -7.92 | 5.8 | 0.8 | 136 |
| -7.93 | 5.7 | 0.9 | 175 |
| -7.94 | 5.7 | 0.9 | 121 |
| -7.95 | 5.7 | 0.9 | 139 |
| **Depth Avg** | **6.1** | **0.9** | **88** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -11.34 |
| Waterdepth 33 kHz Echo [m TAW]: | -11.39 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -11.01 |
| Water-Mud Interface Navitracker [m TAW]: | -10.46 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| -0.05 | 56 | 1.000 |
| -1.32 | 65 | 1.000 |
| -2.61 | 72 | 1.000 |
| -3.86 | 81 | 1.000 |
| -5.14 | 81 | 1.000 |
| -6.37 | 76 | 1.000 |
| -7.59 | 83 | 1.000 |
| -8.80 | 84 | 1.000 |
| -9.22 | 88 | 1.000 |
| -9.63 | 88 | 1.000 |
| -10.02 | 102 | 1.000 |
| -10.46 | 99 | 1.000 |
| -10.86 | 123 | 1.223 |
| -10.90 | 148 | 1.312 |
| -10.91 | 203 | 1.123 |
| **Depth Avg** | **77** | **1.000** |

Siltprofiler & Navitracker-OBS

Location: Kallo

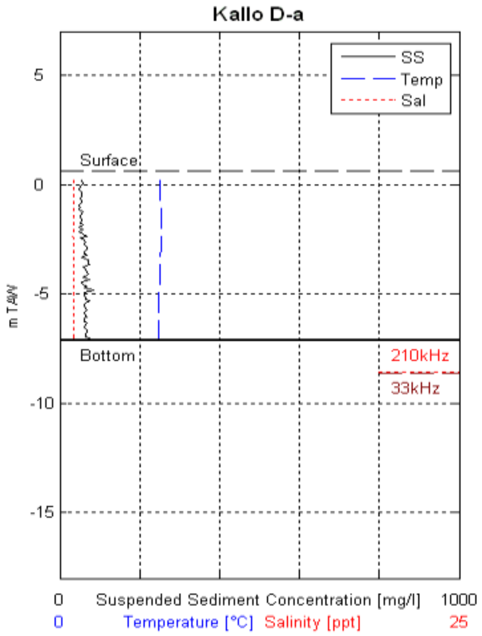
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* wl | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

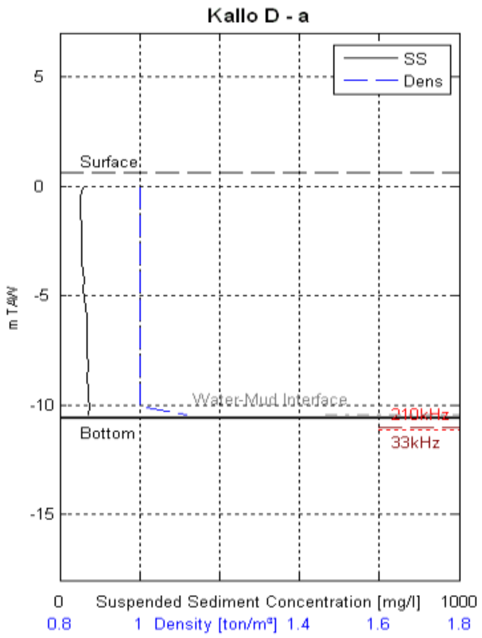
| 11265 HCBS - FEBRUARY 2005 SURVEY | 135 Da |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 17:30 |
| Time after/before HT [MET]: | -6:09 |
| Coordinates [UTM-ED50] Easting: | 590492 |
| Coordinates [UTM-ED50] Northing: | 5680152 |
| Water-Bottom Interface Siltpr. [m TAW]: | -7.15 |
| Waterdepth 210 kHz Echo [m TAW]: | -8.55 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.60 |
| Surface elevation [m TAW]: | 0.61 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.20 | 6.3 | 0.9 | 59 |
| -3.27 | 6.3 | 0.9 | 67 |
| -4.49 | 6.2 | 0.8 | 48 |
| -6.54 | 6.2 | 0.9 | 49 |
| -6.64 | 6.2 | 0.9 | 62 |
| -6.73 | 6.2 | 0.9 | 63 |
| -6.84 | 6.2 | 0.9 | 53 |
| -6.84 | 6.2 | 0.9 | 53 |
| -6.88 | 6.2 | 0.9 | 56 |
| -6.89 | 6.2 | 0.9 | 82 |
| -6.92 | 6.2 | 0.9 | 60 |
| -6.93 | 6.2 | 0.9 | 56 |
| -6.94 | 6.2 | 0.9 | 45 |
| -6.95 | 6.2 | 0.9 | 76 |
| -6.97 | 6.2 | 0.9 | 73 |
| -7.00 | 6.2 | 0.9 | 80 |
| -7.01 | 6.2 | 0.9 | 53 |
| -7.04 | 6.2 | 0.9 | 80 |
| **Depth Avg** | **6.3** | **0.9** | **61** |



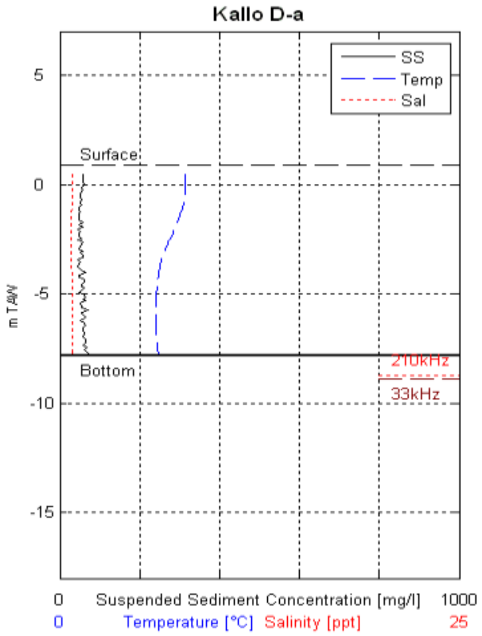

**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -11.13 |
| Waterdepth 33 kHz Echo [m TAW]: | -11.03 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -10.61 |
| Water-Mud Interface Navitracker [m TAW]: | -10.44 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| -0.06 | 62 | 1.000 |
| -1.30 | 53 | 1.000 |
| -2.59 | 52 | 1.000 |
| -3.86 | 59 | 1.000 |
| -5.12 | 61 | 1.000 |
| -6.37 | 71 | 1.000 |
| -7.60 | 69 | 1.000 |
| -8.83 | 69 | 1.000 |
| -9.22 | 72 | 1.000 |
| -9.66 | 73 | 1.000 |
| -10.07 | 77 | 1.000 |
| -10.44 | 72 | 1.053 |
| -10.51 | 74 | 1.165 |
| **Depth Avg** | **62** | **1.002** |

| Siltprofiler & Navitracker-OBS | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* *I/RA/11265/05.014MSA* |

| 11265 HCBS - FEBRUARY 2005 SURVEY | 143 Da |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 18:09 |
| Time after/before HT [MET]: | -5:30 |
| Coordinates [UTM-ED50] Easting: | 590493 |
| Coordinates [UTM-ED50] Northing: | 5680150 |
| Water-Bottom Interface Siltpr. [m TAW]: | -7.84 |
| Waterdepth 210 kHz Echo [m TAW]: | -8.75 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.87 |
| Surface elevation [m TAW]: | 0.87 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.44 | 7.8 | 0.8 | 56 |
| -3.83 | 6.2 | 0.8 | 48 |
| -5.24 | 6.1 | 0.8 | 49 |
| -7.21 | 6.1 | 0.8 | 49 |
| -7.32 | 6.1 | 0.8 | 65 |
| -7.43 | 6.1 | 0.8 | 63 |
| -7.53 | 6.1 | 0.8 | 62 |
| -7.57 | 6.1 | 0.8 | 58 |
| -7.60 | 6.1 | 0.8 | 59 |
| -7.61 | 6.1 | 0.8 | 65 |
| -7.62 | 6.2 | 0.8 | 59 |
| -7.63 | 6.1 | 0.8 | 55 |
| -7.64 | 6.1 | 0.8 | 63 |
| -7.65 | 6.2 | 0.8 | 52 |
| -7.66 | 6.1 | 0.8 | 77 |
| -7.67 | 6.2 | 0.8 | 75 |
| -7.68 | 6.1 | 0.8 | 59 |
| -7.69 | 6.1 | 0.8 | 70 |
| -7.70 | 6.2 | 0.8 | 67 |
| -7.71 | 6.2 | 0.8 | 63 |
| -7.72 | 6.2 | 0.8 | 69 |
| -7.73 | 6.2 | 0.8 | 72 |
| **Depth Avg** | **6.7** | **0.8** | **56** |

Data Not Recorded

Siltprofiler & Navitracker-OBS

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

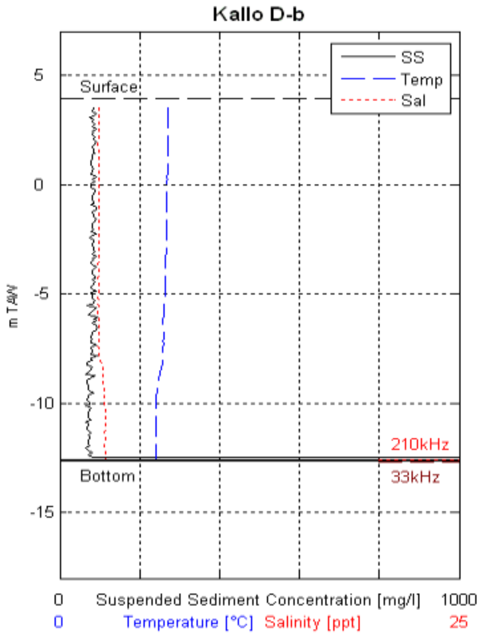
Location: Kallo

Date: 18/02/2005

*I/RA/11265/05.014MSA*

### G.3.2. Measurement location b

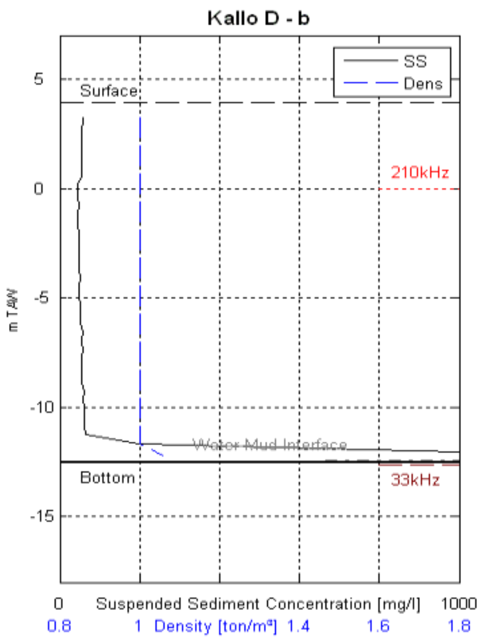
| 11265 HCBS - FEBRUARY 2005 SURVEY | 65 Db |
|---|---|




**Siltprofiler**

Date & Time [MET]: 18/2/2005 11:28
Time after/before HT [MET]: 0:58
Coordinates [UTM-ED50] Easting: 590553
Coordinates [UTM-ED50] Northing: 5680153
Water-Bottom Interface Siltpr. [m TAW]: -12.62
Waterdepth 210 kHz Echo [m TAW]: -12.59
Waterdepth 33 kHz Echo [m TAW]: -12.68
Surface elevation [m TAW]: 3.95

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.54 | 6.8 | 2.4 | 83 |
| -5.60 | 6.5 | 2.4 | 79 |
| -8.31 | 6.4 | 2.7 | 88 |
| -12.01 | 6.0 | 2.8 | 65 |
| -12.11 | 6.0 | 2.8 | 83 |
| -12.20 | 6.0 | 2.8 | 111 |
| -12.30 | 6.0 | 2.8 | 83 |
| -12.36 | 6.0 | 2.9 | 73 |
| -12.38 | 6.0 | 2.8 | 80 |
| -12.39 | 6.0 | 2.8 | 66 |
| -12.40 | 6.0 | 2.8 | 108 |
| -12.41 | 6.0 | 2.8 | 88 |
| -12.42 | 6.0 | 2.9 | 72 |
| -12.43 | 6.0 | 2.8 | 76 |
| -12.44 | 6.0 | 2.9 | 96 |
| -12.45 | 6.0 | 2.8 | 82 |
| -12.46 | 6.0 | 2.9 | 62 |
| -12.47 | 6.0 | 2.9 | 56 |
| -12.48 | 6.0 | 2.9 | 69 |
| -12.49 | 6.0 | 2.9 | 122 |
| -12.50 | 6.0 | 2.9 | 70 |
| -12.52 | 6.0 | 2.9 | 7530 |
| **Depth Avg** | **6.5** | **2.5** | **85** |




**Navitracker-OBS**

Waterdepth 210 kHz Echo [m TAW]: 0
Waterdepth 33 kHz Echo [m TAW]: -12.62
Water-Bottom Interface CTD-OBS [m TAW]: -12.50
Water-Mud Interface Navitracker [m TAW]: -12.40

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 3.25 | 59 | 1.000 |
| 1.72 | 55 | 1.000 |
| 0.53 | 51 | 1.000 |
| -0.78 | 48 | 1.000 |
| -2.08 | 51 | 1.000 |
| -3.30 | 48 | 1.000 |
| -4.50 | 46 | 1.000 |
| -5.74 | 52 | 1.000 |
| -6.98 | 55 | 1.000 |
| -8.02 | 55 | 1.000 |
| -9.24 | 59 | 1.000 |
| -10.46 | 59 | 1.000 |
| -10.88 | 62 | 1.000 |
| -11.23 | 62 | 1.000 |
| -11.68 | 62 | 1.000 |
| -12.08 | 2518 | 1.000 |
| -12.40 | 1055 | 1.172 |
| **Depth Avg** | **78** | **1.001** |

Siltprofiler & Navitracker-OBS

Location:
Kallo

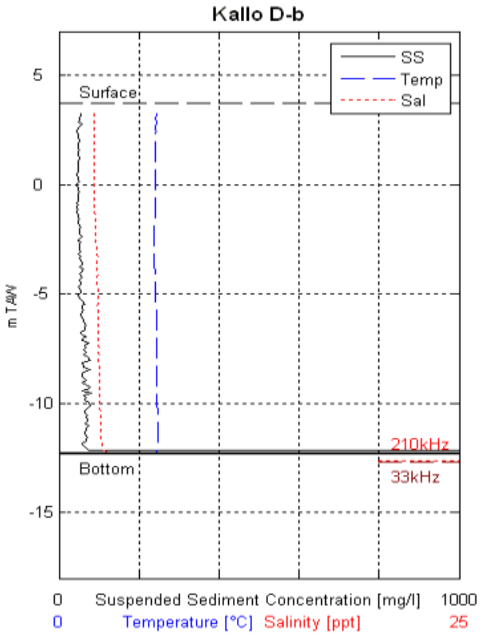
Date:
18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

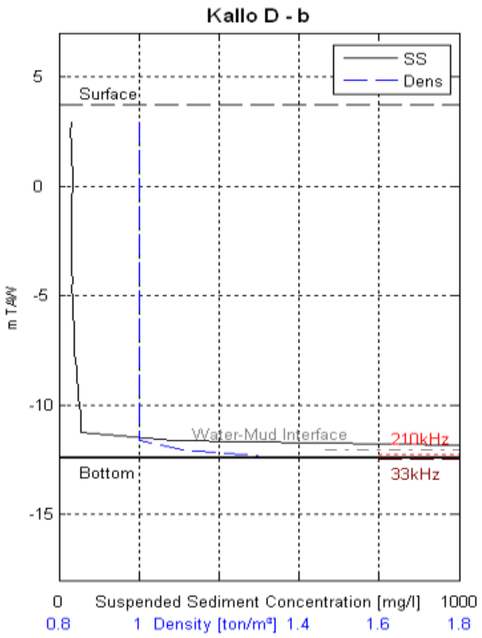
| 11265 HCBS - FEBRUARY 2005 SURVEY | 71 Db |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 11:53 |
| Time after/before HT [MET]: | 1:23 |
| Coordinates [UTM-ED50] Easting: | 590558 |
| Coordinates [UTM-ED50] Northing: | 5680155 |
| Water-Bottom Interface Siltpr. [m TAW]: | -12.31 |
| Waterdepth 210 kHz Echo [m TAW]: | -12.61 |
| Waterdepth 33 kHz Echo [m TAW]: | -12.69 |
| Surface elevation [m TAW]: | 3.69 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.27 | 6.1 | 2.2 | 52 |
| -5.24 | 6.1 | 2.5 | 46 |
| -7.72 | 6.1 | 2.5 | 72 |
| -11.70 | 6.2 | 2.6 | 112 |
| -11.79 | 6.1 | 2.6 | 56 |
| -11.88 | 6.2 | 2.6 | 70 |
| -11.99 | 6.1 | 2.8 | 63 |
| -12.01 | 6.1 | 2.8 | 79 |
| -12.02 | 6.2 | 2.7 | 56 |
| -12.03 | 6.1 | 2.8 | 66 |
| -12.04 | 6.2 | 2.8 | 48 |
| -12.05 | 6.2 | 2.8 | 72 |
| -12.07 | 6.1 | 2.7 | 80 |
| -12.08 | 6.2 | 2.8 | 67 |
| -12.09 | 6.1 | 2.7 | 56 |
| -12.10 | 6.1 | 2.7 | 45 |
| -12.11 | 6.1 | 2.8 | 70 |
| -12.14 | 6.1 | 2.8 | 75 |
| -12.15 | 6.1 | 2.8 | 48 |
| -12.16 | 6.1 | 2.7 | 89 |
| -12.17 | 6.1 | 2.8 | 103 |
| -12.20 | 6.1 | 2.9 | 5621 |
| **Depth Avg** | **6.1** | **2.4** | **68** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -12.25 |
| Waterdepth 33 kHz Echo [m TAW]: | -12.49 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -12.41 |
| Water-Mud Interface Navitracker [m TAW]: | -12.06 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 2.95 | 31 | 1.000 |
| 1.59 | 31 | 1.000 |
| 0.30 | 35 | 1.000 |
| -1.00 | 33 | 1.000 |
| -2.26 | 31 | 1.000 |
| -3.46 | 31 | 1.000 |
| -4.69 | 33 | 1.000 |
| -5.94 | 35 | 1.000 |
| -7.17 | 36 | 1.000 |
| -8.38 | 42 | 1.000 |
| -9.61 | 46 | 1.000 |
| -10.41 | 55 | 1.000 |
| -10.82 | 53 | 1.000 |
| -11.23 | 53 | 1.000 |
| -11.63 | 51 | 1.000 |
| -12.06 | 1793 | 1.000 |
| -12.31 | 1582 | 1.298 |
| **Depth Avg** | **97** | **1.005** |

Siltprofiler & Navitracker-OBS

*Data processed by:* IMDC

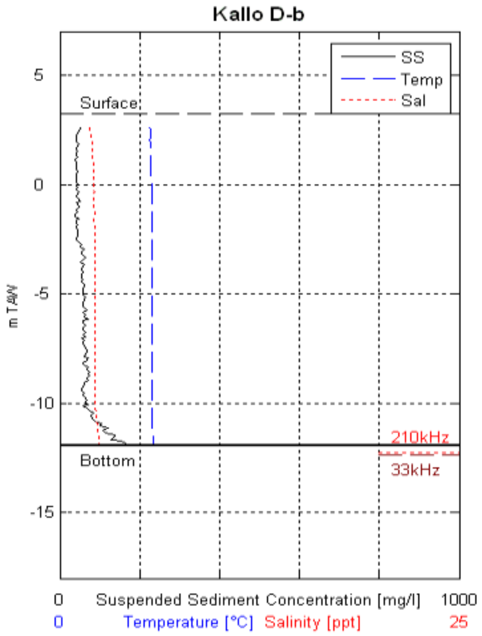
*In association with:* WL | delft hydraulics, GEMS International

Location: Kallo

Date: 18/02/2005

*I/RA/11265/05.014MSA*

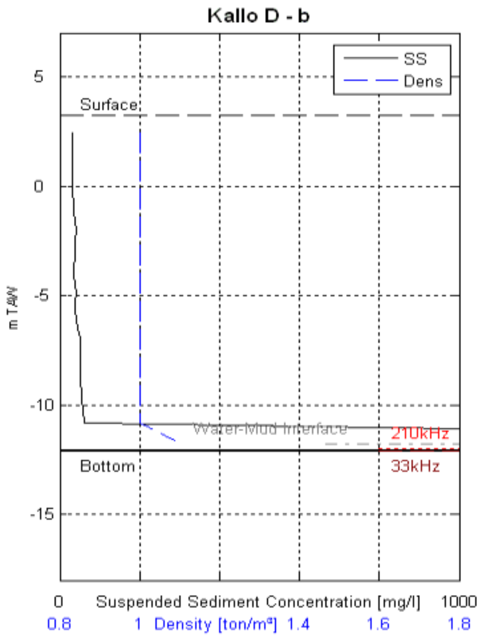
# 11265 HCBS - FEBRUARY 2005 SURVEY | 77 Db




**Siltprofiler**

Date & Time [MET]: 18/2/2005 12:34
Time after/before HT [MET]: 2:04
Coordinates [UTM-ED50] Easting: 590547
Coordinates [UTM-ED50] Northing: 5680165
Water-Bottom Interface Siltpr. [m TAW]: -11.94
Waterdepth 210 kHz Echo [m TAW]: -12.25
Waterdepth 33 kHz Echo [m TAW]: -12.36
Surface elevation [m TAW]: 3.22

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 2.60 | 5.6 | 1.9 | 49 |
| -4.35 | 5.8 | 2.2 | 62 |
| -6.77 | 5.8 | 2.2 | 55 |
| -11.33 | 5.8 | 2.4 | 112 |
| -11.43 | 5.8 | 2.5 | 125 |
| -11.52 | 5.8 | 2.4 | 155 |
| -11.62 | 5.8 | 2.4 | 108 |
| -11.62 | 5.8 | 2.4 | 108 |
| -11.63 | 5.8 | 2.5 | 102 |
| -11.65 | 5.8 | 2.5 | 125 |
| -11.66 | 5.8 | 2.4 | 136 |
| -11.67 | 5.8 | 2.5 | 112 |
| -11.68 | 5.8 | 2.4 | 133 |
| -11.69 | 5.8 | 2.5 | 127 |
| -11.71 | 5.8 | 2.5 | 131 |
| -11.73 | 5.8 | 2.5 | 164 |
| -11.74 | 5.8 | 2.4 | 161 |
| -11.77 | 5.8 | 2.4 | 203 |
| -11.82 | 5.8 | 2.4 | 151 |
| -11.83 | 5.8 | 2.4 | 182 |
| **Depth Avg** | **5.8** | **2.2** | **60** |




**Navitracker-OBS**

Waterdepth 210 kHz Echo [m TAW]: -12
Waterdepth 33 kHz Echo [m TAW]: -12.1
Water-Bottom Interface CTD-OBS [m TAW]: -12.08
Water-Mud Interface Navitracker [m TAW]: -11.80

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 2.47 | 31 | 1.000 |
| 1.39 | 32 | 1.000 |
| 0.10 | 33 | 1.000 |
| -1.16 | 35 | 1.000 |
| -2.46 | 38 | 1.000 |
| -3.70 | 36 | 1.000 |
| -4.88 | 41 | 1.000 |
| -6.07 | 41 | 1.000 |
| -7.32 | 52 | 1.000 |
| -8.54 | 53 | 1.000 |
| -9.79 | 53 | 1.000 |
| -10.17 | 56 | 1.000 |
| -10.61 | 57 | 1.000 |
| -10.99 | 56 | 1.000 |
| -11.98 | NaN | 1.310 |
| **Depth Avg** | **125** | **1.002** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

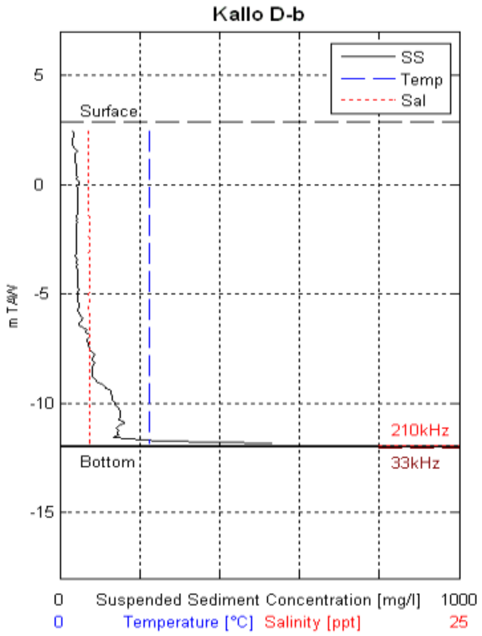
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

| 11265 HCBS - FEBRUARY 2005 SURVEY | 83 Db |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 13:00 |
| Time after/before HT [MET]: | 2:30 |
| Coordinates [UTM-ED50] Easting: | 590542 |
| Coordinates [UTM-ED50] Northing: | 5680157 |
| Water-Bottom Interface Siltpr. [m TAW]: | -11.97 |
| Waterdepth 210 kHz Echo [m TAW]: | -11.94 |
| Waterdepth 33 kHz Echo [m TAW]: | -12.04 |
| Surface elevation [m TAW]: | 2.86 |

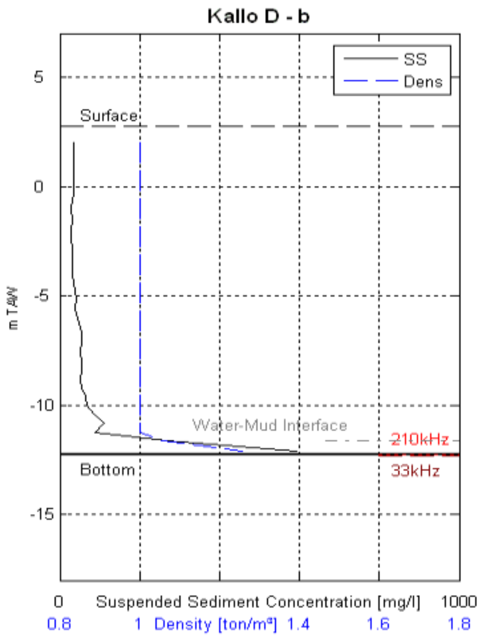
| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 2.44 | 5.6 | 1.9 | 25 |
| -4.68 | 5.6 | 1.9 | 42 |
| -6.94 | 5.6 | 1.9 | 82 |
| -11.35 | 5.7 | 1.9 | 142 |
| -11.45 | 5.6 | 1.9 | 146 |
| -11.55 | 5.6 | 1.9 | 137 |
| -11.63 | 5.6 | 1.9 | 164 |
| -11.67 | 5.6 | 1.9 | 225 |
| -11.68 | 5.6 | 1.9 | 247 |
| -11.69 | 5.6 | 1.9 | 239 |
| -11.70 | 5.6 | 1.9 | 250 |
| -11.71 | 5.7 | 1.9 | 248 |
| -11.72 | 5.6 | 1.9 | 243 |
| -11.73 | 5.7 | 1.9 | 253 |
| -11.76 | 5.7 | 1.9 | 264 |
| -11.78 | 5.7 | 1.9 | 265 |
| -11.79 | 5.6 | 1.9 | 248 |
| -11.80 | 5.6 | 1.9 | 258 |
| -11.82 | 5.6 | 1.9 | 308 |
| -11.83 | 5.6 | 1.9 | 278 |
| -11.85 | 5.6 | 1.9 | 336 |
| -11.87 | 5.6 | 1.9 | 2149 |
| **Depth Avg** | **5.6** | **1.8** | **70** |

Data Not Recorded

| Siltprofiler & Navitracker-OBS | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* |
| | | *I/RA/11265/05.014MSA* |

| 11265 HCBS - FEBRUARY 2005 SURVEY | 85 Db |
|---|---|

Data Not Recorded




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -12.27 |
| Waterdepth 33 kHz Echo [m TAW]: | -12.32 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -12.25 |
| Water-Mud Interface Navitracker [m TAW]: | -11.62 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 2.01 | 38 | 1.000 |
| 0.83 | 36 | 1.000 |
| -0.34 | 33 | 1.000 |
| -1.53 | 32 | 1.000 |
| -2.86 | 31 | 1.000 |
| -4.02 | 32 | 1.000 |
| -5.15 | 40 | 1.000 |
| -6.35 | 43 | 1.000 |
| -7.59 | 53 | 1.000 |
| -8.77 | 53 | 1.000 |
| -10.02 | 67 | 1.000 |
| -10.41 | 76 | 1.000 |
| -10.79 | 112 | 1.000 |
| -11.22 | 84 | 1.000 |
| -11.62 | 106 | 1.000 |
| -12.02 | 485 | 1.258 |
| -12.14 | NaN | NaN |
| -12.15 | NaN | NaN |
| **Depth Avg** | **61** | **1.006** |

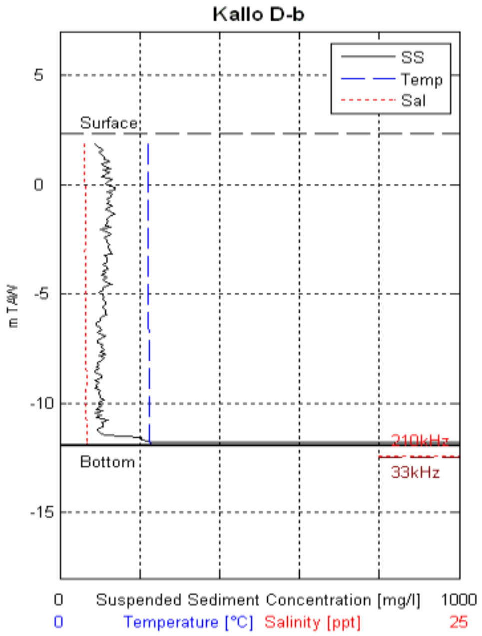
| Siltprofiler & Navitracker-OBS | |
|---|---|
| Location: Kallo | Date: 18/02/2005 |

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

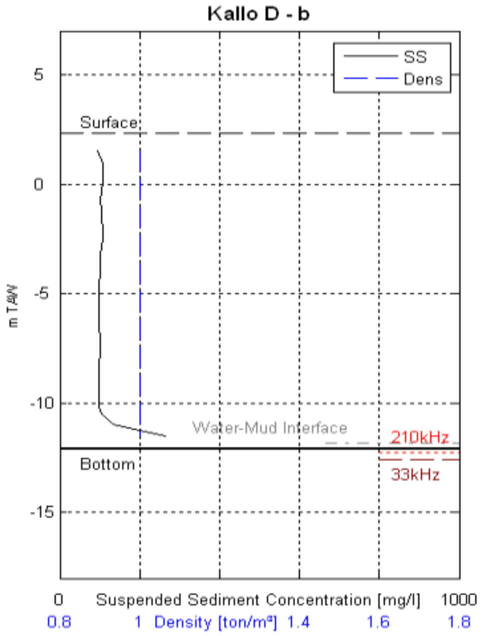
# 11265 HCBS - FEBRUARY 2005 SURVEY | 91 Db




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 13:39 |
| Time after/before HT [MET]: | 3:09 |
| Coordinates [UTM-ED50] Easting: | 590549 |
| Coordinates [UTM-ED50] Northing: | 5680162 |
| Water-Bottom Interface Siltpr. [m TAW]: | -11.96 |
| Waterdepth 210 kHz Echo [m TAW]: | -12.42 |
| Waterdepth 33 kHz Echo [m TAW]: | -12.48 |
| Surface elevation [m TAW]: | 2.30 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 1.89 | 5.5 | 1.5 | 69 |
| -5.16 | 5.5 | 1.6 | 118 |
| -7.42 | 5.5 | 1.6 | 90 |
| -11.35 | 5.6 | 1.7 | 96 |
| -11.45 | 5.6 | 1.7 | 118 |
| -11.54 | 5.6 | 1.7 | 231 |
| -11.64 | 5.6 | 1.7 | 217 |
| -11.67 | 5.6 | 1.7 | 184 |
| -11.68 | 5.6 | 1.7 | 206 |
| -11.69 | 5.6 | 1.7 | 239 |
| -11.70 | 5.6 | 1.7 | 178 |
| -11.71 | 5.6 | 1.7 | 222 |
| -11.72 | 5.7 | 1.7 | 216 |
| -11.73 | 5.6 | 1.7 | 222 |
| -11.75 | 5.6 | 1.7 | 234 |
| -11.76 | 5.6 | 1.7 | 253 |
| -11.77 | 5.6 | 1.7 | 228 |
| -11.79 | 5.6 | 1.7 | 253 |
| -11.80 | 5.7 | 1.7 | 245 |
| -11.81 | 5.7 | 1.7 | 256 |
| -11.84 | 5.7 | 1.7 | 2399 |
| -11.85 | 5.7 | 1.7 | 24534 |
| **Depth Avg** | **5.6** | **1.6** | **125** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -12.24 |
| Waterdepth 33 kHz Echo [m TAW]: | -12.57 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -12.10 |
| Water-Mud Interface Navitracker [m TAW]: | -11.85 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 1.59 | 98 | 1.000 |
| 0.55 | 107 | 1.000 |
| -0.74 | 102 | 1.000 |
| -2.02 | 107 | 1.000 |
| -3.30 | 102 | 1.000 |
| -4.54 | 102 | 1.000 |
| -5.77 | 96 | 1.000 |
| -6.98 | 99 | 1.000 |
| -8.19 | 99 | 1.000 |
| -9.40 | 97 | 1.000 |
| -10.15 | 99 | 1.000 |
| -10.51 | 98 | 1.000 |
| -10.85 | 114 | 1.000 |
| -12.00 | 2435 | 1.317 |
| **Depth Avg** | **105** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

Date: 18/02/2005

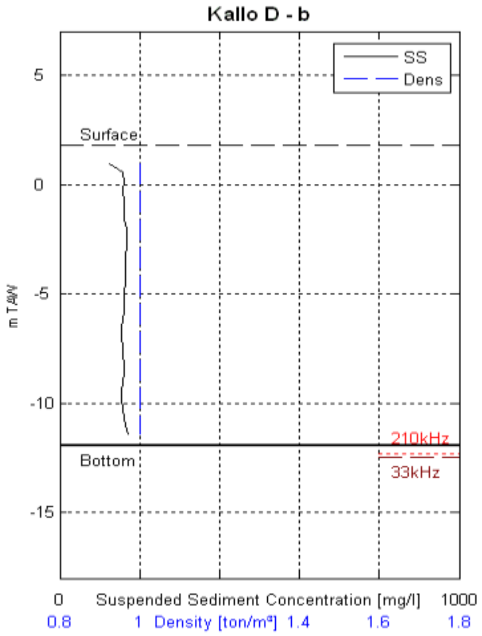
*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

| 11265 HCBS - FEBRUARY 2005 SURVEY | 96 Db |
|---|---|

Data Not Recorded




**Navitracker-OBS**

Waterdepth 210 kHz Echo [m TAW]: -12.31
Waterdepth 33 kHz Echo [m TAW]: -12.46
Water-Bottom Interface CTD-OBS [m TAW]: -11.95
Water-Mud Interface Navitracker [m TAW]: NaN

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.97 | 116 | NaN |
| -0.30 | 160 | 1.000 |
| -1.57 | 160 | 1.000 |
| -2.84 | 167 | 1.000 |
| -4.10 | 165 | 1.000 |
| -5.35 | 160 | 1.000 |
| -6.59 | 157 | 1.000 |
| -7.81 | 158 | 1.000 |
| -9.05 | 159 | 1.000 |
| -9.86 | 155 | 1.000 |
| -10.25 | 157 | 1.000 |
| -10.65 | 162 | 1.000 |
| -11.05 | 165 | 1.000 |
| -11.42 | 162 | 1.000 |
| -11.85 | 179 | 1.000 |
| **Depth Avg** | **158** | **1.000** |

Siltprofiler & Navitracker-OBS

*Data processed by:*

*In association with:*

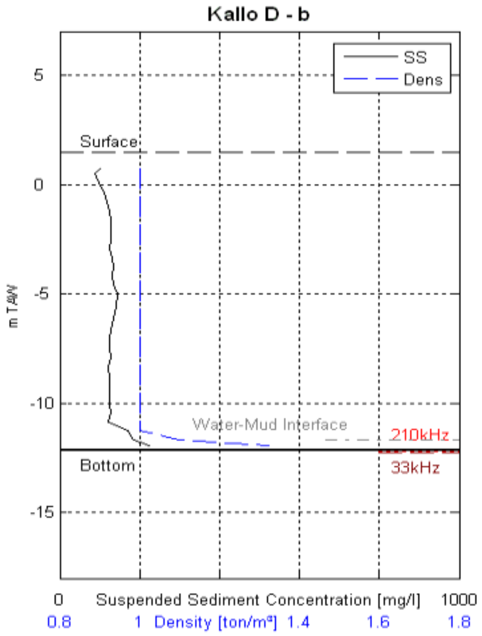
Location: Kallo

Date: 18/02/2005

*I/RA/11265/05.014MSA*

| 11265 HCBS - FEBRUARY 2005 SURVEY | 101 Db |
|---|---|

Data Not Recorded




**Navitracker-OBS**

Waterdepth 210 kHz Echo [m TAW]: -12.18
Waterdepth 33 kHz Echo [m TAW]: -12.24
Water-Bottom Interface CTD-OBS [m TAW]: -12.13
Water-Mud Interface Navitracker [m TAW]: -11.66

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.75 | 94 | 1.000 |
| -0.37 | 109 | 1.000 |
| -1.66 | 124 | 1.000 |
| -2.95 | 124 | 1.000 |
| -4.13 | 135 | 1.000 |
| -5.40 | 144 | 1.000 |
| -6.60 | 131 | 1.000 |
| -7.82 | 126 | 1.000 |
| -9.19 | 126 | 1.000 |
| -10.42 | 129 | 1.000 |
| -10.85 | 119 | 1.000 |
| -11.25 | 116 | 1.000 |
| -12.03 | 244 | 1.338 |
| **Depth Avg** | **128** | **1.006** |

Siltprofiler & Navitracker-OBS

*Data processed by:*

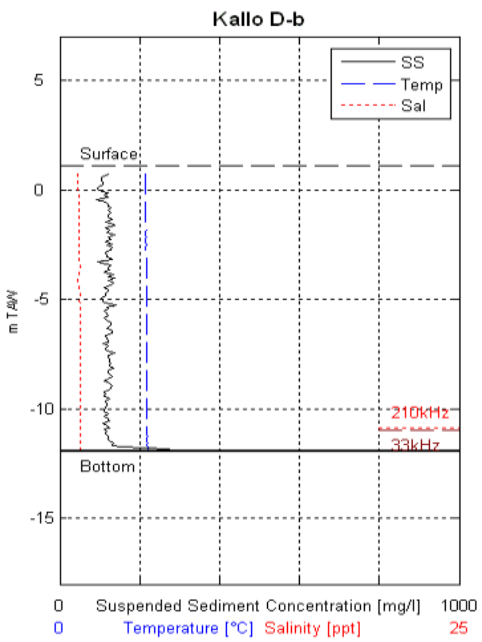
*In association with:*

*I/RA/11265/05.014MSA*

Location:
Kallo

Date:
18/02/2005

| 11265 HCBS - FEBRUARY 2005 SURVEY | 106 Db |
|---|---|




**Siltprofiler**

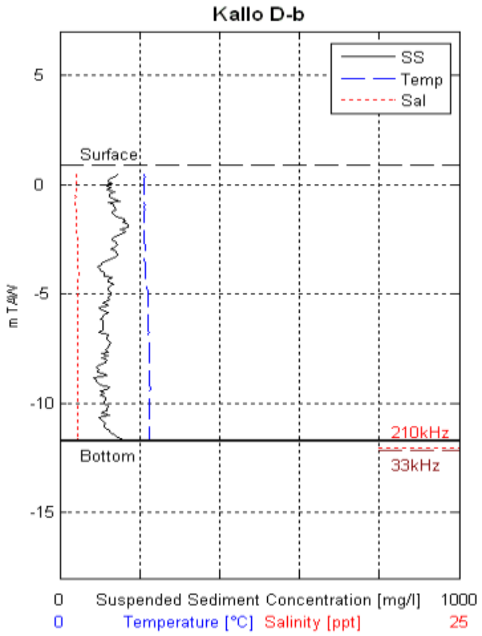
| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 15:22 |
| Time after/before HT [MET]: | 4:52 |
| Coordinates [UTM-ED50] Easting: | 590542 |
| Coordinates [UTM-ED50] Northing: | 5680157 |
| Water-Bottom Interface Siltpr. [m TAW]: | -11.93 |
| Waterdepth 210 kHz Echo [m TAW]: | -10.88 |
| Waterdepth 33 kHz Echo [m TAW]: | -10.99 |
| Surface elevation [m TAW]: | 1.12 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.71 | 5.3 | 1.1 | 127 |
| -6.05 | 5.4 | 1.3 | 134 |
| -8.11 | 5.4 | 1.3 | 130 |
| -11.32 | 5.5 | 1.3 | 108 |
| -11.42 | 5.5 | 1.3 | 134 |
| -11.52 | 5.5 | 1.3 | 176 |
| -11.62 | 5.5 | 1.3 | 128 |
| -11.62 | 5.5 | 1.3 | 128 |
| -11.63 | 5.5 | 1.3 | 128 |
| -11.65 | 5.5 | 1.3 | 120 |
| -11.67 | 5.5 | 1.3 | 161 |
| -11.68 | 5.5 | 1.3 | 128 |
| -11.70 | 5.5 | 1.3 | 145 |
| -11.71 | 5.5 | 1.3 | 105 |
| -11.72 | 5.5 | 1.3 | 134 |
| -11.73 | 5.4 | 1.3 | 127 |
| -11.74 | 5.5 | 1.3 | 151 |
| -11.75 | 5.5 | 1.3 | 179 |
| -11.76 | 5.5 | 1.3 | 148 |
| -11.78 | 5.5 | 1.3 | 169 |
| -11.81 | 5.5 | 1.3 | 182 |
| -11.82 | 5.5 | 1.3 | 170 |
| **Depth Avg** | **5.4** | **1.2** | **121** |

Data Not Recorded

| Siltprofiler & Navitracker-OBS | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* |
| | | *I/RA/11265/05.014MSA* |

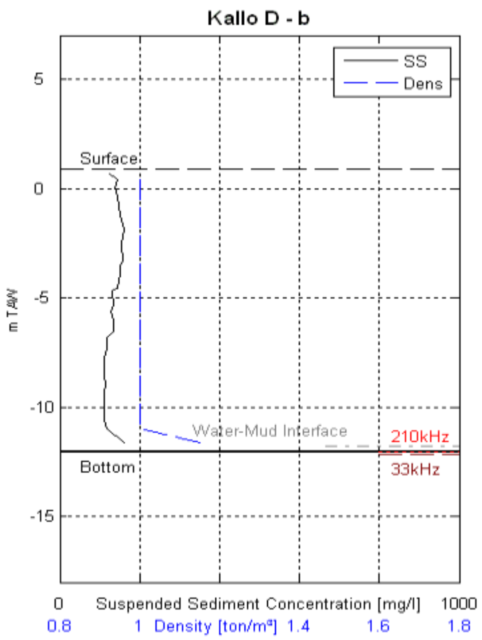
# 11265 HCBS - FEBRUARY 2005 SURVEY | 111 Db




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 15:48 |
| Time after/before HT [MET]: | 5:18 |
| Coordinates [UTM-ED50] Easting: | 590542 |
| Coordinates [UTM-ED50] Northing: | 5680167 |
| Water-Bottom Interface Siltpr. [m TAW]: | -11.71 |
| Waterdepth 210 kHz Echo [m TAW]: | -12.06 |
| Waterdepth 33 kHz Echo [m TAW]: | -12.14 |
| Surface elevation [m TAW]: | 0.88 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.47 | 5.3 | 1.0 | 169 |
| -6.07 | 5.6 | 1.2 | 125 |
| -7.73 | 5.6 | 1.2 | 95 |
| -11.09 | 5.6 | 1.2 | 77 |
| -11.19 | 5.6 | 1.2 | 139 |
| -11.27 | 5.6 | 1.2 | 137 |
| -11.39 | 5.6 | 1.2 | 139 |
| -11.40 | 5.7 | 1.1 | 152 |
| -11.42 | 5.6 | 1.2 | 127 |
| -11.43 | 5.6 | 1.2 | 160 |
| -11.46 | 5.6 | 1.2 | 176 |
| -11.47 | 5.6 | 1.2 | 125 |
| -11.48 | 5.6 | 1.2 | 106 |
| -11.51 | 5.6 | 1.2 | 166 |
| -11.52 | 5.6 | 1.2 | 149 |
| -11.53 | 5.6 | 1.2 | 140 |
| -11.56 | 5.6 | 1.2 | 149 |
| -11.57 | 5.7 | 1.1 | 112 |
| -11.58 | 5.6 | 1.2 | 160 |
| -11.60 | 5.6 | 1.2 | 155 |
| **Depth Avg** | **5.5** | **1.1** | **122** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -12.05 |
| Waterdepth 33 kHz Echo [m TAW]: | -12.13 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -12.04 |
| Water-Mud Interface Navitracker [m TAW]: | -11.77 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.82 | 134 | NaN |
| -0.20 | 108 | NaN |
| -1.24 | 151 | 1.000 |
| -2.50 | 162 | 1.000 |
| -3.55 | 151 | 1.000 |
| -4.69 | 134 | 1.000 |
| -6.00 | 135 | 1.000 |
| -7.34 | 118 | 1.000 |
| -8.57 | 114 | 1.000 |
| -9.78 | 112 | 1.000 |
| -10.14 | 114 | 1.000 |
| -10.60 | 112 | 1.000 |
| -10.98 | 117 | 1.000 |
| -11.42 | 127 | 1.000 |
| -11.77 | 167 | 1.258 |
| -11.94 | 221 | 1.351 |
| **Depth Avg** | **134** | **1.004** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

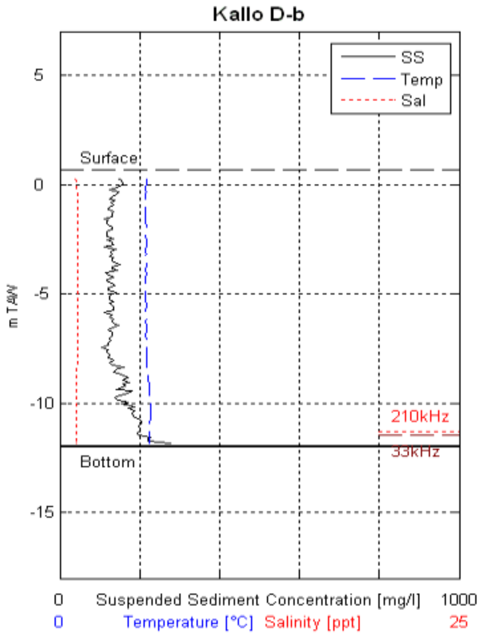
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

# 11265 HCBS - FEBRUARY 2005 SURVEY | 116 Db




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 16:09 |
| Time after/before HT [MET]: | 5:39 |
| Coordinates [UTM-ED50] Easting: | 590542 |
| Coordinates [UTM-ED50] Northing: | 5680157 |
| Water-Bottom Interface Siltpr. [m TAW]: | -11.98 |
| Waterdepth 210 kHz Echo [m TAW]: | -11.31 |
| Waterdepth 33 kHz Echo [m TAW]: | -11.48 |
| Surface elevation [m TAW]: | 0.69 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.23 | 5.4 | 1.0 | 148 |
| -5.52 | 5.4 | 1.1 | 122 |
| -7.61 | 5.5 | 1.1 | 139 |
| -11.35 | 5.6 | 1.1 | 205 |
| -11.46 | 5.6 | 1.1 | 205 |
| -11.53 | 5.7 | 1.1 | 240 |
| -11.62 | 5.6 | 1.1 | 240 |
| -11.67 | 5.7 | 1.1 | 230 |
| -11.69 | 5.6 | 1.1 | 187 |
| -11.71 | 5.6 | 1.1 | 213 |
| -11.73 | 5.6 | 1.1 | 231 |
| -11.74 | 5.6 | 1.1 | 213 |
| -11.75 | 5.6 | 1.1 | 233 |
| -11.78 | 5.6 | 1.1 | 231 |
| -11.80 | 5.6 | 1.1 | 250 |
| -11.81 | 5.6 | 1.1 | 264 |
| -11.83 | 5.6 | 1.1 | 310 |
| -11.84 | 5.6 | 1.1 | 245 |
| -11.85 | 5.6 | 1.1 | 288 |
| -11.87 | 5.6 | 1.1 | 275 |
| **Depth Avg** | **5.5** | **1.1** | **144** |

Data Not Recorded

Siltprofiler & Navitracker-OBS

Location:
Kallo

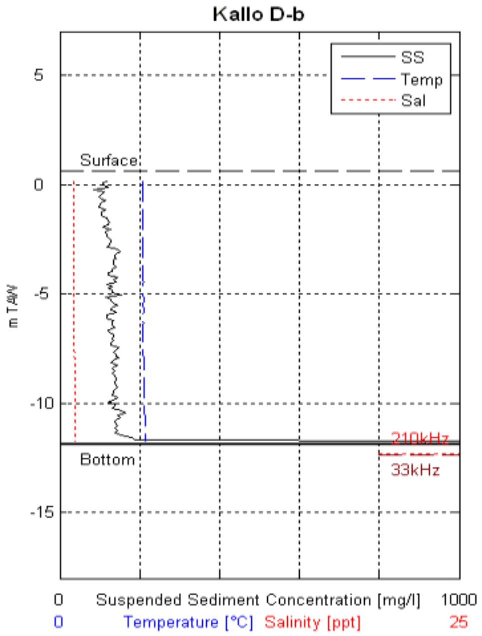
Date:
18/02/2005

*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

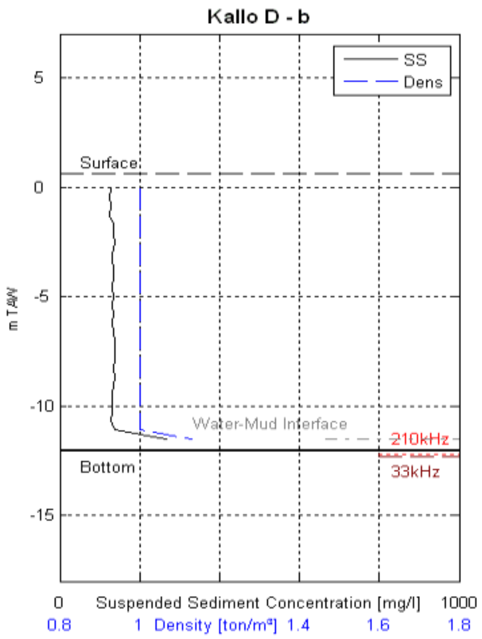
| 11265 HCBS - FEBRUARY 2005 SURVEY | 121 Db |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 16:32 |
| Time after/before HT [MET]: | 6:02 |
| Coordinates [UTM-ED50] Easting: | 590546 |
| Coordinates [UTM-ED50] Northing: | 5680164 |
| Water-Bottom Interface Siltpr. [m TAW]: | -11.86 |
| Waterdepth 210 kHz Echo [m TAW]: | -12.31 |
| Waterdepth 33 kHz Echo [m TAW]: | -12.36 |
| Surface elevation [m TAW]: | 0.59 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.18 | 5.2 | 0.8 | 120 |
| -6.20 | 5.2 | 0.9 | 134 |
| -8.23 | 5.3 | 0.9 | 115 |
| -11.24 | 5.3 | 1.0 | 145 |
| -11.35 | 5.3 | 1.0 | 131 |
| -11.45 | 5.3 | 1.0 | 152 |
| -11.53 | 5.3 | 1.0 | 167 |
| -11.56 | 5.3 | 1.0 | 136 |
| -11.57 | 5.3 | 1.0 | 182 |
| -11.58 | 5.3 | 1.0 | 161 |
| -11.59 | 5.3 | 1.0 | 200 |
| -11.61 | 5.3 | 1.0 | 191 |
| -11.62 | 5.3 | 1.0 | 152 |
| -11.63 | 5.3 | 1.0 | 188 |
| -11.65 | 5.3 | 1.0 | 127 |
| -11.67 | 5.3 | 1.0 | 199 |
| -11.68 | 5.3 | 1.0 | 184 |
| -11.69 | 5.3 | 1.0 | 226 |
| -11.70 | 5.3 | 1.0 | 208 |
| -11.72 | 5.3 | 1.0 | 236 |
| -11.74 | 5.3 | 1.0 | 243 |
| -11.75 | 5.3 | 1.0 | 5229 |
| **Depth Avg** | **5.2** | **0.9** | **134** |



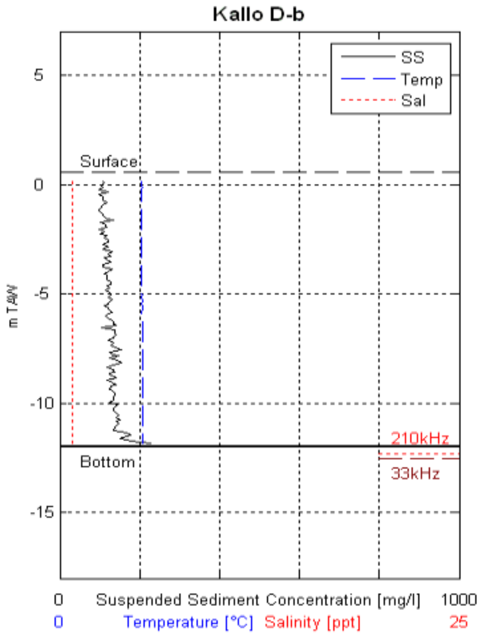

**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -12.23 |
| Waterdepth 33 kHz Echo [m TAW]: | -12.3 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -12.07 |
| Water-Mud Interface Navitracker [m TAW]: | -11.50 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| -0.09 | 128 | 1.000 |
| -1.29 | 124 | 1.000 |
| -2.56 | 135 | 1.000 |
| -3.71 | 134 | 1.000 |
| -4.97 | 134 | 1.000 |
| -6.18 | 133 | 1.000 |
| -7.38 | 137 | 1.000 |
| -8.66 | 138 | 1.000 |
| -9.88 | 127 | 1.000 |
| -10.27 | 128 | 1.000 |
| -10.66 | 128 | 1.000 |
| -11.10 | 131 | 1.000 |
| -11.50 | 139 | 1.000 |
| -11.97 | 503 | 1.298 |
| **Depth Avg** | **135** | **1.002** |

| Siltprofiler & Navitracker-OBS | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* |
| | | *I/RA/11265/05.014MSA* |

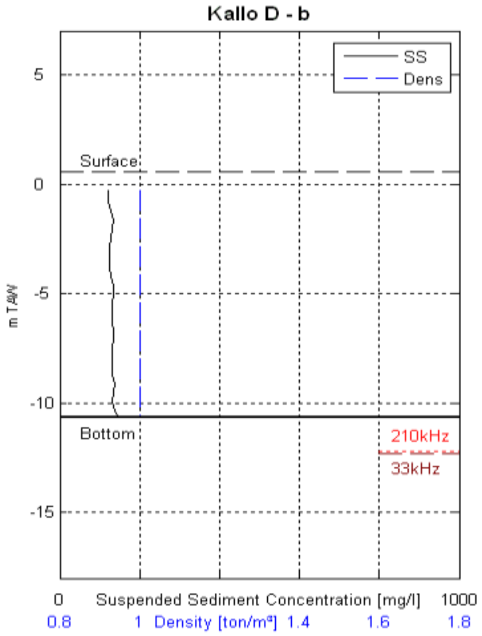
# 11265 HCBS - FEBRUARY 2005 SURVEY — 126 Db




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 16:55 |
| Time after/before HT [MET]: | -6:45 |
| Coordinates [UTM-ED50] Easting: | 590546 |
| Coordinates [UTM-ED50] Northing: | 5680163 |
| Water-Bottom Interface Siltpr. [m TAW]: | -11.98 |
| Waterdepth 210 kHz Echo [m TAW]: | -12.31 |
| Waterdepth 33 kHz Echo [m TAW]: | -12.53 |
| Surface elevation [m TAW]: | 0.55 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.14 | 5.1 | 0.8 | 124 |
| -5.90 | 5.2 | 0.8 | 131 |
| -7.85 | 5.2 | 0.8 | 193 |
| -11.35 | 5.2 | 0.8 | 182 |
| -11.46 | 5.2 | 0.8 | 187 |
| -11.56 | 5.2 | 0.8 | 160 |
| -11.65 | 5.2 | 0.8 | 142 |
| -11.67 | 5.2 | 0.8 | 169 |
| -11.68 | 5.2 | 0.8 | 190 |
| -11.69 | 5.2 | 0.8 | 176 |
| -11.70 | 5.2 | 0.8 | 167 |
| -11.71 | 5.2 | 0.8 | 164 |
| -11.73 | 5.2 | 0.8 | 175 |
| -11.74 | 5.2 | 0.8 | 188 |
| -11.76 | 5.2 | 0.8 | 134 |
| -11.78 | 5.2 | 0.8 | 182 |
| -11.79 | 5.2 | 0.8 | 200 |
| -11.81 | 5.2 | 0.8 | 234 |
| -11.83 | 5.2 | 0.8 | 197 |
| -11.84 | 5.2 | 0.8 | 199 |
| -11.86 | 5.2 | 0.8 | 234 |
| -11.87 | 5.2 | 0.8 | 247 |
| **Depth Avg** | **5.2** | **0.8** | **126** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -12.22 |
| Waterdepth 33 kHz Echo [m TAW]: | -12.3 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -10.68 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| -0.14 | 118 | 1.000 |
| -1.21 | 128 | 1.000 |
| -2.49 | 127 | 1.000 |
| -3.78 | 124 | 1.000 |
| -5.02 | 134 | 1.000 |
| -6.25 | 128 | 1.000 |
| -7.49 | 133 | 1.000 |
| -8.73 | 135 | 1.000 |
| -9.10 | 139 | 1.000 |
| -9.53 | 131 | 1.000 |
| -10.58 | 145 | 1.000 |
| **Depth Avg** | **130** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

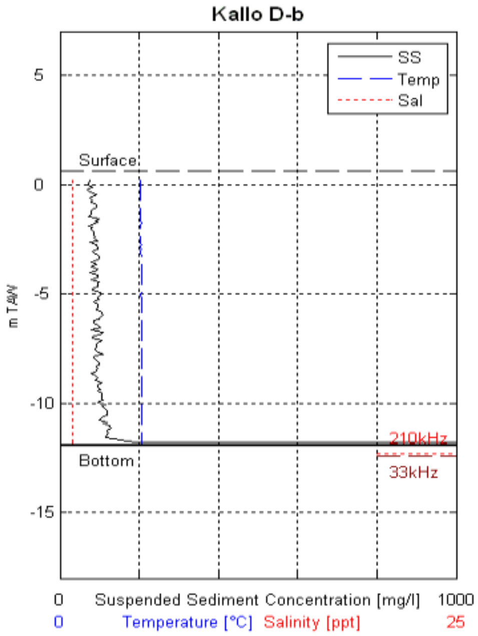
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

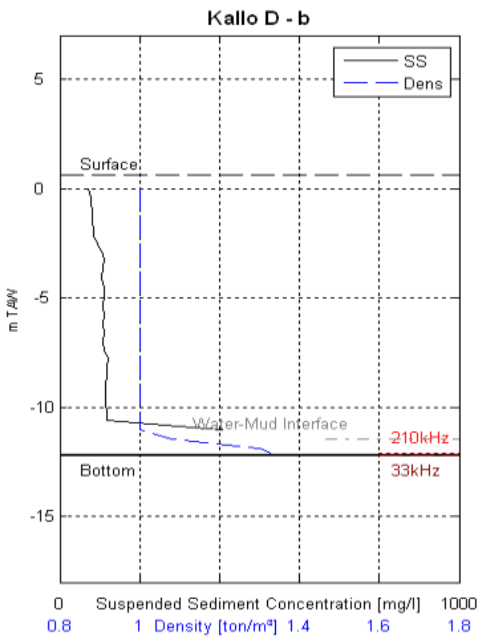
| 11265 HCBS - FEBRUARY 2005 SURVEY | 131 Db |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 17:13 |
| Time after/before HT [MET]: | -6:26 |
| Coordinates [UTM-ED50] Easting: | 590544 |
| Coordinates [UTM-ED50] Northing: | 5680162 |
| Water-Bottom Interface Siltpr. [m TAW]: | -11.95 |
| Waterdepth 210 kHz Echo [m TAW]: | -12.30 |
| Waterdepth 33 kHz Echo [m TAW]: | -12.44 |
| Surface elevation [m TAW]: | 0.60 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.19 | 5.1 | 0.8 | 85 |
| -6.08 | 5.1 | 0.8 | 105 |
| -8.21 | 5.1 | 0.8 | 77 |
| -11.34 | 5.1 | 0.8 | 85 |
| -11.44 | 5.2 | 0.8 | 112 |
| -11.54 | 5.1 | 0.8 | 86 |
| -11.63 | 5.1 | 0.8 | 170 |
| -11.64 | 5.2 | 0.8 | 206 |
| -11.66 | 5.1 | 0.8 | 99 |
| -11.68 | 5.2 | 0.8 | 149 |
| -11.69 | 5.2 | 0.8 | 226 |
| -11.71 | 5.1 | 0.8 | 216 |
| -11.72 | 5.1 | 0.8 | 185 |
| -11.74 | 5.1 | 0.8 | 184 |
| -11.75 | 5.1 | 0.8 | 171 |
| -11.76 | 5.2 | 0.8 | 170 |
| -11.79 | 5.1 | 0.8 | 145 |
| -11.80 | 5.1 | 0.8 | 203 |
| -11.81 | 5.2 | 0.8 | 142 |
| -11.82 | 5.1 | 0.8 | 152 |
| -11.83 | 5.2 | 0.8 | 10239 |
| -11.84 | 5.1 | 0.8 | 34777 |
| **Depth Avg** | **5.1** | **0.8** | **131** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -12.1 |
| Waterdepth 33 kHz Echo [m TAW]: | -12.21 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -12.18 |
| Water-Mud Interface Navitracker [m TAW]: | -11.44 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| -0.05 | 72 | 1.000 |
| -1.27 | 81 | 1.000 |
| -2.97 | 92 | 1.000 |
| -4.08 | 108 | 1.000 |
| -5.36 | 109 | 1.000 |
| -6.59 | 109 | 1.000 |
| -7.77 | 109 | 1.000 |
| -8.97 | 113 | 1.000 |
| -10.21 | 119 | 1.000 |
| -10.62 | 118 | 1.000 |
| -11.02 | 117 | 1.000 |
| -11.44 | NaN | 1.000 |
| -11.78 | NaN | 1.275 |
| -11.95 | NaN | 1.315 |
| -12.08 | NaN | 1.326 |
| **Depth Avg** | **108** | **1.013** |

## Siltprofiler & Navitracker-OBS

Location:
Kallo

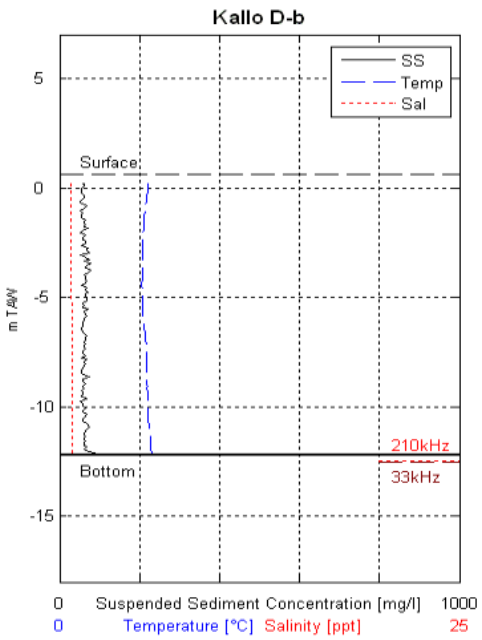
Date:
18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

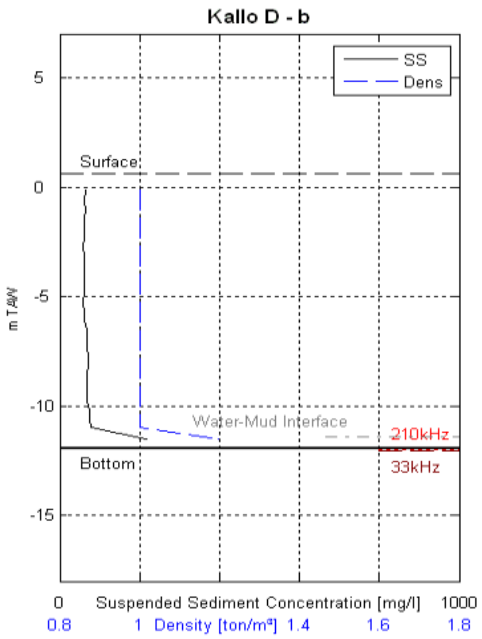
| 11265 HCBS - FEBRUARY 2005 SURVEY | 136 Db |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 17:33 |
| Time after/before HT [MET]: | -6:06 |
| Coordinates [UTM-ED50] Easting: | 590548 |
| Coordinates [UTM-ED50] Northing: | 5680159 |
| Water-Bottom Interface Siltpr. [m TAW]: | -12.23 |
| Waterdepth 210 kHz Echo [m TAW]: | -12.48 |
| Waterdepth 33 kHz Echo [m TAW]: | -12.54 |
| Surface elevation [m TAW]: | 0.63 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.22 | 5.6 | 0.7 | 38 |
| -5.78 | 5.2 | 0.8 | 85 |
| -7.91 | 5.5 | 0.7 | 77 |
| -11.61 | 5.7 | 0.8 | 53 |
| -11.70 | 5.7 | 0.8 | 73 |
| -11.81 | 5.7 | 0.8 | 63 |
| -11.90 | 5.8 | 0.8 | 73 |
| -11.93 | 5.7 | 0.8 | 56 |
| -11.94 | 5.7 | 0.8 | 45 |
| -11.95 | 5.7 | 0.8 | 55 |
| -11.96 | 5.7 | 0.8 | 73 |
| -11.99 | 5.8 | 0.8 | 50 |
| -12.00 | 5.8 | 0.8 | 70 |
| -12.01 | 5.7 | 0.8 | 56 |
| -12.02 | 5.7 | 0.8 | 70 |
| -12.03 | 5.8 | 0.8 | 65 |
| -12.05 | 5.7 | 0.8 | 76 |
| -12.06 | 5.7 | 0.8 | 85 |
| -12.08 | 5.8 | 0.8 | 62 |
| -12.09 | 5.8 | 0.8 | 67 |
| -12.10 | 5.7 | 0.8 | 89 |
| -12.12 | 5.8 | 0.8 | 88 |
| **Depth Avg** | **5.4** | **0.8** | **62** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -12 |
| Waterdepth 33 kHz Echo [m TAW]: | -12.07 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -11.94 |
| Water-Mud Interface Navitracker [m TAW]: | -11.39 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| -0.05 | 65 | 1.000 |
| -1.44 | 62 | 1.000 |
| -2.73 | 61 | 1.000 |
| -4.00 | 63 | 1.000 |
| -5.26 | 59 | 1.000 |
| -6.49 | 72 | 1.000 |
| -7.71 | 69 | 1.000 |
| -8.92 | 67 | 1.000 |
| -10.15 | 73 | 1.000 |
| -10.55 | 76 | 1.000 |
| -10.97 | 73 | 1.000 |
| -11.39 | 457 | 1.015 |
| -11.59 | 116 | 1.260 |
| -11.66 | 271 | 1.289 |
| -11.80 | 606 | 1.282 |
| -11.84 | 596 | 1.274 |
| **Depth Avg** | **69** | **1.004** |

Siltprofiler & Navitracker-OBS

Location:
Kallo

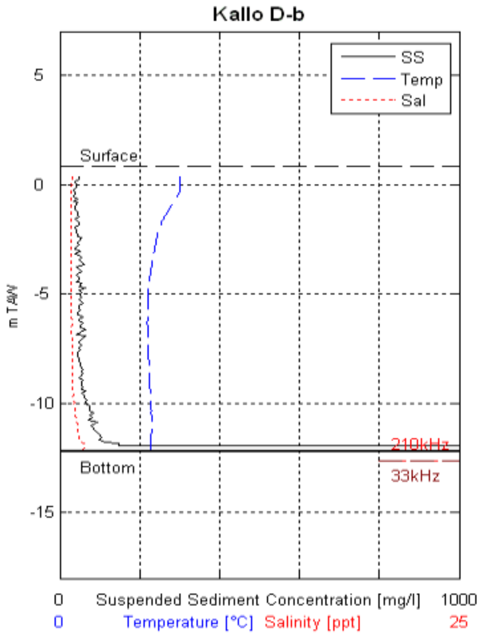
Date:
18/02/2005

*Data processed by:* IMDC

*In association with:* wl | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

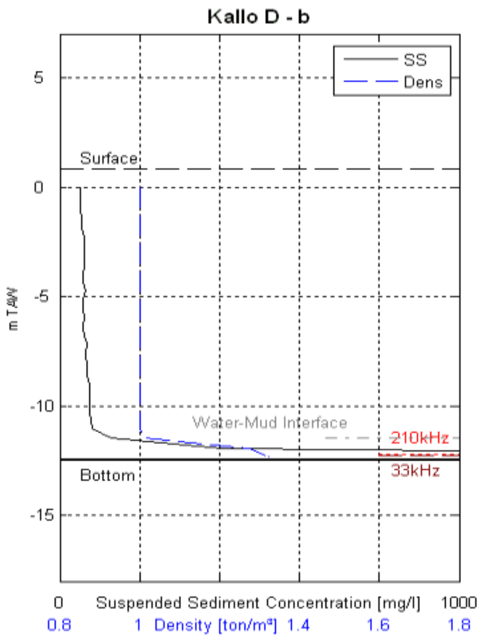
| 11265 HCBS - FEBRUARY 2005 SURVEY | 142 Db |
|---|---|




**Siltprofiler**

Date & Time [MET]: 18/2/2005 18:05
Time after/before HT [MET]: -5:34
Coordinates [UTM-ED50] Easting: 590540
Coordinates [UTM-ED50] Northing: 5680157
Water-Bottom Interface Siltpr. [m TAW]: -12.23
Waterdepth 210 kHz Echo [m TAW]: -12.61
Waterdepth 33 kHz Echo [m TAW]: -12.63
Surface elevation [m TAW]: 0.82

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.39 | 7.5 | 0.8 | 45 |
| -6.52 | 5.5 | 0.7 | 66 |
| -8.58 | 5.6 | 0.8 | 65 |
| -11.62 | 5.7 | 1.2 | 101 |
| -11.71 | 5.7 | 1.2 | 114 |
| -11.81 | 5.7 | 1.5 | 117 |
| -11.90 | 5.7 | 1.5 | 190 |
| -11.94 | 5.7 | 1.5 | 164 |
| -11.97 | 5.7 | 1.5 | 149 |
| -11.98 | 5.7 | 1.5 | 149 |
| -12.00 | 5.7 | 1.6 | 217 |
| -12.01 | 5.7 | 1.6 | 211 |
| -12.02 | 5.7 | 1.5 | 190 |
| -12.03 | 5.7 | 1.5 | 1325 |
| -12.04 | 5.7 | 1.6 | 304 |
| -12.05 | 5.7 | 1.5 | 8465 |
| -12.06 | 5.7 | 1.6 | 26409 |
| -12.08 | 5.7 | 1.6 | 28943 |
| -12.09 | 5.7 | 1.6 | 32148 |
| -12.10 | 5.7 | 1.6 | 40015 |
| -12.11 | 5.7 | 1.6 | 36481 |
| -12.12 | 5.7 | 1.4 | 56524 |
| **Depth Avg** | **6.0** | **0.8** | **337** |




**Navitracker-OBS**

Waterdepth 210 kHz Echo [m TAW]: -12.18
Waterdepth 33 kHz Echo [m TAW]: -12.24
Water-Bottom Interface CTD-OBS [m TAW]: -12.48
Water-Mud Interface Navitracker [m TAW]: -11.45

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.13 | 55 | 1.000 |
| -1.01 | 52 | 1.000 |
| -2.26 | 61 | 1.000 |
| -3.58 | 61 | 1.000 |
| -4.74 | 62 | 1.000 |
| -5.93 | 63 | 1.000 |
| -7.12 | 73 | 1.000 |
| -8.19 | 73 | 1.000 |
| -9.42 | 74 | 1.000 |
| -10.64 | 76 | 1.000 |
| -11.03 | 84 | 1.000 |
| -11.45 | 164 | 1.000 |
| -11.89 | 114 | 1.224 |
| -12.00 | 129 | 1.295 |
| -12.31 | 1871 | 1.305 |
| -12.38 | NaN | 1.342 |
| **Depth Avg** | **112** | **1.014** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

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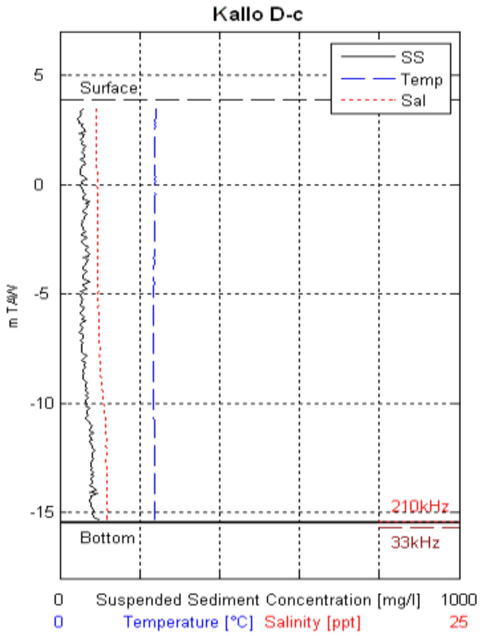
### G.3.3. Measurement location c

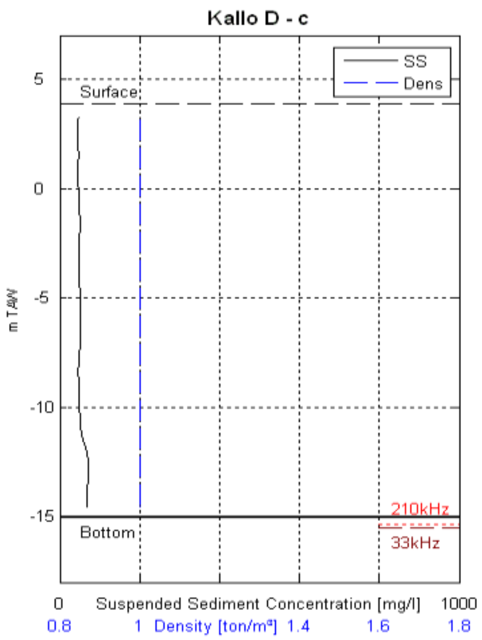
# 11265 HCBS - FEBRUARY 2005 SURVEY | 66 Dc




## Siltprofiler

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 11:34 |
| Time after/before HT [MET]: | 1:04 |
| Coordinates [UTM-ED50] Easting: | 590650 |
| Coordinates [UTM-ED50] Northing: | 5680164 |
| Water-Bottom Interface Siltpr. [m TAW]: | -15.47 |
| Waterdepth 210 kHz Echo [m TAW]: | -15.43 |
| Waterdepth 33 kHz Echo [m TAW]: | -15.67 |
| Surface elevation [m TAW]: | 3.90 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.49 | 6.0 | 2.3 | 62 |
| -8.67 | 5.8 | 2.6 | 62 |
| -11.03 | 5.9 | 2.9 | 108 |
| -14.86 | 6.0 | 3.0 | 65 |
| -14.95 | 6.0 | 3.0 | 70 |
| -15.05 | 6.0 | 3.0 | 79 |
| -15.15 | 5.9 | 2.9 | 72 |
| -15.19 | 6.0 | 2.9 | 69 |
| -15.20 | 6.0 | 3.0 | 92 |
| -15.23 | 6.0 | 2.9 | 93 |
| -15.24 | 6.0 | 3.0 | 92 |
| -15.25 | 6.0 | 2.9 | 102 |
| -15.26 | 6.0 | 3.0 | 88 |
| -15.27 | 6.0 | 3.0 | 75 |
| -15.28 | 5.9 | 3.1 | 73 |
| -15.29 | 6.0 | 3.0 | 65 |
| -15.30 | 5.9 | 3.0 | 103 |
| -15.32 | 6.0 | 2.9 | 105 |
| -15.33 | 5.9 | 3.0 | 121 |
| -15.34 | 6.0 | 3.0 | 80 |
| -15.35 | 6.0 | 3.0 | 92 |
| -15.36 | 6.0 | 2.9 | 118 |
| **Depth Avg** | **5.9** | **2.5** | **65** |




## Navitracker-OBS

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -15.37 |
| Waterdepth 33 kHz Echo [m TAW]: | -15.5 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -15.04 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 3.21 | 48 | NaN |
| 1.94 | 45 | 1.000 |
| 0.67 | 43 | 1.000 |
| -0.58 | 49 | 1.000 |
| -1.86 | 49 | 1.000 |
| -3.10 | 49 | 1.000 |
| -4.31 | 46 | 1.000 |
| -5.53 | 53 | 1.000 |
| -6.75 | 52 | 1.000 |
| -7.99 | 48 | 1.000 |
| -9.24 | 46 | 1.000 |
| -10.44 | 51 | 1.000 |
| -11.69 | 53 | 1.000 |
| -12.89 | 72 | 1.000 |
| -13.31 | 72 | 1.000 |
| -13.72 | 66 | 1.000 |
| -14.10 | 66 | 1.000 |
| -14.54 | 72 | 1.000 |
| -14.94 | 73 | 1.000 |
| **Depth Avg** | **52** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

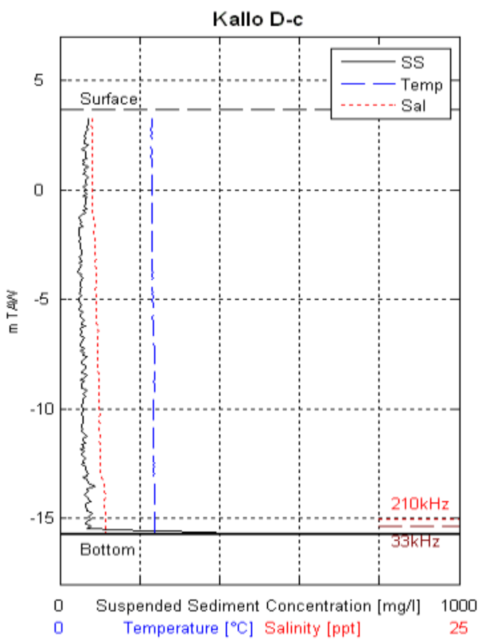
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

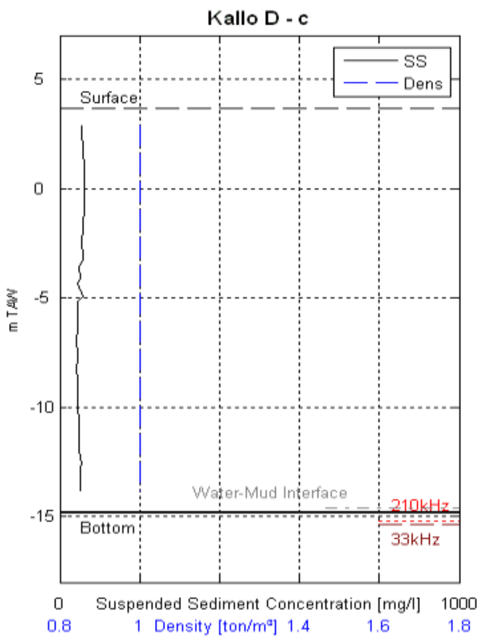
# 11265 HCBS - FEBRUARY 2005 SURVEY | 72 Dc




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 11:56 |
| Time after/before HT [MET]: | 1:26 |
| Coordinates [UTM-ED50] Easting: | 590655 |
| Coordinates [UTM-ED50] Northing: | 5680163 |
| Water-Bottom Interface Siltpr. [m TAW]: | -15.74 |
| Waterdepth 210 kHz Echo [m TAW]: | -15.06 |
| Waterdepth 33 kHz Echo [m TAW]: | -15.35 |
| Surface elevation [m TAW]: | 3.65 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.24 | 5.7 | 2.0 | 85 |
| -6.81 | 5.9 | 2.4 | 69 |
| -10.26 | 5.9 | 2.5 | 48 |
| -15.12 | 5.9 | 2.8 | 49 |
| -15.23 | 5.9 | 2.8 | 77 |
| -15.33 | 5.9 | 2.8 | 122 |
| -15.41 | 5.9 | 2.8 | 49 |
| -15.45 | 5.9 | 2.8 | 83 |
| -15.46 | 5.9 | 2.8 | 72 |
| -15.48 | 5.9 | 2.8 | 93 |
| -15.49 | 6.0 | 2.9 | 59 |
| -15.51 | 5.9 | 2.8 | 49 |
| -15.52 | 5.9 | 2.8 | 56 |
| -15.53 | 5.9 | 2.8 | 60 |
| -15.54 | 5.9 | 2.8 | 58 |
| -15.55 | 5.9 | 2.8 | 102 |
| -15.57 | 5.9 | 2.8 | 50 |
| -15.58 | 5.9 | 2.8 | 56 |
| -15.59 | 5.9 | 2.8 | 56 |
| -15.60 | 5.9 | 2.9 | 80 |
| -15.61 | 5.9 | 2.8 | 93 |
| -15.63 | 5.9 | 2.8 | 493 |
| **Depth Avg** | **5.8** | **2.3** | **61** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -15.2 |
| Waterdepth 33 kHz Echo [m TAW]: | -15.34 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -14.83 |
| Water-Mud Interface Navitracker [m TAW]: | -14.61 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 2.89 | 52 | 1.000 |
| 1.78 | 57 | 1.000 |
| 0.01 | 62 | 1.000 |
| -1.76 | 59 | 1.000 |
| -2.94 | 55 | 1.000 |
| -4.10 | 53 | 1.000 |
| -5.12 | 49 | 1.000 |
| -6.56 | 45 | 1.000 |
| -7.65 | 45 | 1.000 |
| -9.22 | 45 | 1.000 |
| -10.27 | 49 | 1.000 |
| -11.87 | 46 | 1.000 |
| -12.95 | 49 | 1.000 |
| -13.78 | 53 | 1.000 |
| -14.61 | 52 | 1.000 |
| -14.73 | 56 | 1.035 |
| **Depth Avg** | **52** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

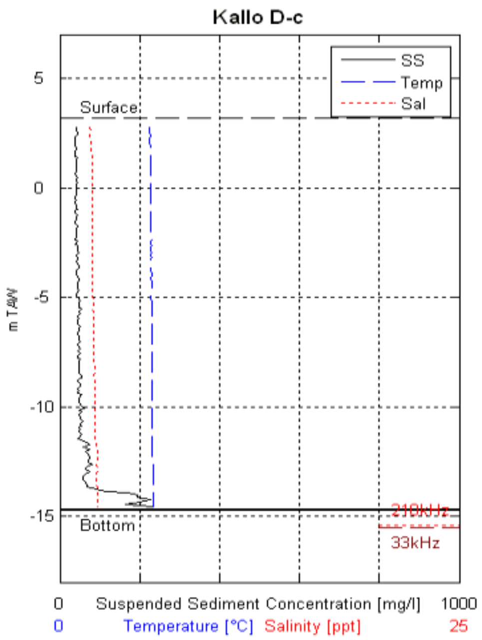
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

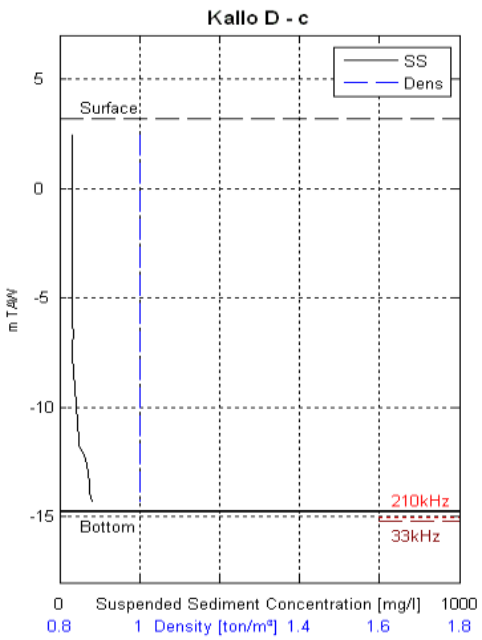
| 11265 HCBS - FEBRUARY 2005 SURVEY | 78 Dc |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 12:38 |
| Time after/before HT [MET]: | 2:08 |
| Coordinates [UTM-ED50] Easting: | 590659 |
| Coordinates [UTM-ED50] Northing: | 5680163 |
| Water-Bottom Interface Siltpr. [m TAW]: | -14.7 |
| Waterdepth 210 kHz Echo [m TAW]: | -15.43 |
| Waterdepth 33 kHz Echo [m TAW]: | -15.51 |
| Surface elevation [m TAW]: | 3.18 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 2.77 | 5.7 | 1.9 | 41 |
| -6.05 | 5.7 | 2.1 | 52 |
| -8.77 | 5.8 | 2.1 | 45 |
| -14.09 | 5.8 | 2.4 | 270 |
| -14.18 | 5.8 | 2.4 | 216 |
| -14.29 | 5.9 | 2.4 | 208 |
| -14.38 | 5.9 | 2.5 | 167 |
| -14.41 | 5.8 | 2.4 | 175 |
| -14.42 | 5.8 | 2.4 | 176 |
| -14.43 | 5.9 | 2.4 | 140 |
| -14.44 | 5.9 | 2.4 | 152 |
| -14.48 | 5.8 | 2.4 | 162 |
| -14.49 | 5.8 | 2.4 | 164 |
| -14.51 | 5.9 | 2.4 | 154 |
| -14.52 | 5.9 | 2.4 | 173 |
| -14.53 | 5.9 | 2.4 | 149 |
| -14.56 | 5.9 | 2.4 | 269 |
| -14.57 | 5.9 | 2.4 | 331 |
| -14.59 | 5.9 | 2.4 | 262 |
| **Depth Avg** | **5.7** | **2.1** | **54** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -15.01 |
| Waterdepth 33 kHz Echo [m TAW]: | -15.2 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -14.78 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 2.44 | 32 | 1.000 |
| 1.22 | 32 | 1.000 |
| -0.07 | 32 | 1.000 |
| -1.33 | 31 | 1.000 |
| -2.60 | 30 | 1.000 |
| -3.84 | 33 | 1.000 |
| -5.03 | 32 | 1.000 |
| -6.22 | 33 | 1.000 |
| -7.39 | 32 | 1.000 |
| -8.57 | 36 | 1.000 |
| -9.69 | 40 | 1.000 |
| -10.87 | 46 | 1.000 |
| -12.16 | 53 | 1.000 |
| -13.03 | 71 | 1.000 |
| -13.47 | 74 | 1.000 |
| -13.90 | 74 | 1.000 |
| -14.30 | 82 | 1.000 |
| -14.68 | 113 | 1.000 |
| **Depth Avg** | **39** | **1.000** |

Siltprofiler & Navitracker-OBS

*Data processed by:* IMDC

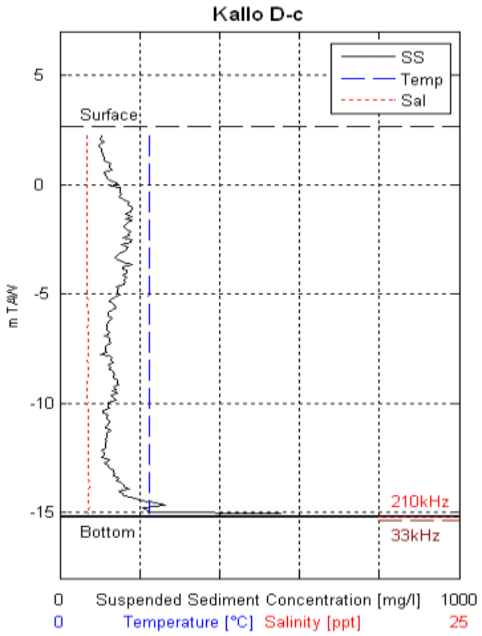
*In association with:* WL | delft hydraulics, GEMS International

Location: Kallo

Date: 18/02/2005

*I/RA/11265/05.014MSA*

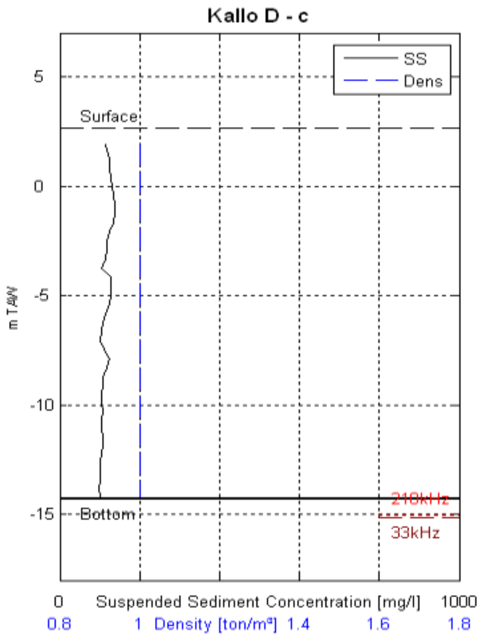
# 11265 HCBS - FEBRUARY 2005 SURVEY — 86 Dc




**Siltprofiler**

Date & Time [MET]: 18/2/2005 13:15
Time after/before HT [MET]: 2:45
Coordinates [UTM-ED50] Easting: 590653
Coordinates [UTM-ED50] Northing: 5680162
Water-Bottom Interface Siltpr. [m TAW]: -15.2
Waterdepth 210 kHz Echo [m TAW]: -15.18
Waterdepth 33 kHz Echo [m TAW]: -15.37
Surface elevation [m TAW]: 2.67

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 2.26 | 5.6 | 1.7 | 145 |
| -6.63 | 5.6 | 1.8 | 120 |
| -9.42 | 5.6 | 1.8 | 151 |
| -14.59 | 5.6 | 1.9 | 300 |
| -14.68 | 5.6 | 1.9 | 258 |
| -14.79 | 5.6 | 1.9 | 191 |
| -14.87 | 5.6 | 1.9 | 240 |
| -14.94 | 5.6 | 1.9 | 208 |
| -14.95 | 5.6 | 1.9 | 209 |
| -14.97 | 5.6 | 1.8 | 236 |
| -14.98 | 5.6 | 1.9 | 237 |
| -14.99 | 5.6 | 1.9 | 226 |
| -15.00 | 5.6 | 1.9 | 230 |
| -15.01 | 5.6 | 1.9 | 240 |
| -15.02 | 5.6 | 1.9 | 234 |
| -15.03 | 5.6 | 1.8 | 242 |
| -15.04 | 5.6 | 1.8 | 239 |
| -15.05 | 5.6 | 1.8 | 264 |
| -15.06 | 5.6 | 1.8 | 286 |
| -15.07 | 5.6 | 1.9 | 245 |
| -15.08 | 5.6 | 1.9 | 259 |
| -15.09 | 5.6 | 1.9 | 1279 |
| **Depth Avg** | **5.6** | **1.7** | **140** |




**Navitracker-OBS**

Waterdepth 210 kHz Echo [m TAW]: -15.01
Waterdepth 33 kHz Echo [m TAW]: -15.13
Water-Bottom Interface CTD-OBS [m TAW]: -14.30
Water-Mud Interface Navitracker [m TAW]: NaN

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 1.97 | 119 | NaN |
| 0.82 | 122 | 1.000 |
| -0.42 | 133 | 1.000 |
| -1.73 | 137 | 1.000 |
| -2.90 | 116 | 1.000 |
| -4.14 | 131 | 1.000 |
| -5.39 | 127 | 1.000 |
| -6.66 | 104 | 1.000 |
| -7.90 | 123 | 1.000 |
| -9.09 | 106 | 1.000 |
| -10.28 | 108 | 1.000 |
| -11.44 | 108 | 1.000 |
| -12.20 | 103 | 1.000 |
| -12.62 | 103 | 1.000 |
| -13.00 | 102 | 1.000 |
| -13.42 | 99 | 1.000 |
| -13.80 | 97 | 1.000 |
| -14.20 | 102 | 1.000 |
| **Depth Avg** | **116** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

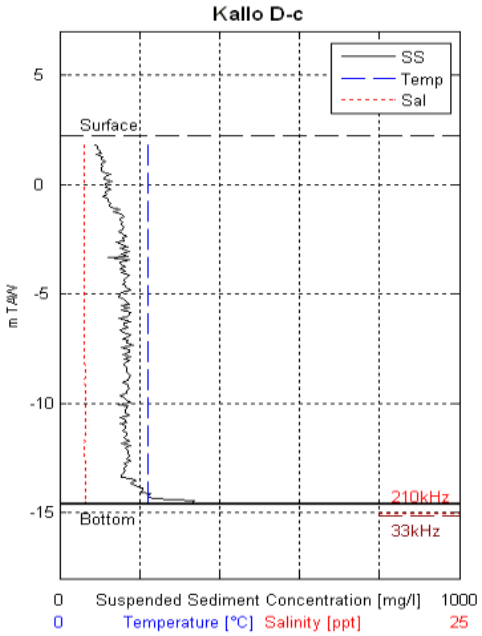
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

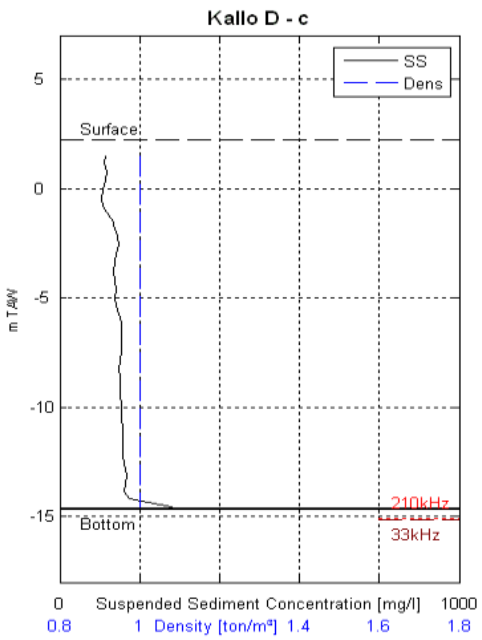
| 11265 HCBS - FEBRUARY 2005 SURVEY | 92 Dc |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 13:45 |
| Time after/before HT [MET]: | 3:15 |
| Coordinates [UTM-ED50] Easting: | 590657 |
| Coordinates [UTM-ED50] Northing: | 5680164 |
| Water-Bottom Interface Siltpr. [m TAW]: | -14.61 |
| Waterdepth 210 kHz Echo [m TAW]: | -15.01 |
| Waterdepth 33 kHz Echo [m TAW]: | -15.15 |
| Surface elevation [m TAW]: | 2.22 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 1.81 | 5.5 | 1.5 | 88 |
| -6.36 | 5.5 | 1.6 | 158 |
| -8.97 | 5.5 | 1.6 | 169 |
| -13.99 | 5.5 | 1.6 | 226 |
| -14.08 | 5.5 | 1.6 | 230 |
| -14.20 | 5.5 | 1.6 | 222 |
| -14.29 | 5.5 | 1.6 | 216 |
| -14.30 | 5.5 | 1.6 | 220 |
| -14.31 | 5.5 | 1.6 | 230 |
| -14.33 | 5.6 | 1.6 | 239 |
| -14.38 | 5.6 | 1.6 | 253 |
| -14.39 | 5.6 | 1.6 | 237 |
| -14.40 | 5.6 | 1.6 | 222 |
| -14.42 | 5.5 | 1.6 | 228 |
| -14.43 | 5.5 | 1.6 | 226 |
| -14.44 | 5.5 | 1.6 | 247 |
| -14.45 | 5.6 | 1.6 | 248 |
| -14.46 | 5.5 | 1.6 | 239 |
| -14.47 | 5.5 | 1.6 | 219 |
| -14.48 | 5.6 | 1.6 | 226 |
| -14.49 | 5.6 | 1.6 | 390 |
| -14.50 | 5.6 | 1.6 | 332 |
| **Depth Avg** | **5.5** | **1.5** | **156** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -15.09 |
| Waterdepth 33 kHz Echo [m TAW]: | -15.13 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -14.64 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 1.48 | 118 | 1.000 |
| 0.33 | 114 | 1.000 |
| -0.95 | 108 | 1.000 |
| -2.15 | 144 | 1.000 |
| -3.40 | 138 | 1.000 |
| -4.61 | 139 | 1.000 |
| -5.76 | 145 | 1.000 |
| -6.88 | 154 | 1.000 |
| -7.89 | 151 | 1.000 |
| -8.97 | 151 | 1.000 |
| -10.01 | 154 | 1.000 |
| -11.13 | 155 | 1.000 |
| -12.14 | 158 | 1.000 |
| -12.74 | 165 | 1.000 |
| -13.10 | 169 | 1.000 |
| -13.46 | 165 | 1.000 |
| -13.84 | 165 | 1.000 |
| -14.20 | 175 | 1.000 |
| -14.53 | 204 | 1.000 |
| -14.54 | 332 | 1.000 |
| **Depth Avg** | **144** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

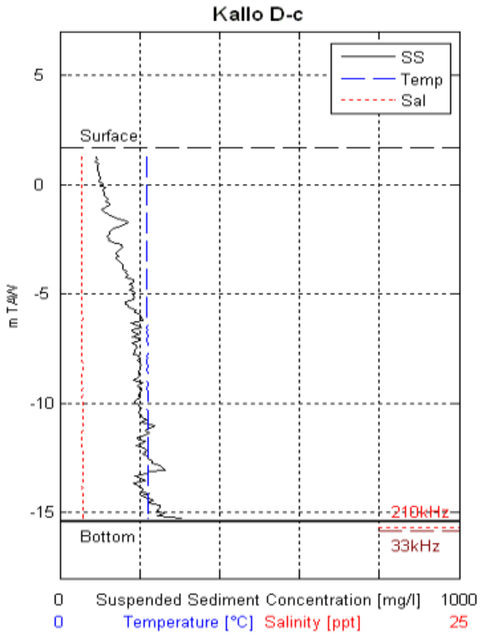
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

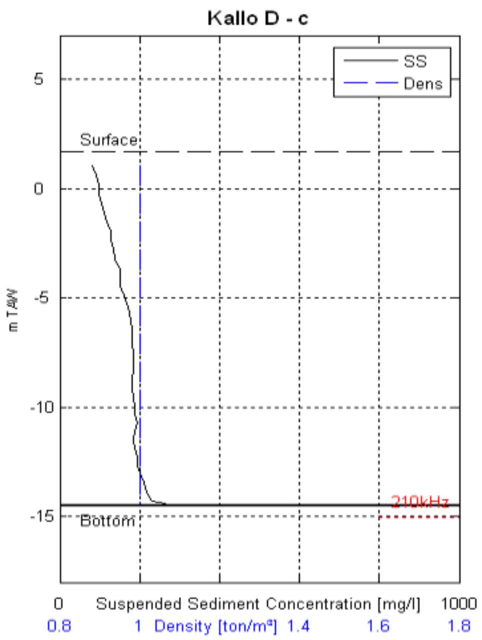
| 11265 HCBS - FEBRUARY 2005 SURVEY | 97 Dc |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 14:26 |
| Time after/before HT [MET]: | 3:56 |
| Coordinates [UTM-ED50] Easting: | 590649 |
| Coordinates [UTM-ED50] Northing: | 5680164 |
| Water-Bottom Interface Siltpr. [m TAW]: | -15.4 |
| Waterdepth 210 kHz Echo [m TAW]: | -15.67 |
| Waterdepth 33 kHz Echo [m TAW]: | -15.81 |
| Surface elevation [m TAW]: | 1.70 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 1.28 | 5.5 | 1.3 | 98 |
| -7.88 | 5.5 | 1.4 | 173 |
| -10.52 | 5.5 | 1.4 | 200 |
| -14.79 | 5.5 | 1.4 | 243 |
| -14.87 | 5.5 | 1.4 | 261 |
| -14.98 | 5.5 | 1.4 | 226 |
| -15.08 | 5.5 | 1.4 | 248 |
| -15.14 | 5.5 | 1.4 | 264 |
| -15.15 | 5.5 | 1.4 | 214 |
| -15.16 | 5.5 | 1.4 | 242 |
| -15.17 | 5.5 | 1.4 | 251 |
| -15.18 | 5.5 | 1.4 | 251 |
| -15.20 | 5.5 | 1.4 | 286 |
| -15.21 | 5.5 | 1.4 | 247 |
| -15.22 | 5.5 | 1.4 | 262 |
| -15.23 | 5.5 | 1.4 | 222 |
| -15.24 | 5.5 | 1.4 | 245 |
| -15.25 | 5.5 | 1.4 | 251 |
| -15.26 | 5.5 | 1.4 | 267 |
| -15.27 | 5.5 | 1.4 | 259 |
| -15.28 | 5.5 | 1.4 | 247 |
| -15.29 | 5.5 | 1.4 | 286 |
| **Depth Avg** | **5.5** | **1.4** | **176** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -15.05 |
| Waterdepth 33 kHz Echo [m TAW]: | -653.97 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -14.52 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 1.03 | 82 | 1.000 |
| -0.24 | 96 | 1.000 |
| -1.53 | 117 | 1.000 |
| -2.77 | 134 | 1.000 |
| -4.06 | 148 | 1.000 |
| -5.24 | 168 | 1.000 |
| -6.42 | 180 | 1.000 |
| -7.65 | 182 | 1.000 |
| -8.80 | 184 | 1.000 |
| -9.94 | 189 | 1.000 |
| -11.10 | 192 | 1.000 |
| -12.26 | 192 | 1.000 |
| -12.67 | 196 | 1.000 |
| -13.03 | 198 | 1.000 |
| -13.44 | 211 | 1.000 |
| -13.85 | 218 | 1.000 |
| -14.29 | 231 | 1.000 |
| -14.42 | 265 | 1.000 |
| **Depth Avg** | **160** | **1.000** |

Siltprofiler & Navitracker-OBS

Location: Kallo

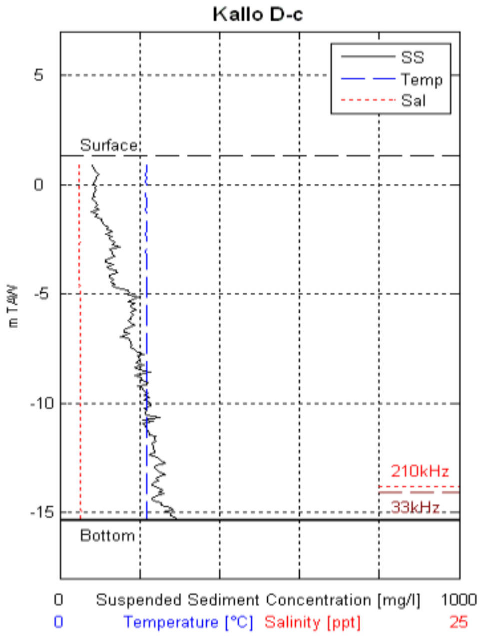
Date: 18/02/2005

*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

| 11265 HCBS - FEBRUARY 2005 SURVEY | 102 Dc |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 14:57 |
| Time after/before HT [MET]: | 4:27 |
| Coordinates [UTM-ED50] Easting: | 590650 |
| Coordinates [UTM-ED50] Northing: | 5680160 |
| Water-Bottom Interface Siltpr. [m TAW]: | -15.37 |
| Waterdepth 210 kHz Echo [m TAW]: | -13.79 |
| Waterdepth 33 kHz Echo [m TAW]: | -14.06 |
| Surface elevation [m TAW]: | 1.31 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.90 | 5.4 | 1.3 | 80 |
| -7.35 | 5.4 | 1.3 | 176 |
| -9.85 | 5.5 | 1.3 | 205 |
| -14.76 | 5.5 | 1.3 | 254 |
| -14.86 | 5.5 | 1.3 | 267 |
| -14.95 | 5.5 | 1.3 | 265 |
| -15.04 | 5.4 | 1.3 | 291 |
| -15.04 | 5.4 | 1.3 | 291 |
| -15.06 | 5.5 | 1.3 | 281 |
| -15.07 | 5.5 | 1.3 | 311 |
| -15.10 | 5.5 | 1.3 | 270 |
| -15.11 | 5.5 | 1.3 | 219 |
| -15.13 | 5.5 | 1.3 | 286 |
| -15.15 | 5.5 | 1.3 | 278 |
| -15.17 | 5.5 | 1.3 | 237 |
| -15.18 | 5.5 | 1.3 | 280 |
| -15.19 | 5.4 | 1.3 | 324 |
| -15.20 | 5.5 | 1.3 | 311 |
| -15.21 | 5.5 | 1.3 | 318 |
| -15.23 | 5.5 | 1.3 | 291 |
| -15.24 | 5.4 | 1.3 | 278 |
| -15.26 | 5.5 | 1.3 | 320 |
| **Depth Avg** | **5.4** | **1.3** | **176** |

Data Not Recorded

Siltprofiler & Navitracker-OBS

Location: Kallo

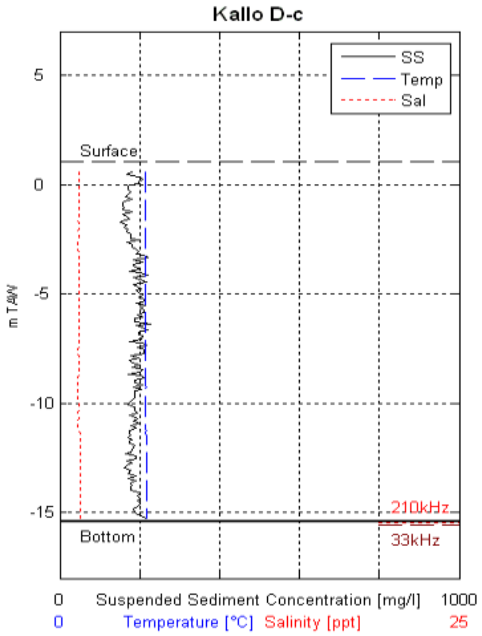
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

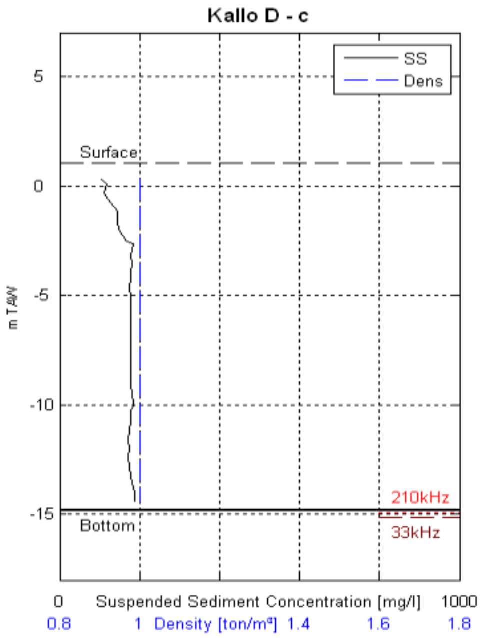
# 11265 HCBS - FEBRUARY 2005 SURVEY | 107 Dc




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 15:29 |
| Time after/before HT [MET]: | 4:59 |
| Coordinates [UTM-ED50] Easting: | 590651 |
| Coordinates [UTM-ED50] Northing: | 5680166 |
| Water-Bottom Interface Siltpr. [m TAW]: | -15.4 |
| Waterdepth 210 kHz Echo [m TAW]: | -15.47 |
| Waterdepth 33 kHz Echo [m TAW]: | -15.55 |
| Surface elevation [m TAW]: | 1.03 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.59 | 5.4 | 1.2 | 197 |
| -7.41 | 5.4 | 1.2 | 178 |
| -9.92 | 5.4 | 1.2 | 217 |
| -14.77 | 5.4 | 1.3 | 173 |
| -14.87 | 5.5 | 1.3 | 173 |
| -14.98 | 5.4 | 1.3 | 171 |
| -15.08 | 5.4 | 1.3 | 188 |
| -15.08 | 5.4 | 1.3 | 188 |
| -15.09 | 5.4 | 1.3 | 205 |
| -15.13 | 5.4 | 1.3 | 148 |
| -15.16 | 5.5 | 1.3 | 223 |
| -15.18 | 5.4 | 1.3 | 194 |
| -15.19 | 5.4 | 1.3 | 214 |
| -15.21 | 5.4 | 1.3 | 206 |
| -15.23 | 5.4 | 1.3 | 214 |
| -15.24 | 5.4 | 1.3 | 179 |
| -15.26 | 5.4 | 1.3 | 223 |
| -15.29 | 5.4 | 1.3 | 228 |
| **Depth Avg** | **5.4** | **1.2** | **188** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -14.93 |
| Waterdepth 33 kHz Echo [m TAW]: | -15.12 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -14.83 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.35 | 109 | 1.000 |
| -0.78 | 124 | 1.000 |
| -1.99 | 149 | 1.000 |
| -3.18 | 179 | 1.000 |
| -4.21 | 175 | 1.000 |
| -5.49 | 178 | 1.000 |
| -6.69 | 178 | 1.000 |
| -7.78 | 179 | 1.000 |
| -9.08 | 179 | 1.000 |
| -10.08 | 183 | 1.000 |
| -11.20 | 175 | 1.000 |
| -12.39 | 172 | 1.000 |
| -12.82 | 169 | 1.000 |
| -13.18 | 175 | 1.000 |
| -13.60 | 180 | 1.000 |
| -13.98 | 190 | 1.000 |
| -14.37 | 186 | 1.000 |
| -14.73 | 192 | 1.000 |
| **Depth Avg** | **167** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

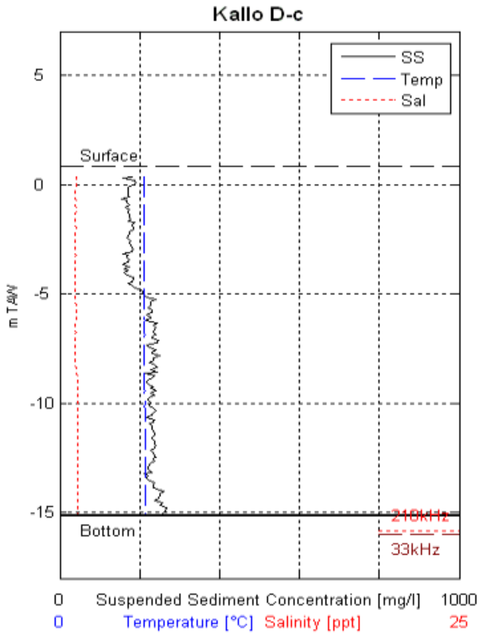
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

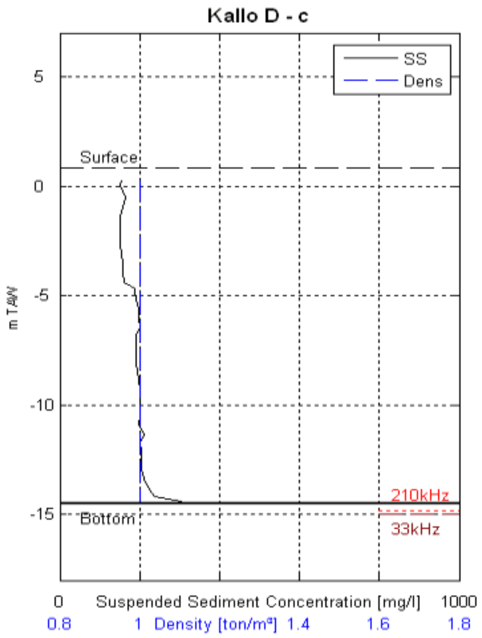
# 11265 HCBS - FEBRUARY 2005 SURVEY | 112 Dc




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 15:53 |
| Time after/before HT [MET]: | 5:23 |
| Coordinates [UTM-ED50] Easting: | 590649 |
| Coordinates [UTM-ED50] Northing: | 5680169 |
| Water-Bottom Interface Siltpr. [m TAW]: | -15.15 |
| Waterdepth 210 kHz Echo [m TAW]: | -15.83 |
| Waterdepth 33 kHz Echo [m TAW]: | -16.01 |
| Surface elevation [m TAW]: | 0.83 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.39 | 5.2 | 1.0 | 187 |
| -8.57 | 5.3 | 1.0 | 233 |
| -11.13 | 5.3 | 1.1 | 219 |
| -14.53 | 5.3 | 1.1 | 242 |
| -14.63 | 5.3 | 1.1 | 243 |
| -14.73 | 5.4 | 1.1 | 259 |
| -14.82 | 5.4 | 1.1 | 275 |
| -14.90 | 5.4 | 1.1 | 261 |
| -14.91 | 5.4 | 1.1 | 275 |
| -14.92 | 5.4 | 1.1 | 242 |
| -14.93 | 5.3 | 1.1 | 254 |
| -14.94 | 5.3 | 1.1 | 250 |
| -14.95 | 5.4 | 1.1 | 259 |
| -14.96 | 5.4 | 1.1 | 231 |
| -14.97 | 5.4 | 1.1 | 267 |
| -14.98 | 5.3 | 1.1 | 225 |
| -14.99 | 5.3 | 1.1 | 273 |
| -15.00 | 5.3 | 1.1 | 231 |
| -15.01 | 5.3 | 1.1 | 272 |
| -15.02 | 5.4 | 1.1 | 273 |
| -15.03 | 5.4 | 1.1 | 234 |
| -15.04 | 5.3 | 1.1 | 253 |
| **Depth Avg** | **5.3** | **1.0** | **212** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -14.83 |
| Waterdepth 33 kHz Echo [m TAW]: | -14.97 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -14.52 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.22 | 154 | 1.000 |
| -0.96 | 160 | 1.000 |
| -2.28 | 151 | 1.000 |
| -3.50 | 158 | 1.000 |
| -4.66 | 183 | 1.000 |
| -5.93 | 199 | 1.000 |
| -7.26 | 192 | 1.000 |
| -8.53 | 194 | 1.000 |
| -9.68 | 203 | 1.000 |
| -10.88 | 196 | 1.000 |
| -12.11 | 205 | 1.000 |
| -12.57 | 204 | 1.000 |
| -12.90 | 203 | 1.000 |
| -13.40 | 203 | 1.000 |
| -14.42 | 372 | 1.000 |
| **Depth Avg** | **186** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

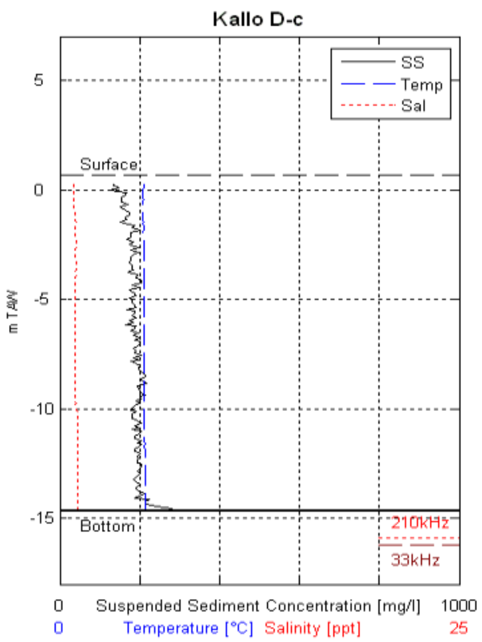
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

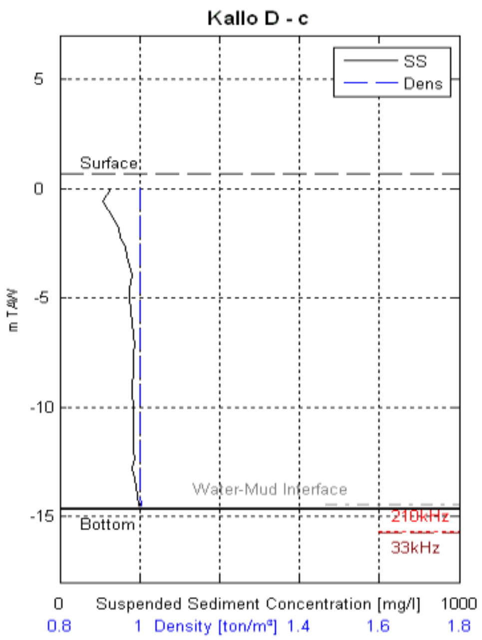
| 11265 HCBS - FEBRUARY 2005 SURVEY | 117 Dc |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 16:16 |
| Time after/before HT [MET]: | 5:46 |
| Coordinates [UTM-ED50] Easting: | 590648 |
| Coordinates [UTM-ED50] Northing: | 5680167 |
| Water-Bottom Interface Siltpr. [m TAW]: | -14.68 |
| Waterdepth 210 kHz Echo [m TAW]: | -15.88 |
| Waterdepth 33 kHz Echo [m TAW]: | -16.21 |
| Surface elevation [m TAW]: | 0.67 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.26 | 5.2 | 0.9 | 112 |
| -8.22 | 5.3 | 1.0 | 228 |
| -10.26 | 5.3 | 1.1 | 193 |
| -14.07 | 5.3 | 1.1 | 185 |
| -14.17 | 5.3 | 1.1 | 236 |
| -14.25 | 5.3 | 1.1 | 185 |
| -14.37 | 5.3 | 1.1 | 231 |
| -14.39 | 5.4 | 1.1 | 236 |
| -14.40 | 5.3 | 1.1 | 231 |
| -14.41 | 5.3 | 1.1 | 211 |
| -14.42 | 5.3 | 1.1 | 213 |
| -14.44 | 5.4 | 1.1 | 225 |
| -14.46 | 5.3 | 1.1 | 270 |
| -14.47 | 5.3 | 1.1 | 247 |
| -14.48 | 5.3 | 1.1 | 239 |
| -14.49 | 5.3 | 1.1 | 231 |
| -14.50 | 5.3 | 1.1 | 259 |
| -14.52 | 5.3 | 1.1 | 275 |
| -14.54 | 5.3 | 1.1 | 272 |
| -14.55 | 5.3 | 1.1 | 294 |
| -14.56 | 5.3 | 1.1 | 283 |
| -14.57 | 5.3 | 1.1 | 283 |
| **Depth Avg** | **5.3** | **1.0** | **187** |



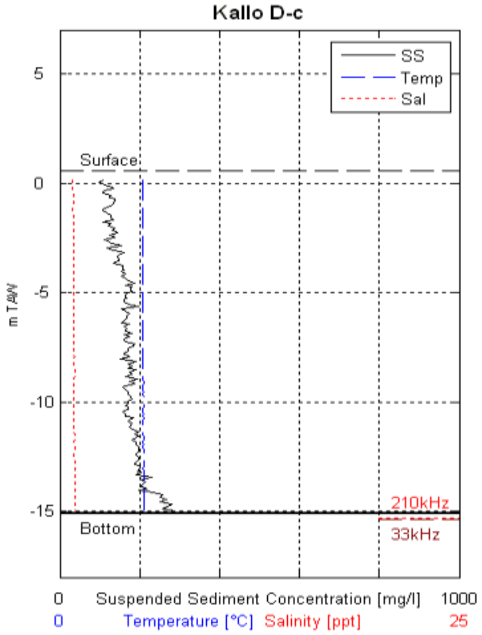

**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -15.7 |
| Waterdepth 33 kHz Echo [m TAW]: | -15.73 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -14.67 |
| Water-Mud Interface Navitracker [m TAW]: | -14.43 |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.01 | 141 | NaN |
| -1.37 | 134 | 1.000 |
| -2.67 | 162 | 1.000 |
| -3.94 | 177 | 1.000 |
| -4.96 | 175 | 1.000 |
| -6.19 | 182 | 1.000 |
| -7.41 | 190 | 1.000 |
| -8.60 | 182 | 1.000 |
| -9.84 | 184 | 1.000 |
| -11.12 | 188 | 1.000 |
| -12.39 | 186 | 1.000 |
| -12.80 | 184 | 1.000 |
| -13.21 | 184 | 1.000 |
| -13.62 | 188 | 1.000 |
| -14.01 | 189 | 1.000 |
| -14.43 | 202 | 1.000 |
| -14.56 | 198 | 1.003 |
| -14.57 | 196 | 1.006 |
| **Depth Avg** | **172** | **1.000** |

| Siltprofiler & Navitracker-OBS | | *Data processed by:* IMDC |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* wl \| delft hydraulics, GEMS International |
| | | *I/RA/11265/05.014MSA* |

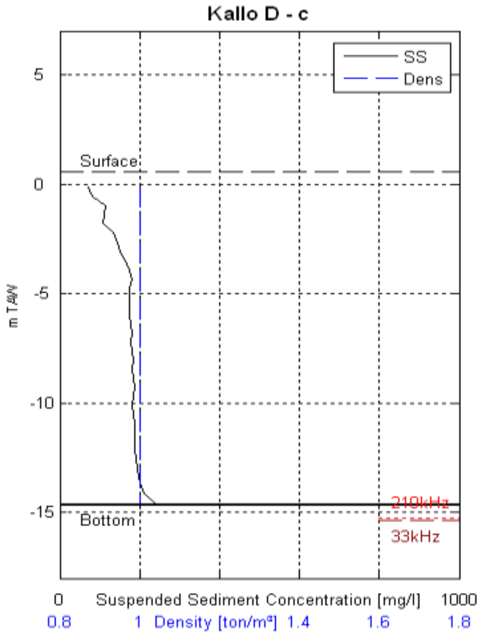
# 11265 HCBS - FEBRUARY 2005 SURVEY | 122 Dc




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 16:38 |
| Time after/before HT [MET]: | 6:08 |
| Coordinates [UTM-ED50] Easting: | 590660 |
| Coordinates [UTM-ED50] Northing: | 5680170 |
| Water-Bottom Interface Siltpr. [m TAW]: | -15.08 |
| Waterdepth 210 kHz Echo [m TAW]: | -15.32 |
| Waterdepth 33 kHz Echo [m TAW]: | -15.34 |
| Surface elevation [m TAW]: | 0.57 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.16 | 5.1 | 0.8 | 105 |
| -8.09 | 5.2 | 0.9 | 148 |
| -10.57 | 5.2 | 0.9 | 216 |
| -14.47 | 5.3 | 1.0 | 243 |
| -14.57 | 5.3 | 1.0 | 197 |
| -14.66 | 5.3 | 0.9 | 254 |
| -14.77 | 5.3 | 1.0 | 242 |
| -14.81 | 5.2 | 1.0 | 219 |
| -14.82 | 5.2 | 1.0 | 310 |
| -14.83 | 5.3 | 1.0 | 253 |
| -14.84 | 5.2 | 0.9 | 237 |
| -14.85 | 5.3 | 0.9 | 251 |
| -14.86 | 5.2 | 1.0 | 253 |
| -14.87 | 5.3 | 0.9 | 245 |
| -14.88 | 5.2 | 1.0 | 272 |
| -14.89 | 5.3 | 0.9 | 284 |
| -14.90 | 5.3 | 0.9 | 247 |
| -14.91 | 5.3 | 1.0 | 308 |
| -14.92 | 5.3 | 0.9 | 288 |
| -14.93 | 5.3 | 1.0 | 250 |
| -14.94 | 5.3 | 0.9 | 256 |
| -14.97 | 5.3 | 1.0 | 316 |
| **Depth Avg** | **5.2** | **0.9** | **168** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -15.25 |
| Waterdepth 33 kHz Echo [m TAW]: | -15.38 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -14.65 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| -0.12 | 73 | 1.000 |
| -1.39 | 117 | 1.000 |
| -2.67 | 143 | 1.000 |
| -3.92 | 169 | 1.000 |
| -5.17 | 175 | 1.000 |
| -6.39 | 178 | 1.000 |
| -7.63 | 182 | 1.000 |
| -8.85 | 186 | 1.000 |
| -10.07 | 183 | 1.000 |
| -11.32 | 190 | 1.000 |
| -12.56 | 190 | 1.000 |
| -12.95 | 194 | 1.000 |
| -13.37 | 194 | 1.000 |
| -13.78 | 203 | 1.000 |
| -14.15 | 208 | 1.000 |
| -14.55 | 214 | 1.000 |
| **Depth Avg** | **166** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

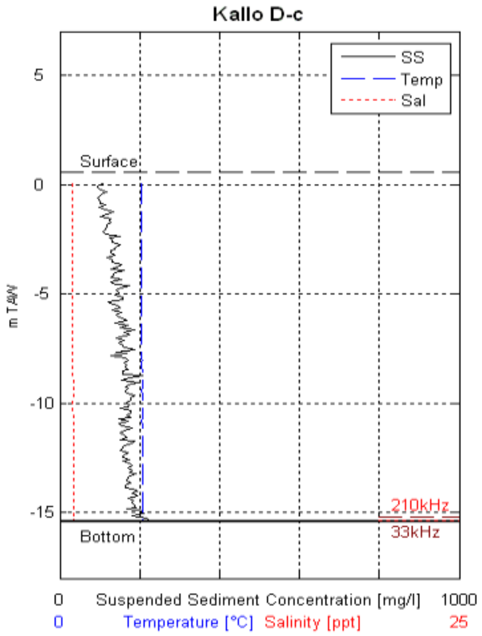
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

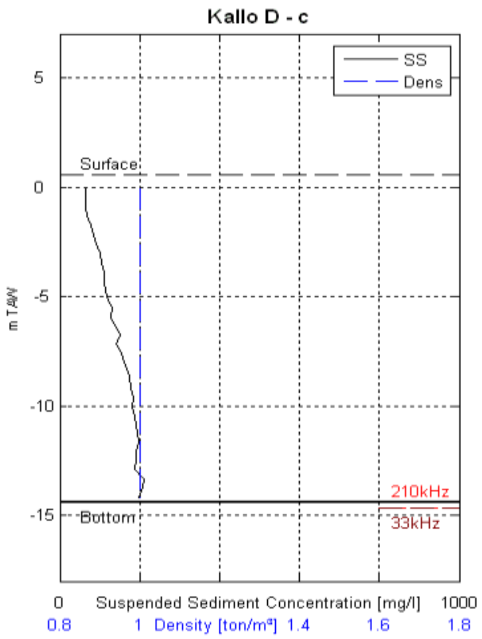
# 11265 HCBS - FEBRUARY 2005 SURVEY | 127 Dc




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 16:58 |
| Time after/before HT [MET]: | -6:41 |
| Coordinates [UTM-ED50] Easting: | 590652 |
| Coordinates [UTM-ED50] Northing: | 5680166 |
| Water-Bottom Interface Siltpr. [m TAW]: | -15.42 |
| Waterdepth 210 kHz Echo [m TAW]: | -15.38 |
| Waterdepth 33 kHz Echo [m TAW]: | -15.21 |
| Surface elevation [m TAW]: | 0.55 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.07 | 5.1 | 0.8 | 105 |
| -8.40 | 5.2 | 0.8 | 117 |
| -11.03 | 5.2 | 0.9 | 128 |
| -14.81 | 5.2 | 0.9 | 151 |
| -14.91 | 5.2 | 0.9 | 187 |
| -14.99 | 5.2 | 0.9 | 236 |
| -15.10 | 5.2 | 0.9 | 176 |
| -15.15 | 5.2 | 0.9 | 203 |
| -15.18 | 5.2 | 0.9 | 191 |
| -15.19 | 5.2 | 0.9 | 196 |
| -15.20 | 5.2 | 0.9 | 213 |
| -15.21 | 5.2 | 0.9 | 199 |
| -15.22 | 5.2 | 0.9 | 199 |
| -15.23 | 5.2 | 0.9 | 140 |
| -15.24 | 5.2 | 0.9 | 199 |
| -15.25 | 5.2 | 0.9 | 237 |
| -15.26 | 5.2 | 0.9 | 149 |
| -15.27 | 5.2 | 0.9 | 231 |
| -15.28 | 5.2 | 0.9 | 214 |
| -15.29 | 5.2 | 0.9 | 208 |
| -15.30 | 5.2 | 0.9 | 226 |
| -15.31 | 5.2 | 0.9 | 214 |
| **Depth Avg** | **5.1** | **0.9** | **152** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -14.64 |
| Waterdepth 33 kHz Echo [m TAW]: | -14.66 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -14.37 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| -0.09 | 67 | 1.000 |
| -1.29 | 67 | 1.000 |
| -2.59 | 92 | 1.000 |
| -3.86 | 112 | 1.000 |
| -5.14 | 123 | 1.000 |
| -6.37 | 139 | 1.000 |
| -7.58 | 159 | 1.000 |
| -8.79 | 182 | 1.000 |
| -10.05 | 180 | 1.000 |
| -11.26 | 193 | 1.000 |
| -12.46 | 193 | 1.000 |
| -12.89 | 186 | 1.000 |
| -13.32 | 189 | 1.000 |
| -14.27 | 199 | 1.000 |
| **Depth Avg** | **141** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location:
Kallo

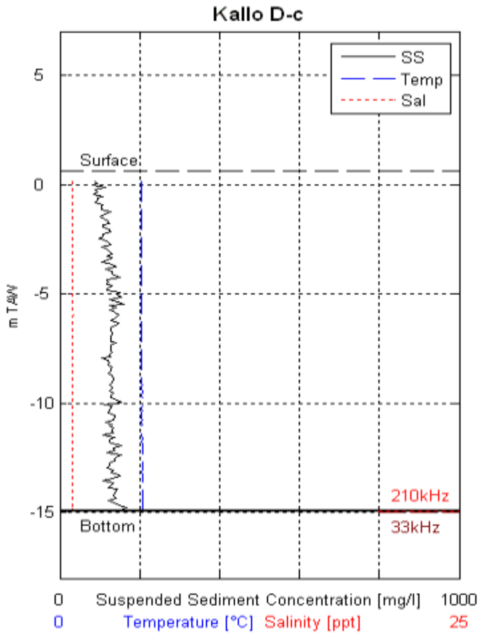
Date:
18/02/2005

*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

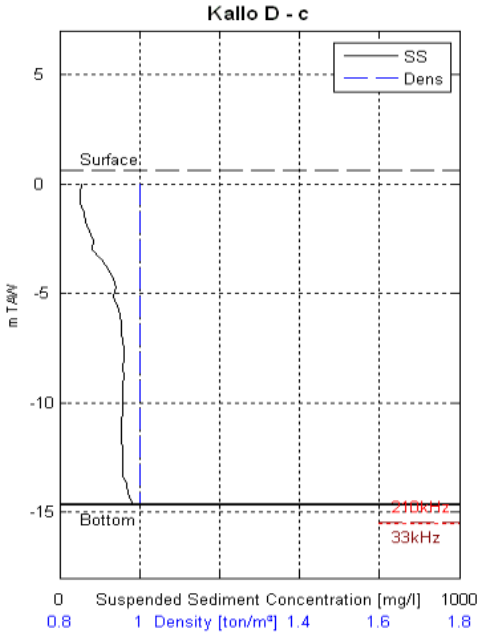
# 11265 HCBS - FEBRUARY 2005 SURVEY | 132 Dc




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 17:19 |
| Time after/before HT [MET]: | -6:20 |
| Coordinates [UTM-ED50] Easting: | 590657 |
| Coordinates [UTM-ED50] Northing: | 5680171 |
| Water-Bottom Interface Siltpr. [m TAW]: | -14.91 |
| Waterdepth 210 kHz Echo [m TAW]: | -14.93 |
| Waterdepth 33 kHz Echo [m TAW]: | -15.00 |
| Surface elevation [m TAW]: | 0.61 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.19 | 5.1 | 0.8 | 69 |
| -8.99 | 5.2 | 0.8 | 96 |
| -10.94 | 5.2 | 0.8 | 130 |
| -14.29 | 5.2 | 0.8 | 121 |
| -14.40 | 5.2 | 0.8 | 89 |
| -14.50 | 5.2 | 0.8 | 99 |
| -14.60 | 5.2 | 0.8 | 182 |
| -14.64 | 5.2 | 0.8 | 106 |
| -14.65 | 5.2 | 0.8 | 122 |
| -14.67 | 5.1 | 0.8 | 117 |
| -14.69 | 5.2 | 0.8 | 136 |
| -14.70 | 5.2 | 0.8 | 139 |
| -14.71 | 5.1 | 0.8 | 178 |
| -14.72 | 5.1 | 0.8 | 158 |
| -14.73 | 5.1 | 0.8 | 122 |
| -14.74 | 5.1 | 0.8 | 115 |
| -14.75 | 5.1 | 0.8 | 170 |
| -14.76 | 5.2 | 0.8 | 154 |
| -14.77 | 5.2 | 0.8 | 120 |
| -14.78 | 5.2 | 0.8 | 108 |
| -14.79 | 5.2 | 0.8 | 170 |
| -14.80 | 5.2 | 0.8 | 158 |
| **Depth Avg** | **5.1** | **0.8** | **125** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -15.49 |
| Waterdepth 33 kHz Echo [m TAW]: | -15.44 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -14.66 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| -0.05 | 55 | 1.000 |
| -1.31 | 55 | 1.000 |
| -2.58 | 86 | 1.000 |
| -3.86 | 116 | 1.000 |
| -5.15 | 135 | 1.000 |
| -6.39 | 154 | 1.000 |
| -7.58 | 160 | 1.000 |
| -8.80 | 162 | 1.000 |
| -10.03 | 158 | 1.000 |
| -11.27 | 157 | 1.000 |
| -12.47 | 159 | 1.000 |
| -12.87 | 157 | 1.000 |
| -13.30 | 154 | 1.000 |
| -13.69 | 165 | 1.000 |
| -14.11 | 172 | 1.000 |
| -14.51 | 179 | 1.000 |
| -14.54 | 189 | 1.000 |
| -14.56 | 184 | 1.000 |
| **Depth Avg** | **130** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

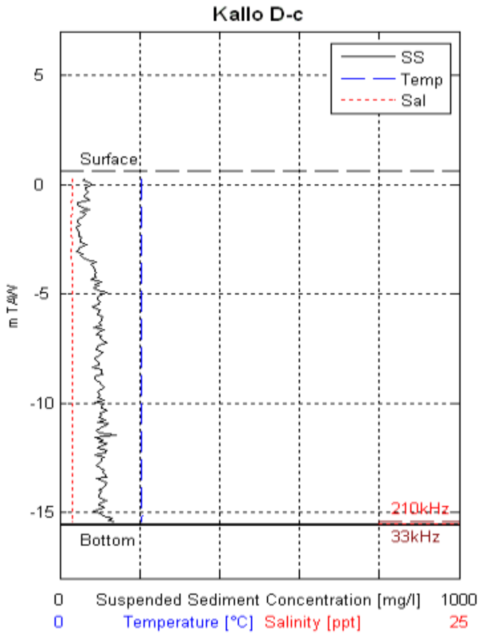
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

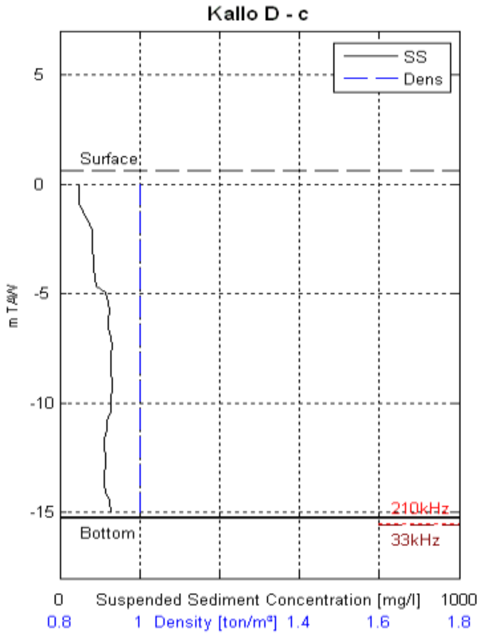
# 11265 HCBS - FEBRUARY 2005 SURVEY | 137 Dc




**Siltprofiler**

Date & Time [MET]: 18/2/2005 17:36
Time after/before HT [MET]: -6:03
Coordinates [UTM-ED50] Easting: 590651
Coordinates [UTM-ED50] Northing: 5680166
Water-Bottom Interface Siltpr. [m TAW]: -15.58
Waterdepth 210 kHz Echo [m TAW]: -15.53
Waterdepth 33 kHz Echo [m TAW]: -15.42
Surface elevation [m TAW]: 0.64

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.23 | 5.1 | 0.7 | 62 |
| -9.17 | 5.1 | 0.8 | 136 |
| -11.65 | 5.1 | 0.8 | 118 |
| -14.96 | 5.1 | 0.8 | 111 |
| -15.07 | 5.2 | 0.8 | 128 |
| -15.16 | 5.1 | 0.8 | 73 |
| -15.27 | 5.1 | 0.8 | 199 |
| -15.32 | 5.1 | 0.8 | 108 |
| -15.33 | 5.1 | 0.8 | 152 |
| -15.34 | 5.1 | 0.8 | 73 |
| -15.35 | 5.2 | 0.8 | 134 |
| -15.36 | 5.1 | 0.8 | 99 |
| -15.37 | 5.2 | 0.8 | 142 |
| -15.38 | 5.2 | 0.8 | 115 |
| -15.39 | 5.2 | 0.8 | 65 |
| -15.40 | 5.1 | 0.8 | 139 |
| -15.42 | 5.1 | 0.8 | 134 |
| -15.43 | 5.2 | 0.8 | 70 |
| -15.44 | 5.1 | 0.8 | 142 |
| -15.45 | 5.1 | 0.8 | 121 |
| -15.46 | 5.1 | 0.8 | 155 |
| -15.47 | 5.1 | 0.8 | 127 |
| **Depth Avg** | **5.1** | **0.8** | **90** |




**Navitracker-OBS**

Waterdepth 210 kHz Echo [m TAW]: -15.53
Waterdepth 33 kHz Echo [m TAW]: -15.58
Water-Bottom Interface CTD-OBS [m TAW]: -15.23
Water-Mud Interface Navitracker [m TAW]: NaN

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| -0.03 | 48 | 1.000 |
| -1.26 | 51 | 1.000 |
| -2.54 | 83 | 1.000 |
| -3.82 | 81 | 1.000 |
| -4.95 | 124 | 1.000 |
| -6.16 | 122 | 1.000 |
| -7.39 | 134 | 1.000 |
| -8.58 | 129 | 1.000 |
| -9.65 | 131 | 1.000 |
| -10.82 | 119 | 1.000 |
| -12.05 | 113 | 1.000 |
| -13.26 | 109 | 1.000 |
| -13.68 | 112 | 1.000 |
| -14.08 | 113 | 1.000 |
| -14.47 | 124 | 1.000 |
| -14.90 | 126 | 1.000 |
| -15.13 | 128 | 1.000 |
| **Depth Avg** | **104** | **1.000** |

Siltprofiler & Navitracker-OBS

Location: Kallo

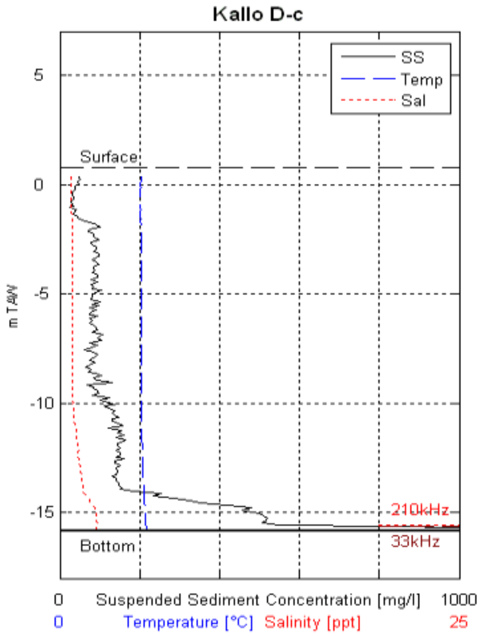
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

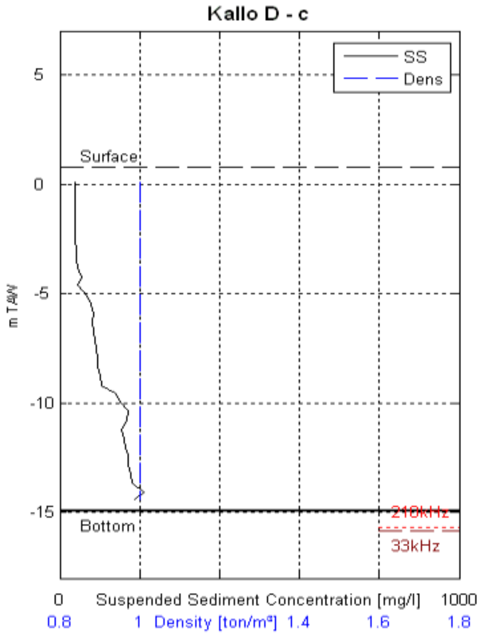
# 11265 HCBS - FEBRUARY 2005 SURVEY | 141 Dc




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 18:01 |
| Time after/before HT [MET]: | -5:38 |
| Coordinates [UTM-ED50] Easting: | 590652 |
| Coordinates [UTM-ED50] Northing: | 5680159 |
| Water-Bottom Interface Siltpr. [m TAW]: | -15.82 |
| Waterdepth 210 kHz Echo [m TAW]: | -15.57 |
| Waterdepth 33 kHz Echo [m TAW]: | -15.60 |
| Surface elevation [m TAW]: | 0.78 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.37 | 5.1 | 0.7 | 52 |
| -7.92 | 5.1 | 0.8 | 76 |
| -10.57 | 5.1 | 0.9 | 131 |
| -15.21 | 5.4 | 2.2 | 507 |
| -15.30 | 5.4 | 2.3 | 563 |
| -15.40 | 5.4 | 2.3 | 466 |
| -15.51 | 5.4 | 2.3 | 531 |
| -15.53 | 5.4 | 2.3 | 559 |
| -15.54 | 5.4 | 2.3 | 590 |
| -15.55 | 5.4 | 2.3 | 540 |
| -15.56 | 5.4 | 2.3 | 523 |
| -15.59 | 5.4 | 2.3 | 609 |
| -15.60 | 5.4 | 2.3 | 493 |
| -15.61 | 5.4 | 2.3 | 554 |
| -15.62 | 5.4 | 2.3 | 545 |
| -15.63 | 5.4 | 2.5 | 530 |
| -15.64 | 5.4 | 2.3 | 516 |
| -15.65 | 5.4 | 2.3 | 570 |
| -15.66 | 5.4 | 2.3 | 523 |
| -15.67 | 5.4 | 2.4 | 967 |
| -15.68 | 5.4 | 2.3 | 1012 |
| -15.71 | 5.4 | 2.3 | 2394 |
| **Depth Avg** | **5.1** | **1.0** | **134** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -15.69 |
| Waterdepth 33 kHz Echo [m TAW]: | -15.85 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -14.92 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.07 | 40 | 1.000 |
| -1.27 | 38 | 1.000 |
| -2.53 | 40 | 1.000 |
| -3.80 | 48 | 1.000 |
| -5.09 | 62 | 1.000 |
| -6.31 | 77 | 1.000 |
| -7.52 | 91 | 1.000 |
| -8.74 | 98 | 1.000 |
| -10.00 | 154 | 1.000 |
| -11.21 | 158 | 1.000 |
| -12.39 | 172 | 1.000 |
| -12.84 | 172 | 1.000 |
| -13.22 | 173 | 1.000 |
| -13.64 | 175 | 1.000 |
| -14.07 | 246 | 1.000 |
| -14.41 | 182 | 1.000 |
| -14.81 | 218 | 1.000 |
| -14.82 | 225 | 1.000 |
| **Depth Avg** | **98** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

Date: 18/02/2005

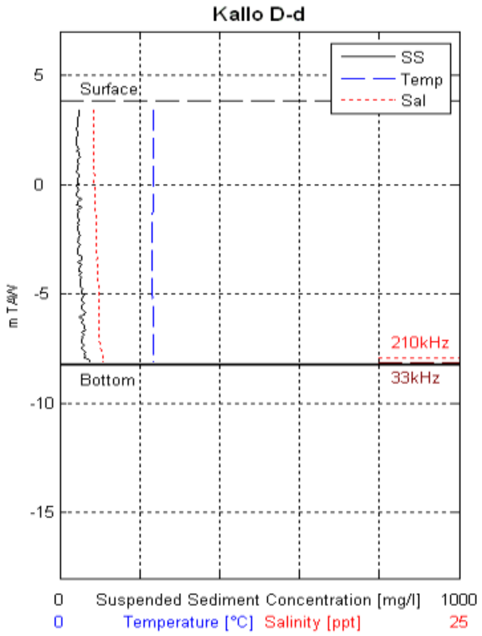
*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

### G.3.4. Measurement location d

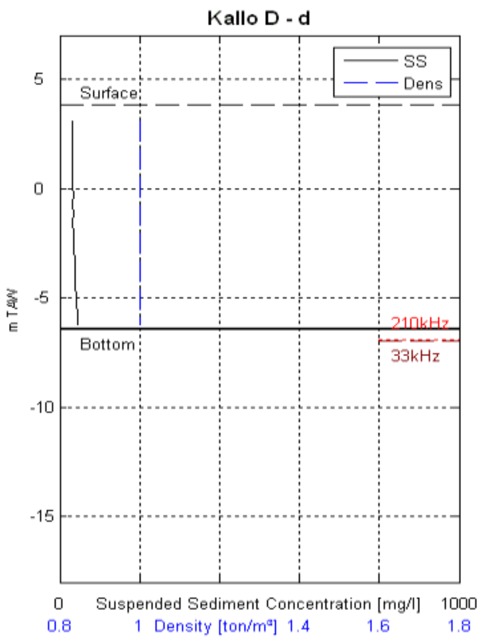
# 11265 HCBS - FEBRUARY 2005 SURVEY | 67 Dd




**Siltprofiler**

Date & Time [MET]: 18/2/2005 11:38
Time after/before HT [MET]: 1:08
Coordinates [UTM-ED50] Easting: 590830
Coordinates [UTM-ED50] Northing: 5680156
Water-Bottom Interface Siltpr. [m TAW]: -8.26
Waterdepth 210 kHz Echo [m TAW]: -7.94
Waterdepth 33 kHz Echo [m TAW]: -8.16
Surface elevation [m TAW]: 3.84

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.40 | 5.8 | 2.1 | 48 |
| -0.49 | 5.9 | 2.2 | 45 |
| -3.19 | 5.8 | 2.3 | 46 |
| -7.65 | 5.8 | 2.7 | 76 |
| -7.73 | 5.8 | 2.7 | 69 |
| -7.84 | 5.8 | 2.7 | 59 |
| -7.95 | 5.8 | 2.8 | 58 |
| -7.96 | 5.8 | 2.7 | 63 |
| -7.97 | 5.8 | 2.7 | 79 |
| -7.99 | 5.9 | 2.7 | 52 |
| -8.01 | 5.9 | 2.7 | 66 |
| -8.02 | 5.9 | 2.7 | 66 |
| -8.03 | 5.8 | 2.8 | 67 |
| -8.06 | 5.8 | 2.7 | 77 |
| -8.07 | 5.9 | 2.8 | 69 |
| -8.09 | 5.9 | 2.8 | 77 |
| -8.10 | 5.9 | 2.7 | 77 |
| -8.11 | 5.9 | 2.7 | 72 |
| -8.12 | 5.9 | 2.6 | 80 |
| -8.13 | 5.9 | 2.8 | 73 |
| -8.14 | 5.9 | 2.8 | 67 |
| -8.15 | 5.9 | 2.6 | 90 |
| **Depth Avg** | **5.8** | **2.3** | **51** |




**Navitracker-OBS**

Waterdepth 210 kHz Echo [m TAW]: -6.89
Waterdepth 33 kHz Echo [m TAW]: -6.99
Water-Bottom Interface CTD-OBS [m TAW]: -6.44
Water-Mud Interface Navitracker [m TAW]: NaN

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 3.06 | 31 | 1.000 |
| 1.82 | 31 | 1.000 |
| 0.55 | 33 | 1.000 |
| -0.73 | 33 | 1.000 |
| -2.03 | 33 | 1.000 |
| -3.24 | 36 | 1.000 |
| -4.44 | 38 | 1.000 |
| -4.86 | 41 | 1.000 |
| -5.24 | 43 | 1.000 |
| -5.70 | 43 | 1.000 |
| -6.14 | 46 | 1.000 |
| -6.34 | 46 | 1.000 |
| **Depth Avg** | **35** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

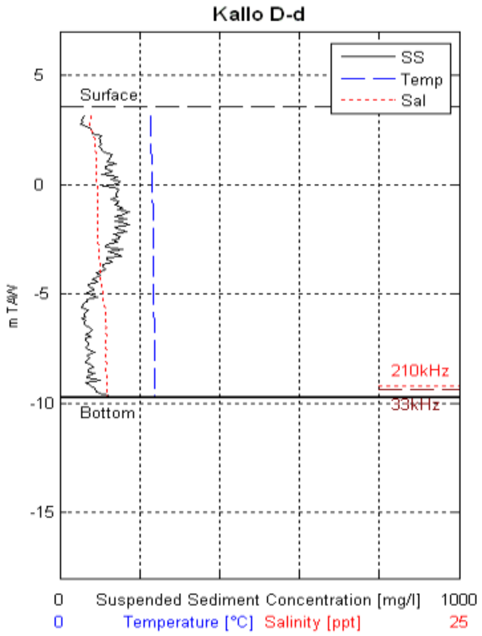
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

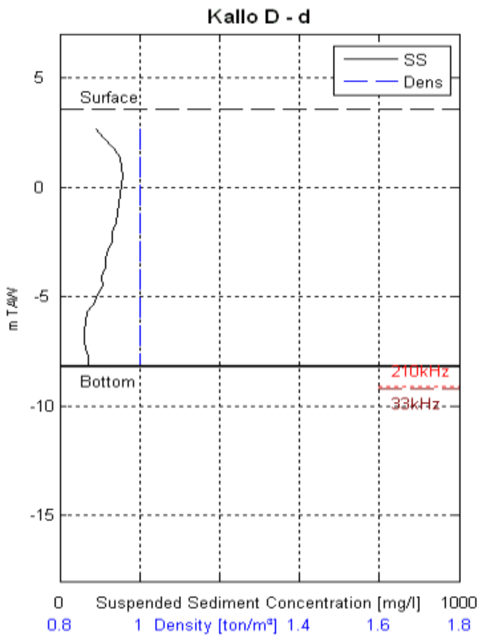
# 11265 HCBS - FEBRUARY 2005 SURVEY | 73 Dd




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 12:02 |
| Time after/before HT [MET]: | 1:32 |
| Coordinates [UTM-ED50] Easting: | 590818 |
| Coordinates [UTM-ED50] Northing: | 5680161 |
| Water-Bottom Interface Siltpr. [m TAW]: | -9.76 |
| Waterdepth 210 kHz Echo [m TAW]: | -9.21 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.38 |
| Surface elevation [m TAW]: | 3.57 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.16 | 5.7 | 1.9 | 53 |
| -3.53 | 5.9 | 2.5 | 112 |
| -5.66 | 5.9 | 2.8 | 58 |
| -9.14 | 5.9 | 3.0 | 108 |
| -9.25 | 5.9 | 2.9 | 125 |
| -9.35 | 5.9 | 2.9 | 79 |
| -9.45 | 5.9 | 2.9 | 59 |
| -9.49 | 5.9 | 2.9 | 169 |
| -9.50 | 5.9 | 3.0 | 77 |
| -9.53 | 6.0 | 2.9 | 148 |
| -9.54 | 5.9 | 2.9 | 108 |
| -9.55 | 5.9 | 3.0 | 137 |
| -9.56 | 5.9 | 2.9 | 83 |
| -9.57 | 6.0 | 3.0 | 166 |
| -9.58 | 5.9 | 2.9 | 95 |
| -9.59 | 5.9 | 2.9 | 96 |
| -9.60 | 6.0 | 3.0 | 125 |
| -9.61 | 5.9 | 3.0 | 106 |
| -9.62 | 6.0 | 2.9 | 98 |
| -9.63 | 6.0 | 2.9 | 199 |
| -9.64 | 5.9 | 3.1 | 121 |
| -9.65 | 5.9 | 2.9 | 120 |
| **Depth Avg** | **5.8** | **2.5** | **101** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -9.09 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.2 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -8.21 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 2.74 | 92 | 1.000 |
| 1.35 | 144 | 1.000 |
| 0.11 | 154 | 1.000 |
| -1.19 | 145 | 1.000 |
| -2.48 | 131 | 1.000 |
| -3.67 | 114 | 1.000 |
| -4.90 | 98 | 1.000 |
| -6.16 | 62 | 1.000 |
| -6.55 | 65 | 1.000 |
| -6.95 | 63 | 1.000 |
| -7.37 | 63 | 1.000 |
| -7.74 | 69 | 1.000 |
| -8.11 | 71 | 1.000 |
| **Depth Avg** | **111** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

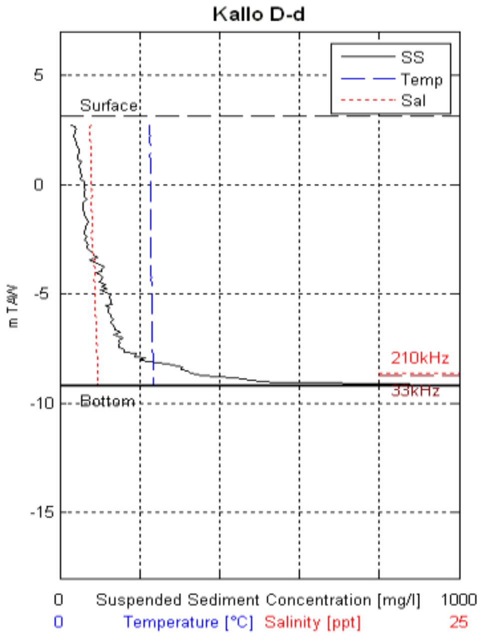
Date: 18/02/2005

*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

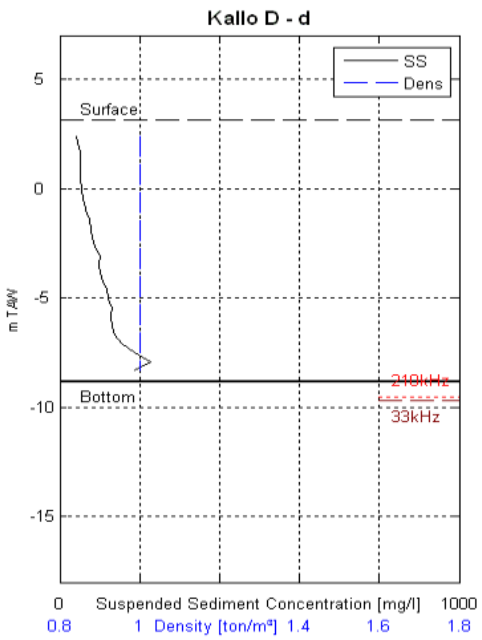
# 11265 HCBS - FEBRUARY 2005 SURVEY | 79 Dd




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 12:42 |
| Time after/before HT [MET]: | 2:12 |
| Coordinates [UTM-ED50] Easting: | 590824 |
| Coordinates [UTM-ED50] Northing: | 5680160 |
| Water-Bottom Interface Siltpr. [m TAW]: | -9.23 |
| Waterdepth 210 kHz Echo [m TAW]: | -8.62 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.75 |
| Surface elevation [m TAW]: | 3.12 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 2.71 | 5.6 | 2.0 | 28 |
| -3.23 | 5.7 | 2.1 | 80 |
| -5.23 | 5.8 | 2.2 | 134 |
| -8.61 | 5.8 | 2.3 | 304 |
| -8.71 | 5.8 | 2.4 | 272 |
| -8.78 | 5.8 | 2.4 | 410 |
| -8.89 | 5.8 | 2.4 | 450 |
| -8.97 | 5.9 | 2.4 | 469 |
| -8.98 | 5.8 | 2.4 | 493 |
| -9.00 | 5.8 | 2.4 | 440 |
| -9.01 | 5.8 | 2.4 | 479 |
| -9.02 | 5.8 | 2.4 | 481 |
| -9.03 | 5.8 | 2.4 | 460 |
| -9.04 | 5.9 | 2.4 | 405 |
| -9.05 | 5.8 | 2.3 | 442 |
| -9.06 | 5.9 | 2.4 | 472 |
| -9.07 | 5.9 | 2.4 | 517 |
| -9.08 | 5.9 | 2.4 | 476 |
| -9.09 | 5.8 | 2.4 | 454 |
| -9.10 | 5.8 | 2.4 | 509 |
| -9.11 | 5.9 | 2.4 | 486 |
| -9.12 | 5.8 | 2.3 | 1698 |
| **Depth Avg** | **5.7** | **2.1** | **110** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -9.51 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.72 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -8.84 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 2.39 | 41 | NaN |
| 1.29 | 53 | 1.000 |
| 0.05 | 52 | 1.000 |
| -1.00 | 65 | 1.000 |
| -2.26 | 77 | 1.000 |
| -3.45 | 102 | 1.000 |
| -4.64 | 114 | 1.000 |
| -5.87 | 127 | 1.000 |
| -7.10 | 141 | 1.000 |
| -7.51 | 173 | 1.000 |
| -7.93 | 221 | 1.000 |
| -8.33 | 177 | 1.000 |
| -8.74 | 249 | 1.000 |
| **Depth Avg** | **96** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

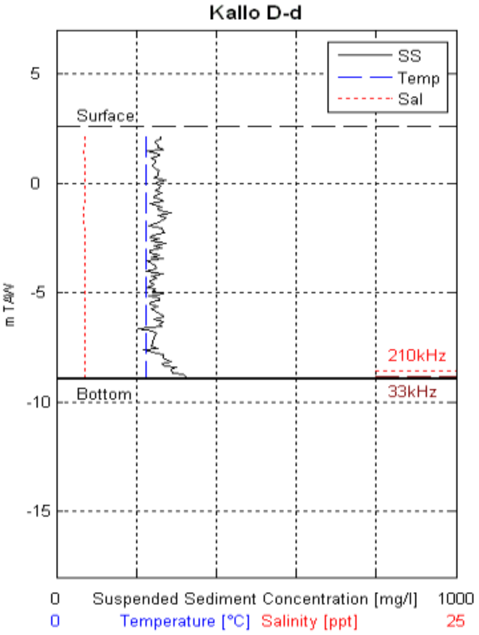
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

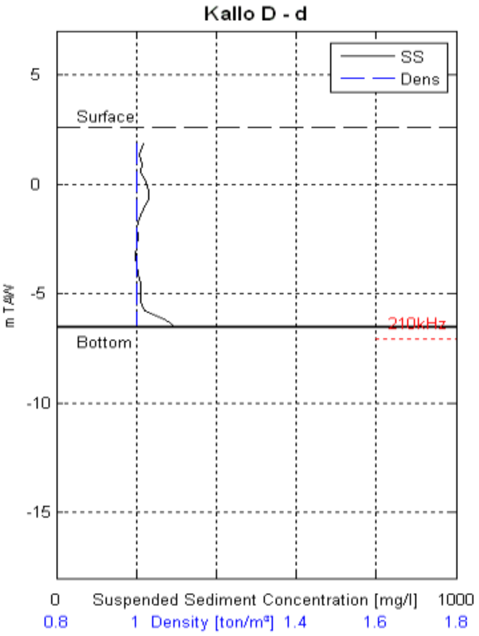
# 11265 HCBS - FEBRUARY 2005 SURVEY | 87 Dd




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 13:20 |
| Time after/before HT [MET]: | 2:50 |
| Coordinates [UTM-ED50] Easting: | 590824 |
| Coordinates [UTM-ED50] Northing: | 5680157 |
| Water-Bottom Interface Siltpr. [m TAW]: | -8.93 |
| Waterdepth 210 kHz Echo [m TAW]: | -8.58 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.85 |
| Surface elevation [m TAW]: | 2.58 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 2.16 | 5.6 | 1.8 | 299 |
| -3.61 | 5.6 | 1.8 | 225 |
| -5.37 | 5.6 | 1.8 | 286 |
| -8.32 | 5.6 | 1.8 | 254 |
| -8.41 | 5.6 | 1.8 | 286 |
| -8.50 | 5.6 | 1.8 | 288 |
| -8.60 | 5.6 | 1.8 | 262 |
| -8.65 | 5.6 | 1.8 | 307 |
| -8.66 | 5.6 | 1.8 | 275 |
| -8.67 | 5.6 | 1.8 | 295 |
| -8.68 | 5.6 | 1.8 | 292 |
| -8.69 | 5.6 | 1.8 | 299 |
| -8.70 | 5.6 | 1.8 | 308 |
| -8.71 | 5.6 | 1.8 | 332 |
| -8.72 | 5.6 | 1.8 | 281 |
| -8.73 | 5.6 | 1.8 | 321 |
| -8.75 | 5.6 | 1.8 | 316 |
| -8.76 | 5.6 | 1.8 | 349 |
| -8.77 | 5.6 | 1.8 | 363 |
| -8.78 | 5.6 | 1.8 | 294 |
| -8.79 | 5.6 | 1.8 | 324 |
| -8.82 | 5.6 | 1.8 | 324 |
| **Depth Avg** | **5.6** | **1.8** | **253** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -7.07 |
| Waterdepth 33 kHz Echo [m TAW]: | -624.65 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -6.52 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 1.90 | 223 | NaN |
| 0.50 | 210 | 1.000 |
| -0.72 | 234 | 1.000 |
| -1.96 | 199 | 1.000 |
| -3.29 | 198 | 1.000 |
| -4.55 | 209 | 1.000 |
| -4.92 | 213 | 1.000 |
| -5.35 | 214 | 1.000 |
| -5.77 | 214 | 1.000 |
| -6.42 | 292 | 1.000 |
| **Depth Avg** | **215** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

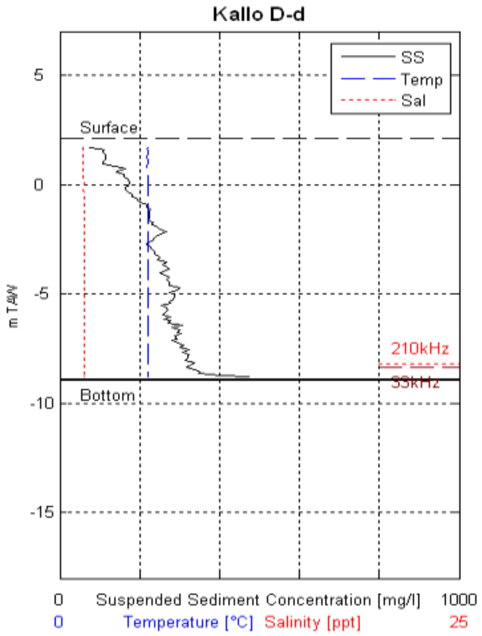
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

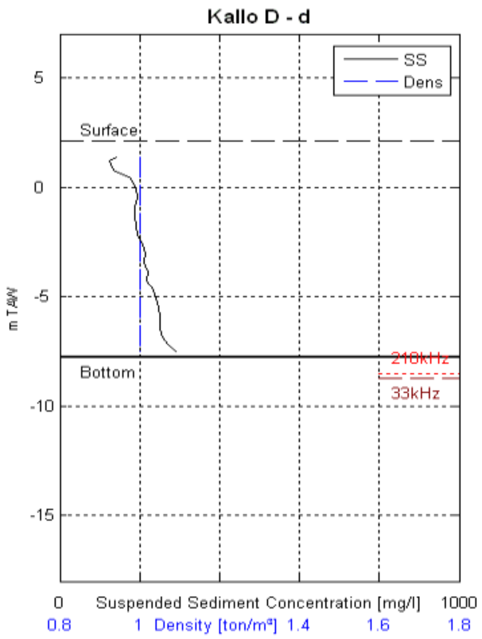
# 11265 HCBS - FEBRUARY 2005 SURVEY | 93 Dd




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 13:53 |
| Time after/before HT [MET]: | 3:23 |
| Coordinates [UTM-ED50] Easting: | 590826 |
| Coordinates [UTM-ED50] Northing: | 5680155 |
| Water-Bottom Interface Siltpr. [m TAW]: | -8.95 |
| Waterdepth 210 kHz Echo [m TAW]: | -8.19 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.36 |
| Surface elevation [m TAW]: | 2.11 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 1.70 | 5.5 | 1.4 | 75 |
| -3.65 | 5.5 | 1.5 | 284 |
| -5.43 | 5.5 | 1.5 | 281 |
| -8.33 | 5.5 | 1.5 | 270 |
| -8.43 | 5.5 | 1.6 | 307 |
| -8.53 | 5.5 | 1.5 | 320 |
| -8.62 | 5.5 | 1.5 | 336 |
| -8.67 | 5.5 | 1.5 | 355 |
| -8.69 | 5.5 | 1.5 | 349 |
| -8.71 | 5.5 | 1.5 | 355 |
| -8.72 | 5.5 | 1.5 | 428 |
| -8.73 | 5.5 | 1.5 | 362 |
| -8.74 | 5.6 | 1.5 | 355 |
| -8.75 | 5.5 | 1.5 | 396 |
| -8.76 | 5.5 | 1.5 | 362 |
| -8.77 | 5.6 | 1.5 | 370 |
| -8.78 | 5.5 | 1.5 | 432 |
| -8.79 | 5.5 | 1.5 | 378 |
| -8.80 | 5.5 | 1.5 | 410 |
| -8.81 | 5.5 | 1.5 | 486 |
| -8.82 | 5.5 | 1.5 | 523 |
| -8.84 | 5.5 | 1.5 | 657 |
| **Depth Avg** | **5.5** | **1.5** | **237** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -8.5 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.71 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -7.77 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 1.39 | 164 | 1.000 |
| -0.08 | 192 | 1.000 |
| -1.33 | 189 | 1.000 |
| -2.58 | 198 | 1.000 |
| -3.87 | 219 | 1.000 |
| -5.10 | 241 | 1.000 |
| -5.93 | 251 | 1.000 |
| -6.31 | 253 | 1.000 |
| -6.74 | 256 | 1.000 |
| -7.16 | 264 | 1.000 |
| -7.50 | 279 | 1.000 |
| -7.67 | 305 | 1.000 |
| **Depth Avg** | **206** | **1.000** |

Siltprofiler & Navitracker-OBS

Location: Kallo

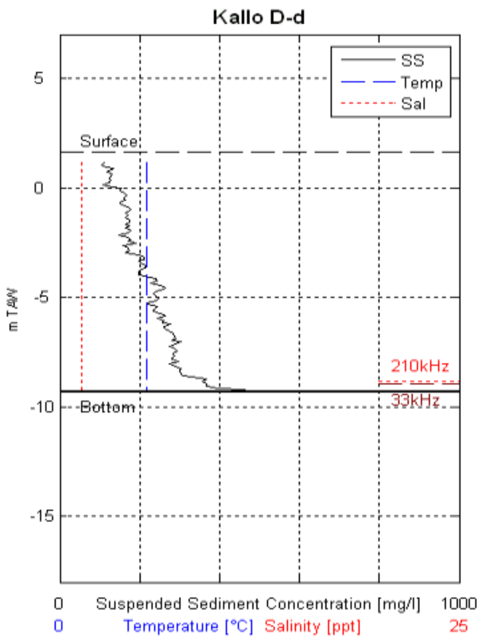
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

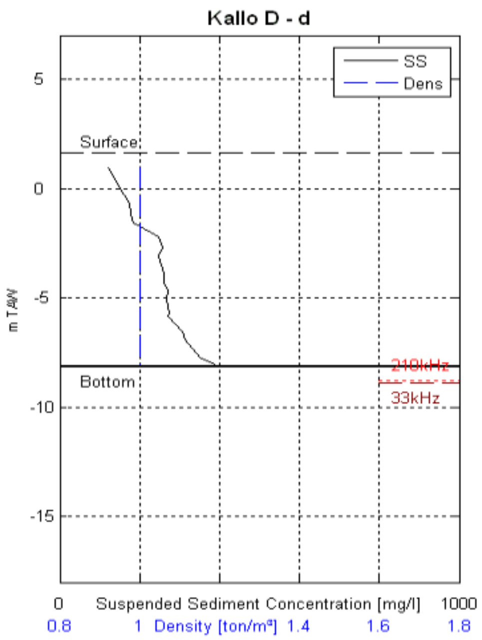
| 11265 HCBS - FEBRUARY 2005 SURVEY | 98 Dd |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 14:32 |
| Time after/before HT [MET]: | 4:02 |
| Coordinates [UTM-ED50] Easting: | 590825 |
| Coordinates [UTM-ED50] Northing: | 5680169 |
| Water-Bottom Interface Siltpr. [m TAW]: | -9.32 |
| Waterdepth 210 kHz Echo [m TAW]: | -8.83 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.97 |
| Surface elevation [m TAW]: | 1.62 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 1.18 | 5.4 | 1.3 | 90 |
| -3.95 | 5.5 | 1.3 | 200 |
| -5.79 | 5.5 | 1.3 | 211 |
| -8.71 | 5.5 | 1.3 | 370 |
| -8.81 | 5.4 | 1.3 | 355 |
| -8.91 | 5.5 | 1.3 | 377 |
| -9.01 | 5.5 | 1.3 | 415 |
| -9.01 | 5.5 | 1.3 | 415 |
| -9.02 | 5.5 | 1.3 | 316 |
| -9.05 | 5.5 | 1.3 | 344 |
| -9.07 | 5.5 | 1.3 | 344 |
| -9.08 | 5.5 | 1.3 | 354 |
| -9.09 | 5.5 | 1.3 | 354 |
| -9.11 | 5.5 | 1.3 | 413 |
| -9.12 | 5.5 | 1.3 | 388 |
| -9.13 | 5.5 | 1.3 | 350 |
| -9.14 | 5.5 | 1.3 | 418 |
| -9.15 | 5.4 | 1.3 | 365 |
| -9.16 | 5.5 | 1.3 | 377 |
| -9.18 | 5.5 | 1.3 | 415 |
| -9.19 | 5.5 | 1.3 | 423 |
| -9.21 | 5.5 | 1.3 | 462 |
| **Depth Avg** | **5.5** | **1.3** | **216** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -8.78 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.9 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -8.14 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.94 | 117 | 1.000 |
| -0.29 | 159 | 1.000 |
| -1.55 | 180 | 1.000 |
| -2.67 | 263 | 1.000 |
| -3.89 | 256 | 1.000 |
| -5.04 | 266 | 1.000 |
| -6.11 | 295 | 1.000 |
| -6.53 | 306 | 1.000 |
| -6.94 | 307 | 1.000 |
| -7.36 | 327 | 1.000 |
| -7.76 | 355 | 1.000 |
| -8.01 | 386 | 1.000 |
| -8.04 | 372 | 1.000 |
| **Depth Avg** | **235** | **1.000** |

Siltprofiler & Navitracker-OBS

Location: Kallo

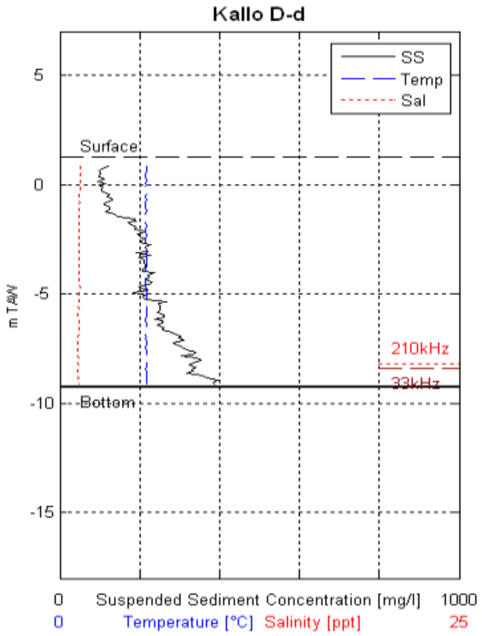
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

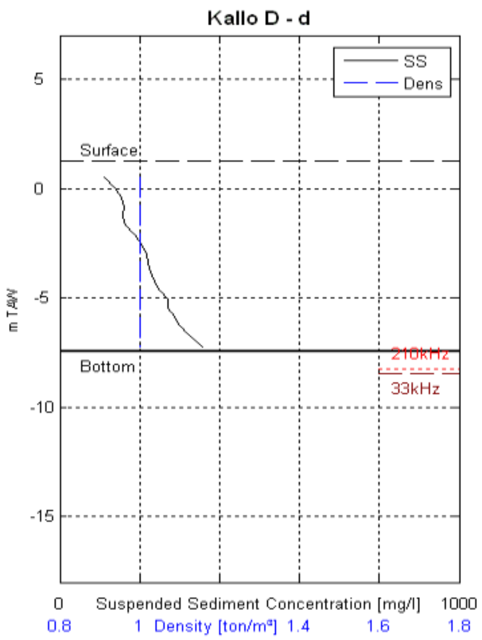
| 11265 HCBS - FEBRUARY 2005 SURVEY | 103 Dd |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 15:05 |
| Time after/before HT [MET]: | 4:35 |
| Coordinates [UTM-ED50] Easting: | 590828 |
| Coordinates [UTM-ED50] Northing: | 5680157 |
| Water-Bottom Interface Siltpr. [m TAW]: | -9.24 |
| Waterdepth 210 kHz Echo [m TAW]: | -8.18 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.39 |
| Surface elevation [m TAW]: | 1.26 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.85 | 5.4 | 1.3 | 103 |
| -4.44 | 5.4 | 1.3 | 214 |
| -6.07 | 5.4 | 1.2 | 233 |
| -8.63 | 5.4 | 1.2 | 307 |
| -8.72 | 5.4 | 1.2 | 336 |
| -8.83 | 5.4 | 1.2 | 358 |
| -8.93 | 5.4 | 1.2 | 377 |
| -8.97 | 5.4 | 1.2 | 398 |
| -8.99 | 5.4 | 1.2 | 383 |
| -9.01 | 5.4 | 1.2 | 406 |
| -9.02 | 5.4 | 1.2 | 388 |
| -9.03 | 5.4 | 1.2 | 380 |
| -9.04 | 5.4 | 1.2 | 368 |
| -9.05 | 5.4 | 1.2 | 393 |
| -9.06 | 5.4 | 1.2 | 385 |
| -9.07 | 5.4 | 1.2 | 383 |
| -9.08 | 5.4 | 1.2 | 393 |
| -9.09 | 5.4 | 1.2 | 411 |
| -9.10 | 5.4 | 1.2 | 385 |
| -9.11 | 5.4 | 1.2 | 386 |
| -9.12 | 5.4 | 1.2 | 378 |
| -9.13 | 5.4 | 1.2 | 401 |
| **Depth Avg** | **5.4** | **1.2** | **217** |



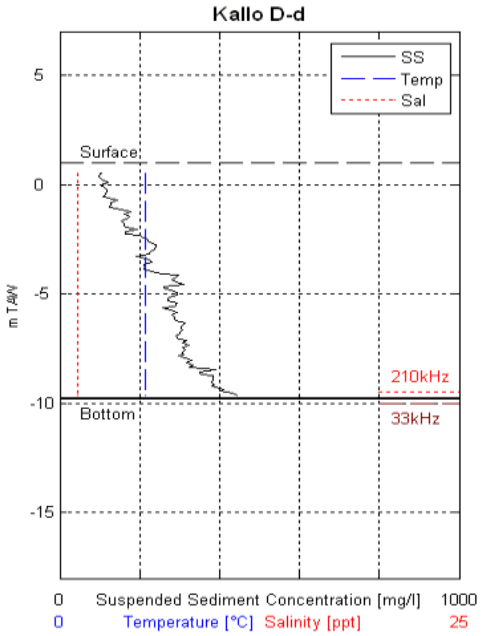

**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -8.25 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.45 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -7.45 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.54 | 87 | 1.000 |
| -0.82 | 170 | 1.000 |
| -2.10 | 183 | 1.000 |
| -3.38 | 220 | 1.000 |
| -4.65 | 245 | 1.000 |
| -5.47 | 266 | 1.000 |
| -5.87 | 282 | 1.000 |
| -6.27 | 299 | 1.000 |
| -6.71 | 307 | 1.000 |
| -7.35 | 348 | 1.000 |
| **Depth Avg** | **213** | **1.000** |

| Siltprofiler & Navitracker-OBS | | *Data processed by:* IMDC |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* wl \| delft hydraulics, GEMS International — *I/RA/11265/05.014MSA* |

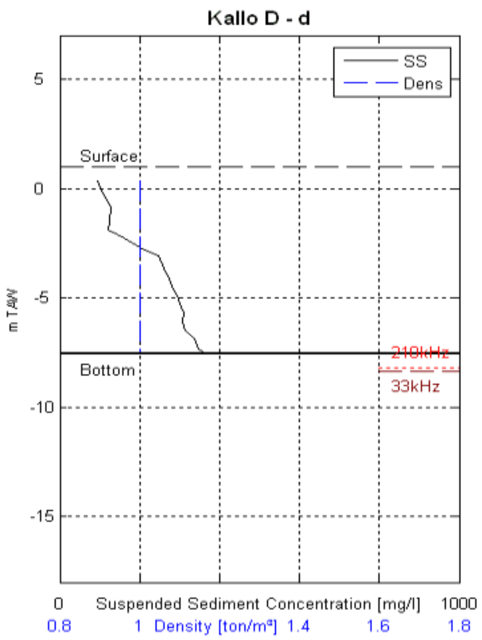
# 11265 HCBS - FEBRUARY 2005 SURVEY | 108 Dd




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 15:34 |
| Time after/before HT [MET]: | 5:04 |
| Coordinates [UTM-ED50] Easting: | 590816 |
| Coordinates [UTM-ED50] Northing: | 5680159 |
| Water-Bottom Interface Siltpr. [m TAW]: | -9.78 |
| Waterdepth 210 kHz Echo [m TAW]: | -9.49 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.99 |
| Surface elevation [m TAW]: | 0.98 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.57 | 5.3 | 1.1 | 112 |
| -4.29 | 5.3 | 1.1 | 278 |
| -6.19 | 5.3 | 1.1 | 291 |
| -9.17 | 5.3 | 1.1 | 328 |
| -9.26 | 5.4 | 1.1 | 391 |
| -9.36 | 5.4 | 1.1 | 372 |
| -9.46 | 5.4 | 1.1 | 332 |
| -9.46 | 5.4 | 1.1 | 332 |
| -9.49 | 5.4 | 1.1 | 420 |
| -9.51 | 5.3 | 1.1 | 423 |
| -9.53 | 5.4 | 1.1 | 459 |
| -9.55 | 5.4 | 1.1 | 400 |
| -9.56 | 5.4 | 1.1 | 398 |
| -9.57 | 5.3 | 1.1 | 484 |
| -9.58 | 5.4 | 1.1 | 427 |
| -9.59 | 5.4 | 1.1 | 438 |
| -9.60 | 5.3 | 1.1 | 462 |
| -9.61 | 5.4 | 1.1 | 474 |
| -9.62 | 5.4 | 1.1 | 449 |
| -9.63 | 5.4 | 1.1 | 455 |
| -9.67 | 5.4 | 1.1 | 425 |
| **Depth Avg** | **5.3** | **1.1** | **244** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -8.22 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.37 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -7.58 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.35 | 96 | 1.000 |
| -0.69 | 119 | 1.000 |
| -1.89 | 122 | 1.000 |
| -3.08 | 241 | 1.000 |
| -4.47 | 278 | 1.000 |
| -5.70 | 312 | 1.000 |
| -6.08 | 306 | 1.000 |
| -6.49 | 310 | 1.000 |
| -6.88 | 327 | 1.000 |
| -7.34 | 348 | 1.000 |
| -7.48 | 361 | 1.000 |
| **Depth Avg** | **219** | **1.000** |

## Siltprofiler & Navitracker-OBS

*Data processed by:* IMDC

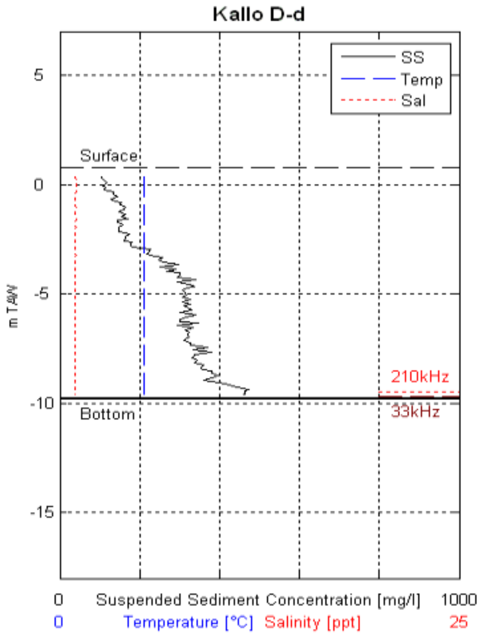
*In association with:* wl | delft hydraulics, GEMS International

Location: Kallo

Date: 18/02/2005

*I/RA/11265/05.014MSA*

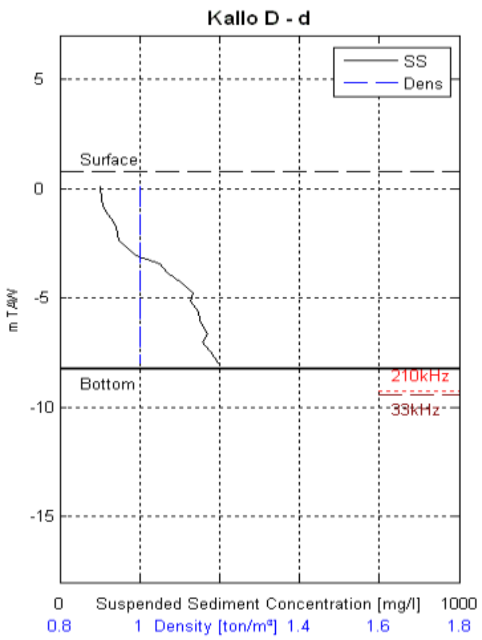
| 11265 HCBS - FEBRUARY 2005 SURVEY | 113 Dd |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 15:56 |
| Time after/before HT [MET]: | 5:26 |
| Coordinates [UTM-ED50] Easting: | 590817 |
| Coordinates [UTM-ED50] Northing: | 5680165 |
| Water-Bottom Interface Siltpr. [m TAW]: | -9.79 |
| Waterdepth 210 kHz Echo [m TAW]: | -9.49 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.69 |
| Surface elevation [m TAW]: | 0.80 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.39 | 5.3 | 1.0 | 127 |
| -5.14 | 5.3 | 1.0 | 284 |
| -6.97 | 5.3 | 1.0 | 332 |
| -9.18 | 5.3 | 1.0 | 391 |
| -9.28 | 5.3 | 1.0 | 445 |
| -9.37 | 5.3 | 1.0 | 443 |
| -9.45 | 5.3 | 1.0 | 484 |
| -9.49 | 5.3 | 1.0 | 495 |
| -9.50 | 5.3 | 1.0 | 405 |
| -9.51 | 5.3 | 1.0 | 454 |
| -9.52 | 5.3 | 1.0 | 422 |
| -9.53 | 5.3 | 1.0 | 495 |
| -9.55 | 5.3 | 1.0 | 502 |
| -9.56 | 5.3 | 1.0 | 533 |
| -9.57 | 5.3 | 1.0 | 445 |
| -9.58 | 5.3 | 1.0 | 440 |
| -9.59 | 5.3 | 1.0 | 514 |
| -9.60 | 5.3 | 1.0 | 406 |
| -9.61 | 5.3 | 1.0 | 486 |
| -9.62 | 5.3 | 1.0 | 466 |
| -9.63 | 5.3 | 1.0 | 472 |
| -9.68 | 5.3 | 1.0 | 497 |
| **Depth Avg** | **5.3** | **1.0** | **262** |



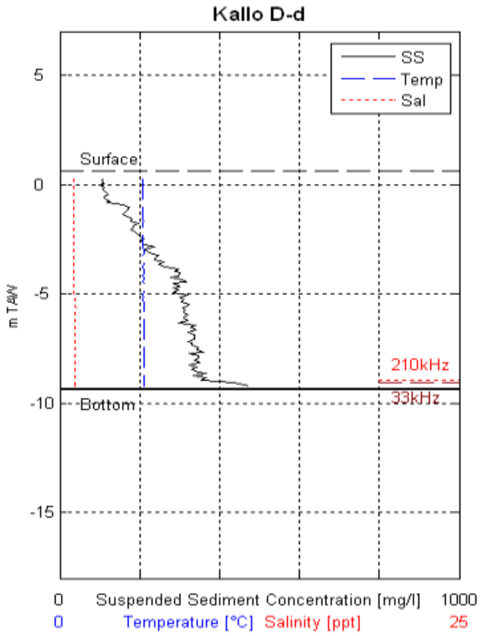

**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -9.26 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.41 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -8.24 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.15 | 106 | 1.000 |
| -0.93 | 107 | 1.000 |
| -2.23 | 138 | 1.000 |
| -3.46 | 254 | 1.000 |
| -4.72 | 314 | 1.000 |
| -6.00 | 348 | 1.000 |
| -6.42 | 368 | 1.000 |
| -6.61 | 356 | 1.000 |
| -6.62 | 358 | 1.000 |
| -6.71 | 361 | 1.000 |
| -7.01 | 352 | 1.000 |
| -7.46 | 374 | 1.000 |
| -7.89 | 386 | 1.000 |
| -8.14 | 406 | 1.000 |
| **Depth Avg** | **239** | **1.000** |

| Siltprofiler & Navitracker-OBS | | *Data processed by:* IMDC |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* WL delft hydraulics, GEMS International<br>*I/RA/11265/05.014MSA* |

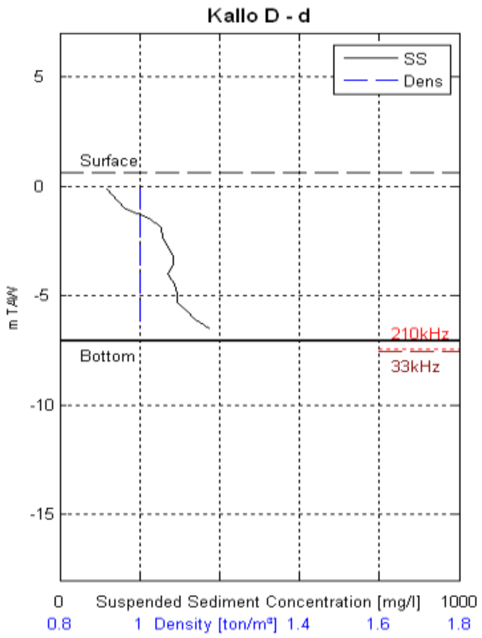
| 11265 HCBS - FEBRUARY 2005 SURVEY | 118 Dd |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 16:21 |
| Time after/before HT [MET]: | 5:51 |
| Coordinates [UTM-ED50] Easting: | 590818 |
| Coordinates [UTM-ED50] Northing: | 5680148 |
| Water-Bottom Interface Siltpr. [m TAW]: | -9.35 |
| Waterdepth 210 kHz Echo [m TAW]: | -8.96 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.06 |
| Surface elevation [m TAW]: | 0.64 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.23 | 5.2 | 0.9 | 96 |
| -4.81 | 5.2 | 0.9 | 339 |
| -6.75 | 5.2 | 1.0 | 345 |
| -8.74 | 5.3 | 1.0 | 305 |
| -8.84 | 5.3 | 1.0 | 329 |
| -8.94 | 5.3 | 1.0 | 400 |
| -9.04 | 5.3 | 1.0 | 486 |
| -9.07 | 5.3 | 1.0 | 526 |
| -9.08 | 5.3 | 1.0 | 500 |
| -9.11 | 5.3 | 1.0 | 455 |
| -9.12 | 5.3 | 1.0 | 420 |
| -9.14 | 5.3 | 1.0 | 528 |
| -9.15 | 5.3 | 1.0 | 479 |
| -9.16 | 5.2 | 1.0 | 464 |
| -9.17 | 5.3 | 1.0 | 472 |
| -9.18 | 5.2 | 1.0 | 478 |
| -9.19 | 5.2 | 1.0 | 442 |
| -9.20 | 5.3 | 1.0 | 462 |
| -9.21 | 5.3 | 1.0 | 466 |
| -9.22 | 5.3 | 1.0 | 437 |
| -9.23 | 5.3 | 1.0 | 556 |
| -9.24 | 5.3 | 1.0 | 481 |
| **Depth Avg** | **5.2** | **0.9** | **257** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -7.44 |
| Waterdepth 33 kHz Echo [m TAW]: | -7.54 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -7.09 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| -0.10 | 112 | NaN |
| -1.48 | 215 | 1.000 |
| -2.75 | 270 | 1.000 |
| -4.02 | 275 | 1.000 |
| -5.32 | 288 | 1.000 |
| -5.68 | 323 | 1.000 |
| -6.99 | 439 | 1.000 |
| **Depth Avg** | **245** | **1.000** |

Siltprofiler & Navitracker-OBS

Location: Kallo

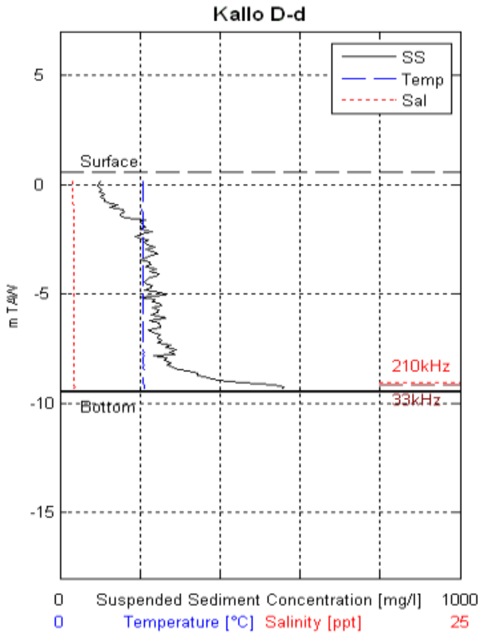
Date: 18/02/2005

*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

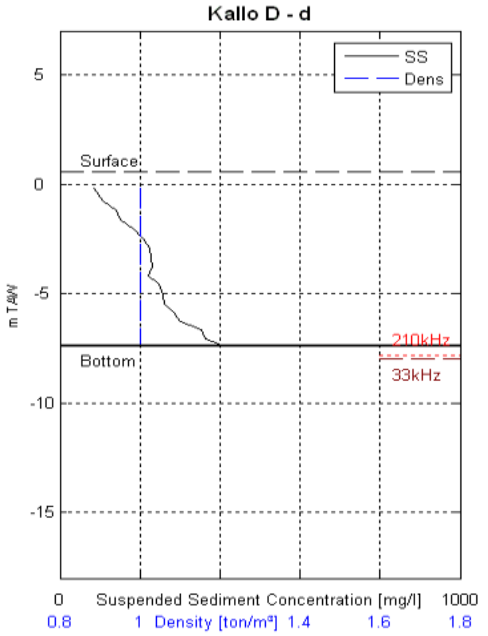
# 11265 HCBS - FEBRUARY 2005 SURVEY | 123 Dd




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 16:43 |
| Time after/before HT [MET]: | 6:13 |
| Coordinates [UTM-ED50] Easting: | 590820 |
| Coordinates [UTM-ED50] Northing: | 5680158 |
| Water-Bottom Interface Siltpr. [m TAW]: | -9.49 |
| Waterdepth 210 kHz Echo [m TAW]: | -9.03 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.15 |
| Surface elevation [m TAW]: | 0.56 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.15 | 5.2 | 0.8 | 92 |
| -4.69 | 5.2 | 0.9 | 261 |
| -6.51 | 5.3 | 0.9 | 269 |
| -8.88 | 5.2 | 0.9 | 358 |
| -8.98 | 5.2 | 0.9 | 370 |
| -9.07 | 5.2 | 0.9 | 457 |
| -9.16 | 5.3 | 0.9 | 579 |
| -9.21 | 5.2 | 0.9 | 565 |
| -9.22 | 5.3 | 0.9 | 505 |
| -9.23 | 5.3 | 0.9 | 509 |
| -9.25 | 5.2 | 0.9 | 586 |
| -9.27 | 5.2 | 0.9 | 622 |
| -9.29 | 5.2 | 0.9 | 533 |
| -9.30 | 5.2 | 0.9 | 565 |
| -9.31 | 5.2 | 0.9 | 642 |
| -9.32 | 5.2 | 0.9 | 577 |
| -9.33 | 5.2 | 0.9 | 565 |
| -9.34 | 5.2 | 0.9 | 535 |
| -9.35 | 5.2 | 0.9 | 517 |
| -9.36 | 5.3 | 0.9 | 572 |
| -9.37 | 5.2 | 0.9 | 565 |
| -9.38 | 5.3 | 0.9 | 551 |
| **Depth Avg** | **5.2** | **0.9** | **227** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -7.81 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.01 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -7.38 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| -0.11 | 76 | 1.000 |
| -1.19 | 141 | 1.000 |
| -2.46 | 204 | 1.000 |
| -3.74 | 233 | 1.000 |
| -5.02 | 260 | 1.000 |
| -5.46 | 256 | 1.000 |
| -5.85 | 288 | 1.000 |
| -6.28 | 282 | 1.000 |
| -6.67 | 388 | 1.000 |
| -7.10 | 371 | 1.000 |
| -7.27 | 374 | 1.000 |
| -7.28 | 398 | 1.000 |
| **Depth Avg** | **213** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location:
Kallo

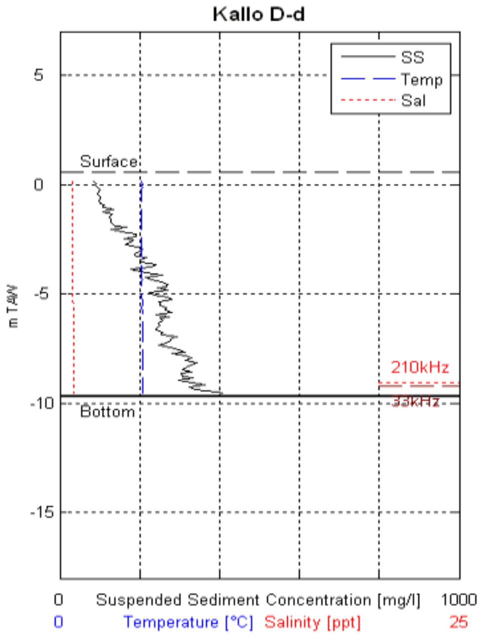
Date:
18/02/2005

*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

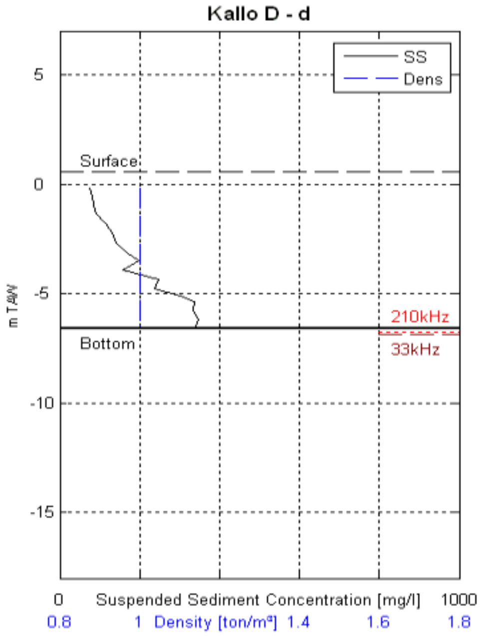
# 11265 HCBS - FEBRUARY 2005 SURVEY | 128 Dd




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 17:01 |
| Time after/before HT [MET]: | -6:38 |
| Coordinates [UTM-ED50] Easting: | 590820 |
| Coordinates [UTM-ED50] Northing: | 5680157 |
| Water-Bottom Interface Siltpr. [m TAW]: | -9.69 |
| Waterdepth 210 kHz Echo [m TAW]: | -9.05 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.19 |
| Surface elevation [m TAW]: | 0.56 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.15 | 5.1 | 0.8 | 88 |
| -4.66 | 5.1 | 0.8 | 401 |
| -6.39 | 5.2 | 0.9 | 264 |
| -9.08 | 5.2 | 0.9 | 345 |
| -9.17 | 5.2 | 0.9 | 381 |
| -9.28 | 5.2 | 0.9 | 396 |
| -9.35 | 5.2 | 0.9 | 381 |
| -9.38 | 5.2 | 0.9 | 464 |
| -9.39 | 5.2 | 0.9 | 300 |
| -9.40 | 5.2 | 0.9 | 400 |
| -9.44 | 5.1 | 0.9 | 259 |
| -9.46 | 5.2 | 0.9 | 272 |
| -9.47 | 5.2 | 0.9 | 510 |
| -9.48 | 5.2 | 0.9 | 339 |
| -9.49 | 5.2 | 0.9 | 403 |
| -9.50 | 5.2 | 0.9 | 417 |
| -9.51 | 5.2 | 0.9 | 454 |
| -9.52 | 5.2 | 0.9 | 447 |
| -9.53 | 5.2 | 0.8 | 460 |
| -9.54 | 5.2 | 0.9 | 362 |
| -9.56 | 5.2 | 0.9 | 423 |
| -9.58 | 5.2 | 0.9 | 337 |
| **Depth Avg** | **5.2** | **0.9** | **219** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -6.78 |
| Waterdepth 33 kHz Echo [m TAW]: | -6.88 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -6.59 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| -0.16 | 76 | 1.000 |
| -1.38 | 88 | 1.000 |
| -2.67 | 134 | 1.000 |
| -3.93 | 135 | 1.000 |
| -4.78 | 233 | 1.000 |
| -5.07 | 239 | 1.000 |
| -5.09 | 236 | 1.000 |
| -5.10 | 305 | 1.000 |
| -5.12 | 286 | 1.000 |
| -5.13 | 320 | 1.000 |
| -5.36 | 337 | 1.000 |
| -5.77 | 320 | 1.000 |
| -6.16 | 346 | 1.000 |
| -6.49 | 340 | 1.000 |
| **Depth Avg** | **180** | **1.000** |

Siltprofiler & Navitracker-OBS

Location: Kallo

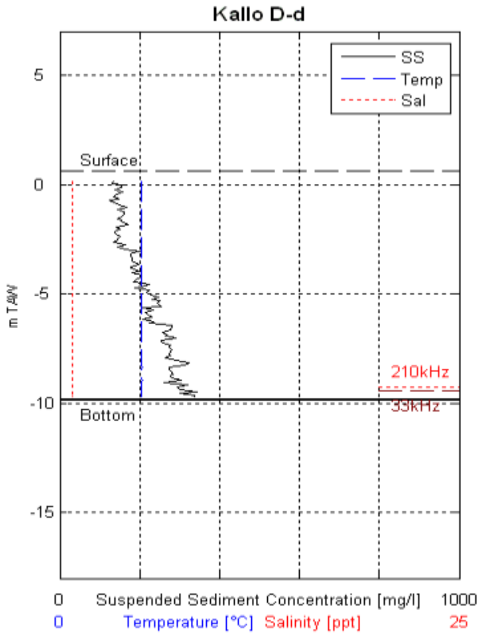
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

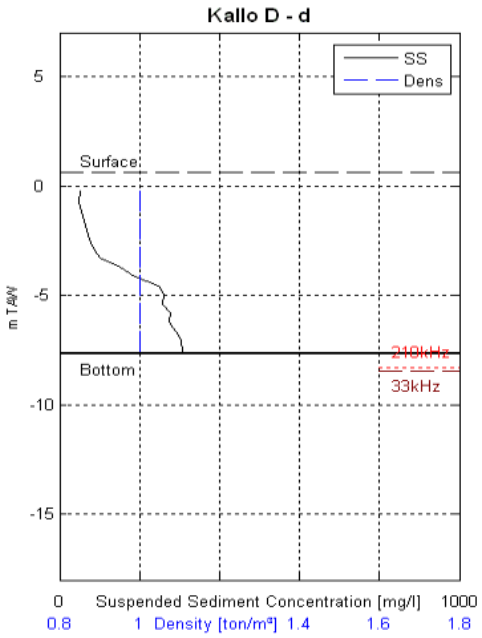
# 11265 HCBS - FEBRUARY 2005 SURVEY — 133 Dd




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 17:23 |
| Time after/before HT [MET]: | -6:16 |
| Coordinates [UTM-ED50] Easting: | 590818 |
| Coordinates [UTM-ED50] Northing: | 5680158 |
| Water-Bottom Interface Siltpr. [m TAW]: | -9.84 |
| Waterdepth 210 kHz Echo [m TAW]: | -9.25 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.42 |
| Surface elevation [m TAW]: | 0.61 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.20 | 5.1 | 0.8 | 125 |
| -5.59 | 5.1 | 0.8 | 265 |
| -7.43 | 5.1 | 0.8 | 242 |
| -9.22 | 5.2 | 0.8 | 320 |
| -9.33 | 5.2 | 0.8 | 358 |
| -9.43 | 5.1 | 0.8 | 411 |
| -9.53 | 5.1 | 0.8 | 378 |
| -9.57 | 5.2 | 0.8 | 273 |
| -9.58 | 5.2 | 0.8 | 297 |
| -9.59 | 5.2 | 0.8 | 341 |
| -9.60 | 5.1 | 0.8 | 243 |
| -9.62 | 5.1 | 0.8 | 307 |
| -9.63 | 5.2 | 0.8 | 318 |
| -9.64 | 5.2 | 0.8 | 354 |
| -9.66 | 5.1 | 0.8 | 308 |
| -9.67 | 5.2 | 0.8 | 341 |
| -9.68 | 5.2 | 0.8 | 367 |
| -9.69 | 5.1 | 0.8 | 304 |
| -9.70 | 5.1 | 0.8 | 347 |
| -9.71 | 5.1 | 0.8 | 349 |
| -9.72 | 5.2 | 0.8 | 288 |
| -9.73 | 5.1 | 0.8 | 401 |
| **Depth Avg** | **5.1** | **0.8** | **212** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -8.3 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.45 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -7.69 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| -0.04 | 52 | 1.000 |
| -1.15 | 52 | 1.000 |
| -2.43 | 72 | 1.000 |
| -3.70 | 139 | 1.000 |
| -4.95 | 270 | 1.000 |
| -5.81 | 278 | 1.000 |
| -6.21 | 285 | 1.000 |
| -6.63 | 285 | 1.000 |
| -7.01 | 299 | 1.000 |
| -7.46 | 316 | 1.000 |
| -7.58 | 294 | 1.000 |
| -7.59 | 323 | 1.000 |
| **Depth Avg** | **159** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

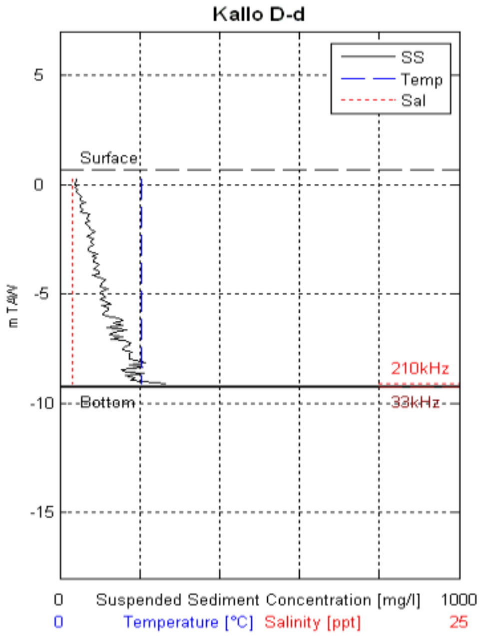
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

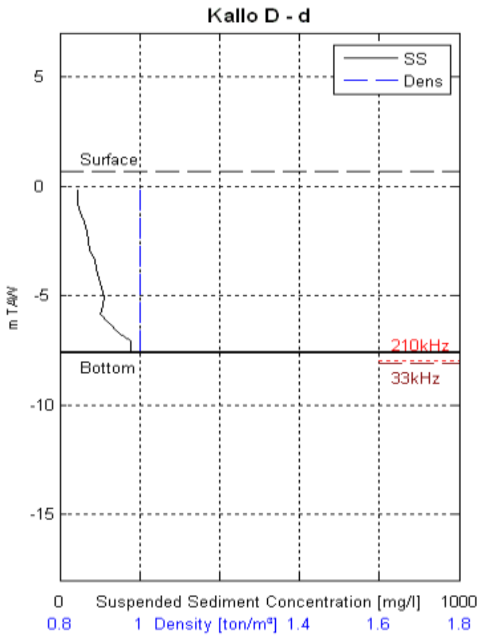
| 11265 HCBS - FEBRUARY 2005 SURVEY | 138 Dd |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 17:43 |
| Time after/before HT [MET]: | -5:56 |
| Coordinates [UTM-ED50] Easting: | 590818 |
| Coordinates [UTM-ED50] Northing: | 5680154 |
| Water-Bottom Interface Siltpr. [m TAW]: | -9.26 |
| Waterdepth 210 kHz Echo [m TAW]: | -9.13 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.26 |
| Surface elevation [m TAW]: | 0.68 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.27 | 5.1 | 0.8 | 49 |
| -4.61 | 5.1 | 0.8 | 95 |
| -6.23 | 5.1 | 0.8 | 118 |
| -8.65 | 5.1 | 0.8 | 185 |
| -8.74 | 5.2 | 0.8 | 158 |
| -8.84 | 5.2 | 0.8 | 196 |
| -8.95 | 5.1 | 0.8 | 184 |
| -8.95 | 5.1 | 0.8 | 184 |
| -8.96 | 5.1 | 0.8 | 160 |
| -8.99 | 5.1 | 0.8 | 136 |
| -9.00 | 5.2 | 0.8 | 259 |
| -9.01 | 5.1 | 0.8 | 236 |
| -9.02 | 5.1 | 0.8 | 231 |
| -9.03 | 5.1 | 0.8 | 248 |
| -9.07 | 5.1 | 0.8 | 202 |
| -9.08 | 5.1 | 0.8 | 239 |
| -9.09 | 5.1 | 0.8 | 269 |
| -9.10 | 5.2 | 0.8 | 256 |
| -9.11 | 5.1 | 0.8 | 219 |
| -9.12 | 5.2 | 0.8 | 281 |
| -9.13 | 5.2 | 0.8 | 273 |
| -9.15 | 5.2 | 0.8 | 280 |
| **Depth Avg** | **5.1** | **0.8** | **107** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -7.98 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.09 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -7.62 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| -0.03 | 46 | 1.000 |
| -1.19 | 51 | 1.000 |
| -2.48 | 69 | 1.000 |
| -3.76 | 87 | 1.000 |
| -5.03 | 117 | 1.000 |
| -5.85 | 106 | 1.000 |
| -6.27 | 109 | 1.000 |
| -6.68 | 135 | 1.000 |
| -7.06 | 168 | 1.000 |
| -7.50 | 193 | 1.000 |
| -7.51 | 177 | 1.000 |
| -7.52 | 169 | 1.000 |
| **Depth Avg** | **90** | **1.000** |

Siltprofiler & Navitracker-OBS

*Data processed by:* IMDC

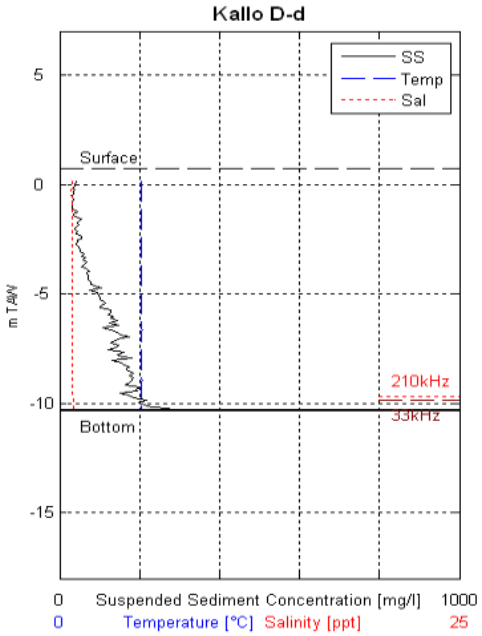
*In association with:* WL | delft hydraulics, GEMS International

Location: Kallo

Date: 18/02/2005

*I/RA/11265/05.014MSA*

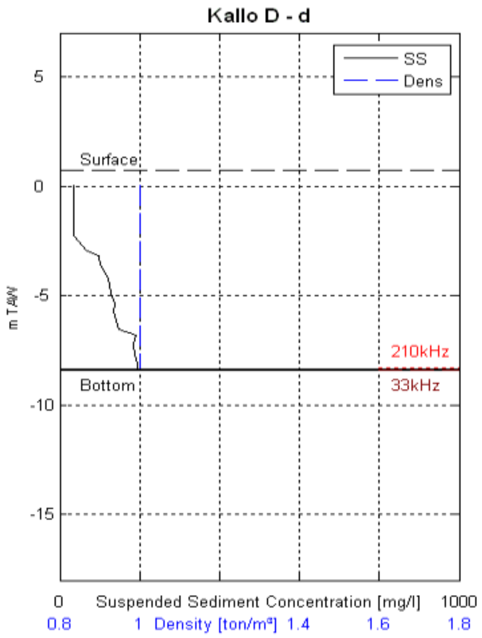
# 11265 HCBS - FEBRUARY 2005 SURVEY | 140 Dd




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 17:54 |
| Time after/before HT [MET]: | -5:45 |
| Coordinates [UTM-ED50] Easting: | 590812 |
| Coordinates [UTM-ED50] Northing: | 5680149 |
| Water-Bottom Interface Siltpr. [m TAW]: | -10.36 |
| Waterdepth 210 kHz Echo [m TAW]: | -9.70 |
| Waterdepth 33 kHz Echo [m TAW]: | -9.83 |
| Surface elevation [m TAW]: | 0.73 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 0.17 | 5.1 | 0.7 | 34 |
| -4.76 | 5.1 | 0.8 | 128 |
| -6.69 | 5.2 | 0.8 | 166 |
| -9.74 | 5.1 | 0.8 | 225 |
| -9.85 | 5.2 | 0.9 | 216 |
| -9.95 | 5.1 | 0.8 | 247 |
| -10.04 | 5.1 | 0.9 | 199 |
| -10.07 | 5.1 | 0.9 | 206 |
| -10.08 | 5.1 | 0.9 | 222 |
| -10.09 | 5.1 | 0.9 | 203 |
| -10.10 | 5.1 | 0.8 | 176 |
| -10.11 | 5.1 | 0.8 | 240 |
| -10.12 | 5.1 | 0.9 | 240 |
| -10.13 | 5.1 | 0.9 | 149 |
| -10.16 | 5.2 | 0.9 | 273 |
| -10.17 | 5.1 | 0.9 | 190 |
| -10.18 | 5.2 | 0.8 | 217 |
| -10.19 | 5.1 | 0.8 | 226 |
| -10.20 | 5.2 | 0.9 | 152 |
| -10.21 | 5.2 | 0.9 | 275 |
| -10.22 | 5.2 | 0.9 | 280 |
| -10.25 | 5.1 | 0.9 | 289 |
| **Depth Avg** | **5.1** | **0.8** | **100** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -8.28 |
| Waterdepth 33 kHz Echo [m TAW]: | -8.41 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -8.39 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 0.08 | 32 | 1.000 |
| -0.95 | 35 | 1.000 |
| -2.25 | 35 | 1.000 |
| -3.62 | 97 | 1.000 |
| -4.89 | 126 | 1.000 |
| -6.13 | 143 | 1.000 |
| -6.55 | 145 | 1.000 |
| -6.79 | 199 | 1.000 |
| -6.80 | 160 | 1.000 |
| -6.81 | 196 | 1.000 |
| -7.26 | 188 | 1.000 |
| -7.67 | 186 | 1.000 |
| -8.10 | 194 | 1.000 |
| -8.28 | 199 | 1.000 |
| -8.29 | 193 | 1.000 |
| **Depth Avg** | **100** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

Date: 18/02/2005

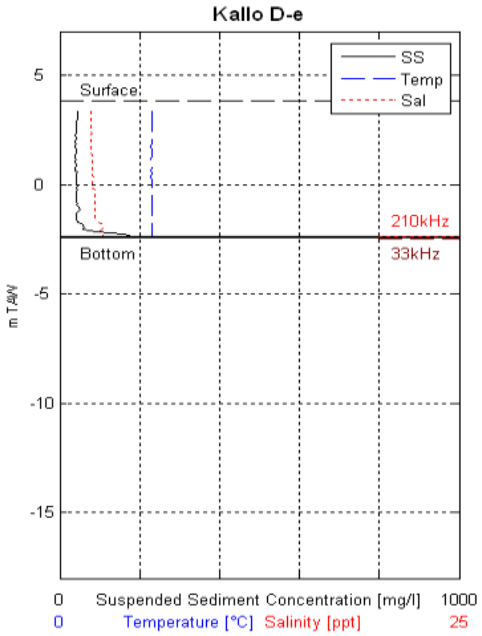
*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

### G.3.5. Measurement location e

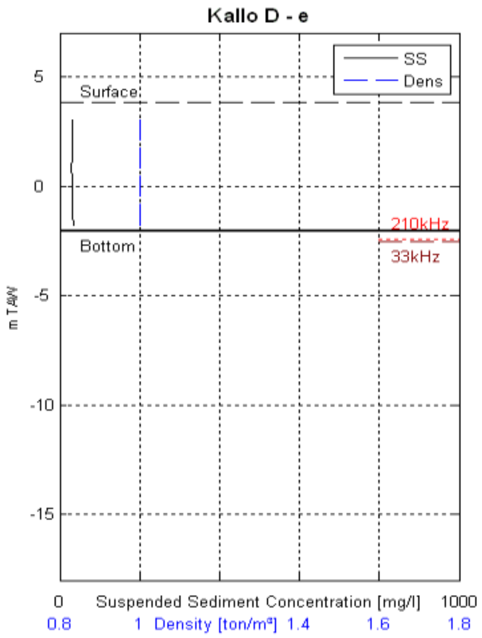
| 11265 HCBS - FEBRUARY 2005 SURVEY | 68 De |
|---|---|




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 11:42 |
| Time after/before HT [MET]: | 1:12 |
| Coordinates [UTM-ED50] Easting: | 591020 |
| Coordinates [UTM-ED50] Northing: | 5680171 |
| Water-Bottom Interface Siltpr. [m TAW]: | -2.45 |
| Waterdepth 210 kHz Echo [m TAW]: | -2.36 |
| Waterdepth 33 kHz Echo [m TAW]: | -2.46 |
| Surface elevation [m TAW]: | 3.80 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.39 | 5.7 | 2.0 | 45 |
| 0.96 | 5.7 | 2.0 | 56 |
| -0.21 | 5.7 | 2.0 | 39 |
| -1.82 | 5.8 | 2.7 | 62 |
| -1.93 | 5.8 | 2.8 | 56 |
| -2.01 | 5.8 | 2.9 | 55 |
| -2.13 | 5.8 | 2.6 | 63 |
| -2.15 | 5.8 | 2.6 | 83 |
| -2.17 | 5.8 | 2.5 | 89 |
| -2.20 | 5.8 | 2.5 | 162 |
| -2.22 | 5.8 | 2.6 | 175 |
| -2.23 | 5.8 | 2.6 | 167 |
| -2.24 | 5.8 | 2.5 | 170 |
| -2.26 | 5.8 | 2.6 | 220 |
| -2.27 | 5.8 | 2.9 | 185 |
| -2.28 | 5.8 | 2.7 | 128 |
| -2.29 | 5.8 | 2.8 | 166 |
| -2.30 | 5.8 | 2.8 | 120 |
| -2.31 | 5.8 | 2.6 | 125 |
| -2.32 | 5.8 | 2.7 | 128 |
| -2.33 | 5.8 | 2.8 | 124 |
| -2.34 | 5.8 | 2.6 | 222 |
| **Depth Avg** | **5.7** | **2.1** | **46** |



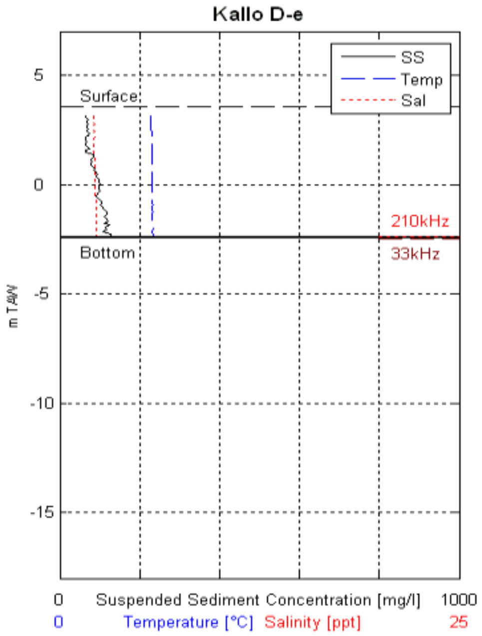

**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -2.41 |
| Waterdepth 33 kHz Echo [m TAW]: | -2.53 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -2.06 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 3.03 | 33 | NaN |
| 1.67 | 32 | 1.000 |
| 0.41 | 32 | 1.000 |
| -0.01 | 30 | 1.000 |
| -0.45 | 31 | 1.000 |
| -0.88 | 32 | 1.000 |
| -1.30 | 32 | 1.000 |
| -1.96 | 35 | 1.000 |
| **Depth Avg** | **32** | **1.000** |

| Siltprofiler & Navitracker-OBS | | *Data processed by:* IMDC |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* WL \| delft hydraulics, GEMS International |
| | | *I/RA/11265/05.014MSA* |

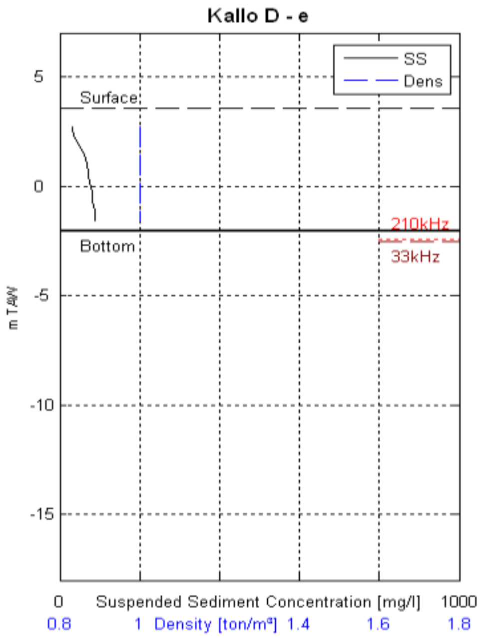
# 11265 HCBS - FEBRUARY 2005 SURVEY | 74 De




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 12:06 |
| Time after/before HT [MET]: | 1:36 |
| Coordinates [UTM-ED50] Easting: | 591014 |
| Coordinates [UTM-ED50] Northing: | 5680167 |
| Water-Bottom Interface Siltpr. [m TAW]: | -2.44 |
| Waterdepth 210 kHz Echo [m TAW]: | -2.36 |
| Waterdepth 33 kHz Echo [m TAW]: | -2.46 |
| Surface elevation [m TAW]: | 3.53 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 3.12 | 5.7 | 2.1 | 53 |
| 0.12 | 5.8 | 2.2 | 103 |
| -0.89 | 5.8 | 2.2 | 111 |
| -1.81 | 5.8 | 2.3 | 122 |
| -1.93 | 5.8 | 2.3 | 118 |
| -2.03 | 5.8 | 2.3 | 106 |
| -2.12 | 5.8 | 2.3 | 131 |
| -2.16 | 5.8 | 2.3 | 96 |
| -2.17 | 5.8 | 2.3 | 95 |
| -2.19 | 5.8 | 2.3 | 95 |
| -2.20 | 5.8 | 2.2 | 133 |
| -2.21 | 5.8 | 2.3 | 152 |
| -2.23 | 5.8 | 2.3 | 125 |
| -2.25 | 5.8 | 2.3 | 125 |
| -2.26 | 5.8 | 2.3 | 103 |
| -2.27 | 5.8 | 2.3 | 111 |
| -2.28 | 5.8 | 2.3 | 120 |
| -2.29 | 5.8 | 2.3 | 114 |
| -2.30 | 5.8 | 2.3 | 127 |
| -2.31 | 5.8 | 2.2 | 120 |
| -2.32 | 5.8 | 2.3 | 108 |
| -2.33 | 5.8 | 2.3 | 166 |
| **Depth Avg** | **5.8** | **2.2** | **89** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -2.41 |
| Waterdepth 33 kHz Echo [m TAW]: | -2.51 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -2.06 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 2.68 | 32 | 1.000 |
| 1.42 | 59 | 1.000 |
| 0.16 | 73 | 1.000 |
| -0.26 | 81 | 1.000 |
| -0.70 | 82 | 1.000 |
| -1.10 | 86 | 1.000 |
| -1.55 | 86 | 1.000 |
| -1.93 | 99 | 1.000 |
| -1.96 | 103 | 1.000 |
| **Depth Avg** | **62** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location:
Kallo

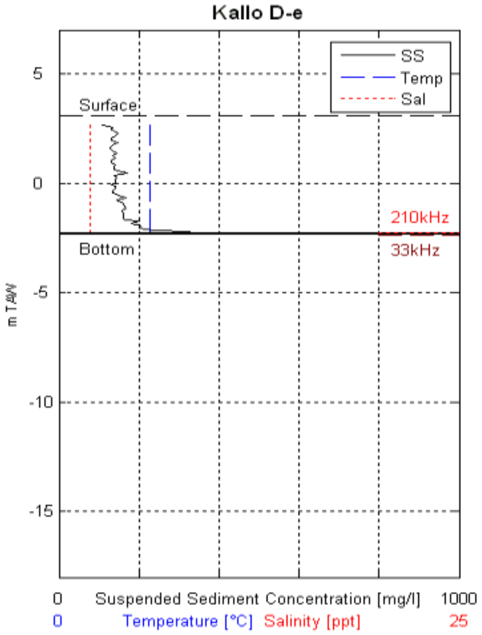
Date:
18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

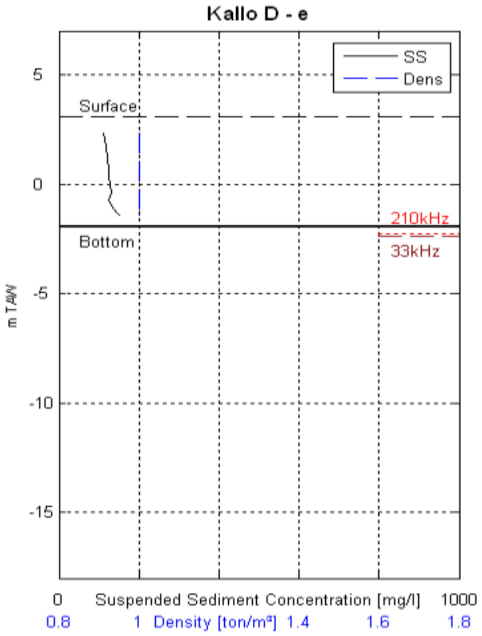
# 11265 HCBS - FEBRUARY 2005 SURVEY | 80 De




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 12:47 |
| Time after/before HT [MET]: | 2:17 |
| Coordinates [UTM-ED50] Easting: | 591021 |
| Coordinates [UTM-ED50] Northing: | 5680165 |
| Water-Bottom Interface Siltpr. [m TAW]: | -2.32 |
| Waterdepth 210 kHz Echo [m TAW]: | -2.27 |
| Waterdepth 33 kHz Echo [m TAW]: | -2.35 |
| Surface elevation [m TAW]: | 3.05 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 2.63 | 5.7 | 2.0 | 109 |
| 0.11 | 5.7 | 2.0 | 120 |
| -0.73 | 5.7 | 2.0 | 140 |
| -1.70 | 5.7 | 2.0 | 167 |
| -1.76 | 5.7 | 2.0 | 169 |
| -1.90 | 5.7 | 2.0 | 185 |
| -2.01 | 5.7 | 2.0 | 184 |
| -2.05 | 5.7 | 2.0 | 240 |
| -2.06 | 5.7 | 2.0 | 362 |
| -2.07 | 5.7 | 2.0 | 173 |
| -2.08 | 5.7 | 2.0 | 184 |
| -2.10 | 5.7 | 2.0 | 185 |
| -2.11 | 5.7 | 2.0 | 194 |
| -2.12 | 5.7 | 2.0 | 208 |
| -2.13 | 5.7 | 2.0 | 213 |
| -2.14 | 5.7 | 2.0 | 196 |
| -2.16 | 5.7 | 2.0 | 342 |
| -2.17 | 5.7 | 2.0 | 228 |
| -2.18 | 5.7 | 2.0 | 264 |
| -2.19 | 5.7 | 2.0 | 175 |
| -2.20 | 5.7 | 2.0 | 199 |
| -2.21 | 5.7 | 2.0 | 326 |
| **Depth Avg** | **5.7** | **2.0** | **147** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -2.26 |
| Waterdepth 33 kHz Echo [m TAW]: | -2.35 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -1.94 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 2.35 | 113 | 1.000 |
| 1.03 | 122 | 1.000 |
| -0.03 | 128 | 1.000 |
| -0.38 | 135 | 1.000 |
| -0.73 | 124 | 1.000 |
| -1.07 | 133 | 1.000 |
| -1.42 | 139 | 1.000 |
| -1.82 | 173 | 1.000 |
| -1.84 | 175 | 1.000 |
| **Depth Avg** | **123** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

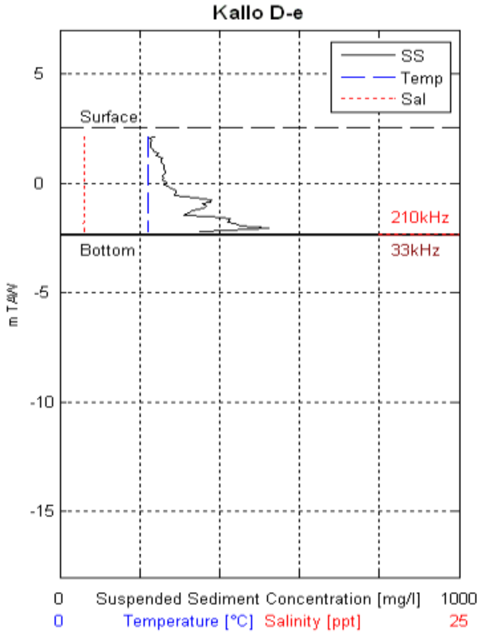
Date: 18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

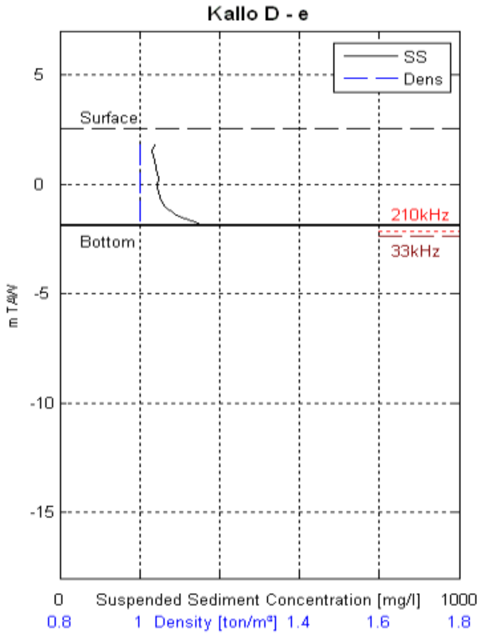
# 11265 HCBS - FEBRUARY 2005 SURVEY | 88 De




**Siltprofiler**

| | |
|---|---|
| Date & Time [MET]: | 18/2/2005 13:24 |
| Time after/before HT [MET]: | 2:54 |
| Coordinates [UTM-ED50] Easting: | 591018 |
| Coordinates [UTM-ED50] Northing: | 5680163 |
| Water-Bottom Interface Siltpr. [m TAW]: | -2.35 |
| Waterdepth 210 kHz Echo [m TAW]: | -2.30 |
| Waterdepth 33 kHz Echo [m TAW]: | -2.37 |
| Surface elevation [m TAW]: | 2.52 |

| Z [mTAW] | Temp [°C] | Sal [ppt] | SS [mg/l] |
|---|---|---|---|
| 2.11 | 5.5 | 1.5 | 248 |
| -0.34 | 5.5 | 1.5 | 295 |
| -1.14 | 5.5 | 1.5 | 339 |
| -1.74 | 5.5 | 1.5 | 388 |
| -1.83 | 5.5 | 1.5 | 398 |
| -1.94 | 5.5 | 1.5 | 512 |
| -2.03 | 5.5 | 1.5 | 417 |
| -2.08 | 5.5 | 1.6 | 509 |
| -2.11 | 5.5 | 1.5 | 568 |
| -2.12 | 5.5 | 1.5 | 410 |
| -2.13 | 5.5 | 1.5 | 427 |
| -2.14 | 5.5 | 1.5 | 519 |
| -2.15 | 5.5 | 1.6 | 460 |
| -2.16 | 5.5 | 1.5 | 457 |
| -2.17 | 5.5 | 1.6 | 460 |
| -2.18 | 5.5 | 1.5 | 400 |
| -2.19 | 5.5 | 1.5 | 406 |
| -2.20 | 5.5 | 1.5 | 417 |
| -2.21 | 5.5 | 1.5 | 466 |
| -2.22 | 5.5 | 1.5 | 307 |
| -2.23 | 5.5 | 1.6 | 329 |
| -2.24 | 5.5 | 1.5 | 318 |
| **Depth Avg** | **5.5** | **1.5** | **299** |




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -2.14 |
| Waterdepth 33 kHz Echo [m TAW]: | -2.37 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -1.92 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 1.79 | 241 | NaN |
| 0.71 | 244 | 1.000 |
| -0.14 | 243 | 1.000 |
| -0.59 | 245 | 1.000 |
| -0.99 | 250 | 1.000 |
| -1.82 | 352 | 1.000 |
| **Depth Avg** | **253** | **1.000** |

## Siltprofiler & Navitracker-OBS

Location: Kallo

Date: 18/02/2005

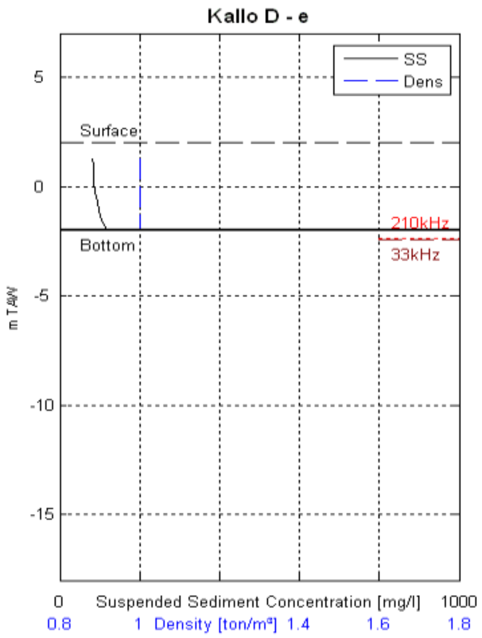
*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

| 11265 HCBS - FEBRUARY 2005 SURVEY | 94 De |
|---|---|

Data Not Recorded




**Navitracker-OBS**

| | |
|---|---|
| Waterdepth 210 kHz Echo [m TAW]: | -2.39 |
| Waterdepth 33 kHz Echo [m TAW]: | -2.44 |
| Water-Bottom Interface CTD-OBS [m TAW]: | -2.01 |
| Water-Mud Interface Navitracker [m TAW]: | NaN |

| Z [mTAW] | SS [mg/l] | Dens [ton/m³] |
|---|---|---|
| 1.29 | 81 | NaN |
| 0.20 | 84 | 1.000 |
| -0.24 | 91 | 1.000 |
| -0.68 | 99 | 1.000 |
| -1.08 | 102 | 1.000 |
| -1.53 | 103 | 1.000 |
| -1.89 | 126 | 1.000 |
| -1.90 | 117 | 1.000 |
| -1.91 | 109 | 1.000 |
| **Depth Avg** | **91** | **1.000** |

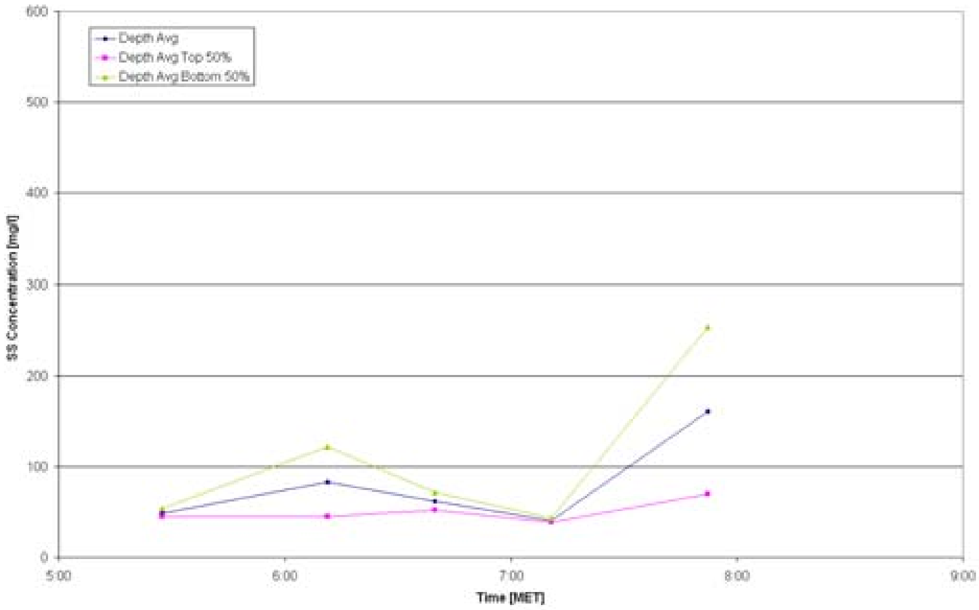
| Siltprofiler & Navitracker-OBS | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* |
| | | *I/RA/11265/05.014MSA* |

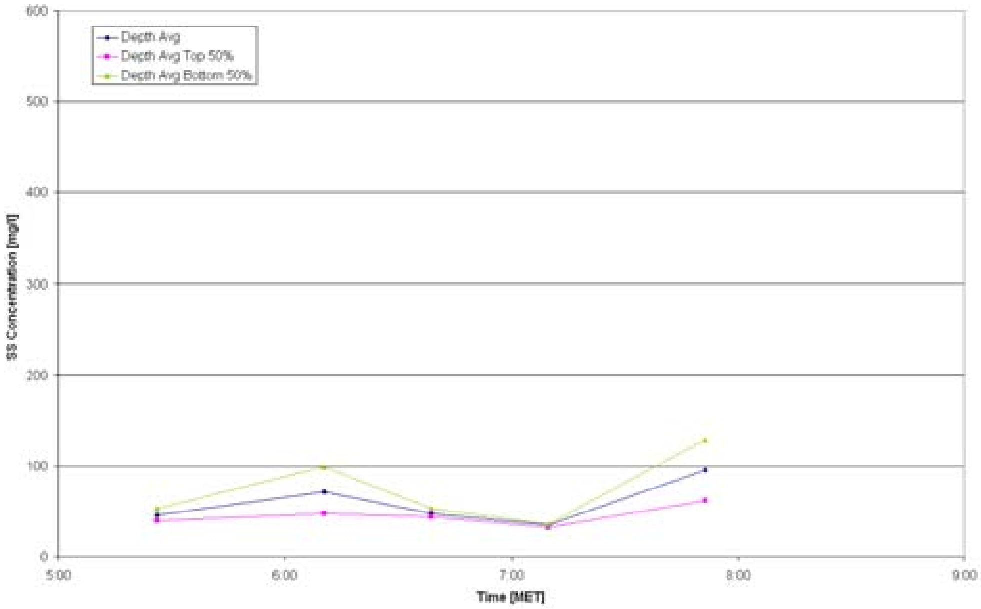
# APPENDIX H.

# DEPTH AVERAGE FIGURES AND TABLES

## H.1 Transect F

| 11265 HCBS - FEBRUARY 2005 SURVEY | Fa |
|---|---|




SS Concentration Siltprofiler &
SS Concentration Navitracker-OBS

*Data processed by:* IMDC

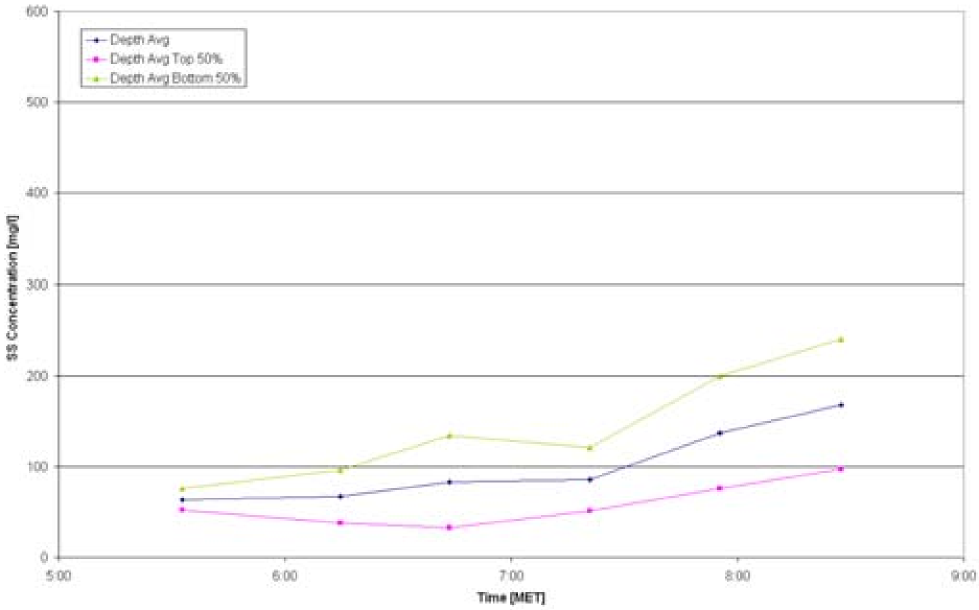
*In association with:* WL | delft hydraulics, GEMS International

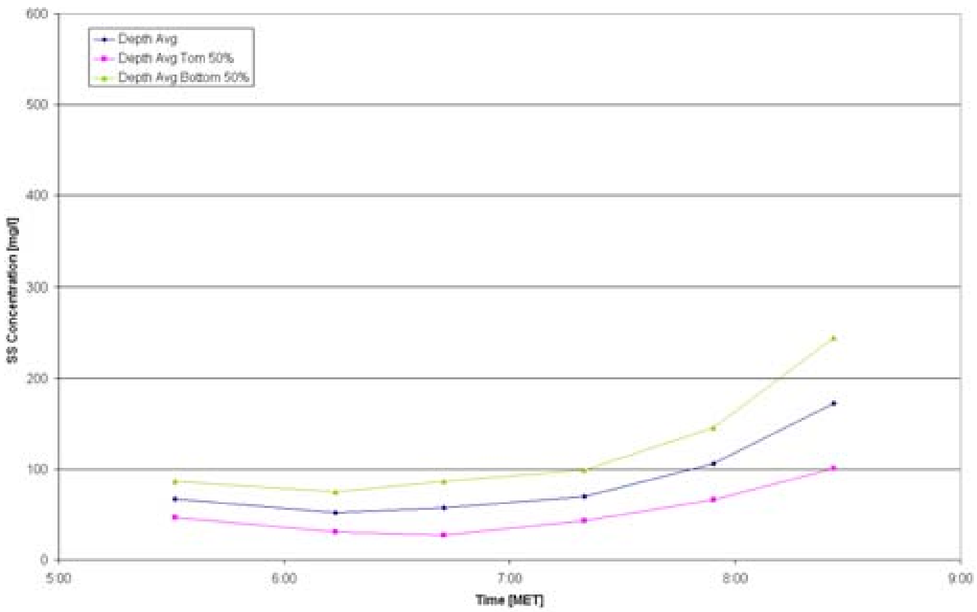
Location: Kallo

Date: 18/02/2005

*I/RA/11265/05.014/MSA*

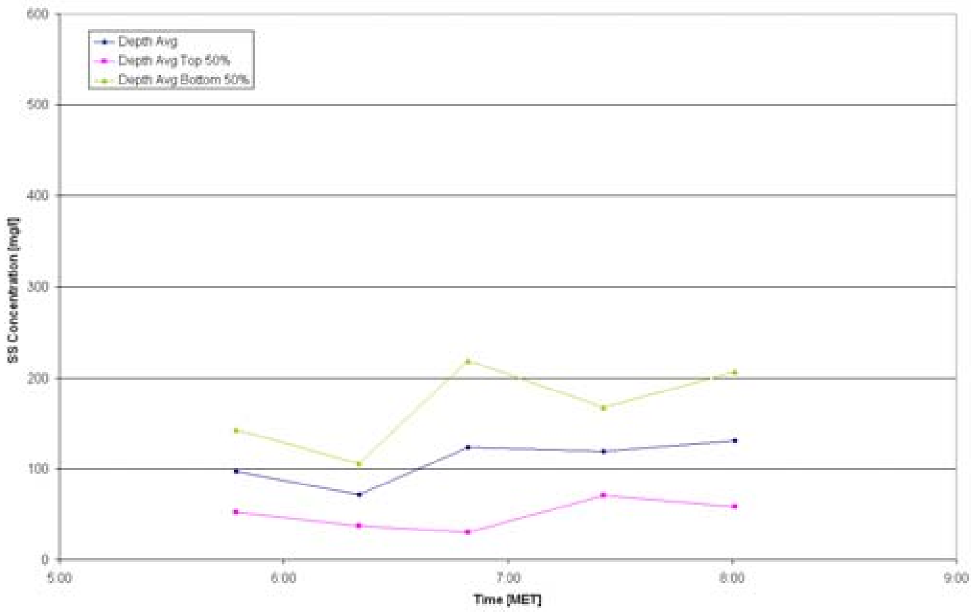
| 11265 HCBS - FEBRUARY 2005 SURVEY | Fb |
| --- | --- |

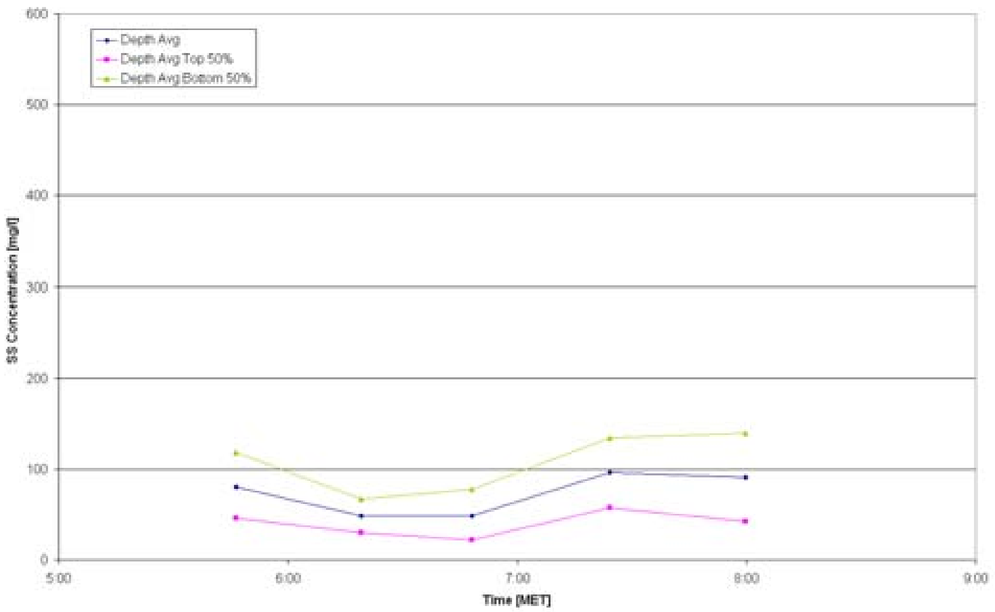



| SS Concentration Siltprofiler & SS Concentration Navitracker-OBS | | *Data processed by:* IMDC |
| --- | --- | --- |
| Location: Kallo | Date: 18/02/2005 | *In association with:* WL \| delft hydraulics, GEMS International<br>*I/RA/11265/05.014/MSA* |

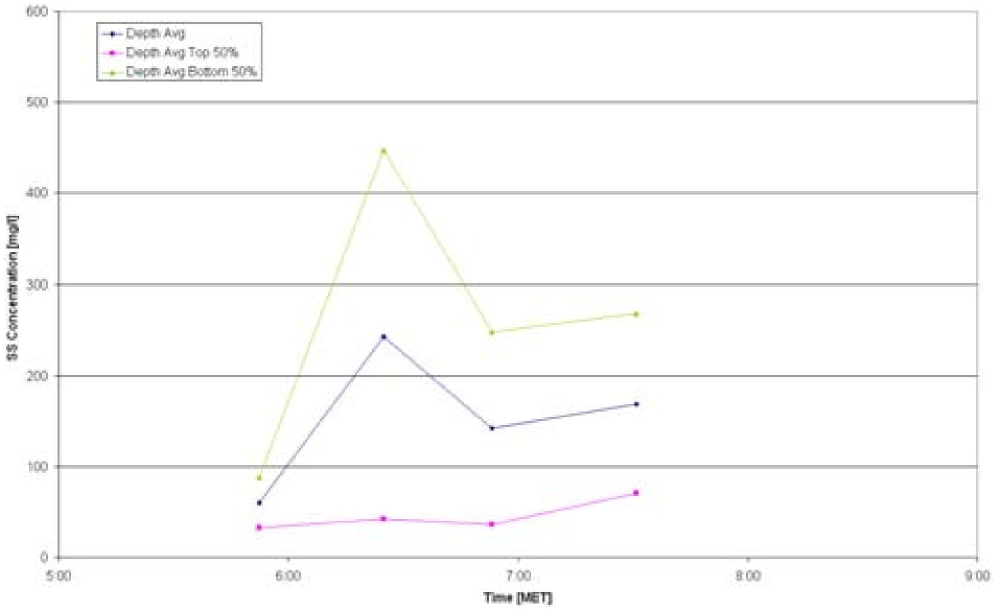
| 11265 HCBS - FEBRUARY 2005 SURVEY | Fc |
|---|---|

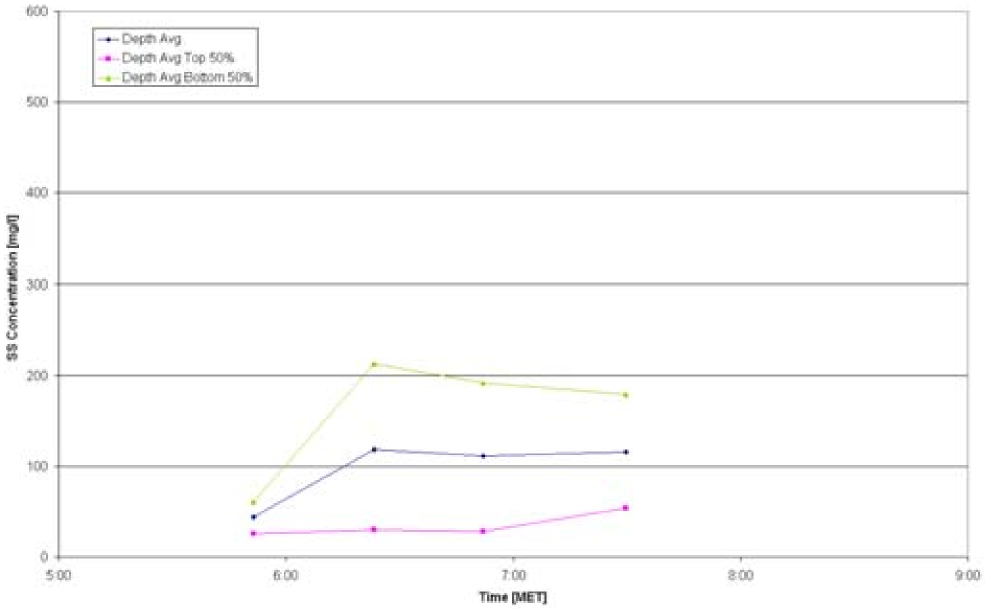



| SS Concentration Siltprofiler & SS Concentration Navitracker-OBS | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* *I/RA/11265/05.014/MSA* |

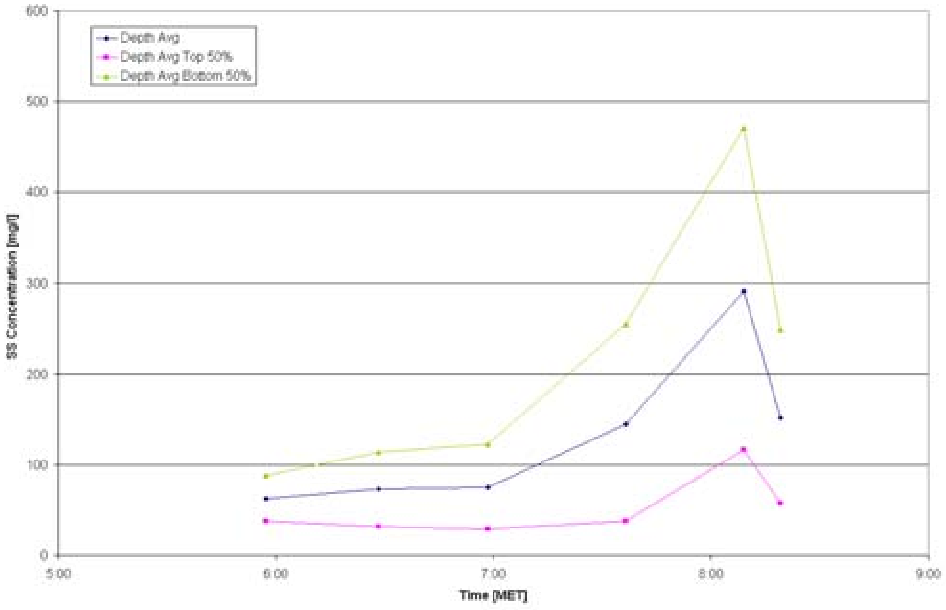
| 11265 HCBS - FEBRUARY 2005 SURVEY | Fd |
|---|---|

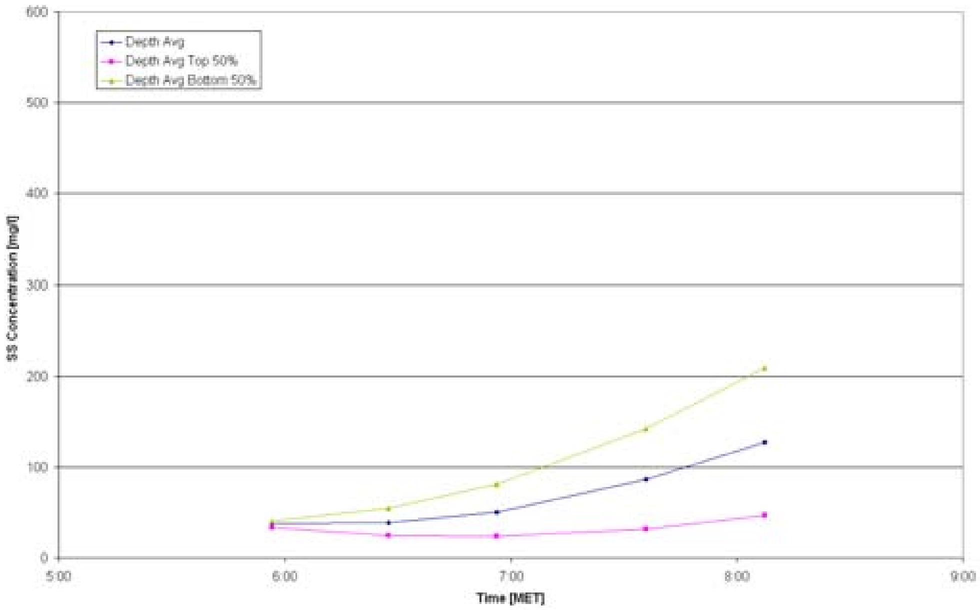



| SS Concentration Siltprofiler & SS Concentration Navitracker-OBS | | *Data processed by:* IMDC |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* WL \| delft hydraulics, GEMS International<br>*I/RA/11265/05.014/MSA* |

| 11265 HCBS - FEBRUARY 2005 SURVEY | Fe |
| --- | --- |




SS Concentration Siltprofiler &
SS Concentration Navitracker-OBS

Location:
Kallo

Date:
18/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014/MSA*

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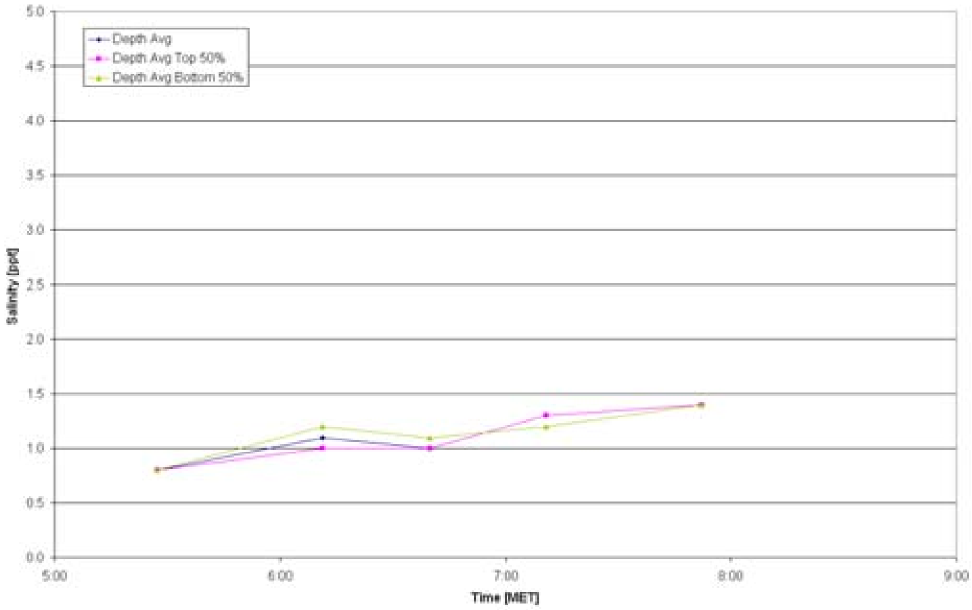
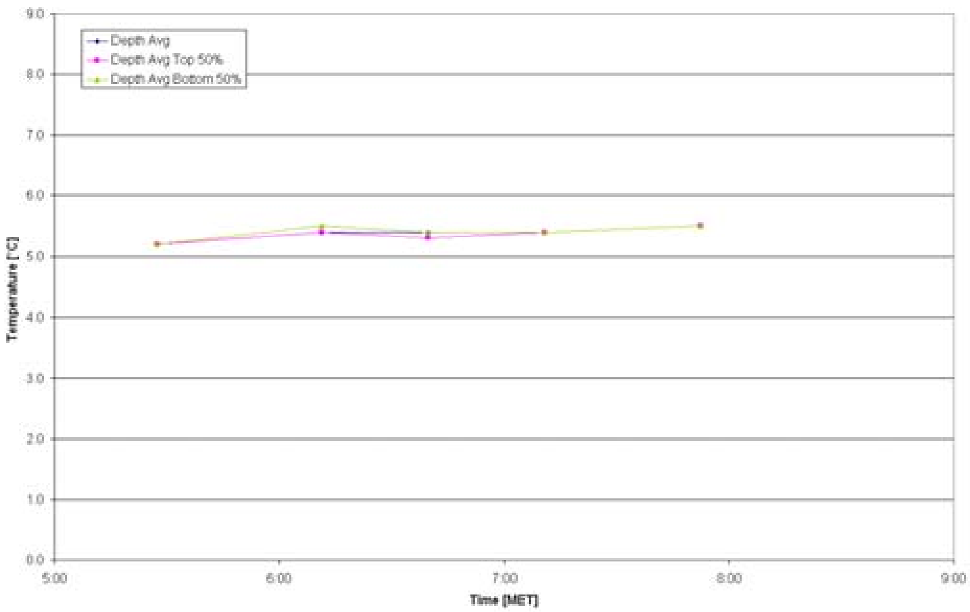
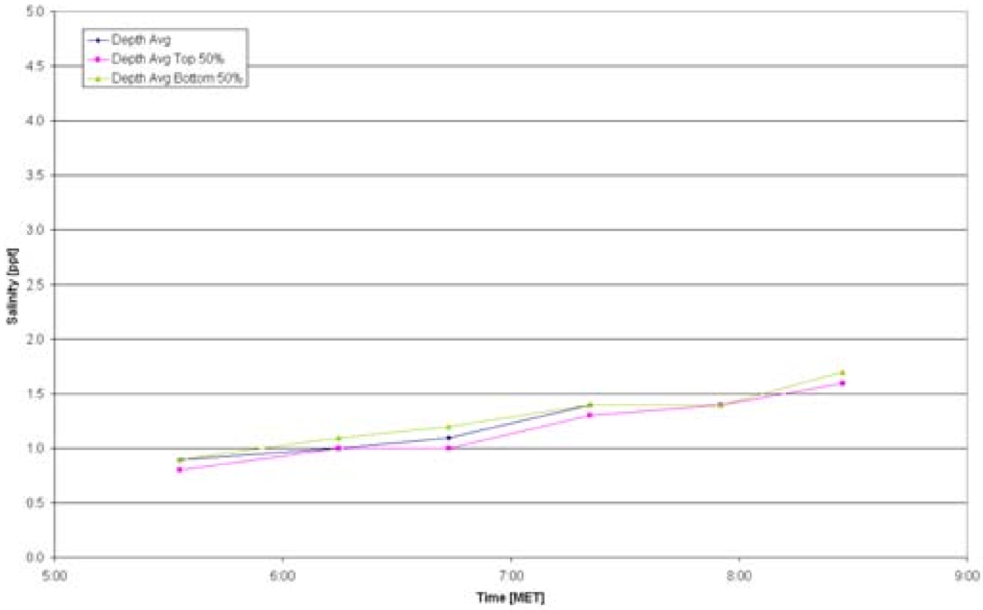
| 11265 HCBS - FEBRUARY 2005 SURVEY | Fa |
|---|---|

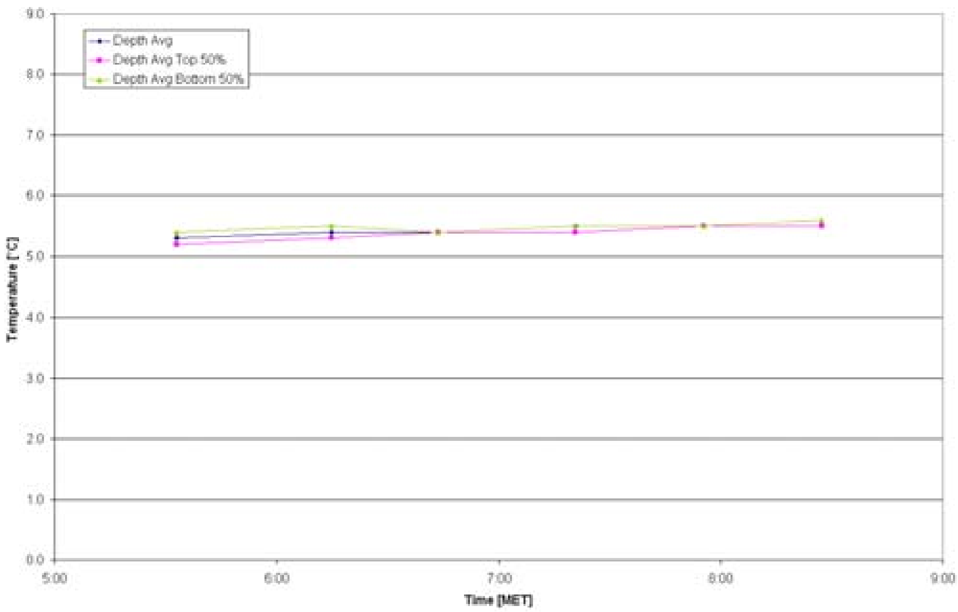



| Salinity & Temperature Siltprofiler | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* *I/RA/11265/05.014/MSA* |

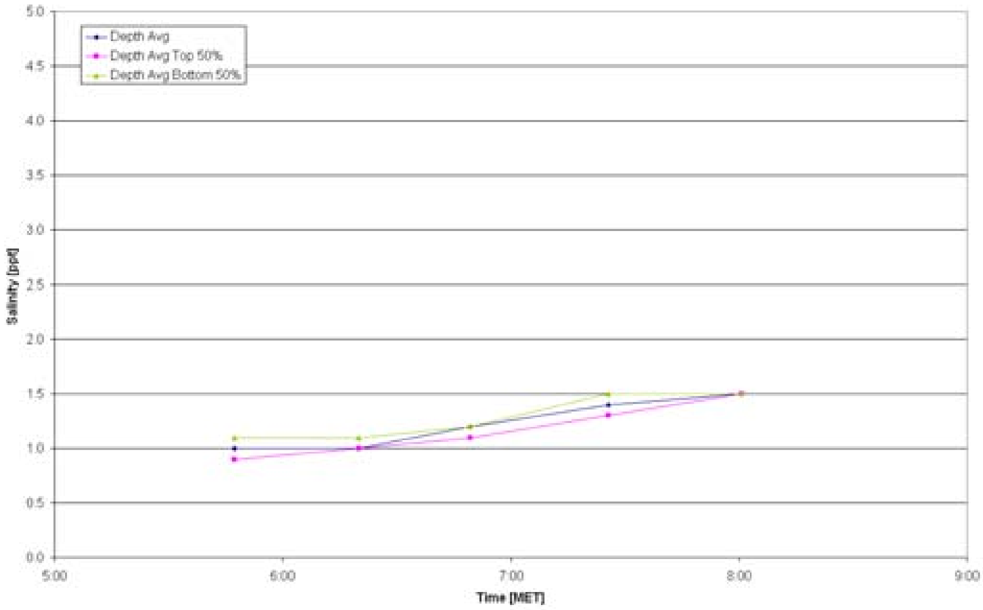
| 11265 HCBS - FEBRUARY 2005 SURVEY | Fb |
|---|---|

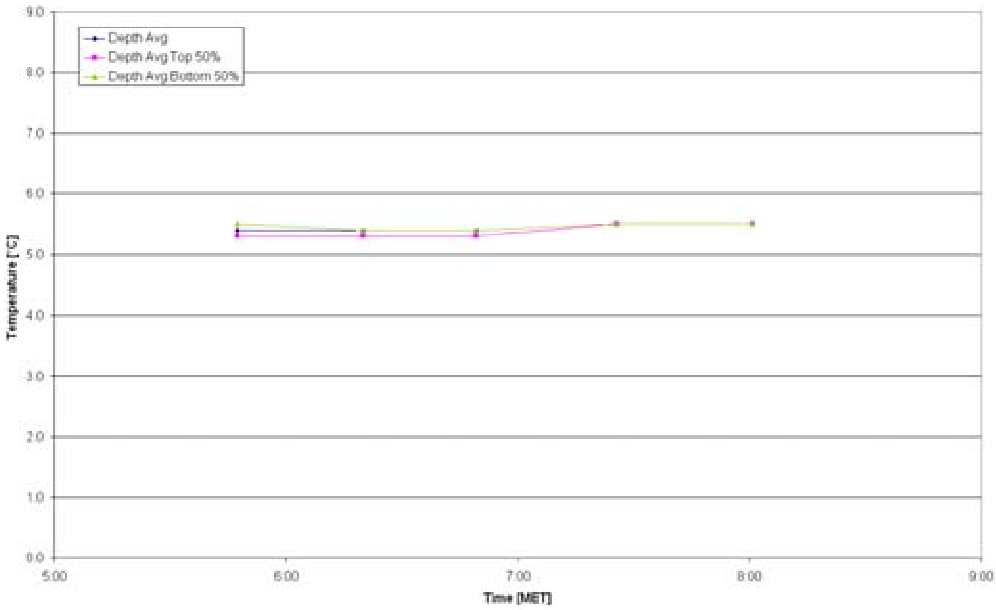



| Salinity & Temperature Siltprofiler | | *Data processed by:* IMDC |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* WL \| delft hydraulics, GEMS International — *I/RA/11265/05.014/MSA* |

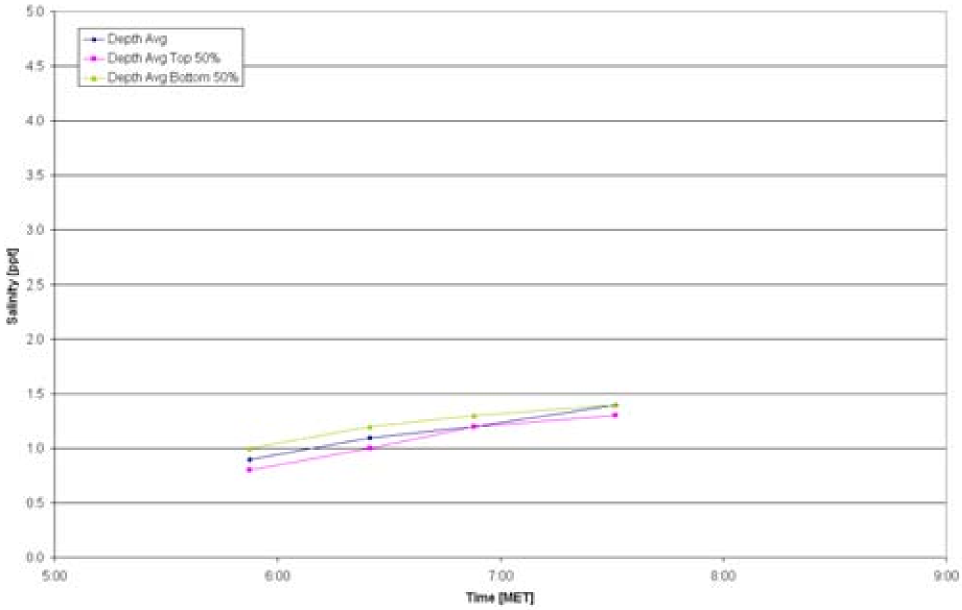
| 11265 HCBS - FEBRUARY 2005 SURVEY | Fc |
|---|---|

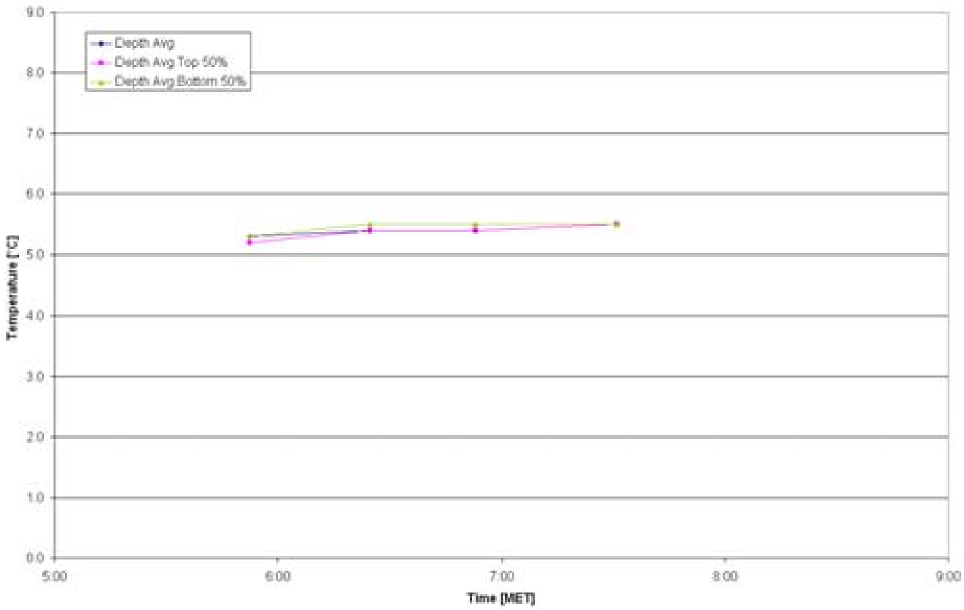



| Salinity & Temperature Siltprofiler | | *Data processed by:* IMDC |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* WL \| delft hydraulics, GEMS International<br>*I/RA/11265/05.014/MSA* |

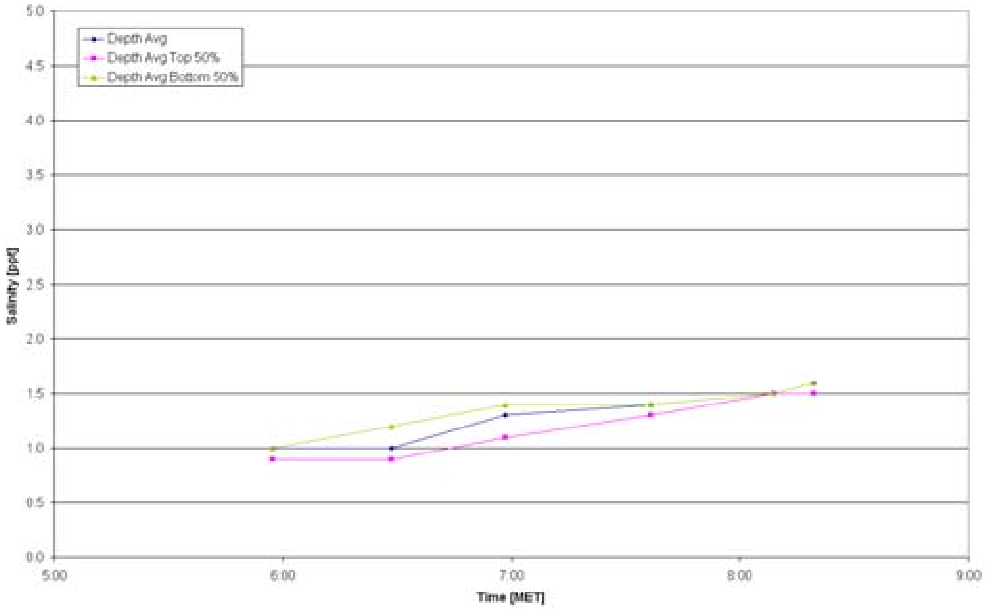
| 11265 HCBS - FEBRUARY 2005 SURVEY | Fd |
|---|---|

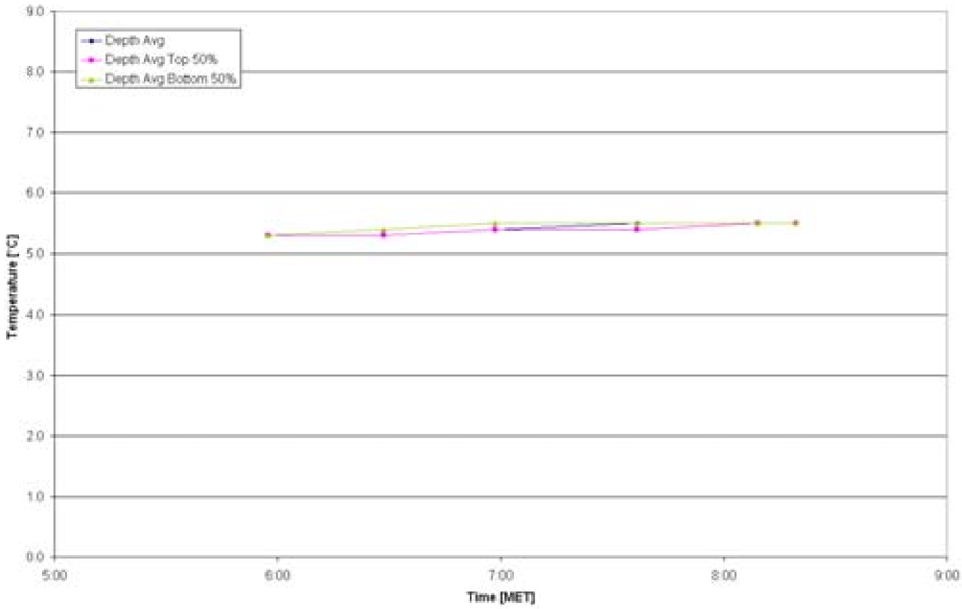



| Salinity & Temperature Siltprofiler | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* *I/RA/11265/05.014/MSA* |

| 11265 HCBS - FEBRUARY 2005 SURVEY | Fe |
|---|---|




| Salinity & Temperature Siltprofiler | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* |
| | | *I/RA/11265/05.014/MSA* |

| **Siltprofiles** | | | **Depth Avg** | | | **Top 50% Depth Avg** | | | **Bottom 50% Depth Avg** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Name** | **Time after HW** | **Time** | **Temp** | **Sal** | **SS Conc** | **Temp** | **Sal** | **SS Conc** | **Temp** | **Sal** | **SS Conc** |
| | **[hh:mm]** | **[hh:mm MET]** | **[°C]** | **[ppt]** | **[mg/l]** | **[°C]** | **[ppt]** | **[mg/l]** | **[°C]** | **[ppt]** | **[mg/l]** |
| 1 Fa | -5:02 | 5:27 | 5,2 | 0,8 | 49 | 5,2 | 0,8 | 45 | 5,2 | 0,8 | 54 |
| 7 Fa | -4:18 | 6:11 | 5,4 | 1,1 | 83 | 5,4 | 1 | 45 | 5,5 | 1,2 | 122 |
| 13 Fa | -3:50 | 6:39 | 5,4 | 1 | 62 | 5,3 | 1 | 52 | 5,4 | 1,1 | 72 |
| 19 Fa | -3:19 | 7:10 | 5,4 | 1,3 | 41 | 5,4 | 1,3 | 39 | 5,4 | 1,2 | 43 |
| 25 Fa | -2:37 | 7:52 | 5,5 | 1,4 | 161 | 5,5 | 1,4 | 70 | 5,5 | 1,4 | 254 |
| | | | | | | | | | | | |
| 2 Fb | -4:57 | 5:32 | 5,3 | 0,9 | 64 | 5,2 | 0,8 | 52 | 5,4 | 0,9 | 76 |
| 8 Fb | -4:15 | 6:14 | 5,4 | 1 | 67 | 5,3 | 1 | 38 | 5,5 | 1,1 | 96 |
| 14 Fb | -3:46 | 6:43 | 5,4 | 1,1 | 83 | 5,4 | 1 | 33 | 5,4 | 1,2 | 134 |
| 20 Fb | -3:09 | 7:20 | 5,5 | 1,4 | 86 | 5,4 | 1,3 | 51 | 5,5 | 1,4 | 121 |
| 26 Fb | -2:34 | 7:55 | 5,5 | 1,4 | 137 | 5,5 | 1,4 | 76 | 5,5 | 1,4 | 200 |
| 32 Fb | -2:02 | 8:27 | 5,5 | 1,6 | 168 | 5,5 | 1,6 | 97 | 5,6 | 1,7 | 240 |
| | | | | | | | | | | | |
| 3 Fc | -4:42 | 5:47 | 5,4 | 1 | 97 | 5,3 | 0,9 | 52 | 5,5 | 1,1 | 143 |
| 9 Fc | -4:09 | 6:20 | 5,4 | 1 | 72 | 5,3 | 1 | 37 | 5,4 | 1,1 | 106 |
| 15 Fc | -3:40 | 6:49 | 5,4 | 1,2 | 124 | 5,3 | 1,1 | 30 | 5,4 | 1,2 | 219 |
| 21 Fc | -3:04 | 7:25 | 5,5 | 1,4 | 119 | 5,5 | 1,3 | 71 | 5,5 | 1,5 | 168 |
| 27 Fc | -2:29 | 8:00 | 5,5 | 1,5 | 131 | 5,5 | 1,5 | 58 | 5,5 | 1,5 | 207 |
| | | | | | | | | | | | |
| 4 Fd | 5:52 | -4:37 | 5,3 | 0,9 | 60 | 5,2 | 0,8 | 33 | 5,3 | 1 | 88 |
| 10 Fd | 6:24 | -4:05 | 5,4 | 1,1 | 243 | 5,4 | 1 | 42 | 5,5 | 1,2 | 447 |
| 16 Fd | 6:53 | -3:36 | 5,4 | 1,2 | 142 | 5,4 | 1,2 | 36 | 5,5 | 1,3 | 248 |
| 22 Fd | 7:30 | -2:59 | 5,5 | 1,4 | 169 | 5,5 | 1,3 | 71 | 5,5 | 1,4 | 269 |
| | | | | | | | | | | | |

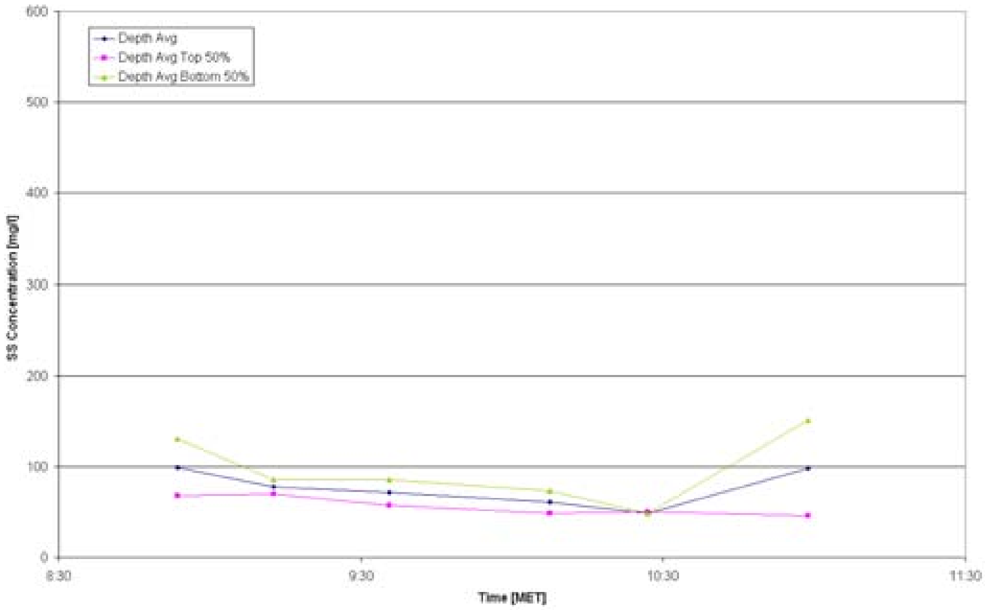
| Siltprofiles | | | Depth Avg | | | Top 50% Depth Avg | | | Bottom 50% Depth Avg | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Name | Time after HW | Time | Temp | Sal | SS Conc | Temp | Sal | SS Conc | Temp | Sal | SS Conc |
| | [hh:mm] | [hh:mm MET] | [°C] | [ppt] | [mg/l] | [°C] | [ppt] | [mg/l] | [°C] | [ppt] | [mg/l] |
| 5 Fe | 5:57 | -4:32 | 5,3 | 1 | 63 | 5,3 | 0,9 | 38 | 5,3 | 1 | 88 |
| 11 Fe | 6:28 | -4:01 | 5,3 | 1 | 73 | 5,3 | 0,9 | 32 | 5,4 | 1,2 | 114 |
| 17 Fe | 6:58 | -3:31 | 5,4 | 1,3 | 75 | 5,4 | 1,1 | 29 | 5,5 | 1,4 | 123 |
| 23 Fe | 7:36 | -2:53 | 5,5 | 1,4 | 145 | 5,4 | 1,3 | 38 | 5,5 | 1,4 | 255 |
| 28 Fe | 8:09 | -2:20 | 5,5 | 1,5 | 292 | 5,5 | 1,5 | 117 | 5,5 | 1,5 | 471 |
| 30 Fe | 8:19 | -2:10 | 5,5 | 1,6 | 152 | 5,5 | 1,5 | 57 | 5,5 | 1,6 | 249 |

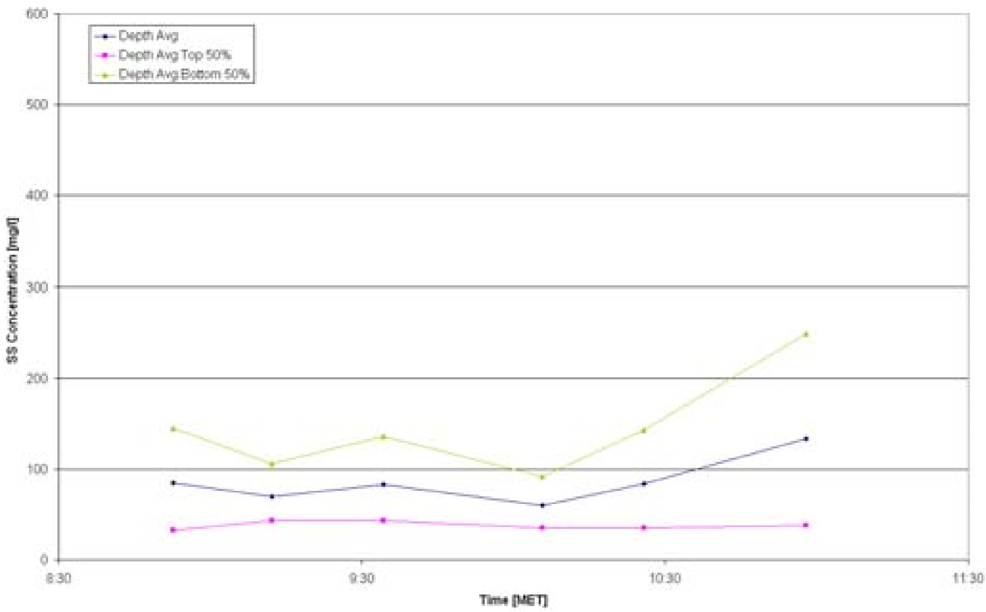
| **NaviOBS Name** | **Time after HW [hh:mm]** | **Time [hh:mm MET]** | **Depth Avg SS conc [mg/l]** | **Top 50% Depth Avg SS conc [mg/l]** | **Bottom 50% Depth Avg SS conc [mg/l]** |
|---|---|---|---|---|---|
| 1 Fa | -5:03 | 5:26 | 46 | 40 | 53 |
| 7 Fa | -4:19 | 6:10 | 72 | 48 | 99 |
| 13 Fa | -3:51 | 6:38 | 48 | 44 | 53 |
| 19 Fa | -3:20 | 7:09 | 35 | 33 | 36 |
| 25 Fa | -2:38 | 7:51 | 95 | 62 | 129 |
| | | | | | |
| 2 Fb | -4:58 | 5:31 | 67 | 47 | 87 |
| 8 Fb | -4:16 | 6:13 | 52 | 31 | 75 |
| 14 Fb | -3:47 | 6:42 | 57 | 27 | 87 |
| 20 Fb | -3:10 | 7:19 | 70 | 43 | 99 |
| 26 Fb | -2:35 | 7:54 | 106 | 66 | 146 |
| 32 Fb | -2:03 | 8:26 | 172 | 101 | 245 |
| | | | | | |
| 3 Fc | -4:43 | 5:46 | 80 | 46 | 118 |
| 9 Fc | -4:10 | 6:19 | 49 | 30 | 67 |
| 15 Fc | -3:41 | 6:48 | 49 | 22 | 78 |
| 21 Fc | -3:05 | 7:24 | 96 | 57 | 134 |
| 27 Fc | -2:30 | 7:59 | 91 | 42 | 140 |
| | | | | | |
| 4 Fd | -4:38 | 5:51 | 44 | 26 | 61 |
| 10 Fd | -4:06 | 6:23 | 118 | 30 | 213 |
| 16 Fd | -3:37 | 6:52 | 111 | 28 | 192 |
| 22 Fd | -3:00 | 7:29 | 116 | 54 | 179 |

| NaviOBS Name | Time after HW [hh:mm] | Time [hh:mm MET] | Depth Avg SS conc [mg/l] | Top 50% Depth Avg SS conc [mg/l] | Bottom 50% Depth Avg SS conc [mg/l] |
|---|---|---|---|---|---|
| | | | | | |
| 5 Fe | -4:33 | 5:56 | 38 | 34 | 41 |
| 11 Fe | -4:02 | 6:27 | 39 | 25 | 55 |
| 17 Fe | -3:33 | 6:56 | 50 | 24 | 81 |
| 23 Fe | -2:54 | 7:35 | 87 | 32 | 142 |
| 28 Fe | -2:22 | 8:07 | 127 | 47 | 209 |

## H.2 Transect E

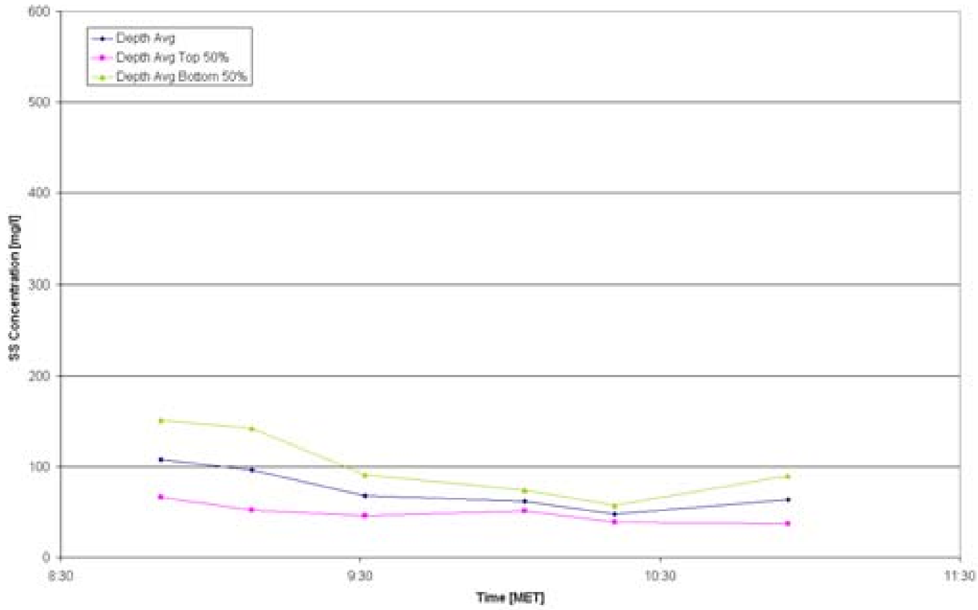
| 11265 HCBS - FEBRUARY 2005 SURVEY | Ea |
|---|---|

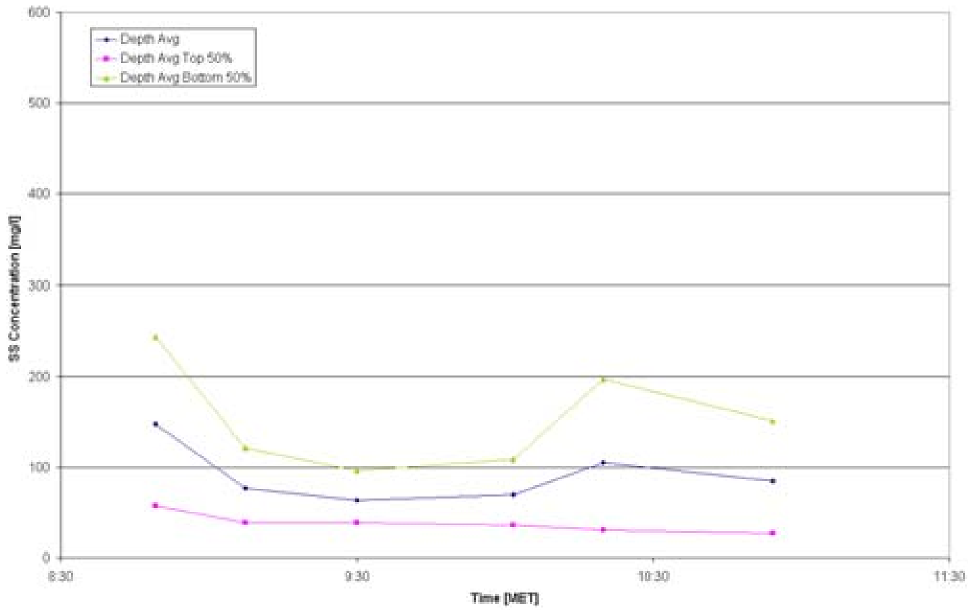



| SS Concentration Siltprofiler & SS Concentration Navitracker-OBS | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* *I/RA/11265/05.014/MSA* |

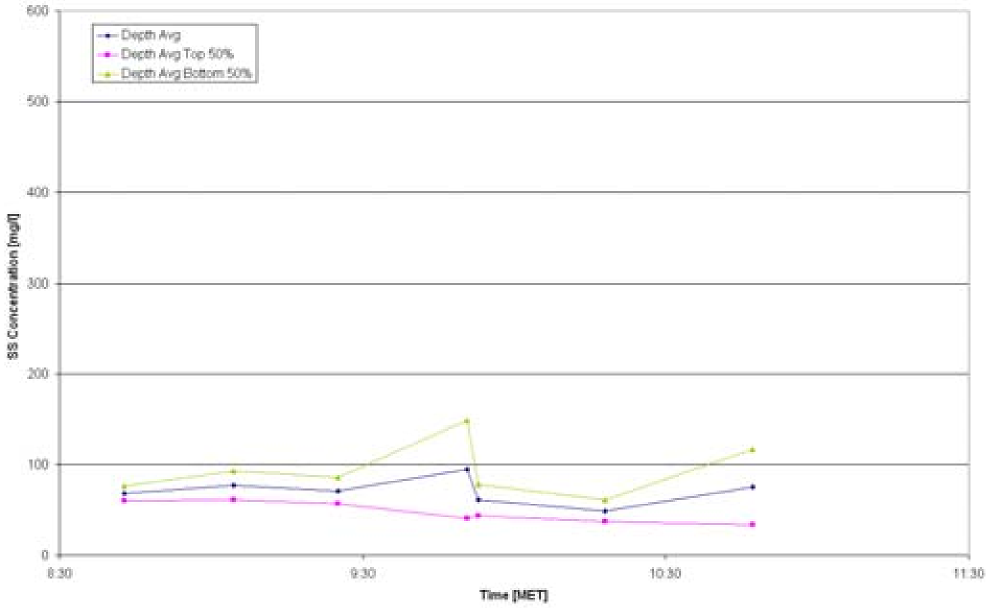
| 11265 HCBS - FEBRUARY 2005 SURVEY | Eb |
|---|---|

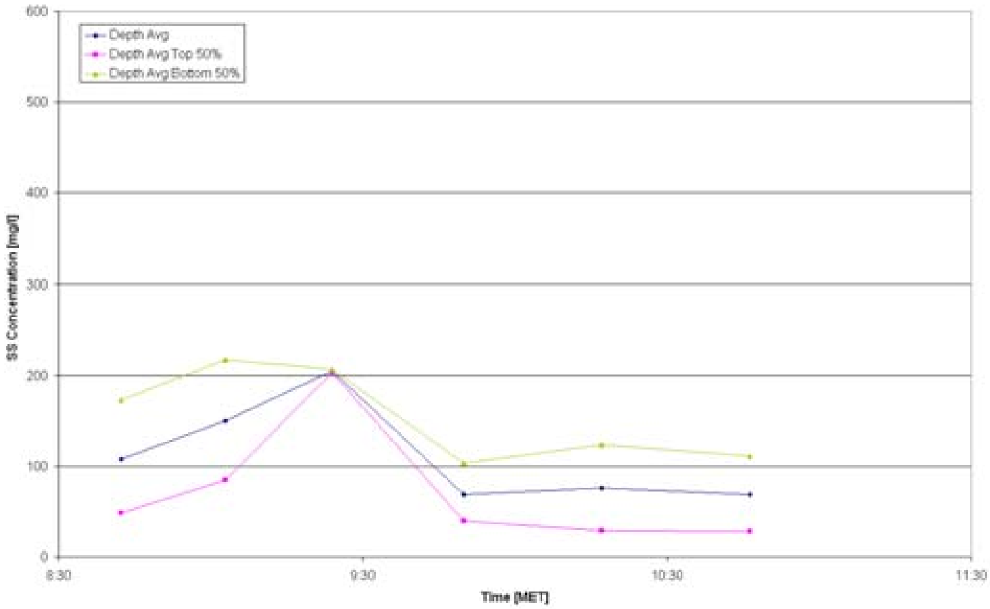



| SS Concentration Siltprofiler & SS Concentration Navitracker-OBS | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* *I/RA/11265/05.014/MSA* |

| 11265 HCBS - FEBRUARY 2005 SURVEY | Ec |
|---|---|




SS Concentration Siltprofiler &
SS Concentration Navitracker-OBS

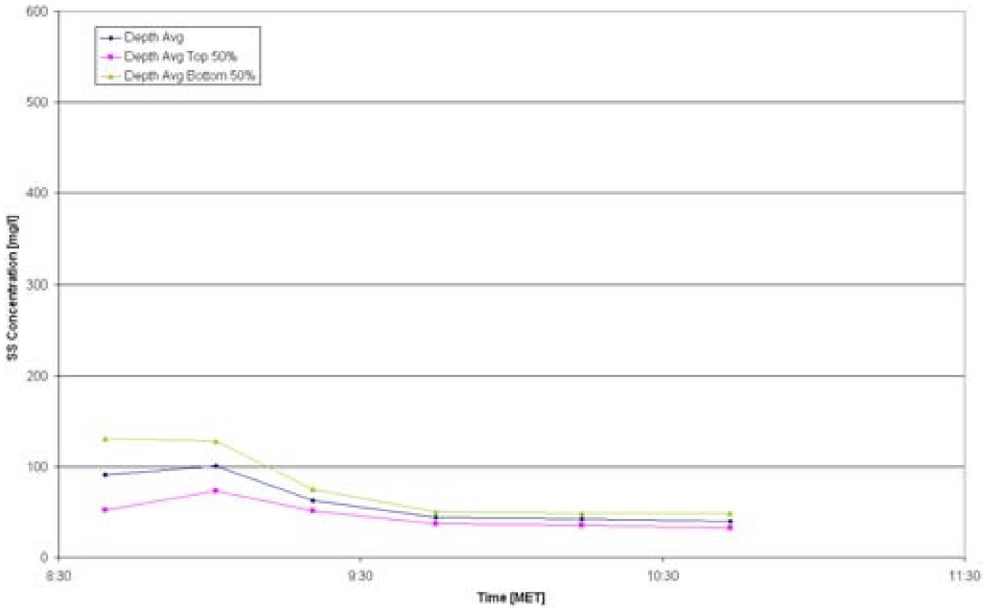
*Data processed by:* IMDC

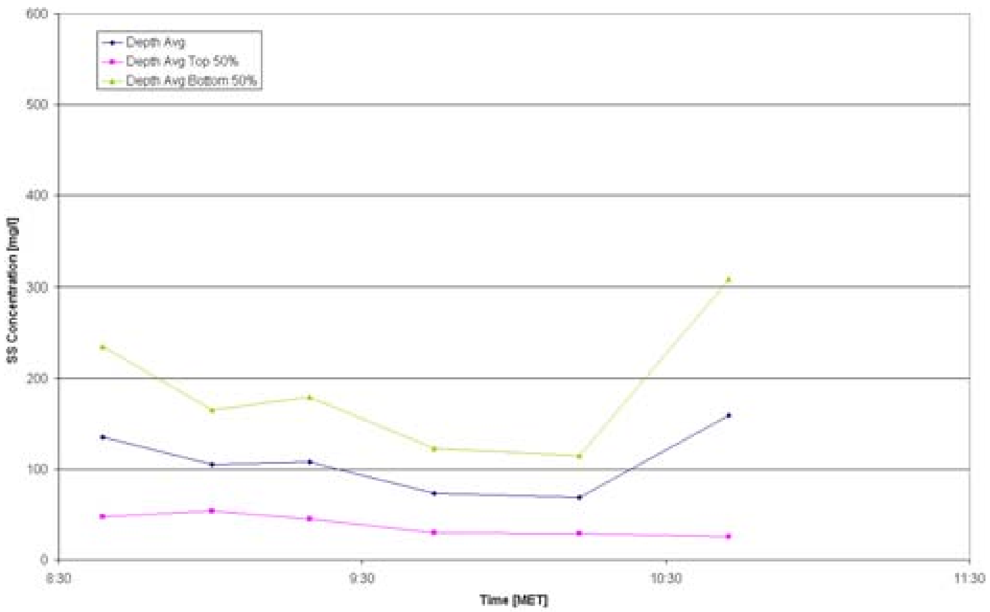
*In association with:* WL | delft hydraulics, GEMS International

| Location: | Date: |
|---|---|
| Kallo | 18/02/2005 |

*I/RA/11265/05.014/MSA*

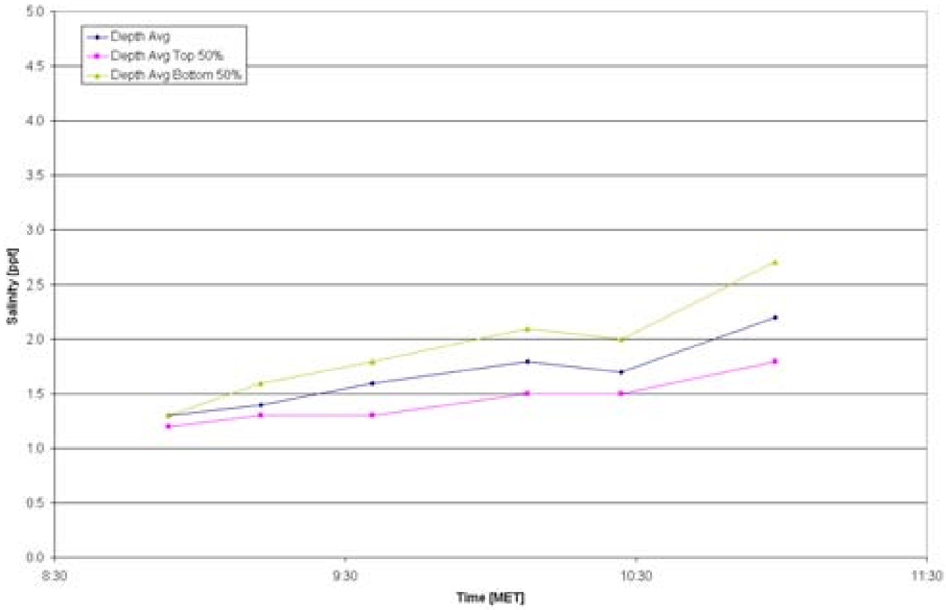
| 11265 HCBS - FEBRUARY 2005 SURVEY | Ed |
|---|---|

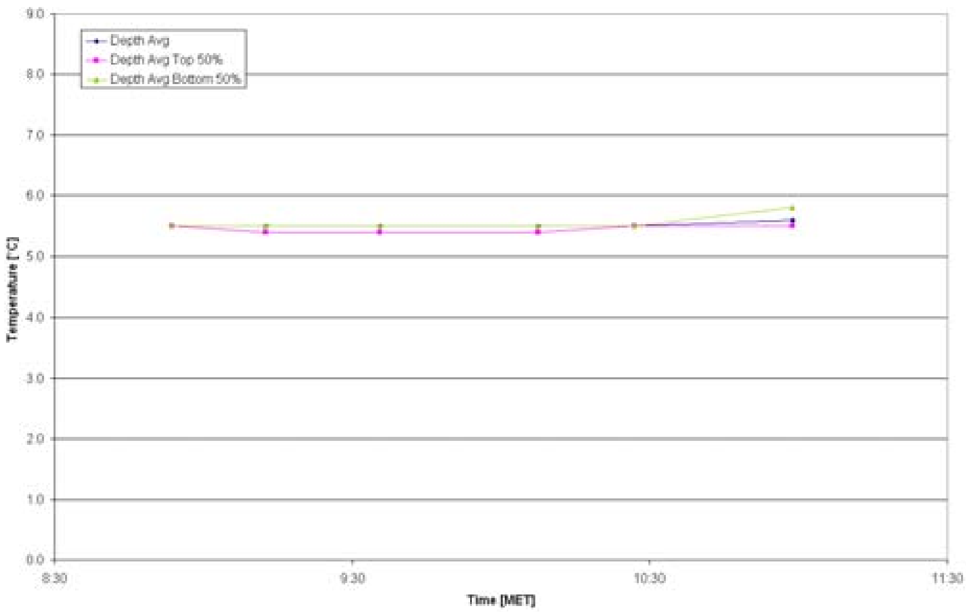



| SS Concentration Siltprofiler &<br>SS Concentration Navitracker-OBS | | *Data processed by:* |
|---|---|---|
| Location:<br>Kallo | Date:<br>18/02/2005 | *In association with:*<br>*I/RA/11265/05.014/MSA* |

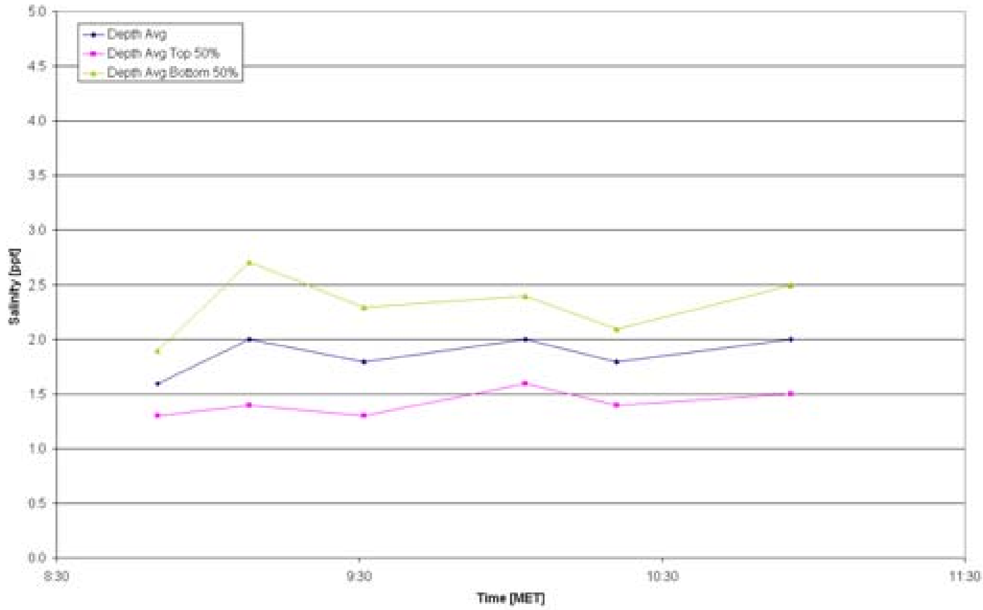
| 11265 HCBS - FEBRUARY 2005 SURVEY | Ea |
|---|---|

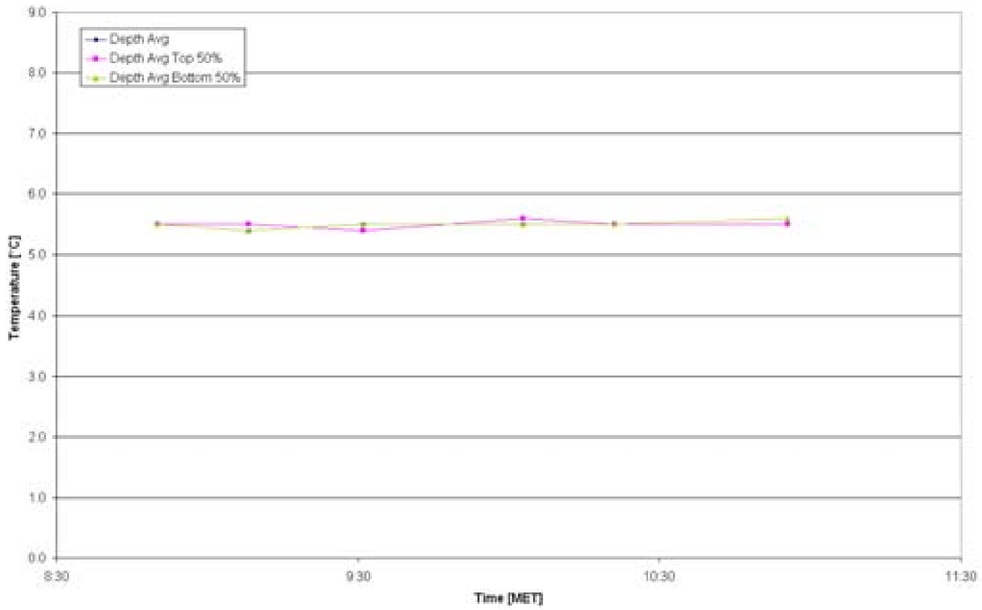



| Salinity & Temperature Siltprofiler | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* *I/RA/11265/05.014/MSA* |

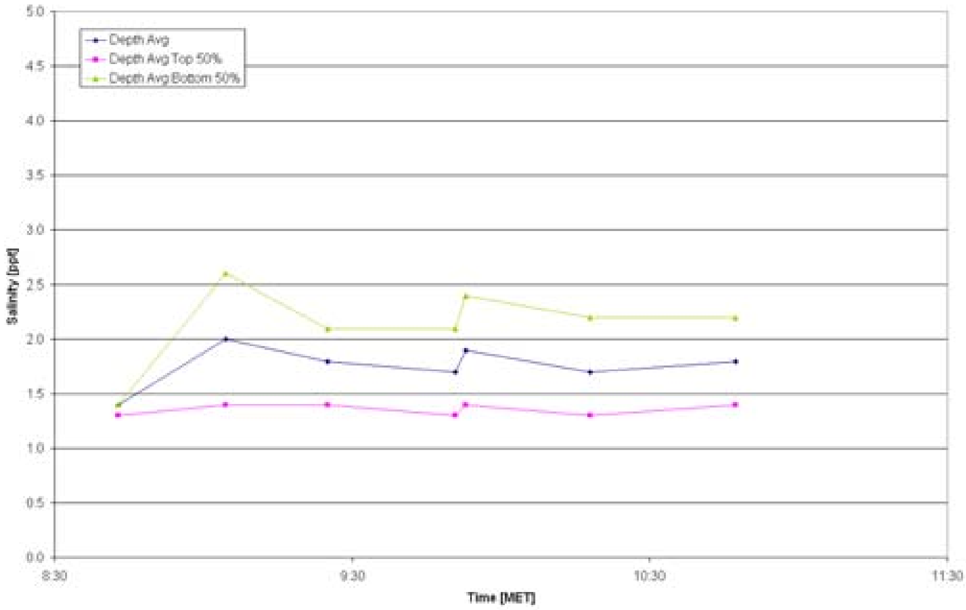
| 11265 HCBS - FEBRUARY 2005 SURVEY | Eb |
|---|---|

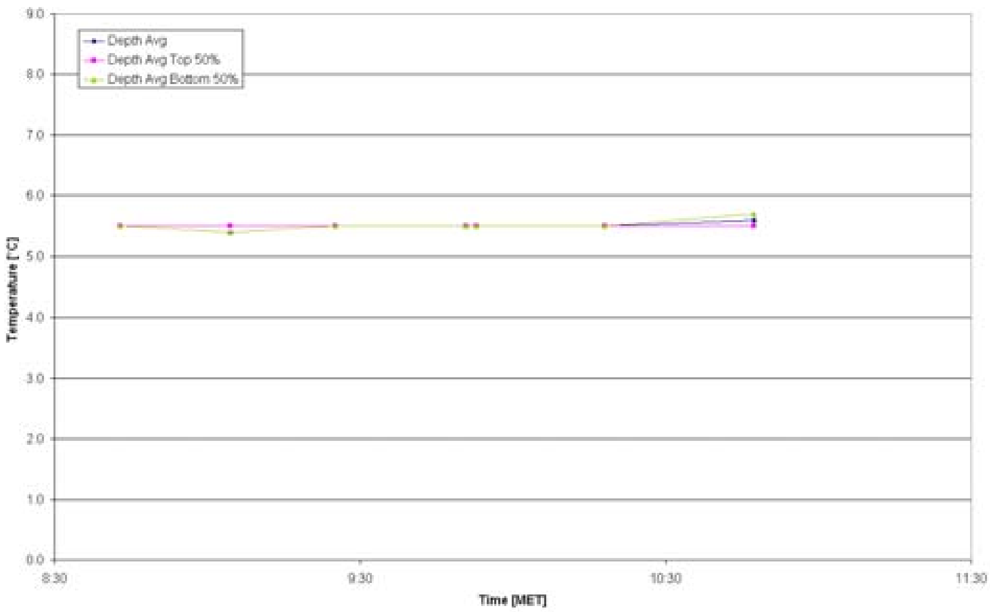



| Salinity & Temperature Siltprofiler | | Data processed by: |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | In association with: |
| | | I/RA/11265/05.014/MSA |

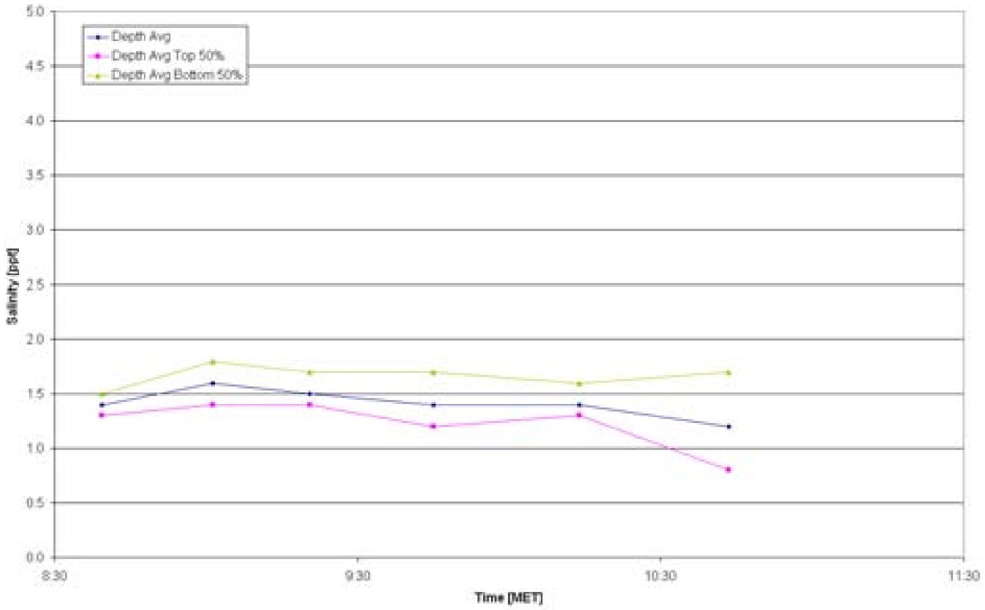
| 11265 HCBS - FEBRUARY 2005 SURVEY | Ec |
|---|---|

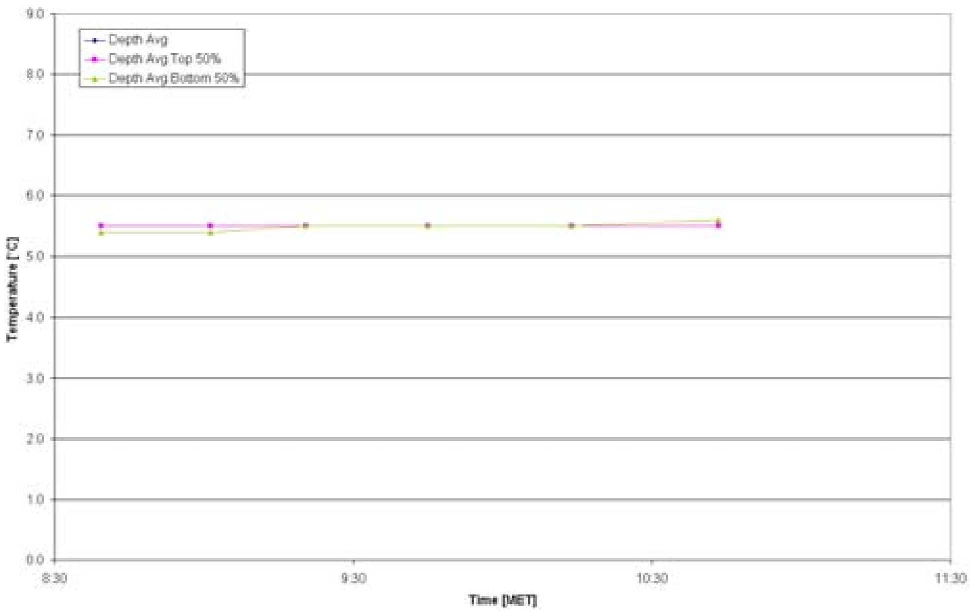



| Salinity & Temperature Siltprofiler | | *Data processed by:* IMDC |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* WL \| delft hydraulics, GEMS International<br>*I/RA/11265/05.014/MSA* |

| 11265 HCBS - FEBRUARY 2005 SURVEY | Ed |
|---|---|




| Salinity & Temperature Siltprofiler | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* *I/RA/11265/05.014/MSA* |

| Siltprofiles | | | Depth Avg | | | Top 50% Depth Avg | | | Bottom 50% Depth Avg | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Name | Time after HW | Time | Temp | Sal | SS Conc | Temp | Sal | SS Conc | Temp | Sal | SS Conc |
| | [hh:mm] | [hh:mm MET] | [°C] | [ppt] | [mg/l] | [°C] | [ppt] | [mg/l] | [°C] | [ppt] | [mg/l] |
| 36 Ea | -1:36 | 8:53 | 5,5 | 1,3 | 99 | 5,5 | 1,2 | 68 | 5,5 | 1,3 | 131 |
| 41 Ea | -1:17 | 9:12 | 5,5 | 1,4 | 78 | 5,4 | 1,3 | 70 | 5,5 | 1,6 | 86 |
| 46 Ea | -0:54 | 9:35 | 5,5 | 1,6 | 72 | 5,4 | 1,3 | 57 | 5,5 | 1,8 | 86 |
| 52 Ea | -0:22 | 10:07 | 5,5 | 1,8 | 61 | 5,4 | 1,5 | 49 | 5,5 | 2,1 | 73 |
| 57 Ea | -0:03 | 10:26 | 5,5 | 1,7 | 49 | 5,5 | 1,5 | 50 | 5,5 | 2 | 49 |
| 62 Ea | 0:28 | 10:58 | 5,6 | 2,2 | 98 | 5,5 | 1,8 | 46 | 5,8 | 2,7 | 151 |
| | | | | | | | | | | | |
| 35 Eb | -1:39 | 8:50 | 5,5 | 1,6 | 108 | 5,5 | 1,3 | 66 | 5,5 | 1,9 | 151 |
| 40 Eb | -1:21 | 9:08 | 5,4 | 2 | 96 | 5,5 | 1,4 | 52 | 5,4 | 2,7 | 142 |
| 45 Eb | -0:59 | 9:30 | 5,5 | 1,8 | 68 | 5,4 | 1,3 | 46 | 5,5 | 2,3 | 91 |
| 51 Eb | -0:27 | 10:02 | 5,5 | 2 | 62 | 5,6 | 1,6 | 51 | 5,5 | 2,4 | 74 |
| 56 Eb | -0:09 | 10:20 | 5,5 | 1,8 | 48 | 5,5 | 1,4 | 39 | 5,5 | 2,1 | 57 |
| 61 Eb | 0:25 | 10:55 | 5,5 | 2 | 64 | 5,5 | 1,5 | 37 | 5,6 | 2,5 | 90 |
| | | | | | | | | | | | |
| 34 Ec | -1:47 | 8:42 | 5,5 | 1,4 | 68 | 5,5 | 1,3 | 60 | 5,5 | 1,4 | 76 |
| 39 Ec | -1:25 | 9:04 | 5,4 | 2 | 77 | 5,5 | 1,4 | 61 | 5,4 | 2,6 | 93 |
| 44 Ec | -1:04 | 9:25 | 5,5 | 1,8 | 71 | 5,5 | 1,4 | 57 | 5,5 | 2,1 | 86 |
| 49 Ec | -0:39 | 9:50 | 5,5 | 1,7 | 95 | 5,5 | 1,3 | 41 | 5,5 | 2,1 | 149 |
| 50 Ec | -0:37 | 9:52 | 5,5 | 1,9 | 61 | 5,5 | 1,4 | 43 | 5,5 | 2,4 | 78 |
| 55 Ec | -0:12 | 10:17 | 5,5 | 1,7 | 49 | 5,5 | 1,3 | 37 | 5,5 | 2,2 | 61 |
| 60 Ec | 0:17 | 10:47 | 5,6 | 1,8 | 75 | 5,5 | 1,4 | 34 | 5,7 | 2,2 | 117 |
| | | | | | | | | | | | |
| 33 Ed | -1:50 | 8:39 | 5,5 | 1,4 | 91 | 5,5 | 1,3 | 52 | 5,4 | 1,5 | 131 |
| 38 Ed | -1:28 | 9:01 | 5,5 | 1,6 | 101 | 5,5 | 1,4 | 73 | 5,4 | 1,8 | 128 |

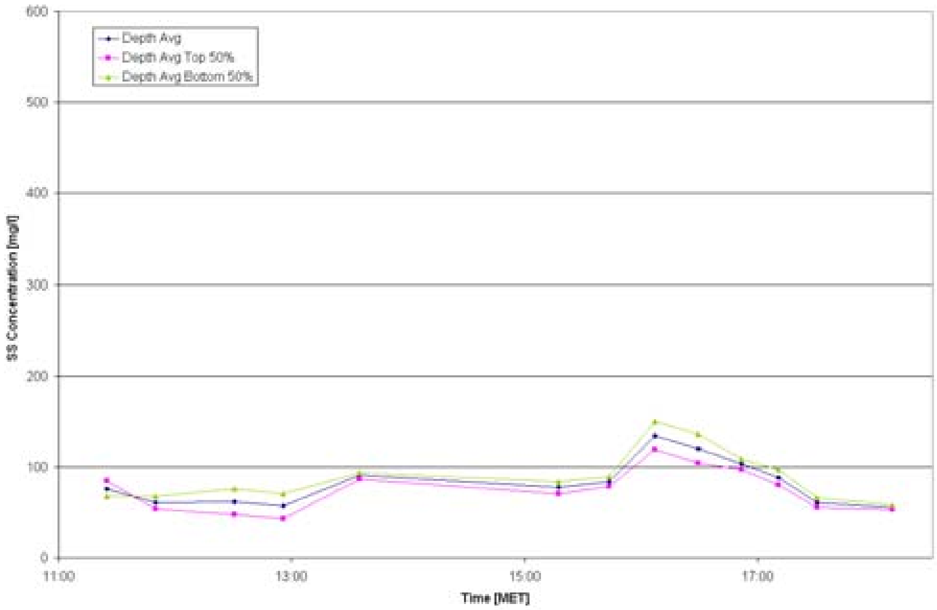
| **Siltprofiles** | | | **Depth Avg** | | | **Top 50% Depth Avg** | | | **Bottom 50% Depth Avg** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Name** | **Time after HW** | **Time** | **Temp** | **Sal** | **SS Conc** | **Temp** | **Sal** | **SS Conc** | **Temp** | **Sal** | **SS Conc** |
| | **[hh:mm]** | **[hh:mm MET]** | **[°C]** | **[ppt]** | **[mg/l]** | **[°C]** | **[ppt]** | **[mg/l]** | **[°C]** | **[ppt]** | **[mg/l]** |
| 43 Ed | -1:09 | 9:20 | 5,5 | 1,5 | 63 | 5,5 | 1,4 | 51 | 5,5 | 1,7 | 75 |
| 48 Ed | -0:45 | 9:44 | 5,5 | 1,4 | 44 | 5,5 | 1,2 | 37 | 5,5 | 1,7 | 50 |
| 54 Ed | -0:16 | 10:13 | 5,5 | 1,4 | 42 | 5,5 | 1,3 | 35 | 5,5 | 1,6 | 49 |
| 59 Ed | 0:13 | 10:43 | 5,5 | 1,2 | 40 | 5,5 | 0,8 | 33 | 5,6 | 1,7 | 49 |

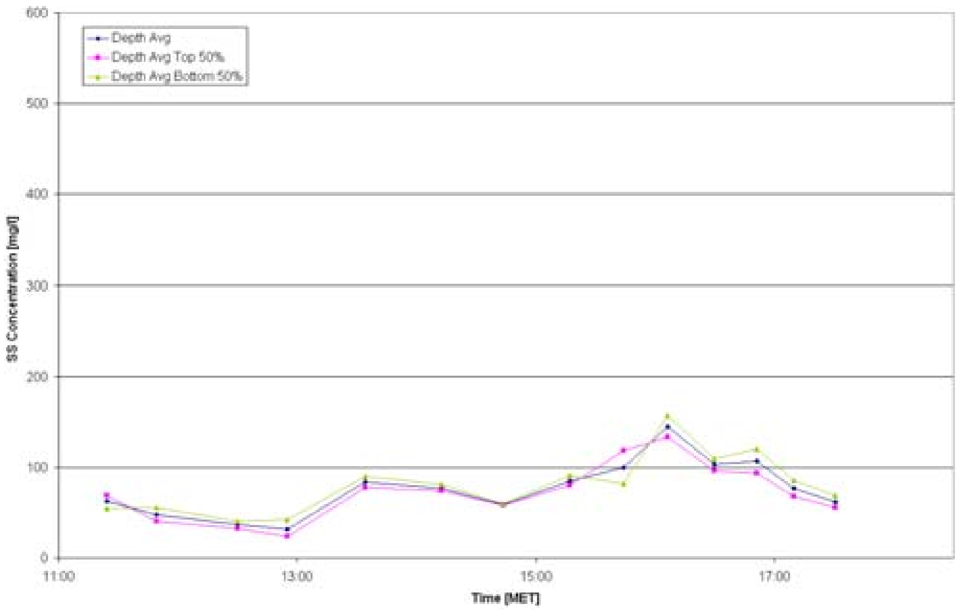
| NaviOBS Name | Time after HW [hh:mm] | Time [hh:mm MET] | Depth Avg SS conc [mg/l] | Top 50% Depth Avg SS conc [mg/l] | Bottom 50% Depth Avg SS conc [mg/l] |
|---|---|---|---|---|---|
| 36 Ea | -1:37 | 8:52 | 85 | 33 | 145 |
| 41 Ea | -1:17 | 9:12 | 70 | 43 | 106 |
| 46 Ea | -0:55 | 9:34 | 83 | 43 | 136 |
| 52 Ea | -0:24 | 10:05 | 60 | 35 | 92 |
| 57 Ea | -0:04 | 10:25 | 84 | 35 | 143 |
| 62 Ea | 0:27 | 10:57 | 133 | 38 | 249 |
| | | | | | |
| 35 Eb | -1:40 | 8:49 | 148 | 57 | 244 |
| 40 Eb | -1:22 | 9:07 | 77 | 39 | 121 |
| 45 Eb | -1:00 | 9:29 | 64 | 39 | 96 |
| 51 Eb | -0:28 | 10:01 | 70 | 36 | 109 |
| 56 Eb | -0:10 | 10:19 | 105 | 31 | 197 |
| 61 Eb | 0:24 | 10:54 | 85 | 27 | 151 |
| | | | | | |
| 34 Ec | -1:47 | 8:42 | 108 | 49 | 173 |
| 39 Ec | -1:27 | 9:02 | 150 | 85 | 217 |
| 44 Ec | -1:06 | 9:23 | 205 | 203 | 207 |
| 49 Ec | -0:40 | 9:49 | 69 | 40 | 103 |
| 55 Ec | -0:12 | 10:17 | 76 | 29 | 124 |
| 60 Ec | 0:16 | 10:46 | 69 | 28 | 111 |
| | | | | | |
| 33 Ed | -1:51 | 8:38 | 135 | 48 | 235 |
| 38 Ed | -1:29 | 9:00 | 105 | 54 | 165 |

| NaviOBS Name | Time after HW [hh:mm] | Time [hh:mm MET] | Depth Avg SS conc [mg/l] | Top 50% Depth Avg SS conc [mg/l] | Bottom 50% Depth Avg SS conc [mg/l] |
|---|---|---|---|---|---|
| 43 Ed | -1:10 | 9:19 | 108 | 45 | 179 |
| 48 Ed | -0:45 | 9:44 | 73 | 30 | 123 |
| 54 Ed | -0:17 | 10:12 | 69 | 29 | 115 |
| 59 Ed | 0:12 | 10:42 | 159 | 26 | 308 |

## H.3 Transect D

| 11265 HCBS - FEBRUARY 2005 SURVEY | Da |
|---|---|




SS Concentration Siltprofiler &
SS Concentration Navitracker-OBS

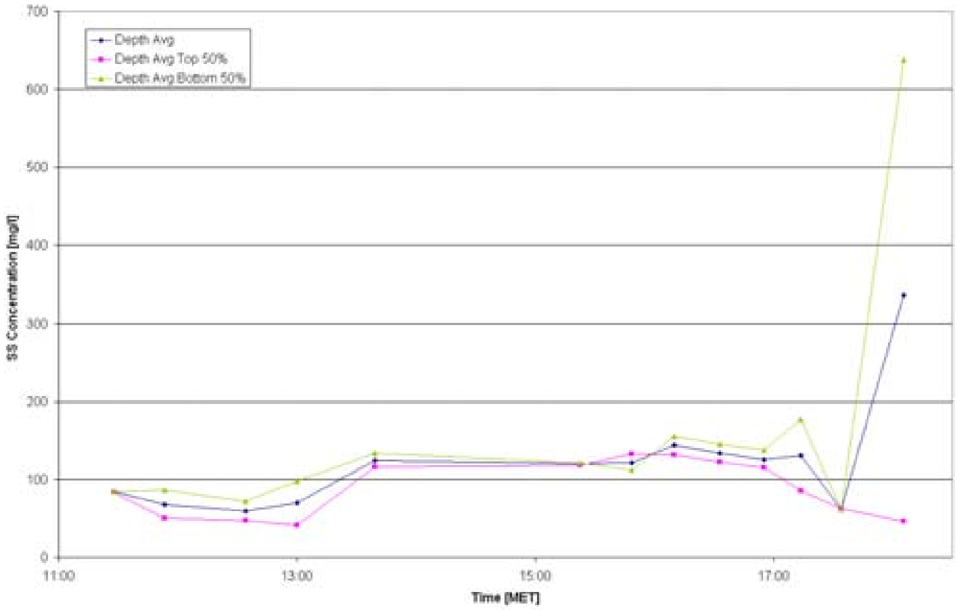
*Data processed by:*

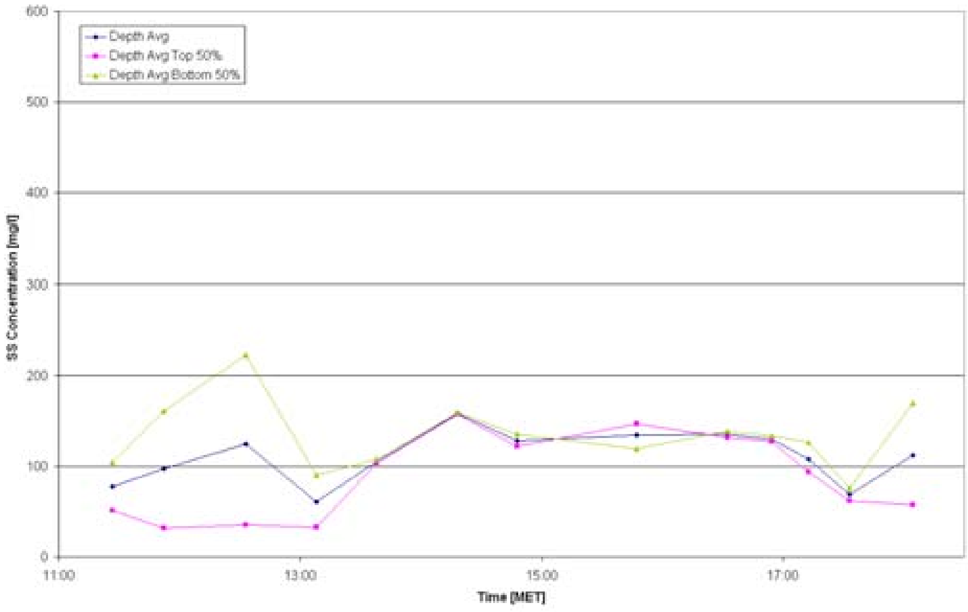
*In association with:*

| Location: | Date: |
|---|---|
| Kallo | 18/02/2005 |

*I/RA/11265/05.014/MSA*

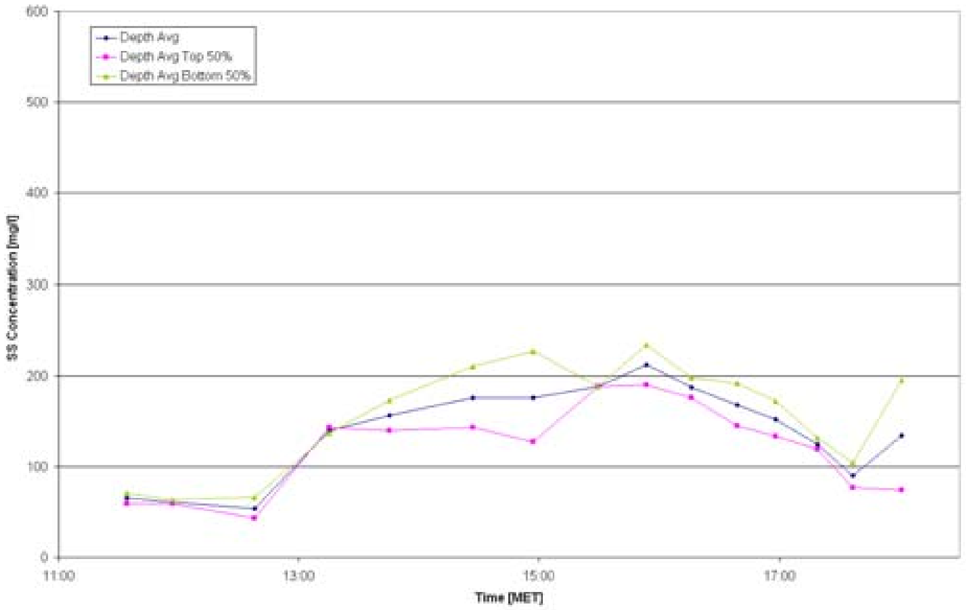
| 11265 HCBS - FEBRUARY 2005 SURVEY | Db |
|---|---|

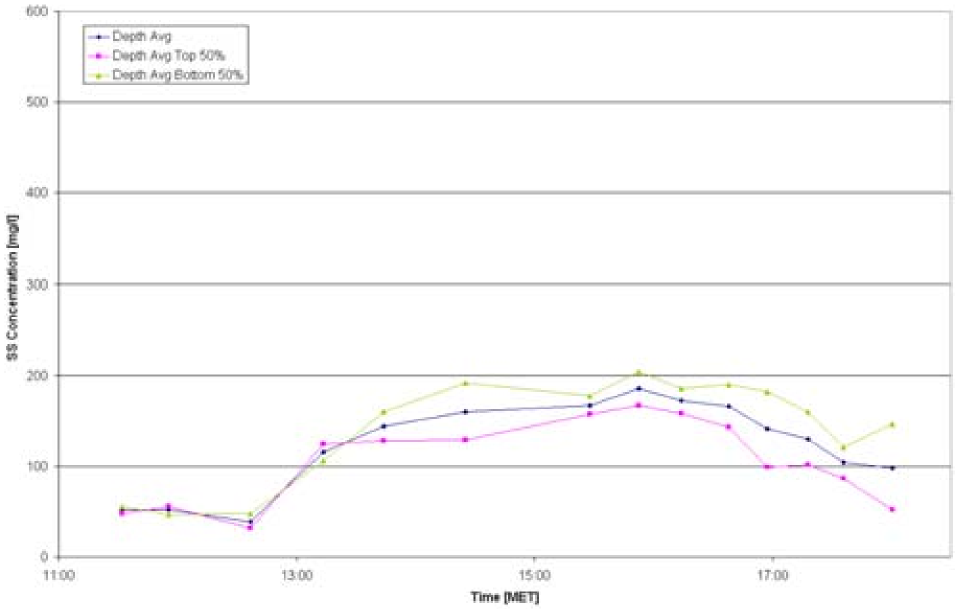



| SS Concentration Siltprofiler & SS Concentration Navitracker-OBS | | *Data processed by:* IMDC |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* WL \| delft hydraulics, GEMS International |
| | | *I/RA/11265/05.014/MSA* |

| 11265 HCBS - FEBRUARY 2005 SURVEY | Dc |
|---|---|




SS Concentration Siltprofiler &
SS Concentration Navitracker-OBS

*Data processed by:*

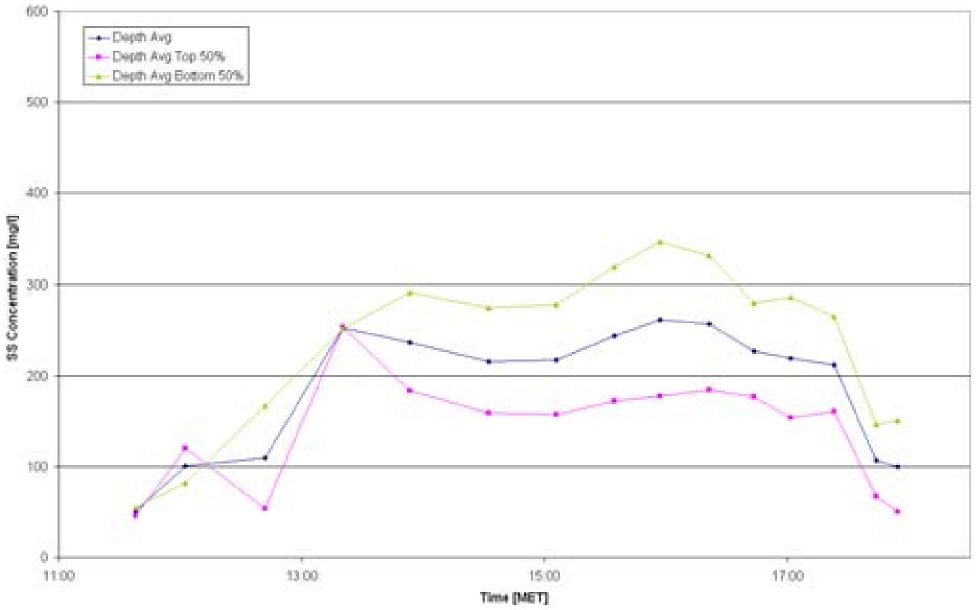
*In association with:*

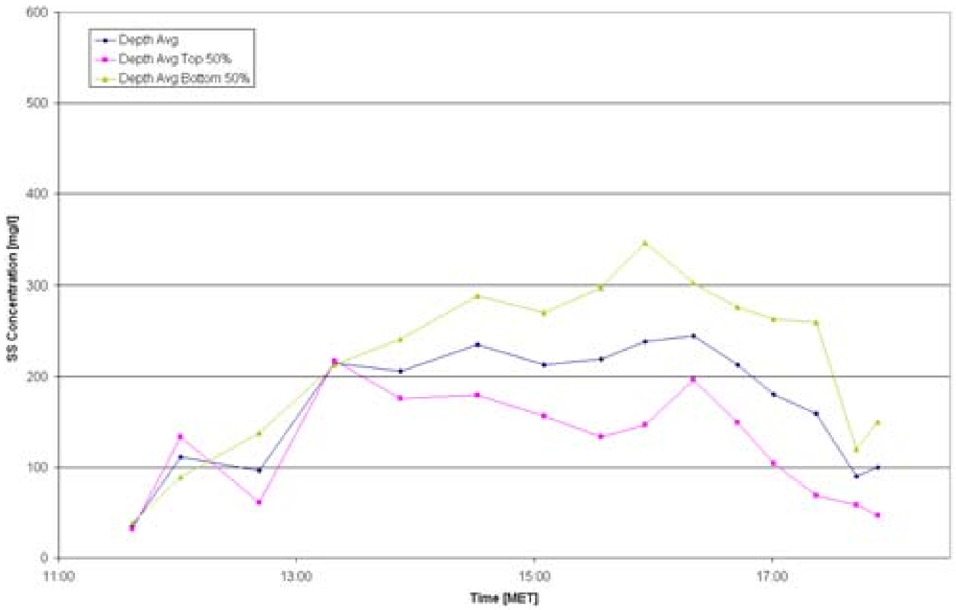
Location:
Kallo

Date:
18/02/2005

*I/RA/11265/05.014/MSA*

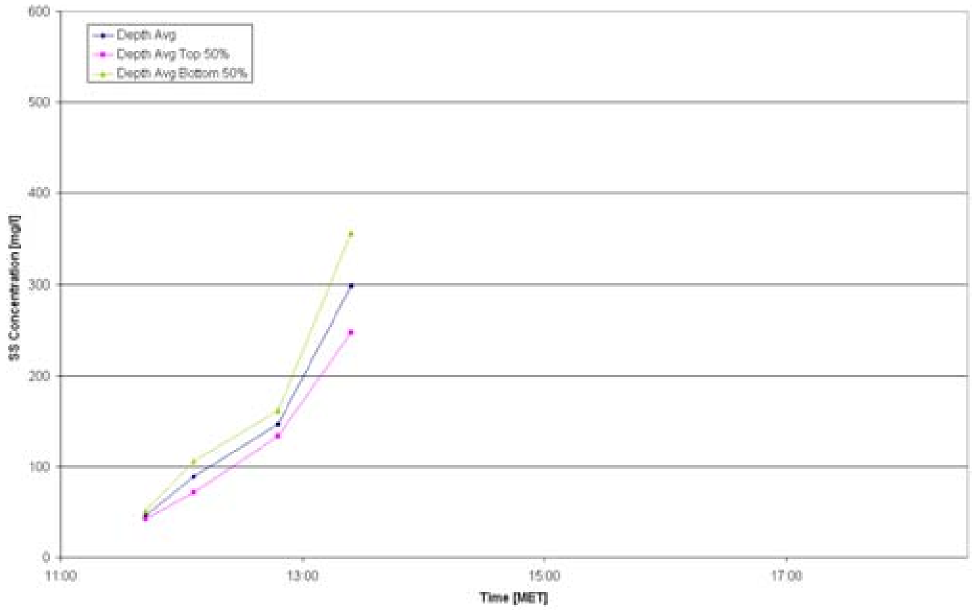
| 11265 HCBS - FEBRUARY 2005 SURVEY | Dd |
|---|---|

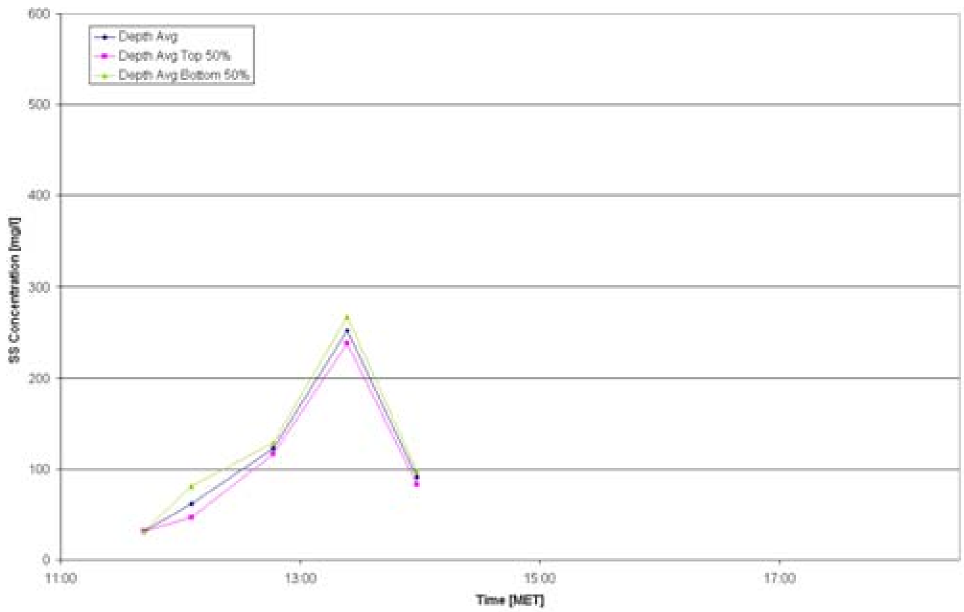



| SS Concentration Siltprofiler & SS Concentration Navitracker-OBS | | Data processed by: |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | In association with: |
| | | I/RA/11265/05.014/MSA |

| 11265 HCBS - FEBRUARY 2005 SURVEY | De |
|---|---|




SS Concentration Siltprofiler &
SS Concentration Navitracker-OBS

*Data processed by:*

*In association with:*

| Location: Kallo | Date: 18/02/2005 |
|---|---|

*I/RA/11265/05.014/MSA*

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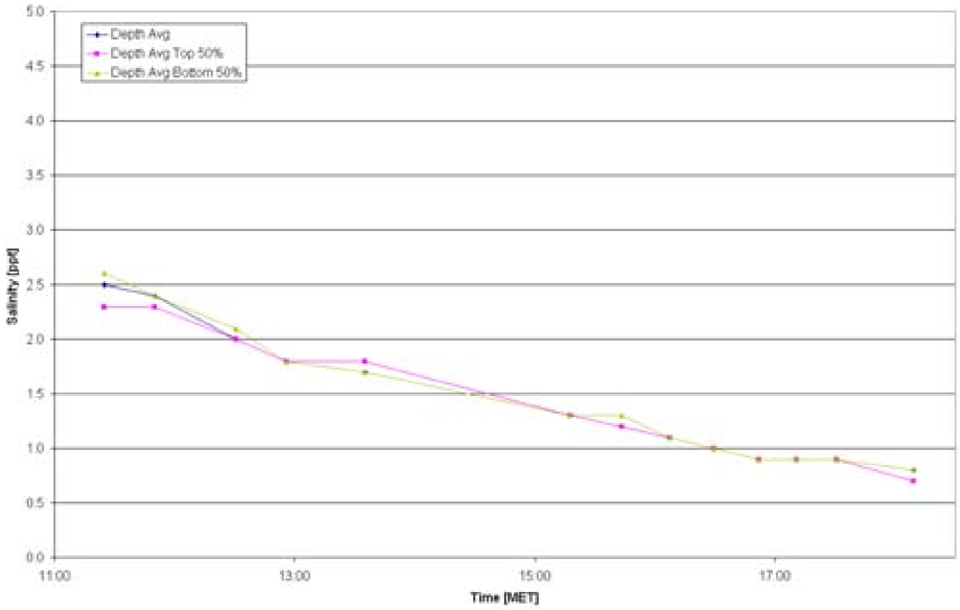
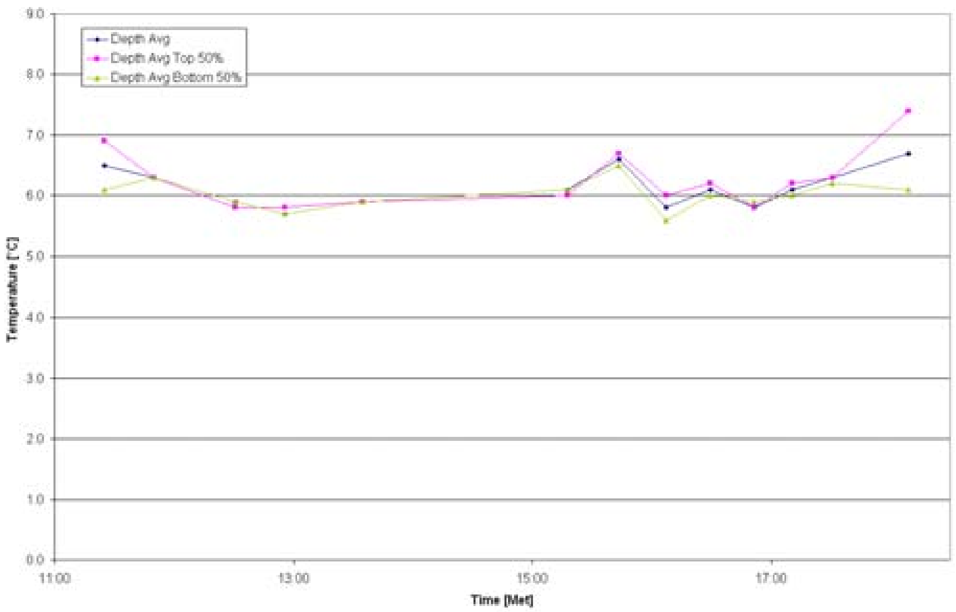
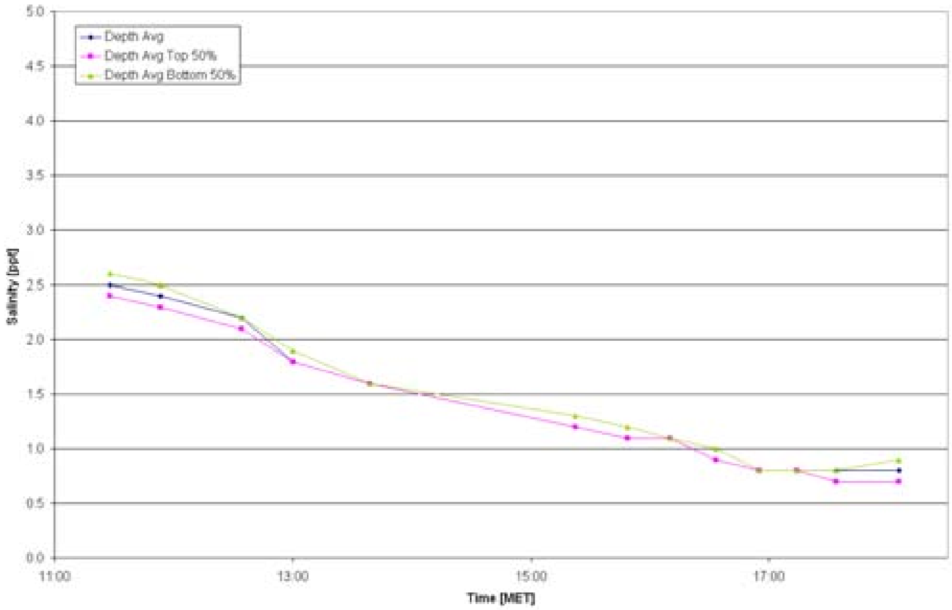
| 11265 HCBS - FEBRUARY 2005 SURVEY | Da |
|---|---|

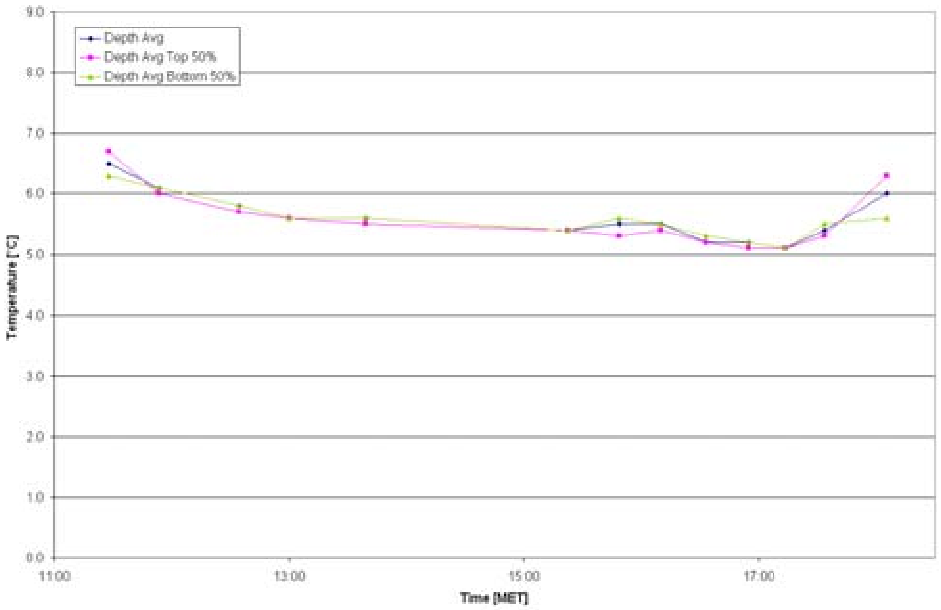



| Salinity & Temperature Siltprofiler | | *Data processed by:* IMDC |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* WL \| delft hydraulics, GEMS International<br>*I/RA/11265/05.014/MSA* |

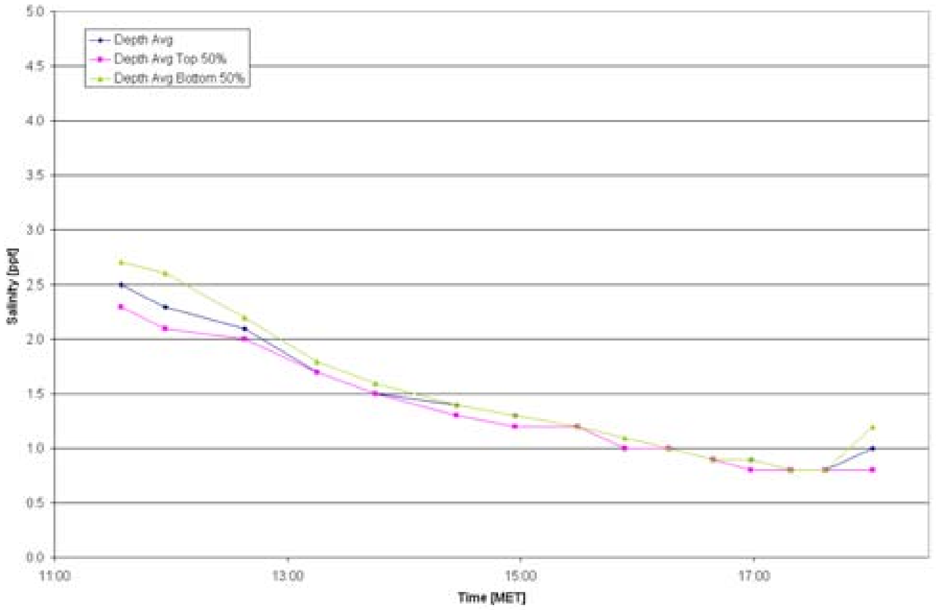
| 11265 HCBS - FEBRUARY 2005 SURVEY | Db |
|---|---|

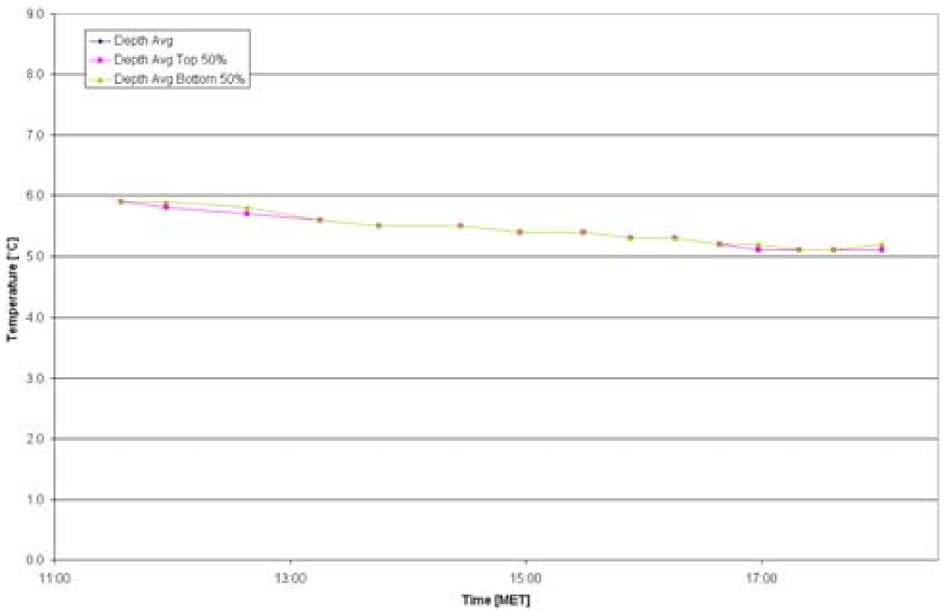



| Salinity & Temperature Siltprofiler | | Data processed by: |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | In association with: I/RA/11265/05.014/MSA |

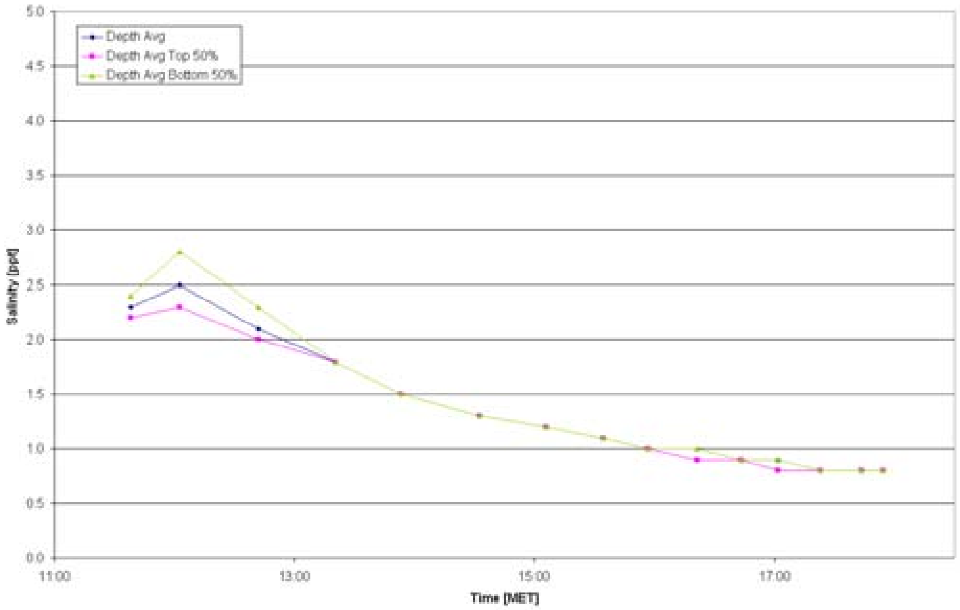
| 11265 HCBS - FEBRUARY 2005 SURVEY | Dc |
|---|---|

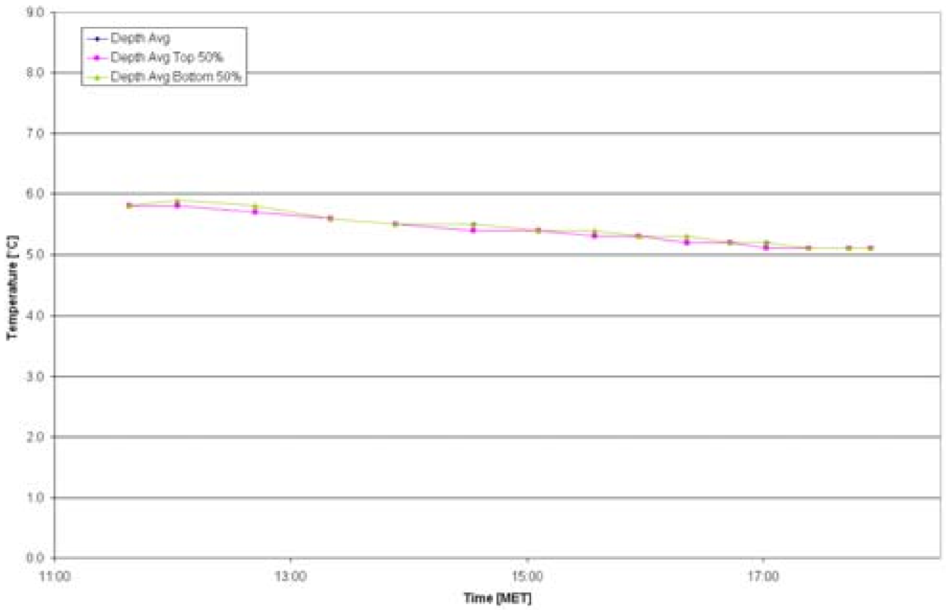



| Salinity & Temperature Siltprofiler | | *Data processed by:* IMDC |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* WL \| delft hydraulics, GEMS International |
| | | *I/RA/11265/05.014/MSA* |

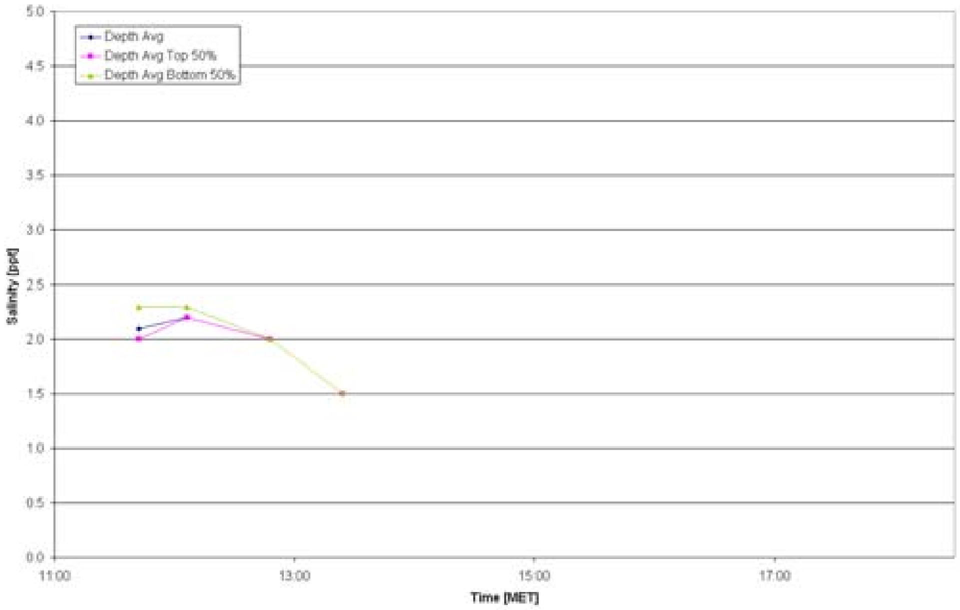
| 11265 HCBS - FEBRUARY 2005 SURVEY | Dd |
|---|---|

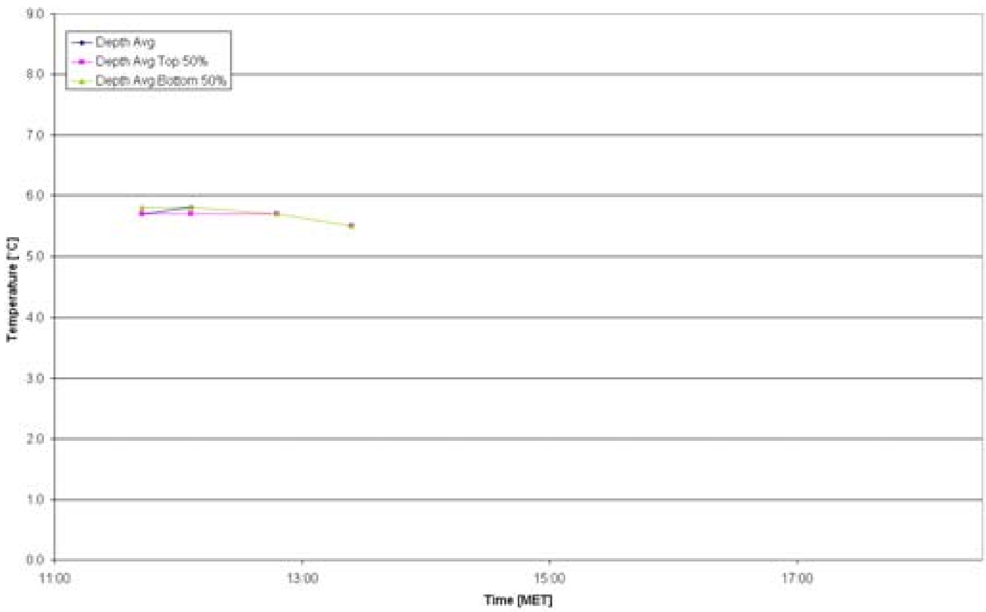



| Salinity & Temperature Siltprofiler | | Data processed by: |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | In association with: |
| | | I/RA/11265/05.014/MSA |

| 11265 HCBS - FEBRUARY 2005 SURVEY | De |
|---|---|




| Salinity & Temperature Siltprofiler | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* |
| | | *I/RA/11265/05.014/MSA* |

| Siltprofiles | | | Depth Avg | | | Top 50% Depth Avg | | | Bottom 50% Depth Avg | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Name | Time after HW | Time | Temp | Sal | SS Conc | Temp | Sal | SS Conc | Temp | Sal | SS Conc |
| | [hh:mm] | [hh:mm MET] | [°C] | [ppt] | [mg/l] | [°C] | [ppt] | [mg/l] | [°C] | [ppt] | [mg/l] |
| 64 Da | 0:54 | 11:24 | 6,5 | 2,5 | 76 | 6,9 | 2,3 | 85 | 6,1 | 2,6 | 68 |
| 70 Da | 1:20 | 11:50 | 6,3 | 2,4 | 61 | 6,3 | 2,3 | 54 | 6,3 | 2,4 | 68 |
| 76 Da | 2:00 | 12:30 | 5,9 | 2 | 62 | 5,8 | 2 | 48 | 5,9 | 2,1 | 76 |
| 82 Da | 2:25 | 12:55 | 5,7 | 1,8 | 57 | 5,8 | 1,8 | 43 | 5,7 | 1,8 | 71 |
| 90 Da | 3:05 | 13:35 | 5,9 | 1,7 | 91 | 5,9 | 1,8 | 87 | 5,9 | 1,7 | 94 |
| 105 Da | 4:47 | 15:17 | 6,1 | 1,3 | 78 | 6 | 1,3 | 71 | 6,1 | 1,3 | 84 |
| 110 Da | 5:13 | 15:43 | 6,6 | 1,2 | 84 | 6,7 | 1,2 | 79 | 6,5 | 1,3 | 89 |
| 115 Da | 5:37 | 16:07 | 5,8 | 1,1 | 134 | 6 | 1,1 | 119 | 5,6 | 1,1 | 150 |
| 120 Da | 5:59 | 16:29 | 6,1 | 1 | 120 | 6,2 | 1 | 104 | 6 | 1 | 136 |
| 125 Da | -6:48 | 16:51 | 5,8 | 0,9 | 103 | 5,8 | 0,9 | 97 | 5,9 | 0,9 | 109 |
| 130 Da | -6:29 | 17:10 | 6,1 | 0,9 | 88 | 6,2 | 0,9 | 80 | 6 | 0,9 | 97 |
| 135 Da | -6:09 | 17:30 | 6,3 | 0,9 | 61 | 6,3 | 0,9 | 56 | 6,2 | 0,9 | 66 |
| 143 Da | -5:30 | 18:09 | 6,7 | 0,8 | 56 | 7,4 | 0,7 | 53 | 6,1 | 0,8 | 58 |
| | | | | | | | | | | | |
| 65 Db | 0:58 | 11:28 | 6,5 | 2,5 | 85 | 6,7 | 2,4 | 84 | 6,3 | 2,6 | 85 |
| 71 Db | 1:23 | 11:53 | 6,1 | 2,4 | 68 | 6 | 2,3 | 51 | 6,1 | 2,5 | 87 |
| 77 Db | 2:04 | 12:34 | 5,8 | 2,2 | 60 | 5,7 | 2,1 | 47 | 5,8 | 2,2 | 72 |
| 83 Db | 2:30 | 13:00 | 5,6 | 1,8 | 70 | 5,6 | 1,8 | 41 | 5,6 | 1,9 | 98 |
| 91 Db | 3:09 | 13:39 | 5,6 | 1,6 | 125 | 5,5 | 1,6 | 116 | 5,6 | 1,6 | 134 |
| 106 Db | 4:52 | 15:22 | 5,4 | 1,2 | 121 | 5,4 | 1,2 | 119 | 5,4 | 1,3 | 122 |
| 111 Db | 5:18 | 15:48 | 5,5 | 1,1 | 122 | 5,3 | 1,1 | 133 | 5,6 | 1,2 | 112 |
| 116 Db | 5:39 | 16:09 | 5,5 | 1,1 | 144 | 5,4 | 1,1 | 132 | 5,5 | 1,1 | 156 |
| 121 Db | 6:02 | 16:32 | 5,2 | 0,9 | 134 | 5,2 | 0,9 | 123 | 5,3 | 1 | 145 |
| 126 Db | -6:45 | 16:55 | 5,2 | 0,8 | 126 | 5,1 | 0,8 | 115 | 5,2 | 0,8 | 138 |
| 131 Db | -6:26 | 17:13 | 5,1 | 0,8 | 131 | 5,1 | 0,8 | 86 | 5,1 | 0,8 | 177 |

| **Siltprofiles** | | | **Depth Avg** | | | **Top 50% Depth Avg** | | | **Bottom 50% Depth Avg** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Name** | **Time after HW** | **Time** | **Temp** | **Sal** | **SS Conc** | **Temp** | **Sal** | **SS Conc** | **Temp** | **Sal** | **SS Conc** |
| | **[hh:mm]** | **[hh:mm MET]** | **[°C]** | **[ppt]** | **[mg/l]** | **[°C]** | **[ppt]** | **[mg/l]** | **[°C]** | **[ppt]** | **[mg/l]** |
| 136 Db | -6:06 | 17:33 | 5,4 | 0,8 | 62 | 5,3 | 0,7 | 63 | 5,5 | 0,8 | 62 |
| 142 Db | -5:34 | 18:05 | 6 | 0,8 | 337 | 6,3 | 0,7 | 46 | 5,6 | 0,9 | 638 |
| | | | | | | | | | | | |
| 66 Dc | 1:04 | 11:34 | 5,9 | 2,5 | 65 | 5,9 | 2,3 | 59 | 5,9 | 2,7 | 71 |
| 72 Dc | 1:26 | 11:56 | 5,8 | 2,3 | 61 | 5,8 | 2,1 | 59 | 5,9 | 2,6 | 64 |
| 78 Dc | 2:08 | 12:38 | 5,7 | 2,1 | 54 | 5,7 | 2 | 43 | 5,8 | 2,2 | 66 |
| 86 Dc | 2:45 | 13:15 | 5,6 | 1,7 | 140 | 5,6 | 1,7 | 143 | 5,6 | 1,8 | 137 |
| 92 Dc | 3:15 | 13:45 | 5,5 | 1,5 | 156 | 5,5 | 1,5 | 140 | 5,5 | 1,6 | 173 |
| 97 Dc | 3:56 | 14:26 | 5,5 | 1,4 | 176 | 5,5 | 1,3 | 143 | 5,5 | 1,4 | 210 |
| 102 Dc | 4:27 | 14:57 | 5,4 | 1,3 | 176 | 5,4 | 1,2 | 127 | 5,4 | 1,3 | 227 |
| 107 Dc | 4:59 | 15:29 | 5,4 | 1,2 | 188 | 5,4 | 1,2 | 188 | 5,4 | 1,2 | 188 |
| 112 Dc | 5:23 | 15:53 | 5,3 | 1 | 212 | 5,3 | 1 | 190 | 5,3 | 1,1 | 234 |
| 117 Dc | 5:46 | 16:16 | 5,3 | 1 | 187 | 5,3 | 1 | 176 | 5,3 | 1 | 198 |
| 122 Dc | 6:08 | 16:38 | 5,2 | 0,9 | 168 | 5,2 | 0,9 | 145 | 5,2 | 0,9 | 192 |
| 127 Dc | -6:41 | 16:58 | 5,1 | 0,9 | 152 | 5,1 | 0,8 | 133 | 5,2 | 0,9 | 172 |
| 132 Dc | -6:20 | 17:19 | 5,1 | 0,8 | 125 | 5,1 | 0,8 | 119 | 5,1 | 0,8 | 132 |
| 137 Dc | -6:03 | 17:36 | 5,1 | 0,8 | 90 | 5,1 | 0,8 | 77 | 5,1 | 0,8 | 104 |
| 141 Dc | -5:38 | 18:01 | 5,1 | 1 | 134 | 5,1 | 0,8 | 74 | 5,2 | 1,2 | 195 |
| | | | | | | | | | | | |
| 67 Dd | 1:08 | 11:38 | 5,8 | 2,3 | 51 | 5,8 | 2,2 | 46 | 5,8 | 2,4 | 55 |
| 73 Dd | 1:32 | 12:02 | 5,8 | 2,5 | 101 | 5,8 | 2,3 | 120 | 5,9 | 2,8 | 82 |
| 79 Dd | 2:12 | 12:42 | 5,7 | 2,1 | 110 | 5,7 | 2 | 54 | 5,8 | 2,3 | 167 |
| 87 Dd | 2:50 | 13:20 | 5,6 | 1,8 | 253 | 5,6 | 1,8 | 254 | 5,6 | 1,8 | 252 |
| 93 Dd | 3:23 | 13:53 | 5,5 | 1,5 | 237 | 5,5 | 1,5 | 184 | 5,5 | 1,5 | 292 |

| Siltprofiles | | | Depth Avg | | | Top 50% Depth Avg | | | Bottom 50% Depth Avg | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Name | Time after HW | Time | Temp | Sal | SS Conc | Temp | Sal | SS Conc | Temp | Sal | SS Conc |
| | [hh:mm] | [hh:mm MET] | [°C] | [ppt] | [mg/l] | [°C] | [ppt] | [mg/l] | [°C] | [ppt] | [mg/l] |
| 98 Dd | 4:02 | 14:32 | 5,5 | 1,3 | 216 | 5,4 | 1,3 | 159 | 5,5 | 1,3 | 275 |
| 103 Dd | 4:35 | 15:05 | 5,4 | 1,2 | 217 | 5,4 | 1,2 | 157 | 5,4 | 1,2 | 278 |
| 108 Dd | 5:04 | 15:34 | 5,3 | 1,1 | 244 | 5,3 | 1,1 | 172 | 5,4 | 1,1 | 319 |
| 113 Dd | 5:26 | 15:56 | 5,3 | 1 | 262 | 5,3 | 1 | 178 | 5,3 | 1 | 346 |
| 118 Dd | 5:51 | 16:21 | 5,2 | 0,9 | 257 | 5,2 | 0,9 | 185 | 5,3 | 1 | 331 |
| 123 Dd | 6:13 | 16:43 | 5,2 | 0,9 | 227 | 5,2 | 0,9 | 177 | 5,2 | 0,9 | 280 |
| 128 Dd | -6:38 | 17:01 | 5,2 | 0,9 | 219 | 5,1 | 0,8 | 154 | 5,2 | 0,9 | 286 |
| 133 Dd | -6:16 | 17:23 | 5,1 | 0,8 | 212 | 5,1 | 0,8 | 161 | 5,1 | 0,8 | 265 |
| 138 Dd | -5:56 | 17:43 | 5,1 | 0,8 | 107 | 5,1 | 0,8 | 67 | 5,1 | 0,8 | 147 |
| 140 Dd | -5:45 | 17:54 | 5,1 | 0,8 | 100 | 5,1 | 0,8 | 50 | 5,1 | 0,8 | 151 |
| | | | | | | | | | | | |
| 68 De | 1:12 | 11:42 | 5,7 | 2,1 | 46 | 5,7 | 2 | 42 | 5,8 | 2,3 | 51 |
| 74 De | 1:36 | 12:06 | 5,8 | 2,2 | 89 | 5,7 | 2,2 | 72 | 5,8 | 2,3 | 106 |
| 80 De | 2:17 | 12:47 | 5,7 | 2 | 147 | 5,7 | 2 | 133 | 5,7 | 2 | 162 |
| 88 De | 2:54 | 13:24 | 5,5 | 1,5 | 299 | 5,5 | 1,5 | 247 | 5,5 | 1,5 | 356 |

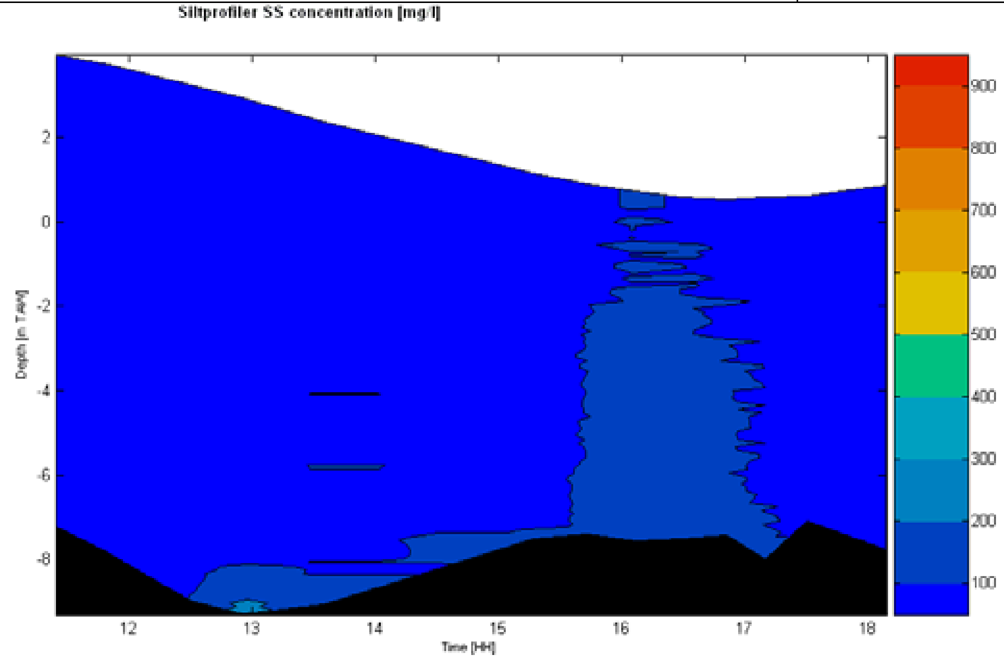
| NaviOBS Name | Time after HW [hh:mm] | Time [hh:mm MET] | Depth Avg SS conc [mg/l] | Top 50% Depth Avg SS conc [mg/l] | Bottom 50% Depth Avg SS conc [mg/l] |
|---|---|---|---|---|---|
| 64 Da | 0:54 | 11:24 | 63 | 69 | 55 |
| 70 Da | 1:19 | 11:49 | 48 | 41 | 56 |
| 76 Da | 1:59 | 12:29 | 37 | 33 | 41 |
| 82 Da | 2:25 | 12:55 | 32 | 24 | 42 |
| 90 Da | 3:04 | 13:34 | 84 | 78 | 90 |
| 95 Da | 3:42 | 14:12 | 77 | 74 | 81 |
| 100 Da | 4:13 | 14:43 | 59 | 58 | 60 |
| 105 Da | 4:46 | 15:16 | 85 | 80 | 91 |
| 110 Da | 5:14 | 15:44 | 100 | 118 | 82 |
| 115 Da | 5:36 | 16:06 | 145 | 133 | 157 |
| 120 Da | 5:59 | 16:29 | 103 | 96 | 110 |
| 125 Da | -6:48 | 16:51 | 107 | 94 | 120 |
| 130 Da | -6:30 | 17:09 | 77 | 68 | 86 |
| 135 Da | -6:09 | 17:30 | 62 | 56 | 69 |
| | | | | | |
| 65 Db | 0:56 | 11:26 | 78 | 51 | 104 |
| 71 Db | 1:22 | 11:52 | 97 | 32 | 161 |
| 77 Db | 2:03 | 12:33 | 125 | 35 | 223 |
| 83 Db | 2:38 | 13:08 | 61 | 33 | 90 |
| 91 Db | 3:07 | 13:37 | 105 | 103 | 108 |
| 106 Db | 3:48 | 14:18 | 158 | 157 | 159 |
| 111 Db | 4:17 | 14:47 | 128 | 122 | 135 |
| 116 Db | 5:17 | 15:47 | 134 | 147 | 119 |

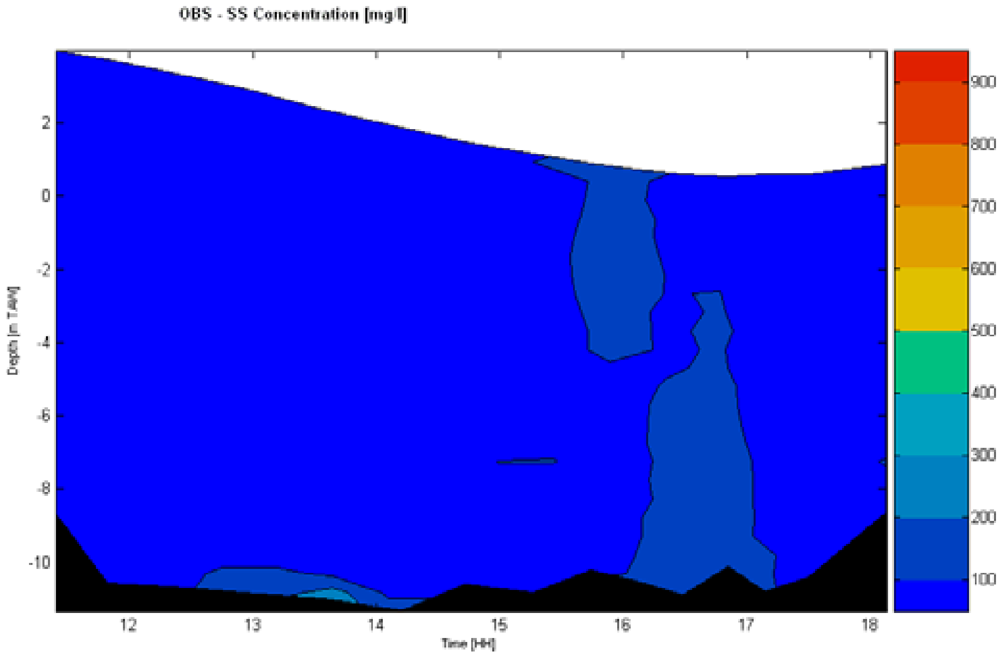
| **NaviOBS Name** | **Time after HW [hh:mm]** | **Time [hh:mm MET]** | **Depth Avg SS conc [mg/l]** | **Top 50% Depth Avg SS conc [mg/l]** | **Bottom 50% Depth Avg SS conc [mg/l]** |
|---|---|---|---|---|---|
| 121 Db | 6:02 | 16:32 | 135 | 132 | 139 |
| 126 Db | -6:45 | 16:54 | 130 | 127 | 133 |
| 131 Db | -6:27 | 17:12 | 108 | 94 | 126 |
| 136 Db | -6:07 | 17:32 | 69 | 62 | 76 |
| 142 Db | -5:35 | 18:04 | 112 | 57 | 170 |
| | | | | | |
| 66 Dc | 1:02 | 11:32 | 52 | 48 | 56 |
| 72 Dc | 1:25 | 11:55 | 52 | 56 | 47 |
| 78 Dc | 2:06 | 12:36 | 39 | 32 | 48 |
| 86 Dc | 2:43 | 13:13 | 116 | 125 | 106 |
| 92 Dc | 3:13 | 13:43 | 144 | 128 | 160 |
| 97 Dc | 3:55 | 14:25 | 160 | 129 | 192 |
| 107 Dc | 4:57 | 15:27 | 167 | 157 | 178 |
| 112 Dc | 5:22 | 15:52 | 186 | 167 | 204 |
| 117 Dc | 5:44 | 16:14 | 172 | 158 | 186 |
| 122 Dc | 6:07 | 16:37 | 166 | 143 | 190 |
| 127 Dc | -6:42 | 16:57 | 141 | 99 | 182 |
| 132 Dc | -6:21 | 17:18 | 130 | 102 | 160 |
| 137 Dc | -6:04 | 17:35 | 104 | 87 | 121 |
| 141 Dc | -5:39 | 18:00 | 98 | 52 | 147 |
| | | | | | |
| 67 Dd | 1:07 | 11:37 | 35 | 32 | 39 |
| 73 Dd | 1:31 | 12:01 | 111 | 133 | 89 |
| 79 Dd | 2:11 | 12:41 | 96 | 61 | 138 |
| 87 Dd | 2:49 | 13:19 | 215 | 217 | 213 |

| NaviOBS Name | Time after HW [hh:mm] | Time [hh:mm MET] | Depth Avg SS conc [mg/l] | Top 50% Depth Avg SS conc [mg/l] | Bottom 50% Depth Avg SS conc [mg/l] |
|---|---|---|---|---|---|
| 93 Dd | 3:22 | 13:52 | 206 | 176 | 241 |
| 98 Dd | 4:01 | 14:31 | 235 | 179 | 289 |
| 103 Dd | 4:35 | 15:05 | 213 | 156 | 270 |
| 108 Dd | 5:03 | 15:33 | 219 | 133 | 298 |
| 113 Dd | 5:26 | 15:56 | 239 | 147 | 346 |
| 118 Dd | 5:50 | 16:20 | 245 | 196 | 302 |
| 123 Dd | 6:12 | 16:42 | 213 | 149 | 277 |
| 128 Dd | -6:39 | 17:00 | 180 | 104 | 263 |
| 133 Dd | -6:17 | 17:22 | 159 | 69 | 260 |
| 138 Dd | -5:57 | 17:42 | 90 | 58 | 120 |
| 140 Dd | -5:46 | 17:53 | 100 | 47 | 150 |
| | | | | | |
| 68 De | 1:11 | 11:41 | 32 | 32 | 32 |
| 74 De | 1:35 | 12:05 | 62 | 47 | 81 |
| 80 De | 2:16 | 12:46 | 123 | 117 | 129 |
| 88 De | 2:53 | 13:23 | 253 | 239 | 268 |
| 94 De | 3:28 | 13:58 | 91 | 83 | 97 |

# APPENDIX I. TIMESERIES

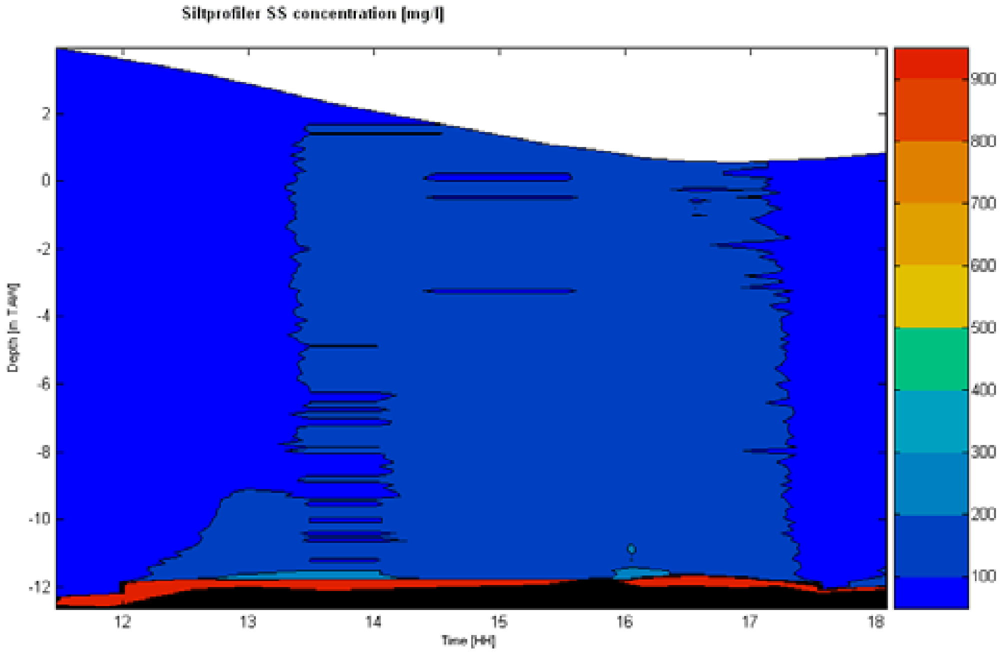
| 11265 HCBS - FEBRUARY 2005 SURVEY | Da |
|---|---|

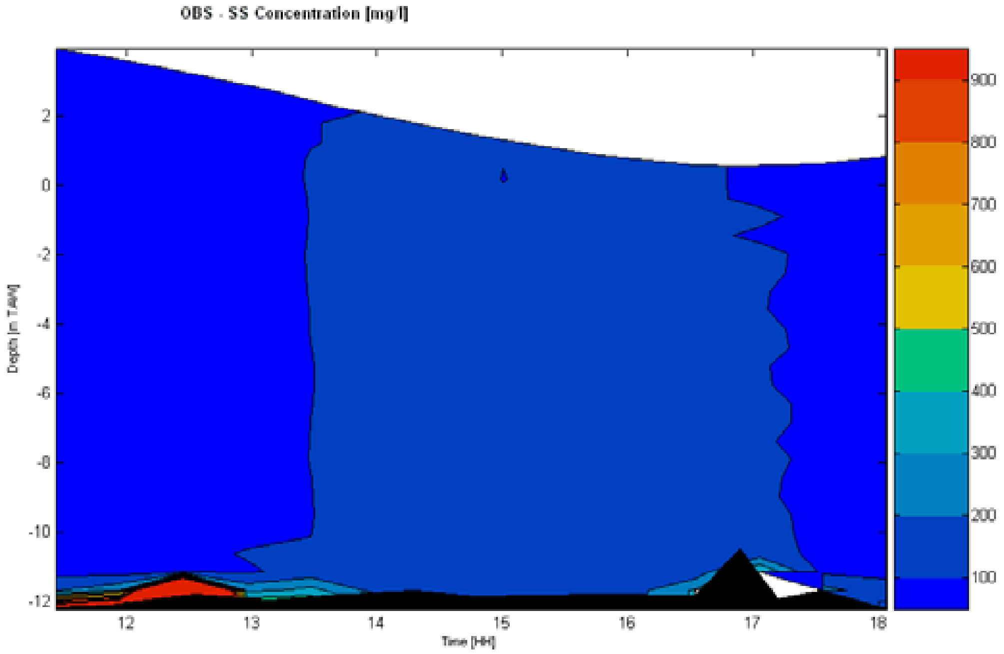



| Timeseries SS Concentration Siltprofiler & Navitracker-OBS | | *Data processed by:* IMDC |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* WL \| delft hydraulics, GEMS International *I/RA/11265/05.014MSA* |

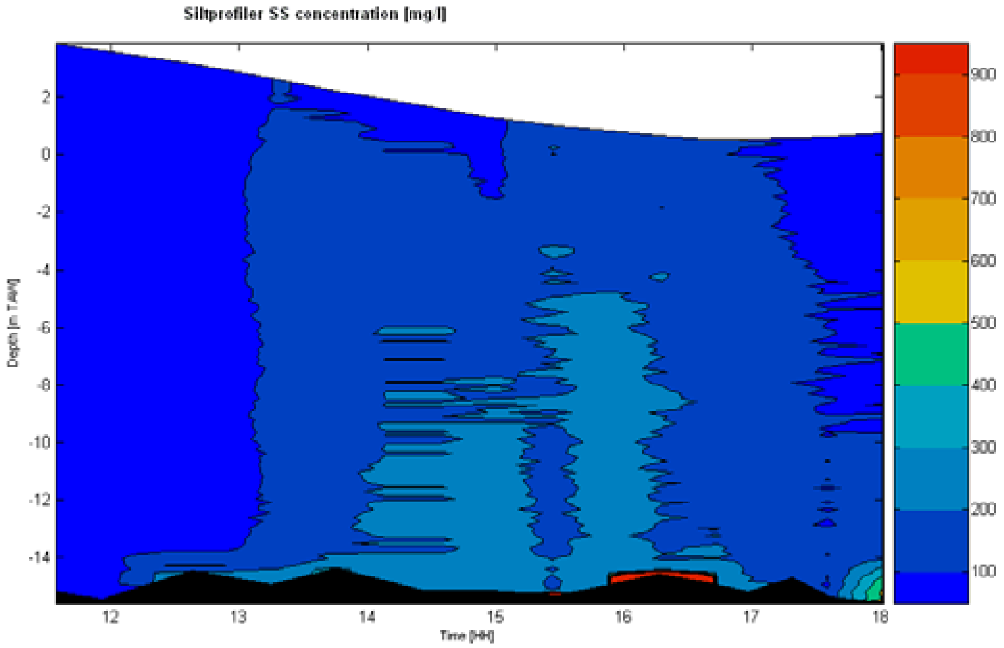
| 11265 HCBS - FEBRUARY 2005 SURVEY | Db |
|---|---|

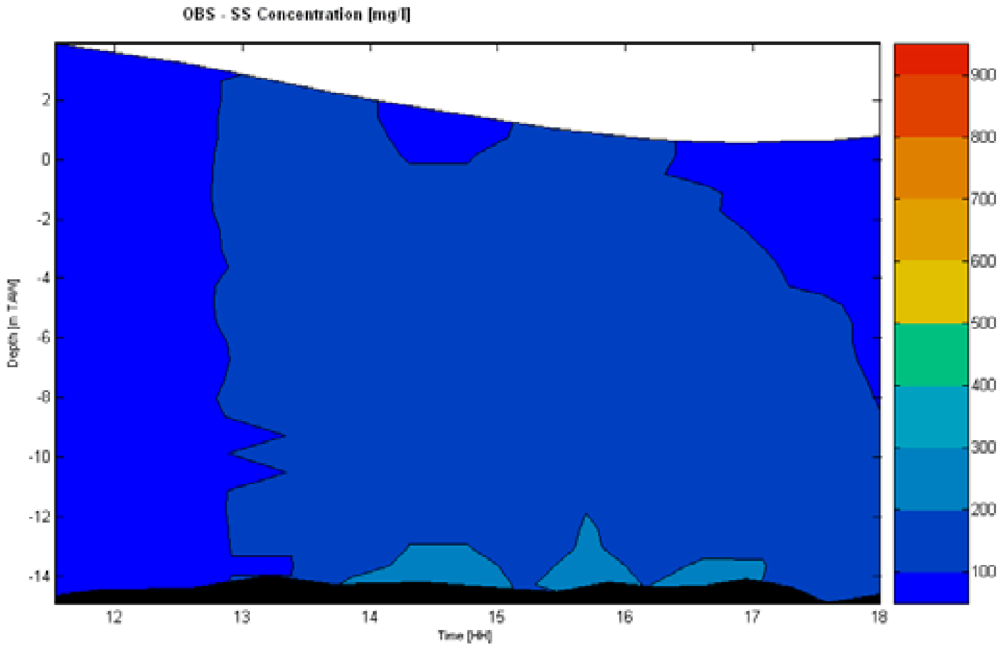



| Timeseries SS Concentration Siltprofiler & Navitracker-OBS | | *Data processed by:* IMDC |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* WL \| delft hydraulics, GEMS International |
| | | *I/RA/11265/05.014MSA* |

| 11265 HCBS - FEBRUARY 2005 SURVEY | Dc |
|---|---|

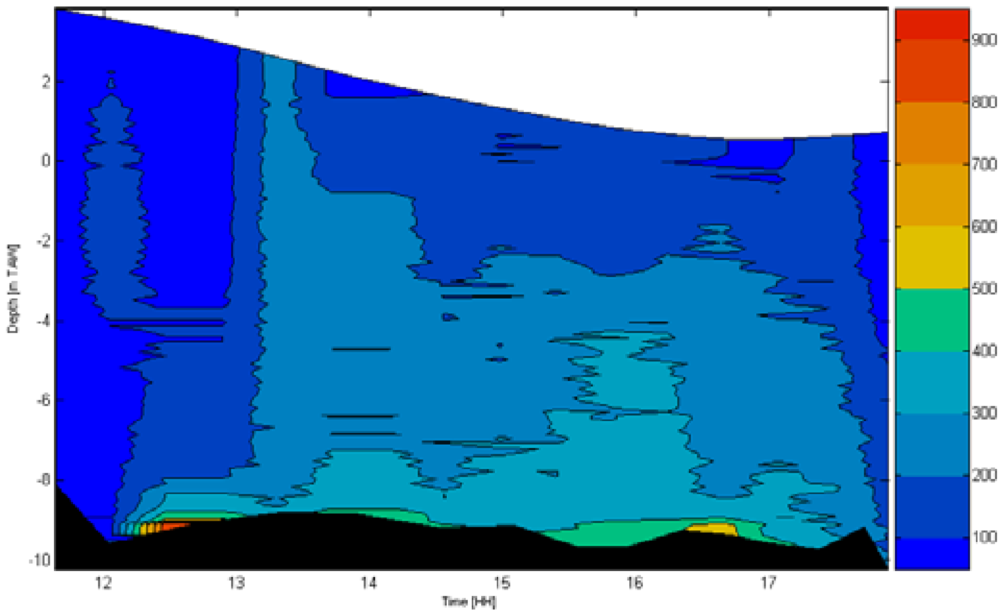


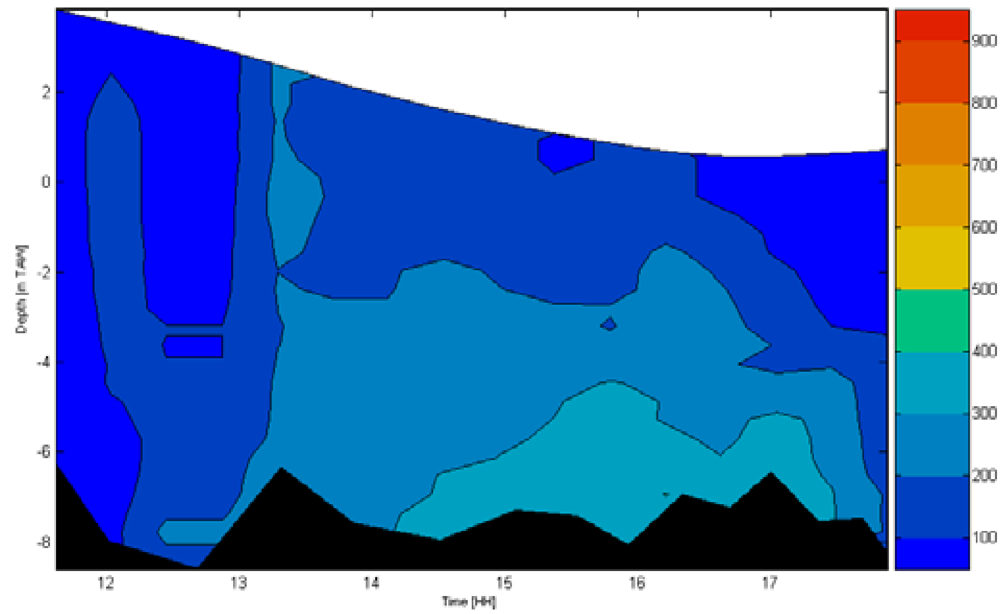

| Timeseries SS Concentration Siltprofiler & Navitracker-OBS | | *Data processed by:* IMDC |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* WL \| delft hydraulics, GEMS International |
| | | *I/RA/11265/05.014MSA* |

| 11265 HCBS - FEBRUARY 2005 SURVEY | Dd |
|---|---|

Siltprofiler SS concentration [mg/l]

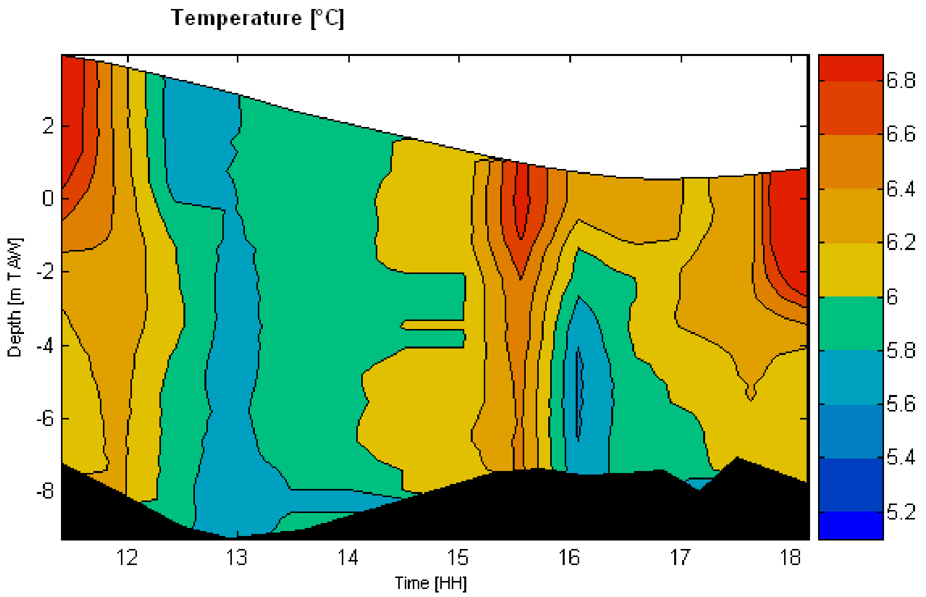


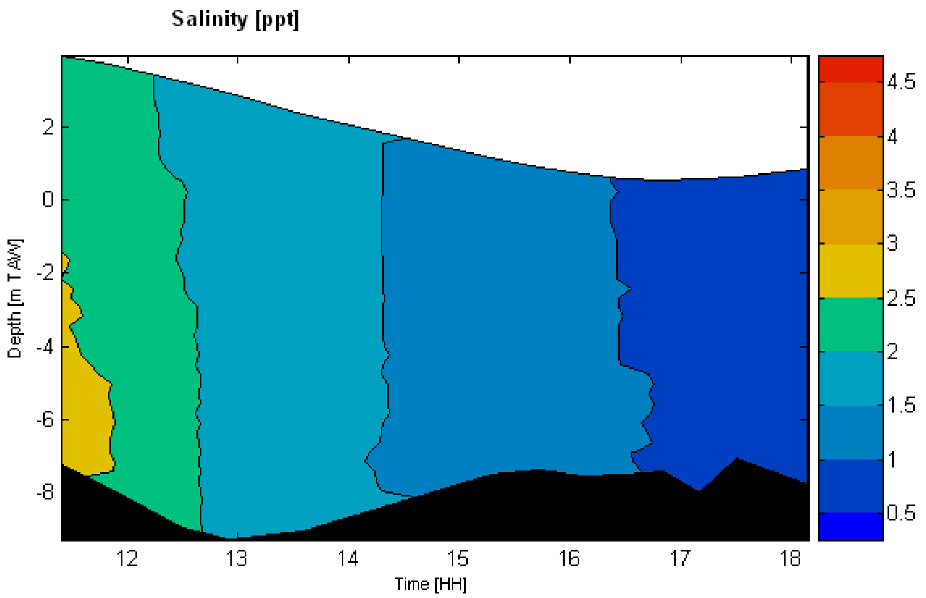

OBS - SS Concentration [mg/l]




| Timeseries SS Concentration<br>Siltprofiler & Navitracker-OBS | | *Data processed by:*<br>*In association with:* |
|---|---|---|
| Location:<br>Kallo | Date:<br>18/02/2005 | *I/RA/11265/05.014MSA* |

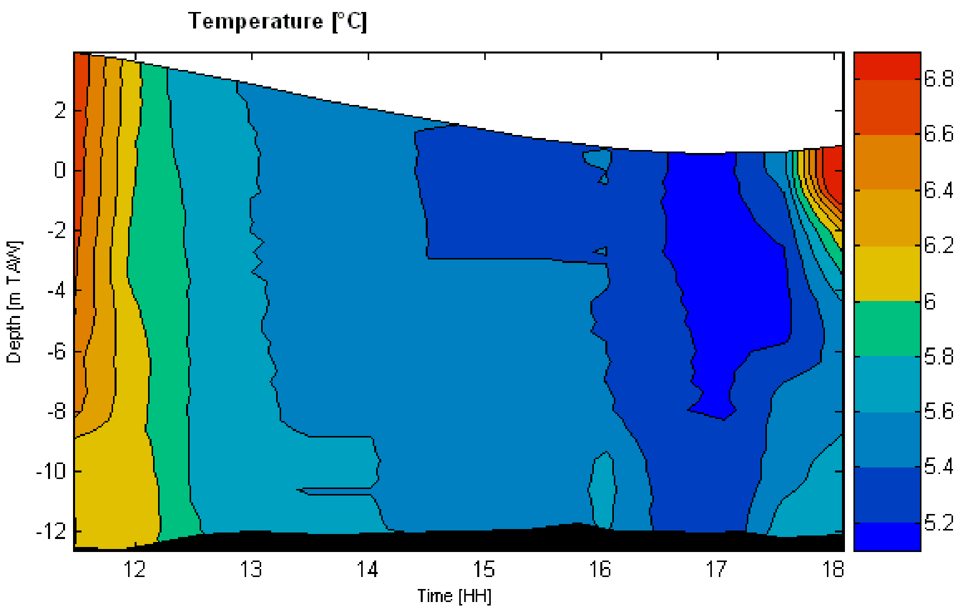
| 11265 HCBS - FEBRUARY 2005 SURVEY | Da |
|---|---|

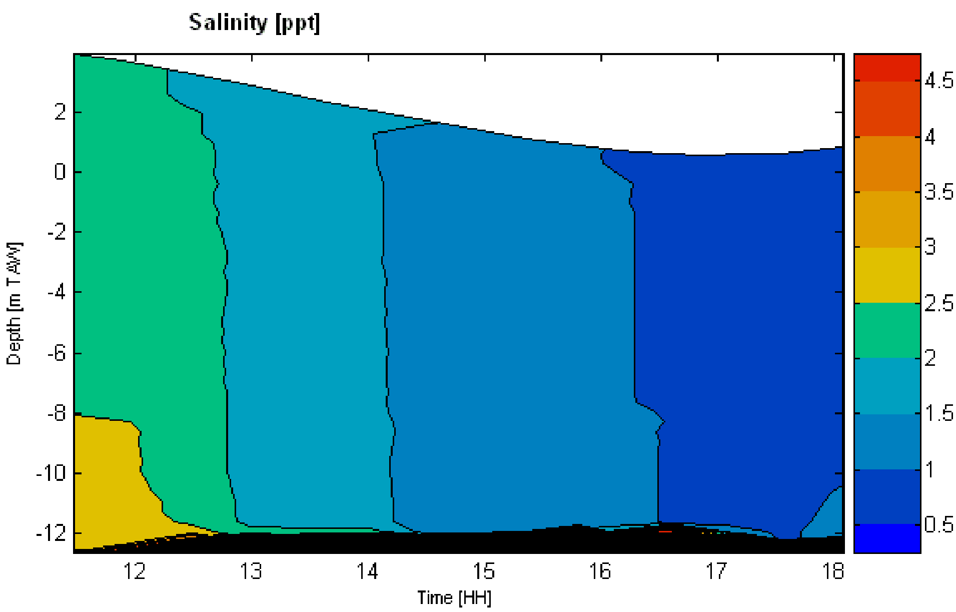



| Timeseries Temperature and Salinity Siltprofiler | | *Data processed by:* IMDC |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* wl \| delft hydraulics, GEMS International<br>*I/RA/11265/05.014MSA* |

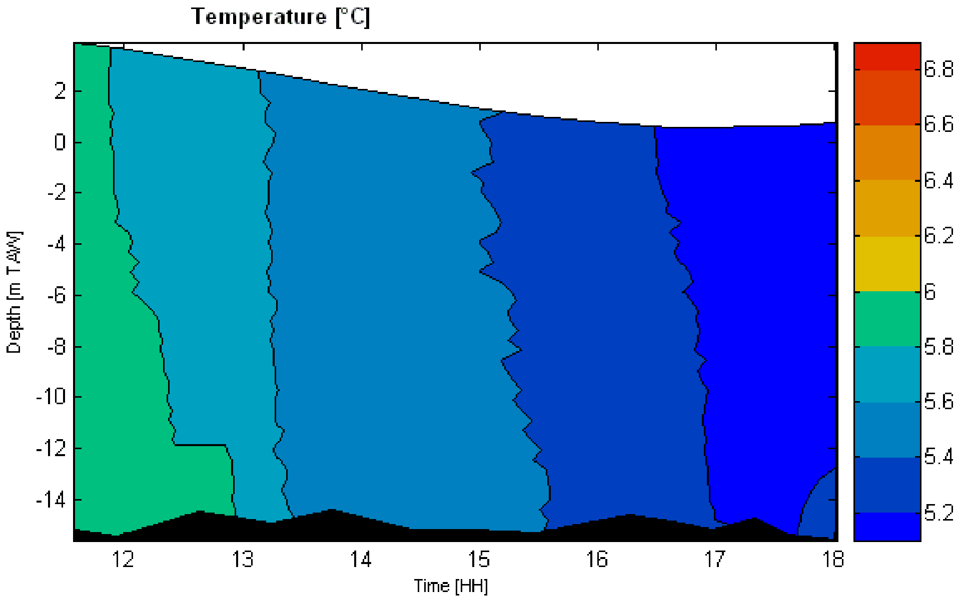
| 11265 HCBS - FEBRUARY 2005 SURVEY | Db |
|---|---|

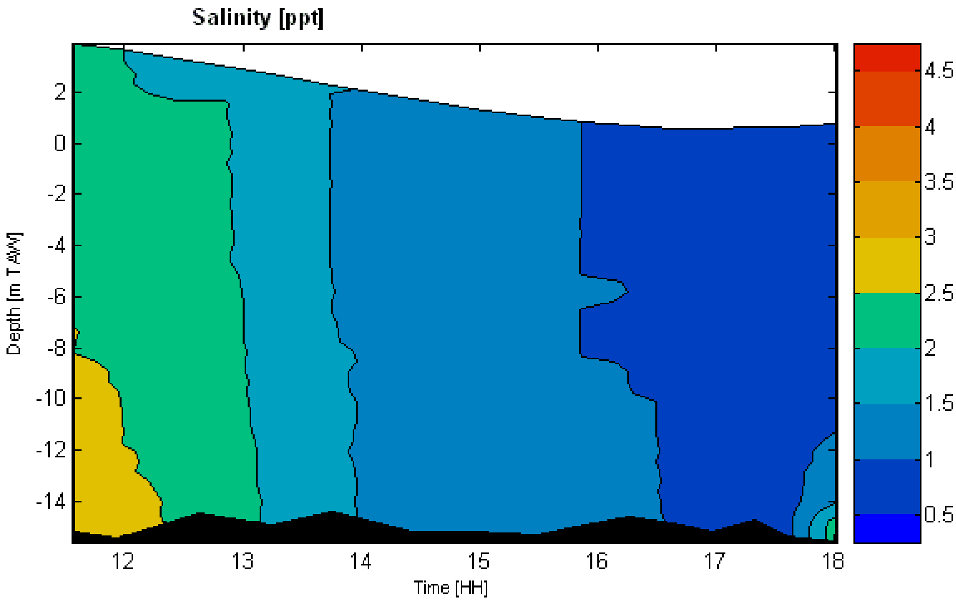



| Timeseries Temperature and Salinity Siltprofiler | | *Data processed by:* IMDC |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* *I/RA/11265/05.014MSA* |

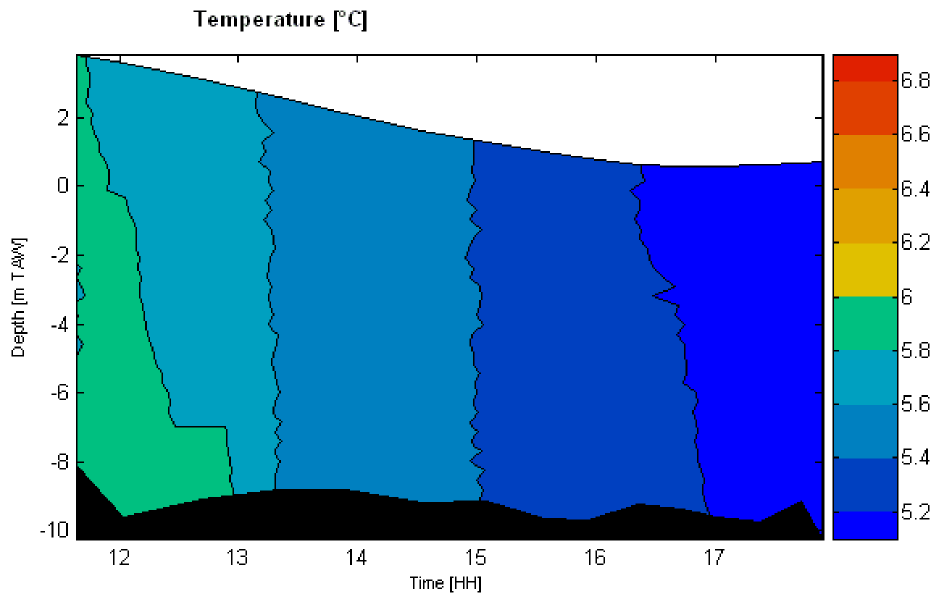
| 11265 HCBS - FEBRUARY 2005 SURVEY | Dc |
|---|---|

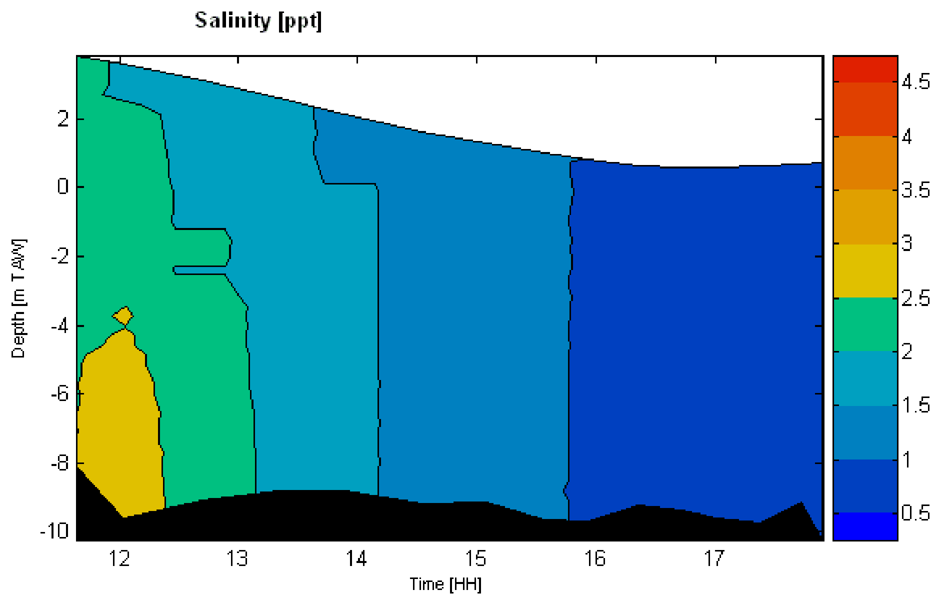



| Timeseries Temperature and Salinity Siltprofiler | | *Data processed by:* IMDC |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* WL \| delft hydraulics, GEMS International<br>*I/RA/11265/05.014MSA* |

| 11265 HCBS - FEBRUARY 2005 SURVEY | Dd |
|---|---|



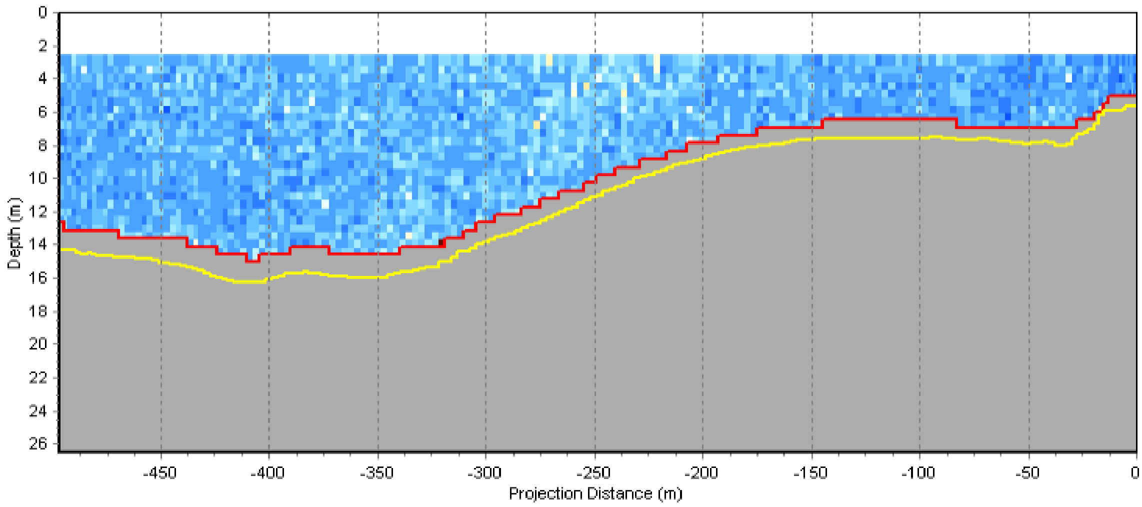

| Timeseries Temperature and Salinity Siltprofiler | | *Data processed by:* IMDC |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* wl \| delft hydraulics GEMS International<br>*I/RA/11265/05.014MSA* |

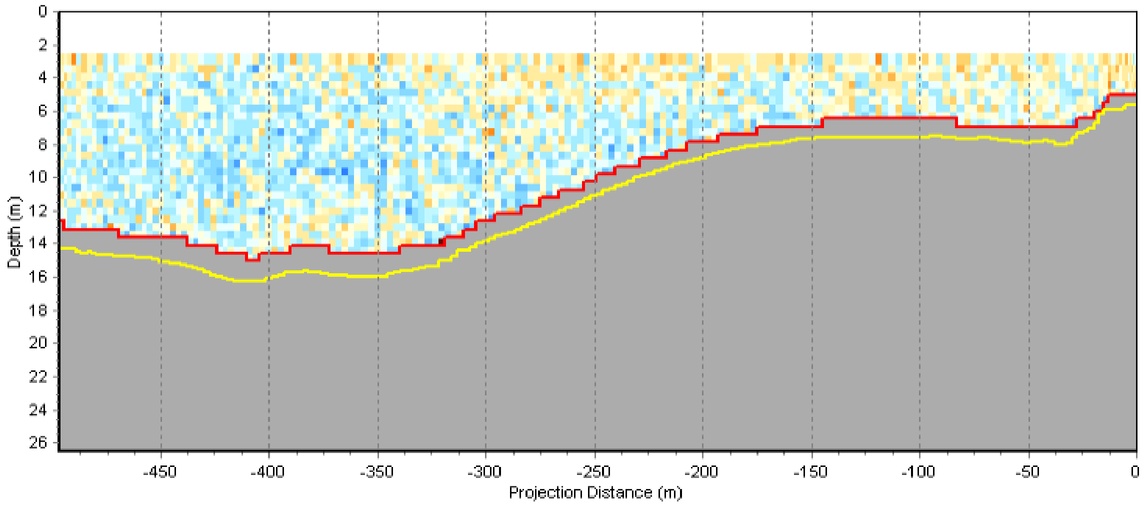
# APPENDIX J.

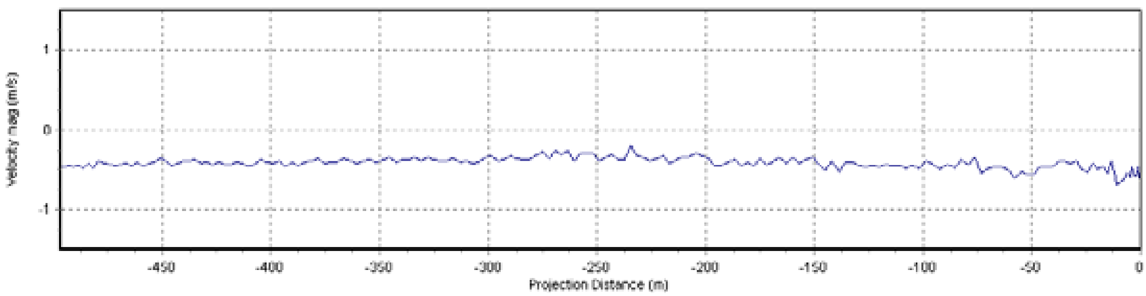
# CONTOURPLOTS OF FLOW VELOCITIES, SEDIMENT CONCENTRATION AND SEDIMENT FLUX PER SAILED TRANSECT

## J.1 Transect F

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 06:07 | HW -4:22 | 6 F Transect |
|---|---|---|---|




Perpendicular & Parallel Velocity
Depth Averaged Velocity

Location: Kallo

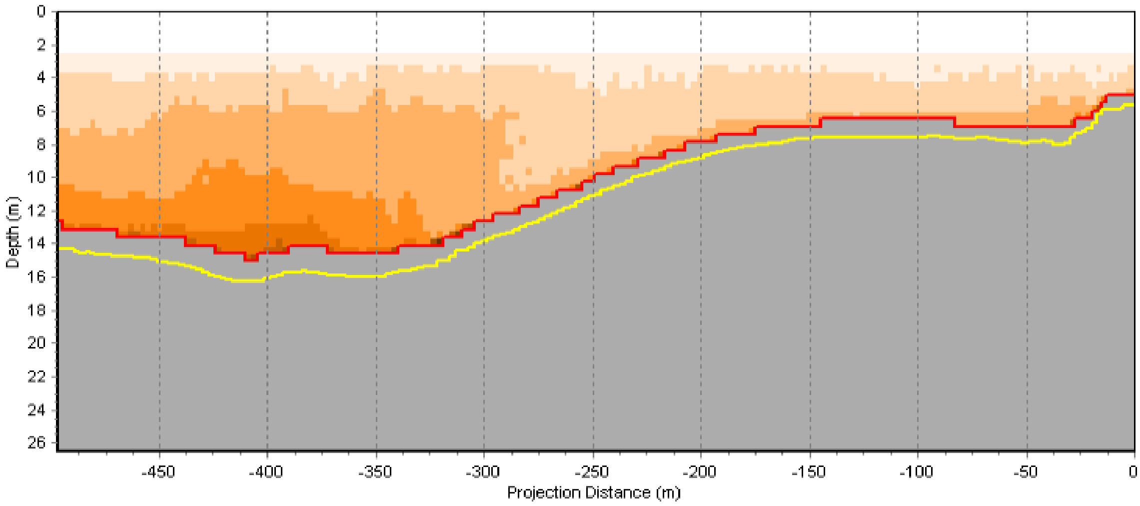
Date: 18/02/2005

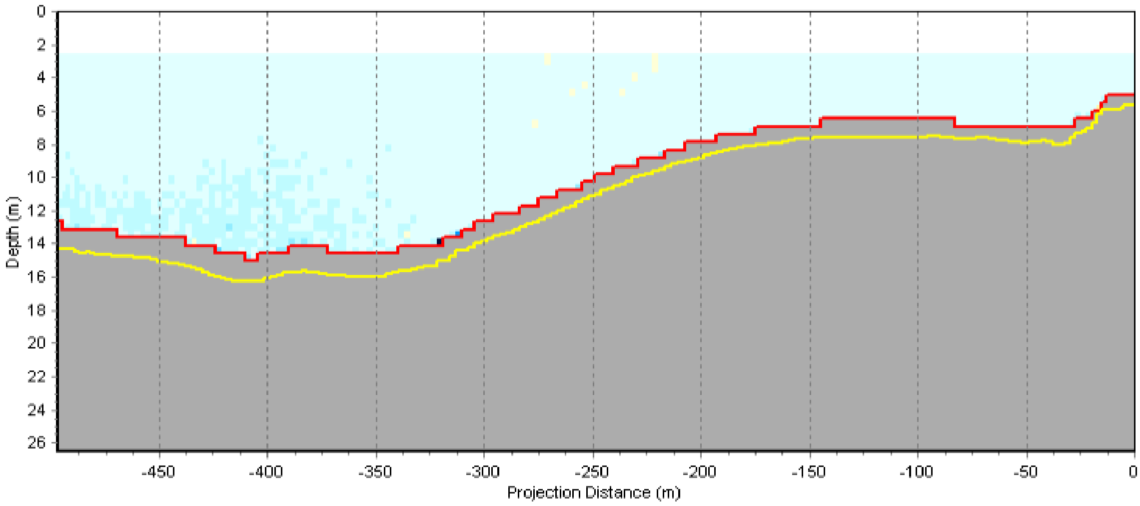
*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 06:07 | HW -4:22 | 6 F Transect |
|---|---|---|---|

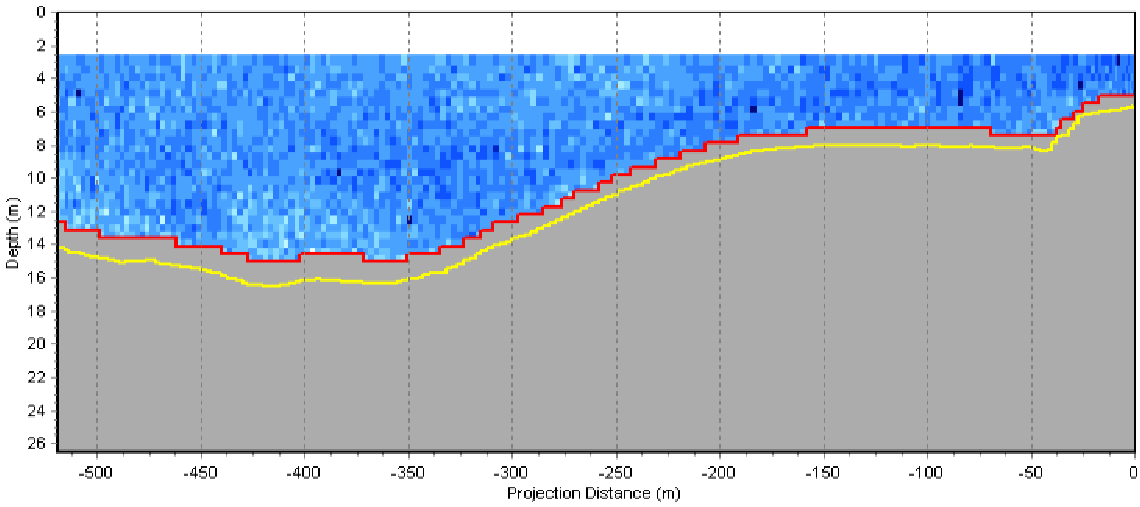


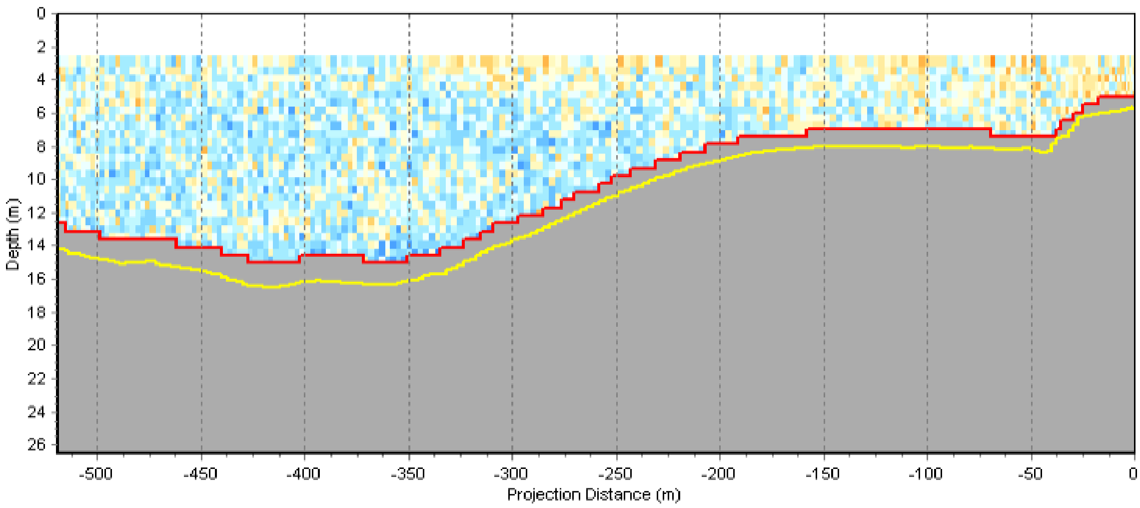



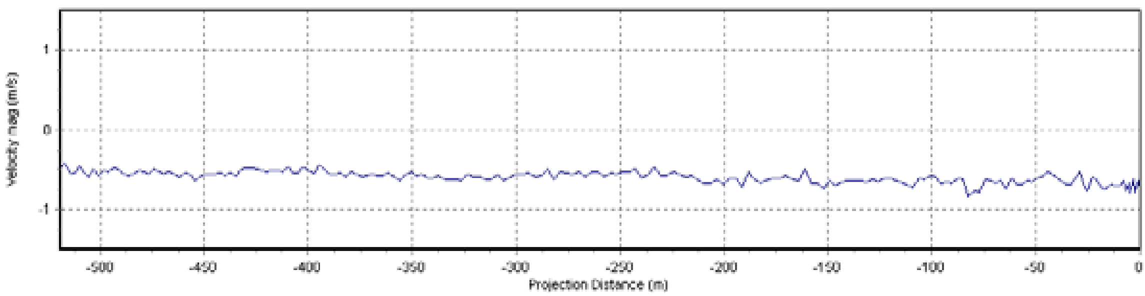

| Suspended Sediment Concentration & Flux | | Data processed by: |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | In association with: |

I/RA/11265/05.014MSA

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 06:36 | HW -3:53 | 12 F Transect |
|---|---|---|---|



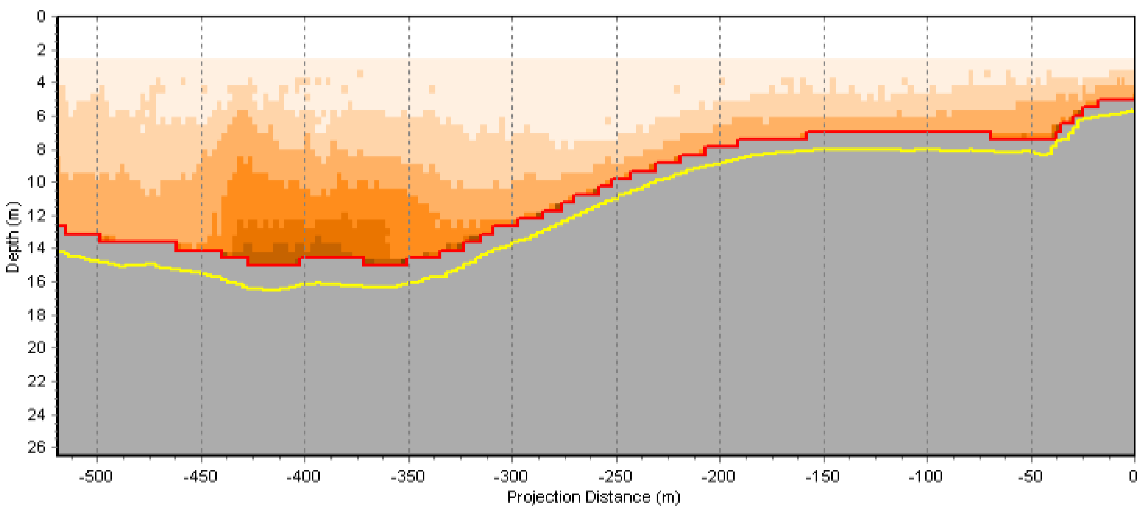



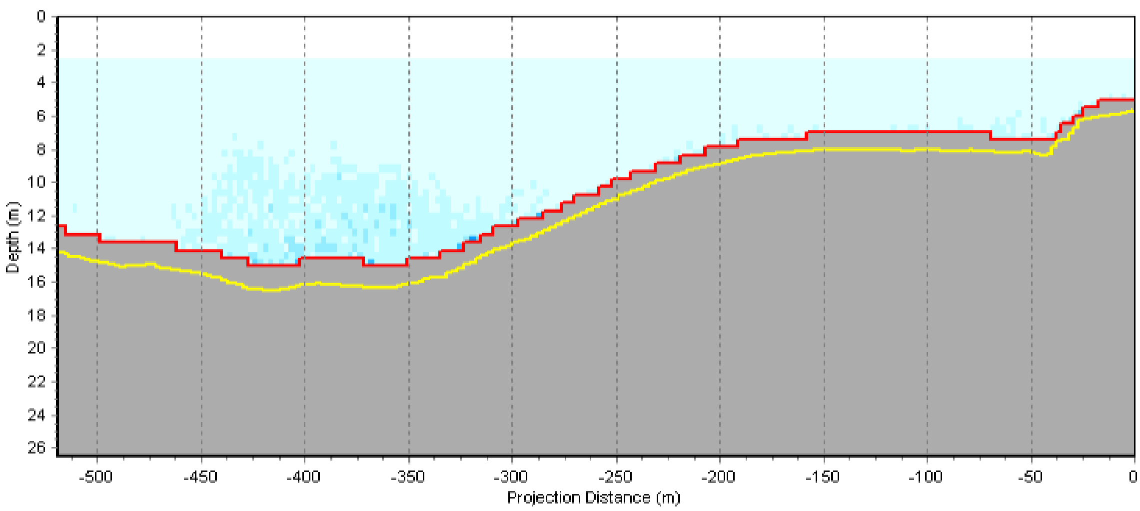




| Perpendicular & Parallel Velocity Depth Averaged Velocity | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* |

*I/RA/11265/05.014MSA*

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 06:36 | HW -3:53 | 12 F Transect |
|---|---|---|---|

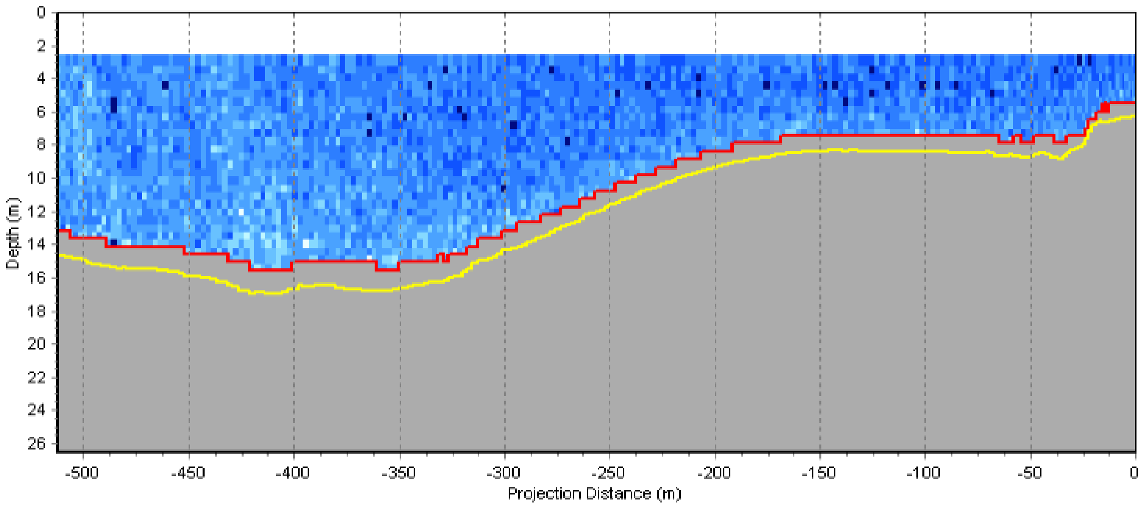


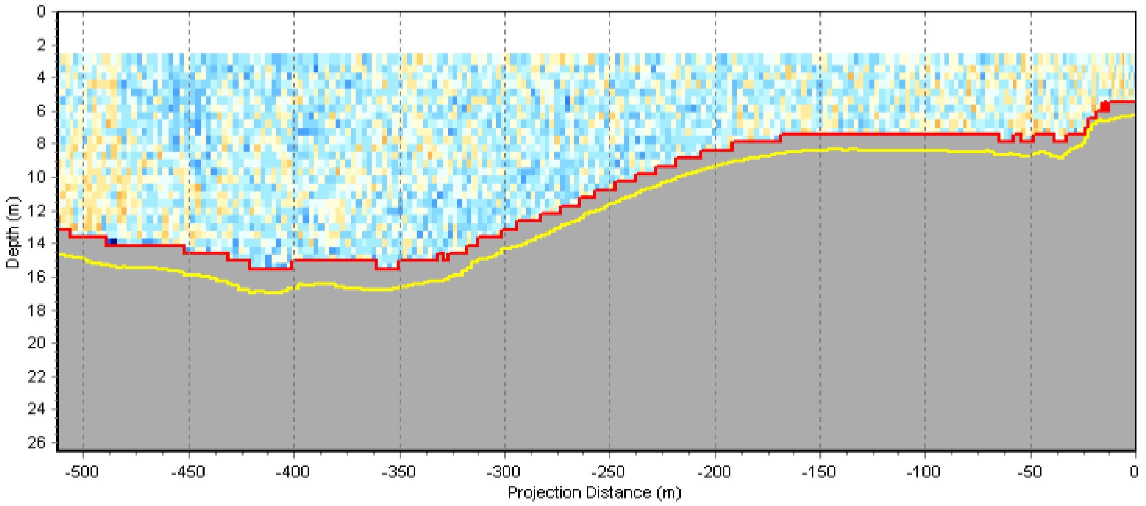



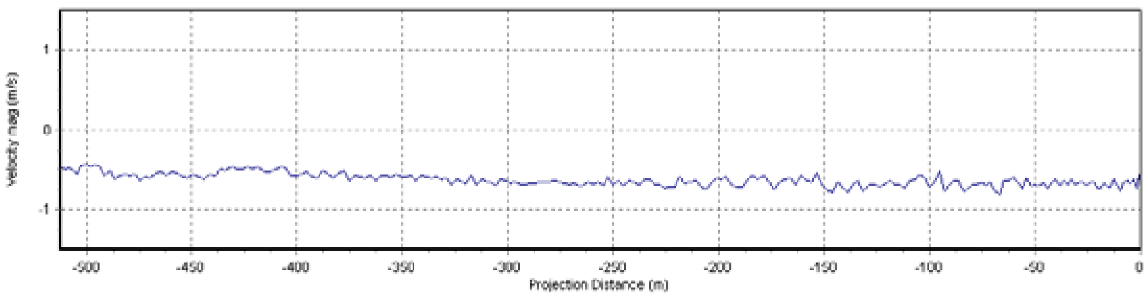

| Suspended Sediment Concentration & Flux | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* |

*I/RA/11265/05.014MSA*

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 07:08 | HW -3:21 | 18 F Transect |
|---|---|---|---|



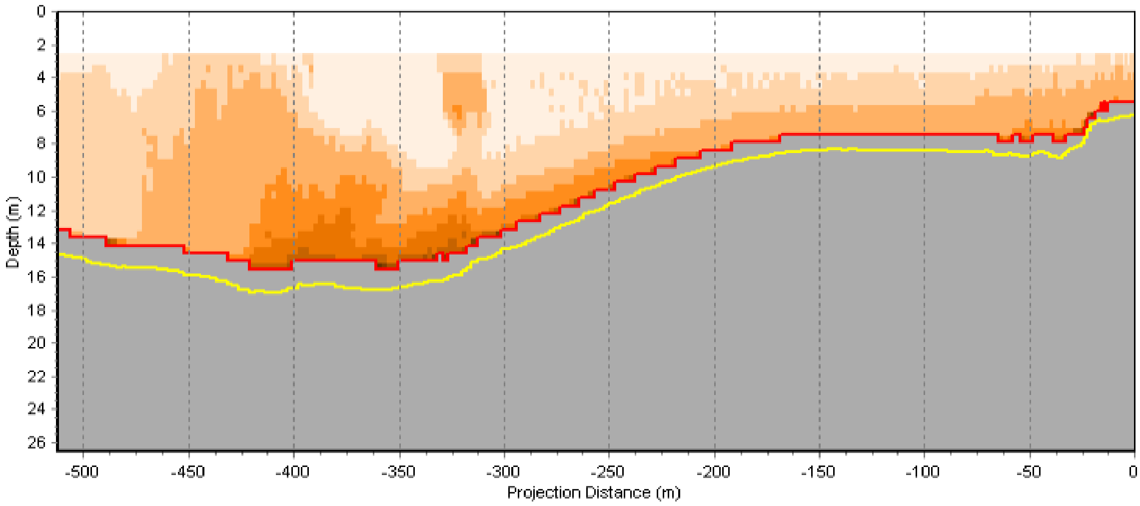



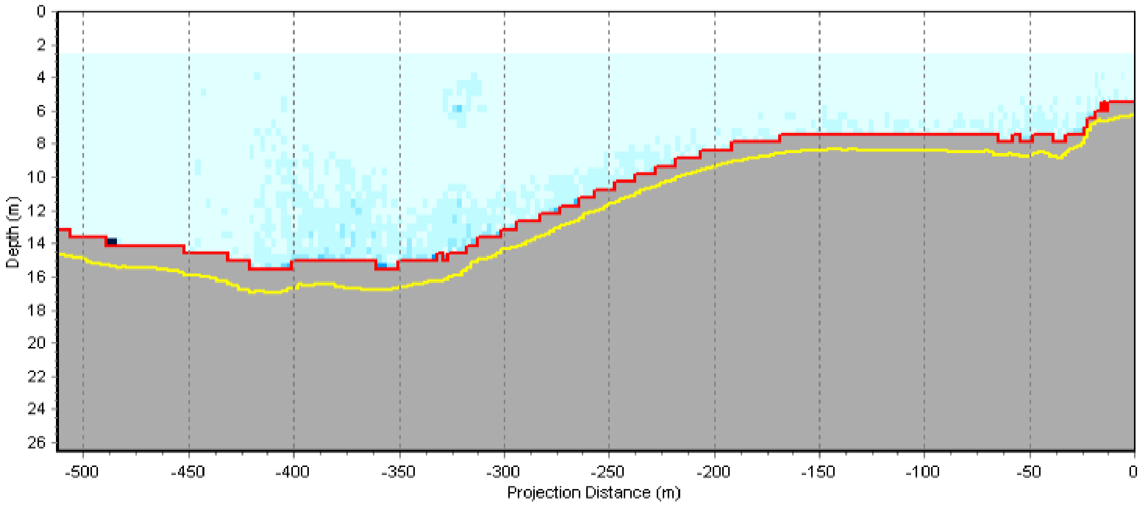




| Perpendicular & Parallel Velocity Depth Averaged Velocity | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* |

*I/RA/11265/05.014MSA*

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 07:08 | HW -3:21 | 18 F Transect |
|---|---|---|---|

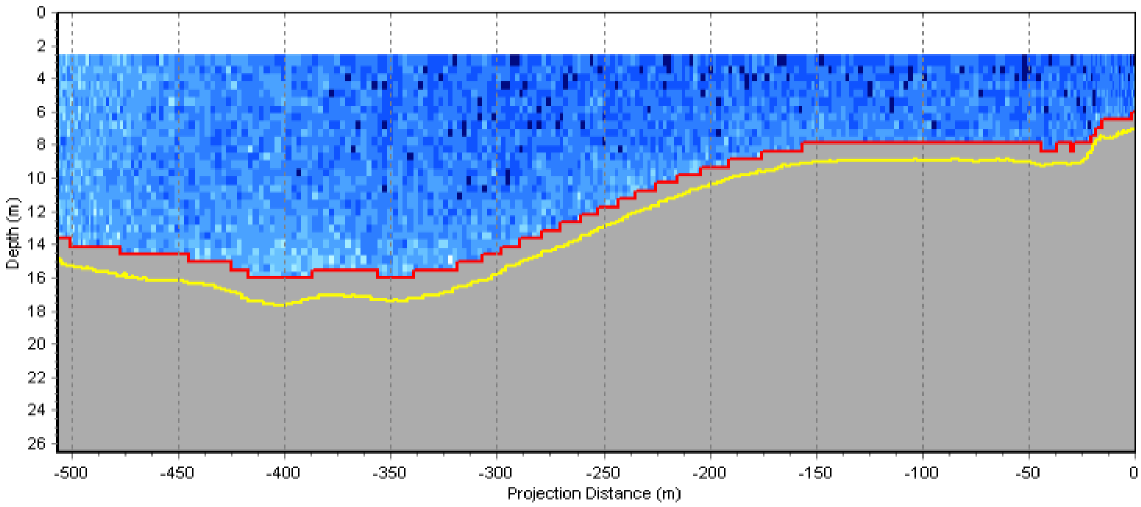


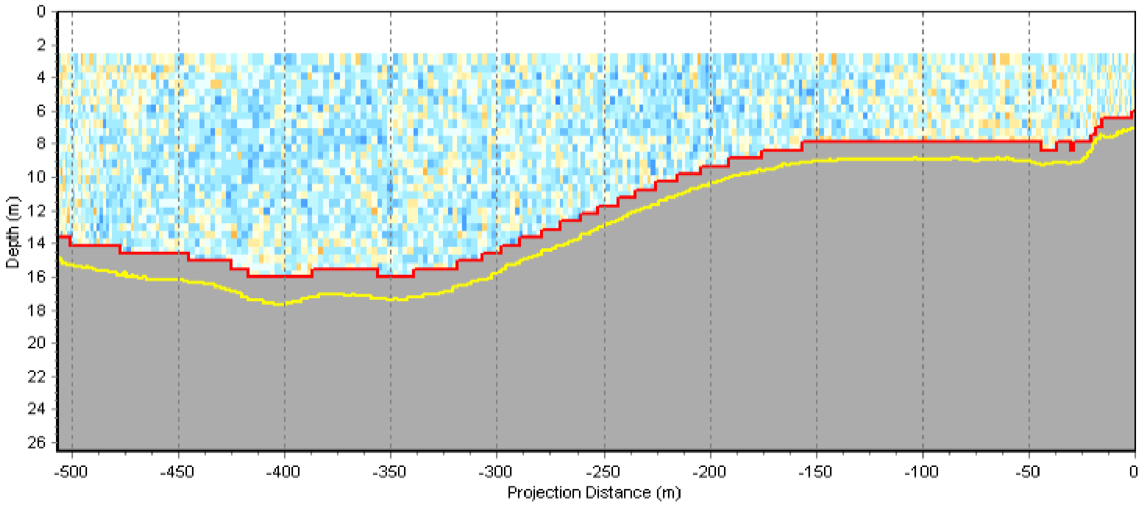



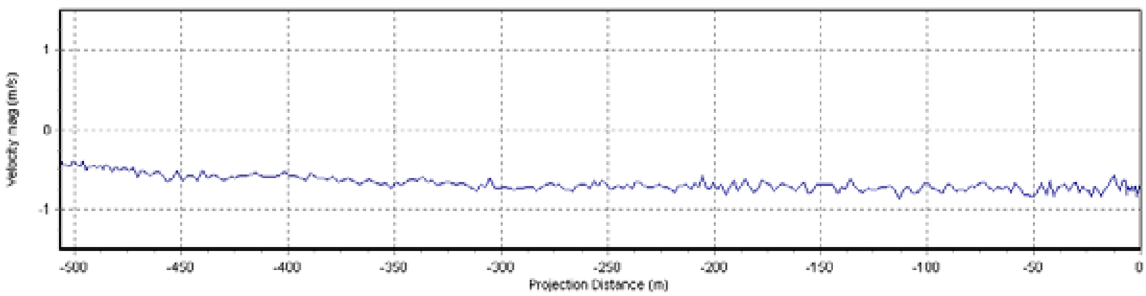

| Suspended Sediment Concentration & Flux | | Data processed by: |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | In association with: |

I/RA/11265/05.014MSA

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 07:49 | HW -2:40 | 24 F Transect |
|---|---|---|---|

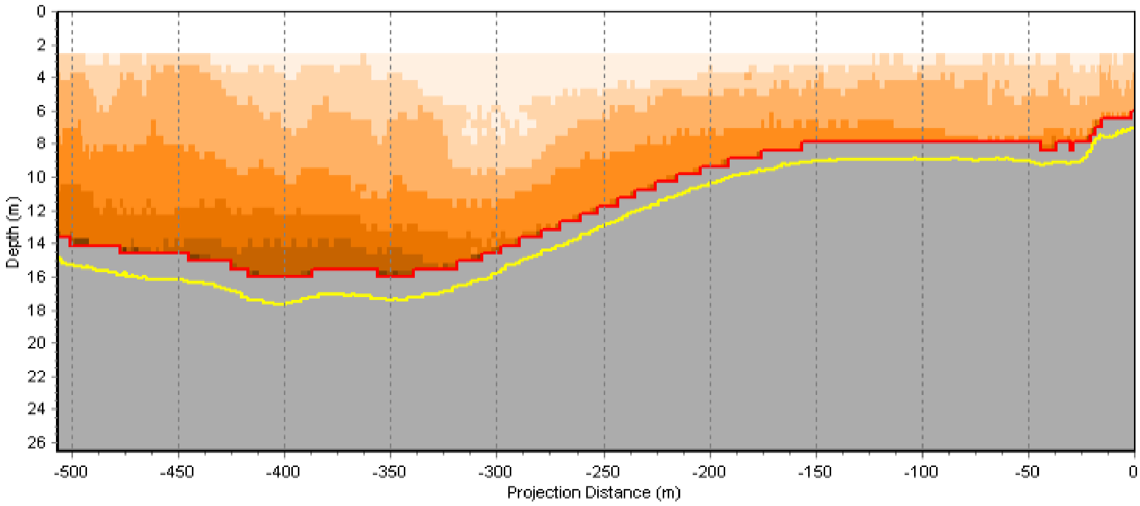


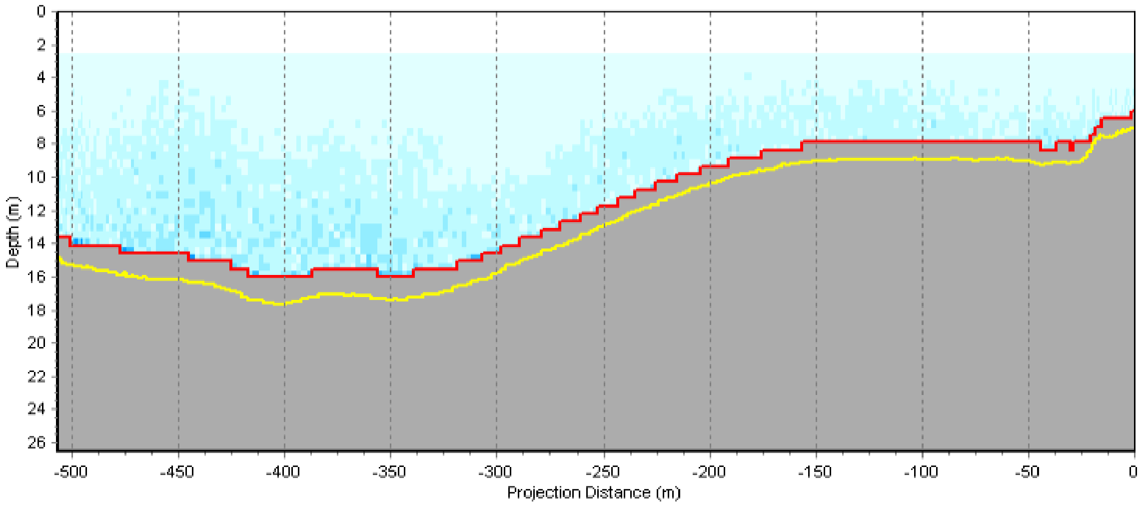




| Perpendicular & Parallel Velocity Depth Averaged Velocity | | *Data processed by:* <br> *In association with:* <br> *I/RA/11265/05.014MSA* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | |

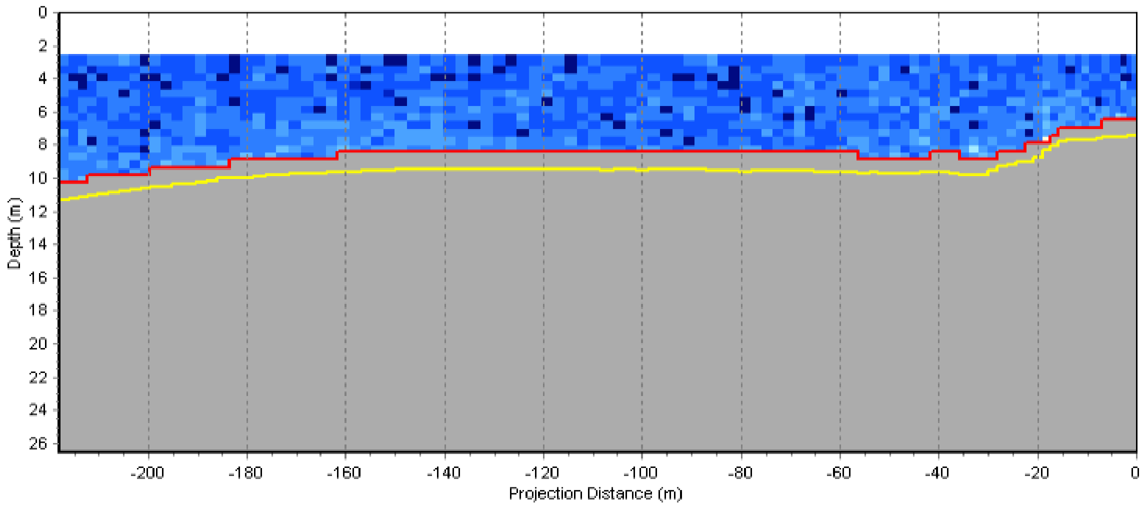
| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 07:49 | HW -2:40 | 24 F Transect |
|---|---|---|---|

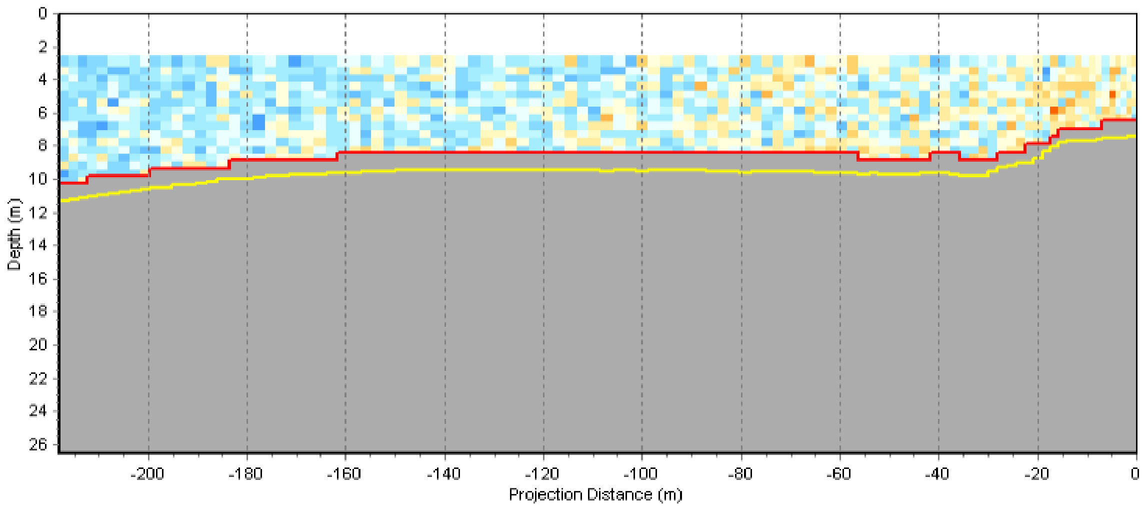


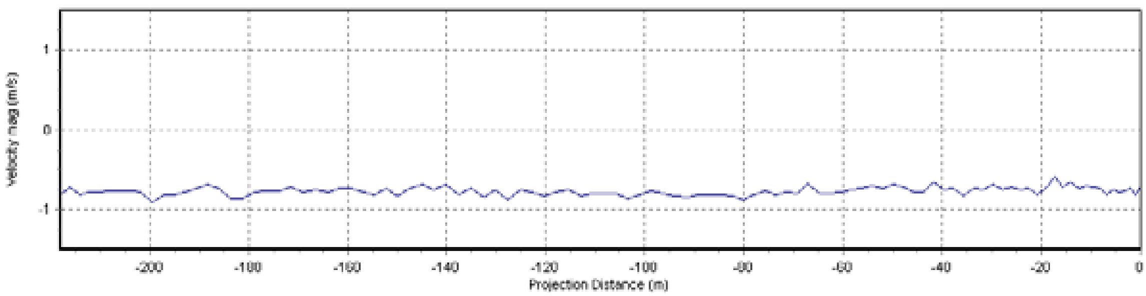




| Suspended Sediment Concentration & Flux | | *Data processed by:* / *In association with:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *I/RA/11265/05.014MSA* |

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 08:18 | HW -3:11 | 29 F Transect |
|---|---|---|---|

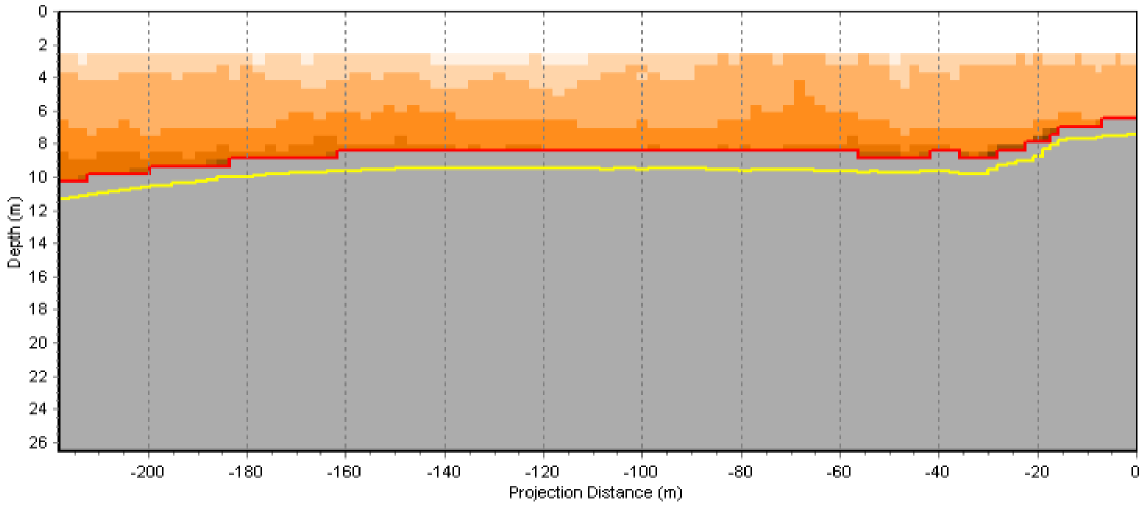


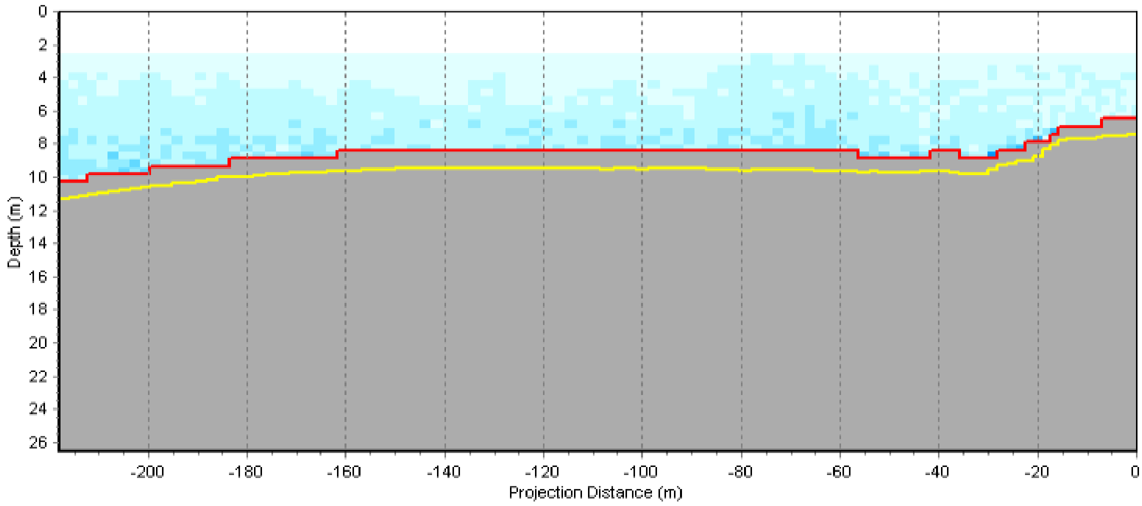




| Perpendicular & Parallel Velocity<br>Depth Averaged Velocity | | *Data processed by:*<br>*In association with:*<br>*I/RA/11265/05.014MSA* |
|---|---|---|
| Location:<br>Kallo | Date:<br>18/02/2005 | |

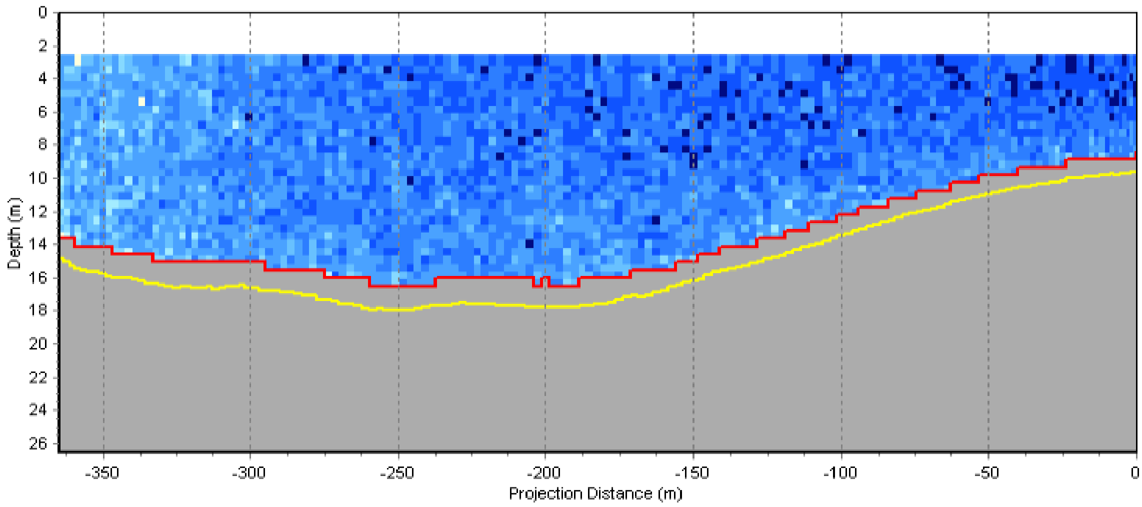
| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 08:18 | HW -3:11 | 29 F Transect |
|---|---|---|---|

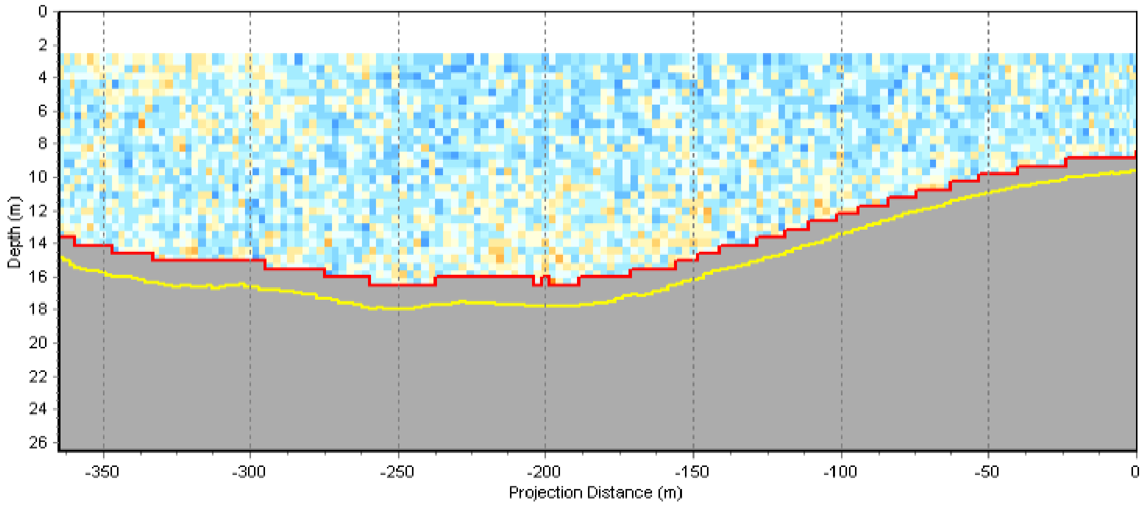


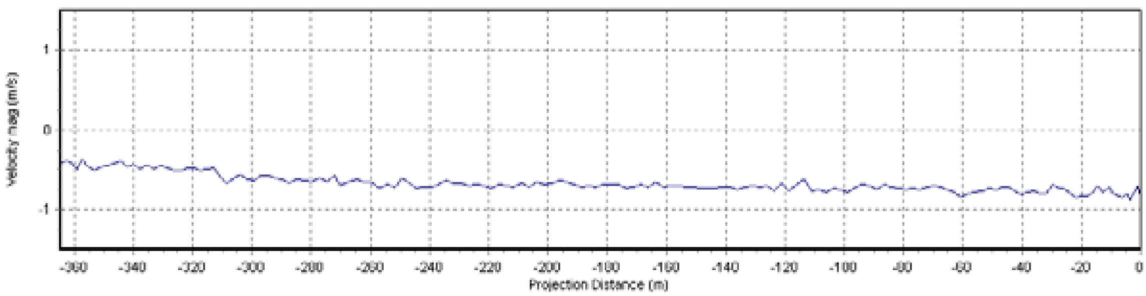




| Suspended Sediment Concentration & Flux | | *Data processed by:* / *In association with:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *I/RA/11265/05.014MSA* |

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 08:24 | HW -3:05 | 31 F Transect |
|---|---|---|---|




Perpendicular & Parallel Velocity
Depth Averaged Velocity

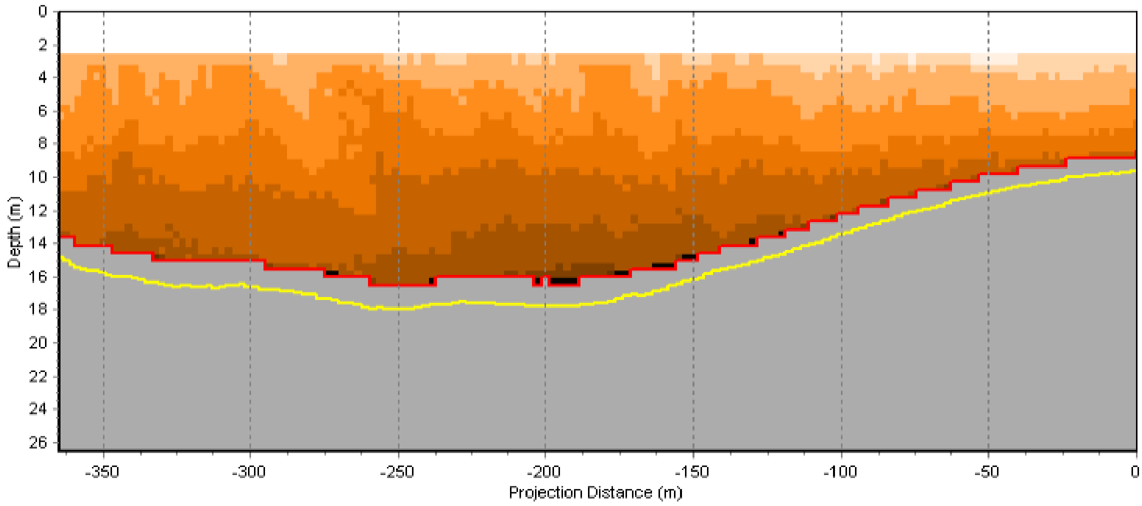
| Location: Kallo | Date: 18/02/2005 |
|---|---|

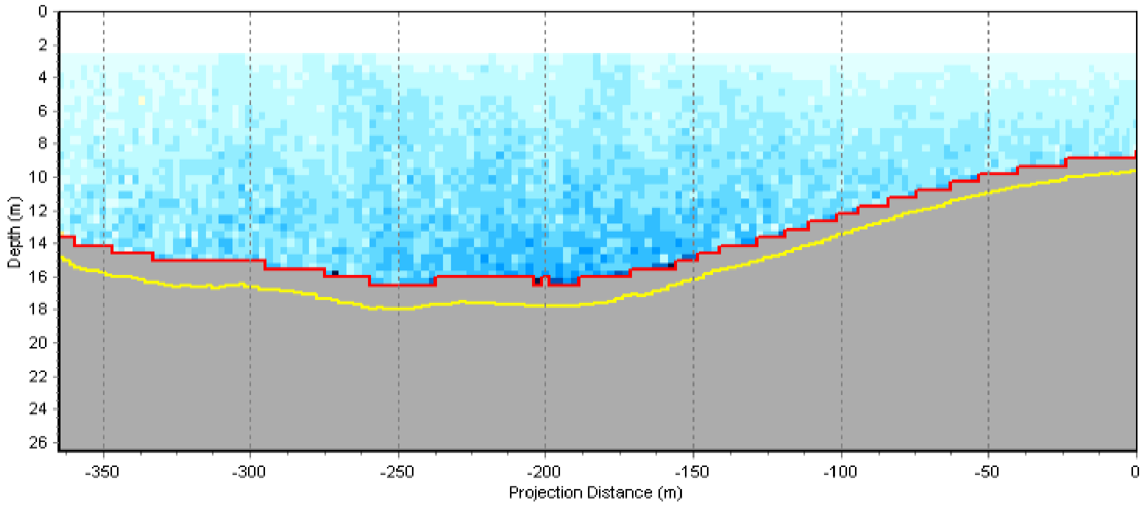
*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 08:24 | HW -3:05 | 31 F Transect |
|---|---|---|---|




| Suspended Sediment Concentration & Flux | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* |
| | | *I/RA/11265/05.014MSA* |

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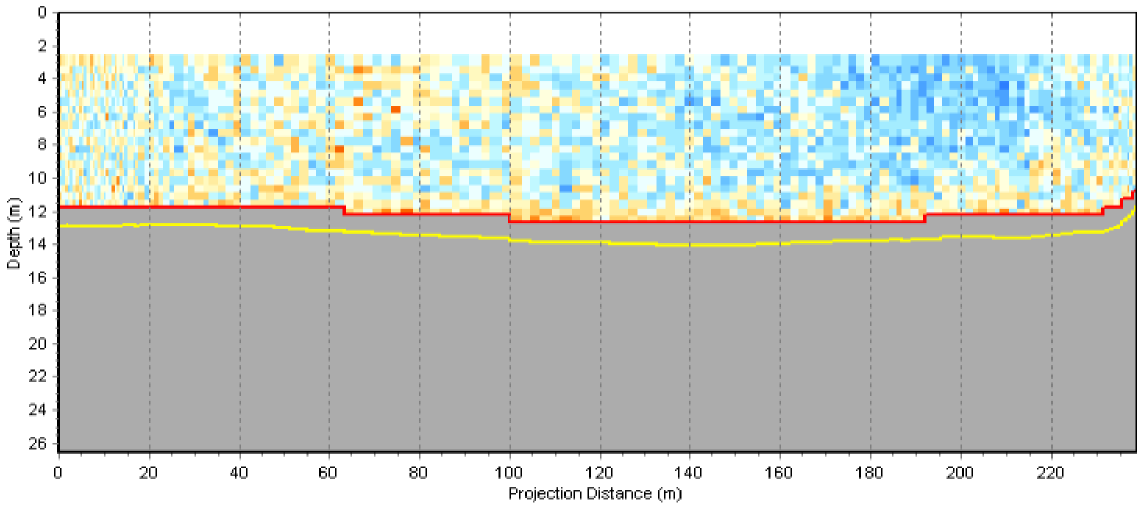
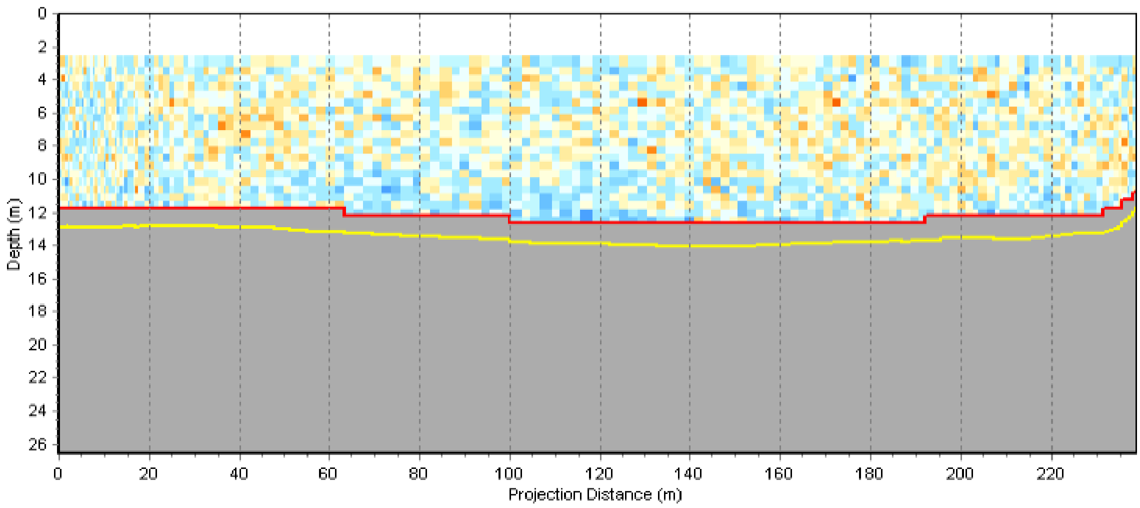
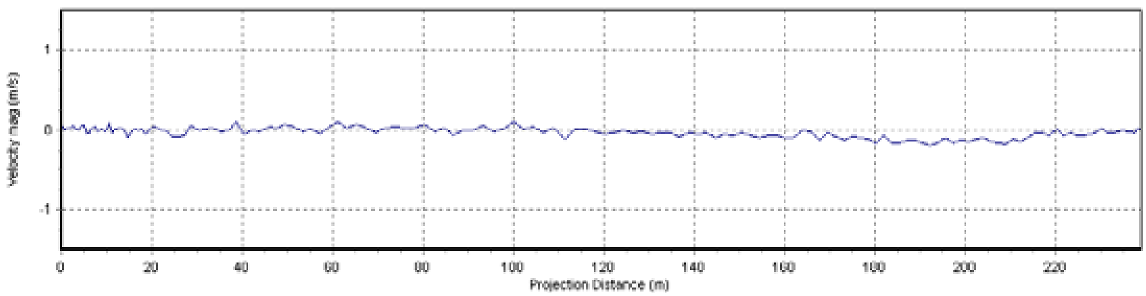
## J.2 Transect E

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 08:58 | HW -1:31 | 37 E Transect |
|---|---|---|---|

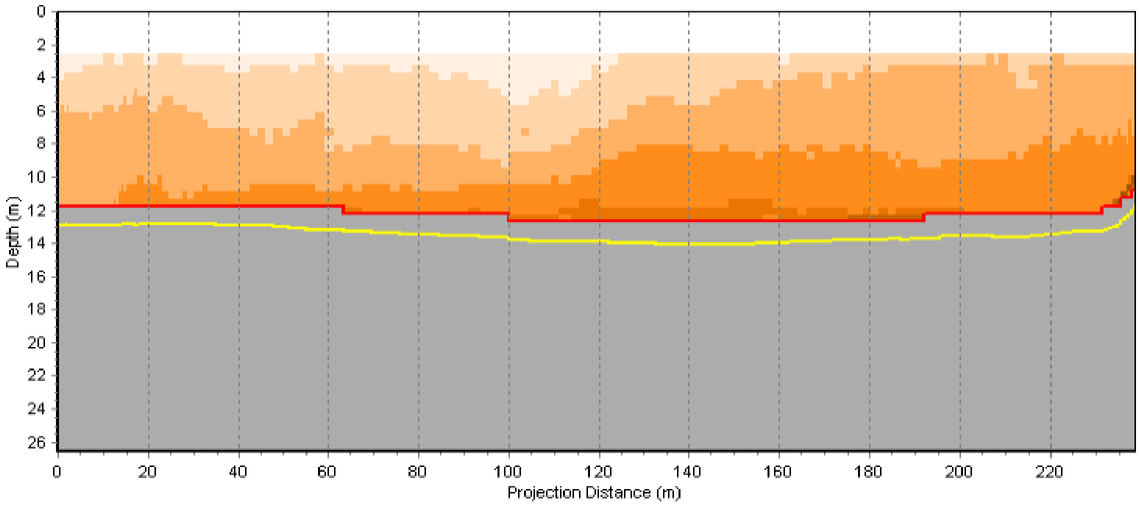


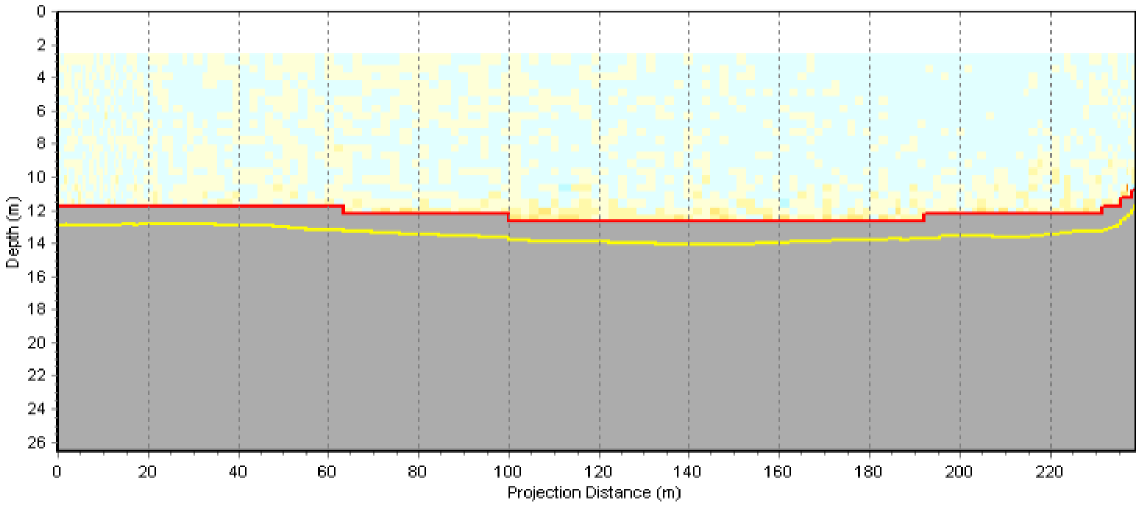




| Perpendicular & Parallel Velocity<br>Depth Averaged Velocity | | *Data processed by:*<br><br>*In association with:* |
|---|---|---|
| Location:<br>Kallo | Date:<br>18/02/2005 | *I/RA/11265/05.014MSA* |

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 08:58 | HW -1:31 | 37 E Transect |
|---|---|---|---|

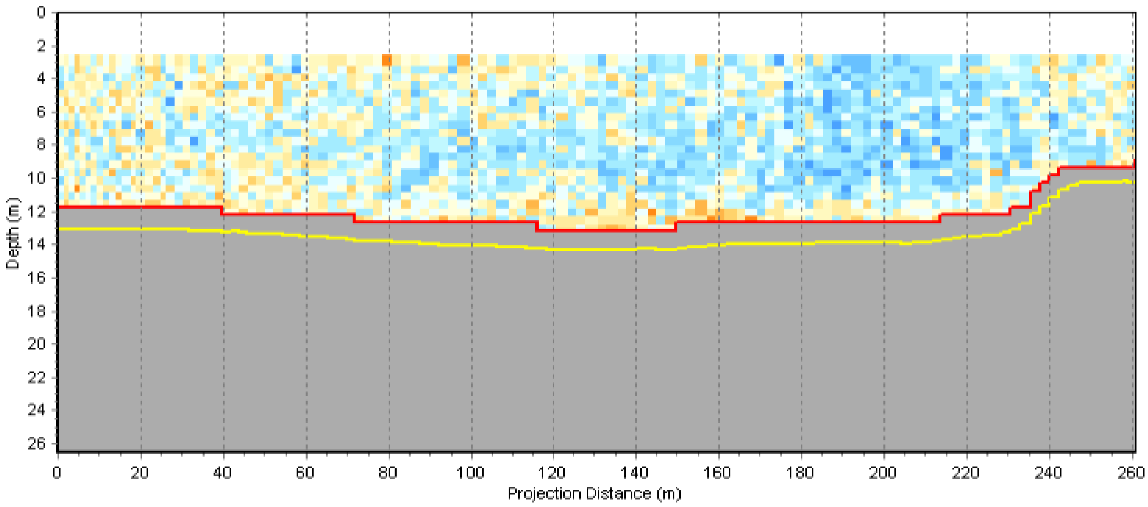


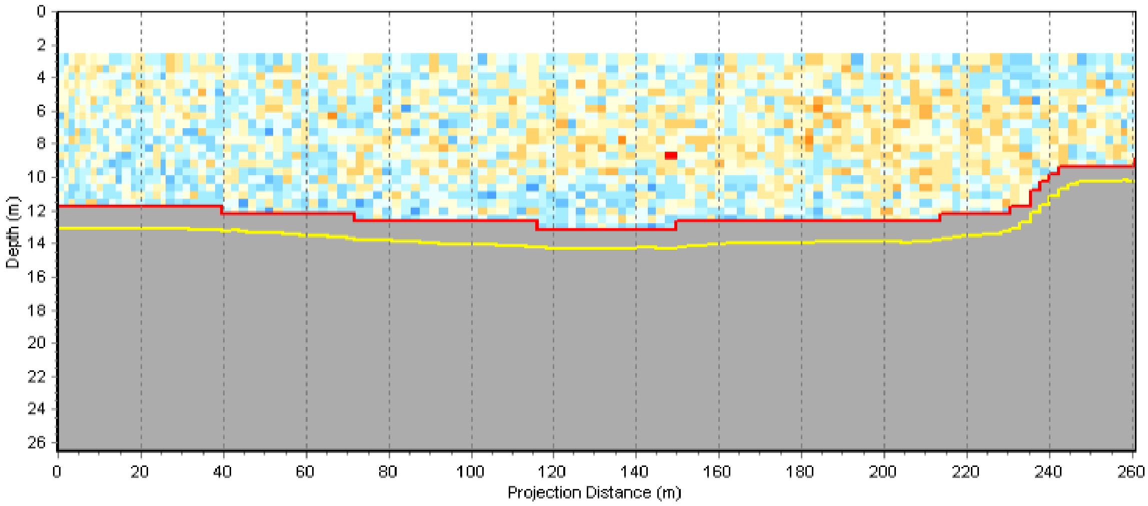



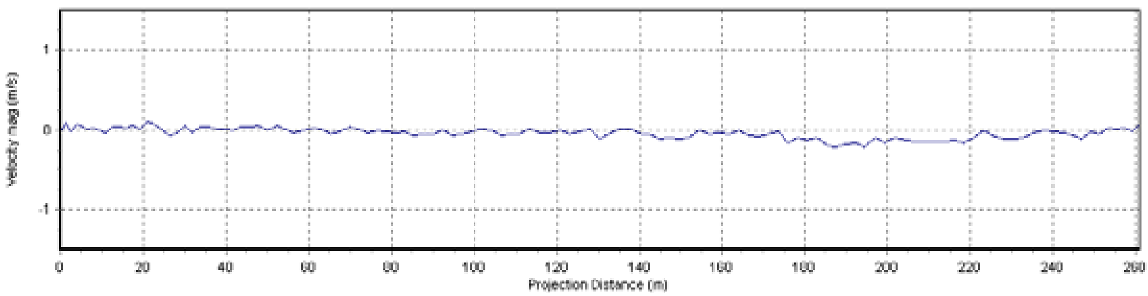

| Suspended Sediment Concentration & Flux | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* |

*I/RA/11265/05.014MSA*

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 09:17 | HW -1:12 | 42 E Transect |
|---|---|---|---|

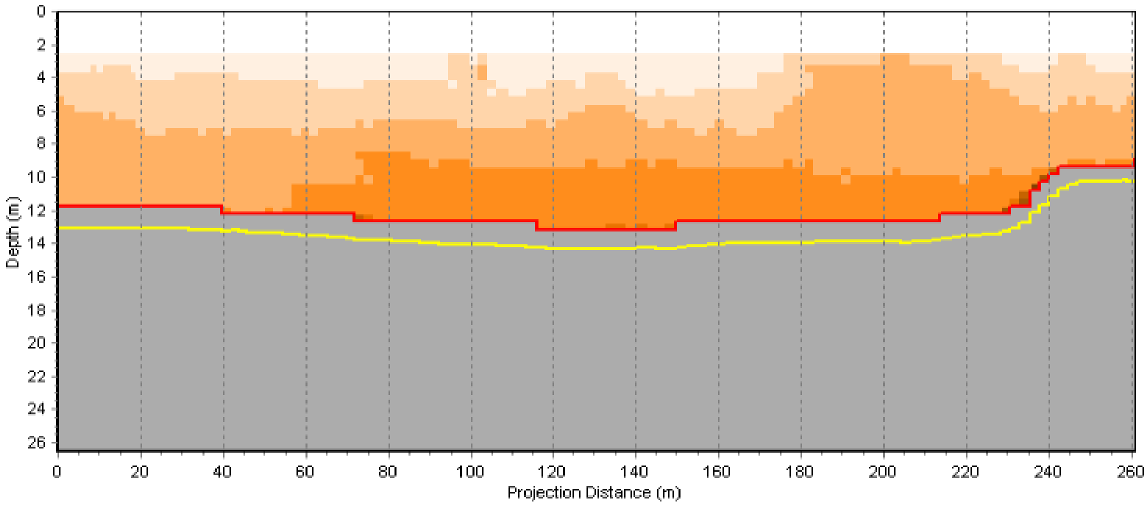


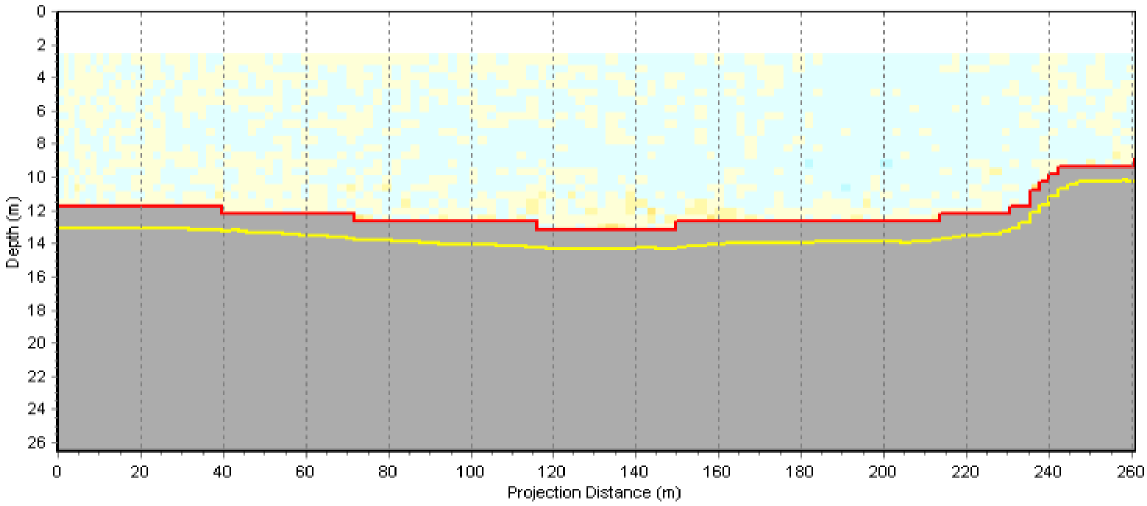




| Perpendicular & Parallel Velocity Depth Averaged Velocity | | *Data processed by:* *In association with:* *I/RA/11265/05.014MSA* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | |

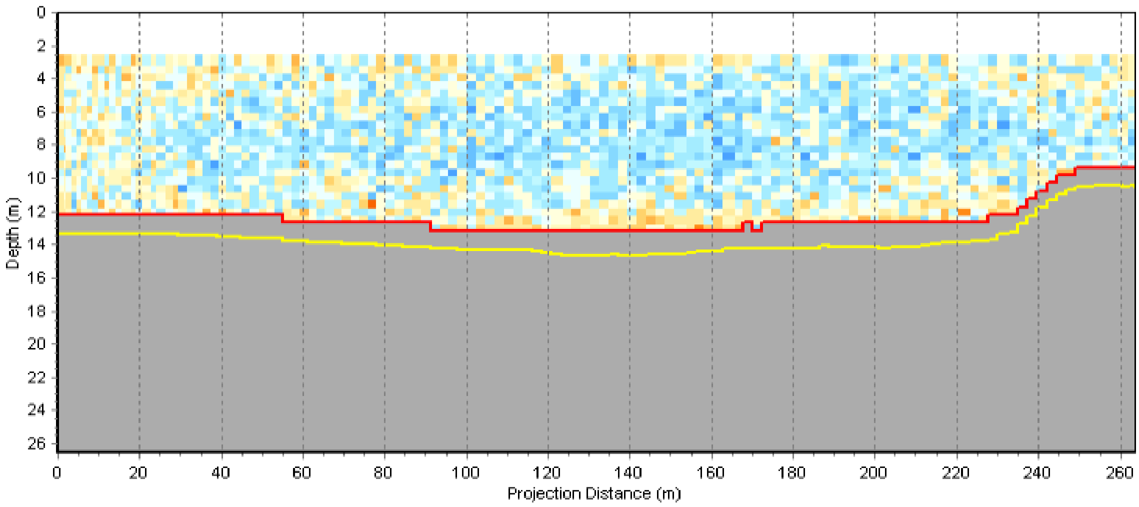
| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 09:17 | HW -1:12 | 42 E Transect |
|---|---|---|---|

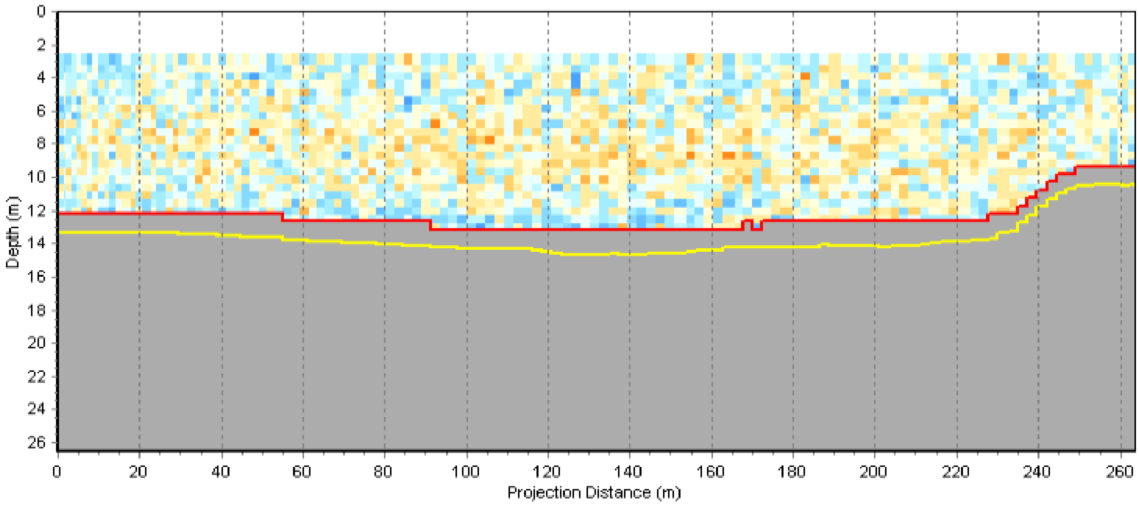


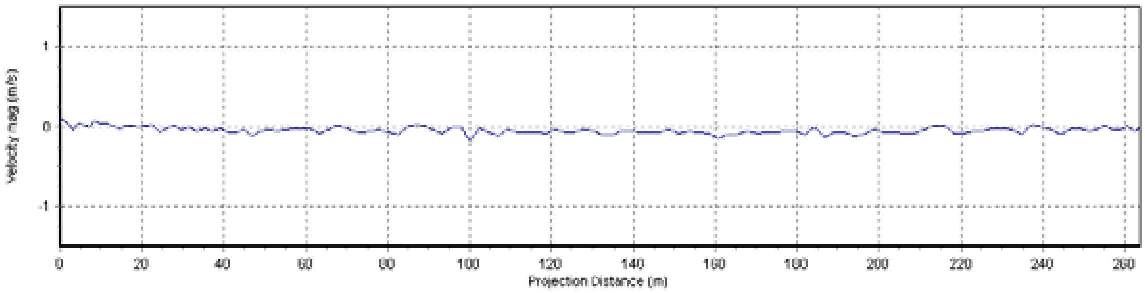




| Suspended Sediment Concentration & Flux | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* |
| | | *I/RA/11265/05.014MSA* |

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 09:42 | HW -0:47 | 47 E Transect |
|---|---|---|---|

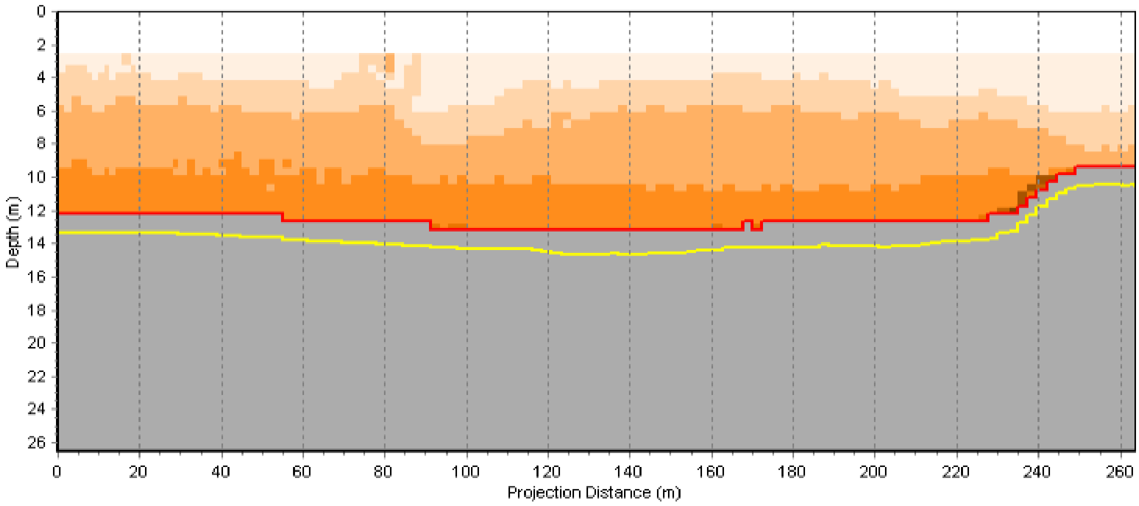


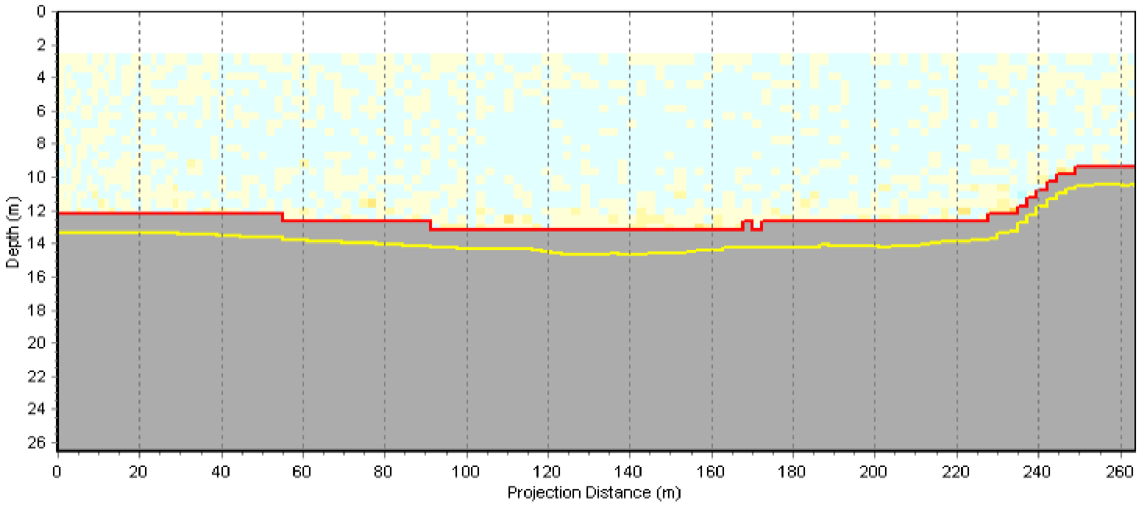




| Perpendicular & Parallel Velocity Depth Averaged Velocity | | *Data processed by:* *In association with:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *I/RA/11265/05.014MSA* |

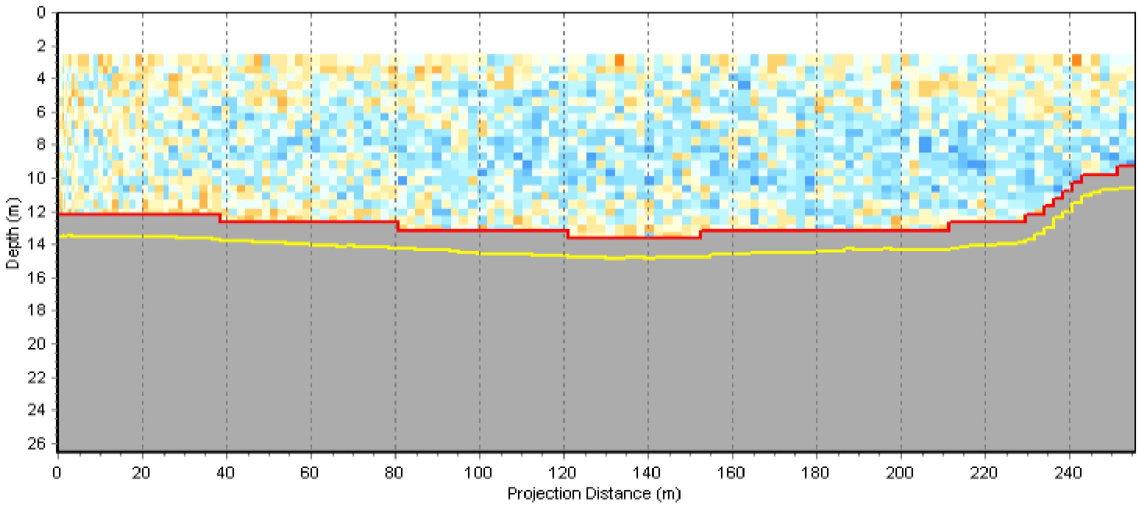
| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 09:42 | HW -0:47 | 47 E Transect |
|---|---|---|---|

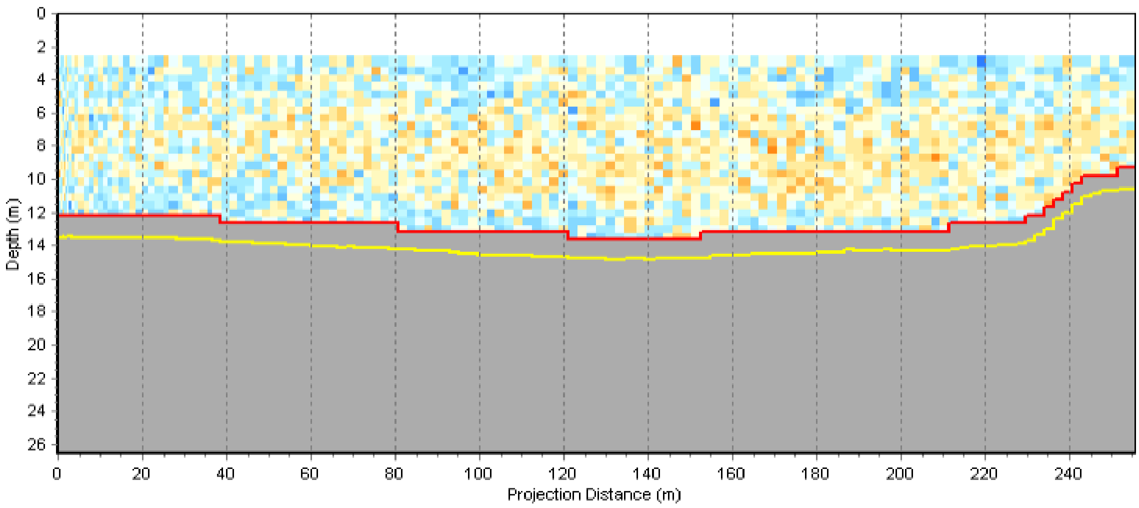


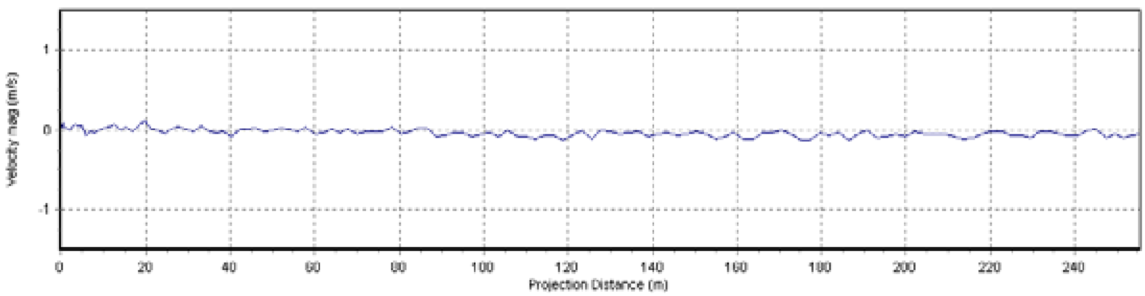




| Suspended Sediment Concentration & Flux | | *Data processed by:* IMDC |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* wl \| delft hydraulics, GEMS International<br>*I/RA/11265/05.014MSA* |

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 10:10 | HW -0:19 | 53 E Transect |
|---|---|---|---|

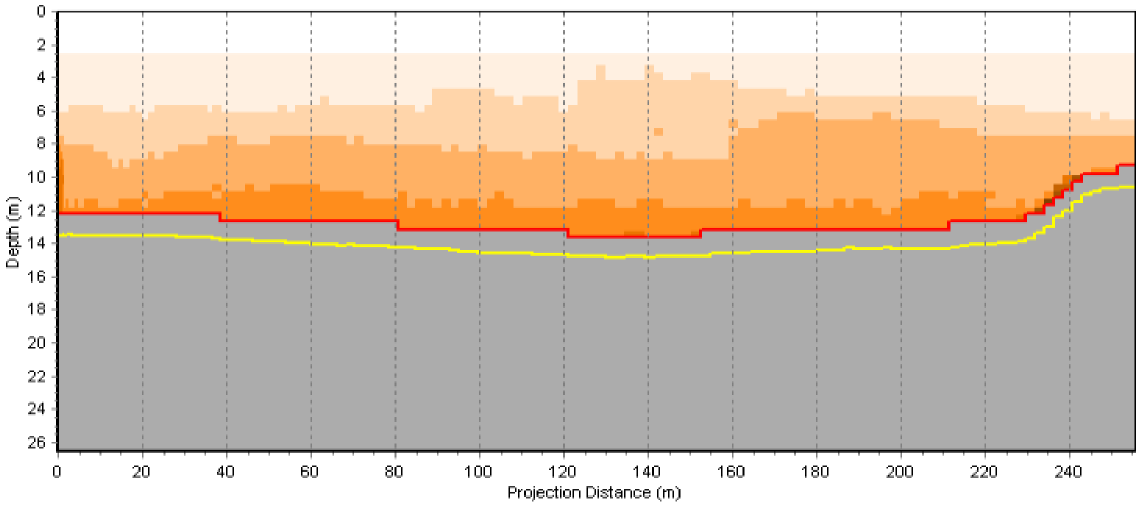


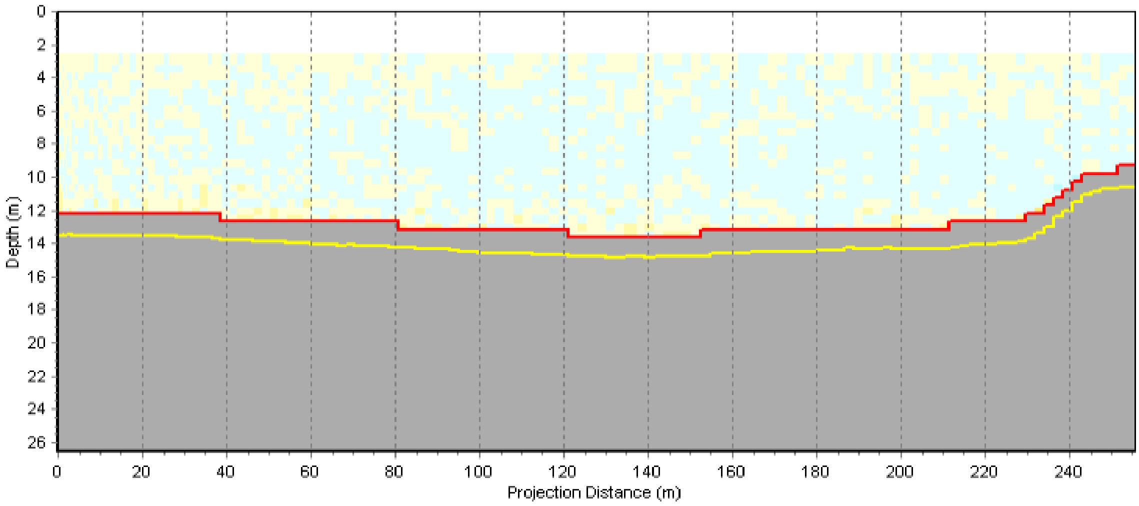




| Perpendicular & Parallel Velocity Depth Averaged Velocity | | *Data processed by:* *In association with:* *I/RA/11265/05.014MSA* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | |

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 10:10 | HW -0:19 | 53 E Transect |
|---|---|---|---|

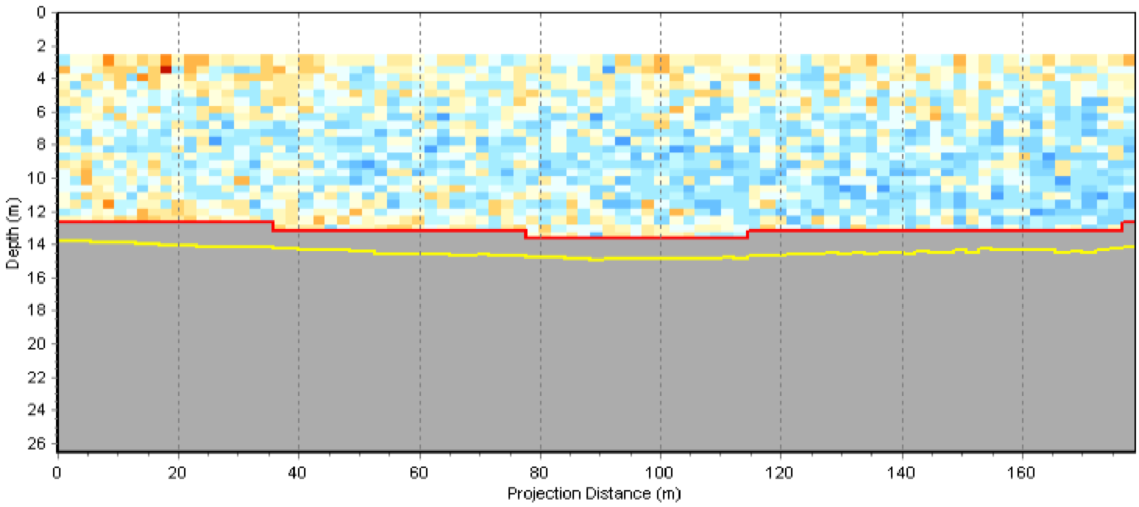


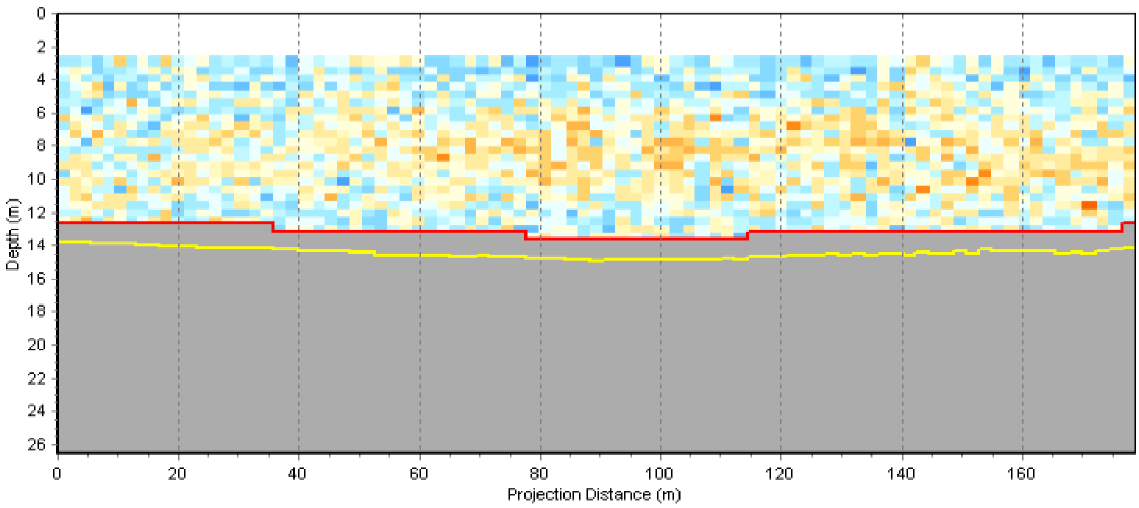



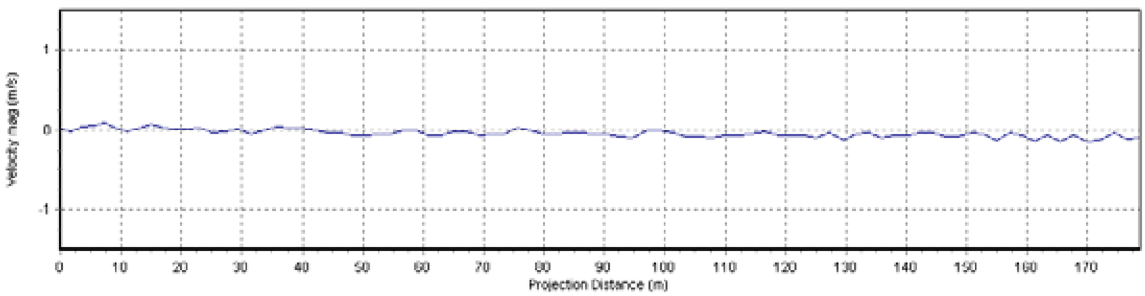

| Suspended Sediment Concentration & Flux | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* |

*I/RA/11265/05.014MSA*

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 10:30 | HW +0:00 | 58 E Transect |
|---|---|---|---|

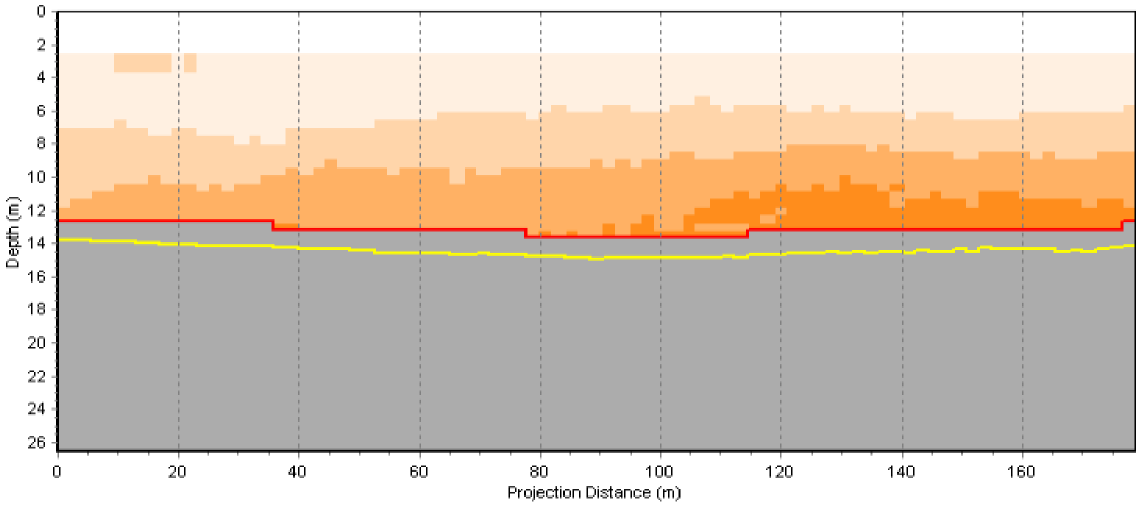


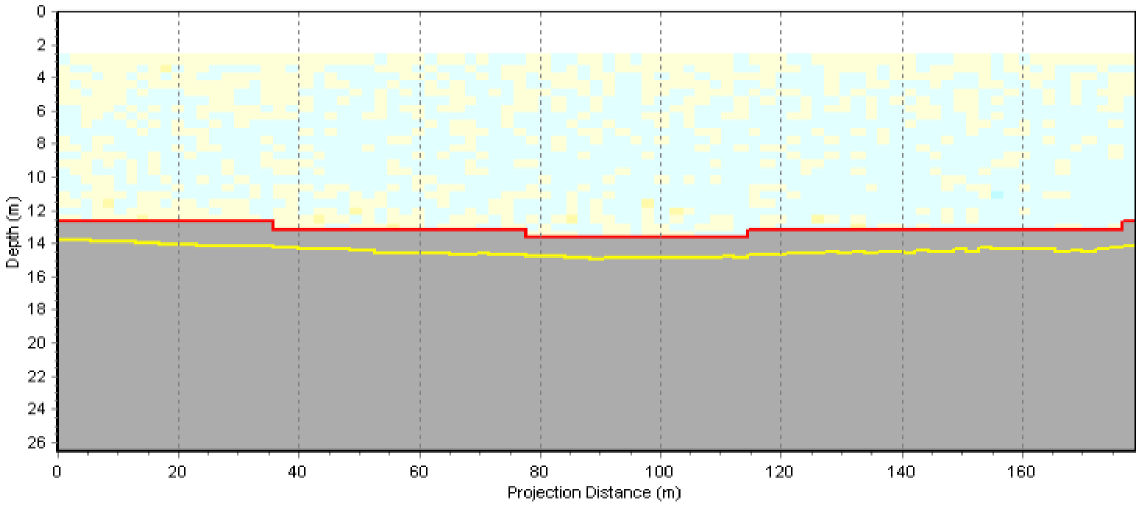




| Perpendicular & Parallel Velocity Depth Averaged Velocity | | *Data processed by:* *In association with:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *I/RA/11265/05.014MSA* |

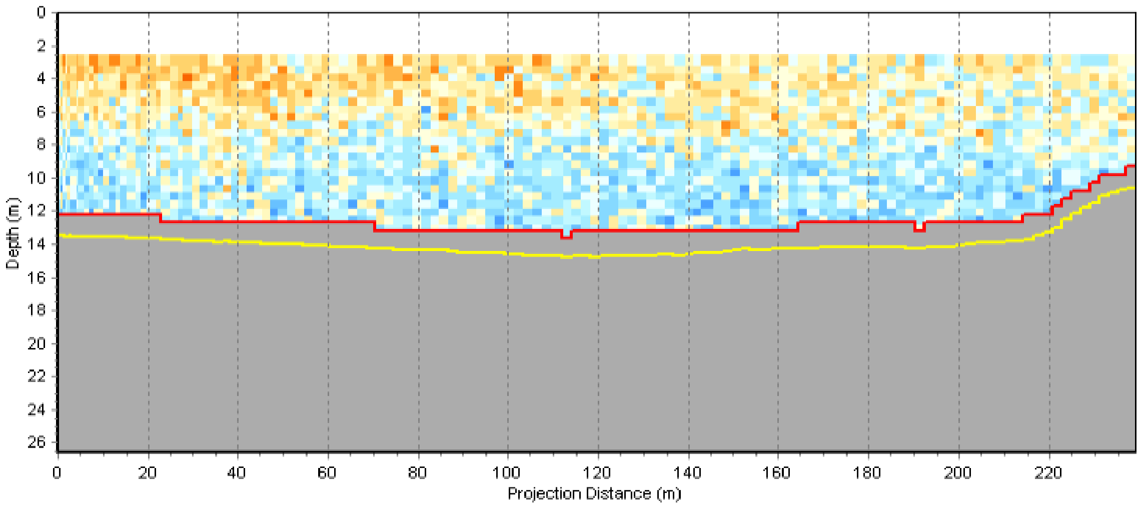
| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 10:30 | HW +0:00 | 58 E Transect |
|---|---|---|---|

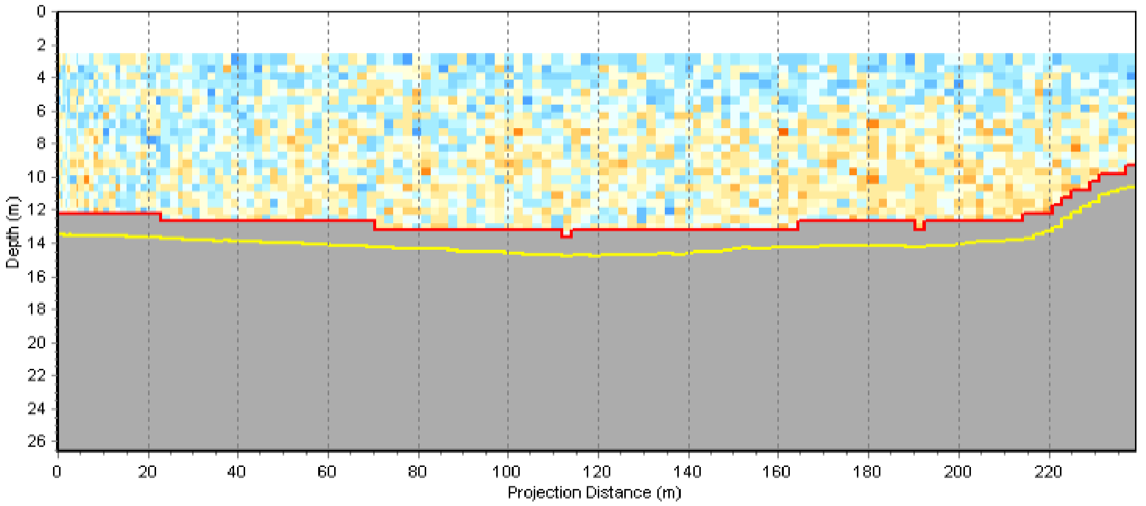


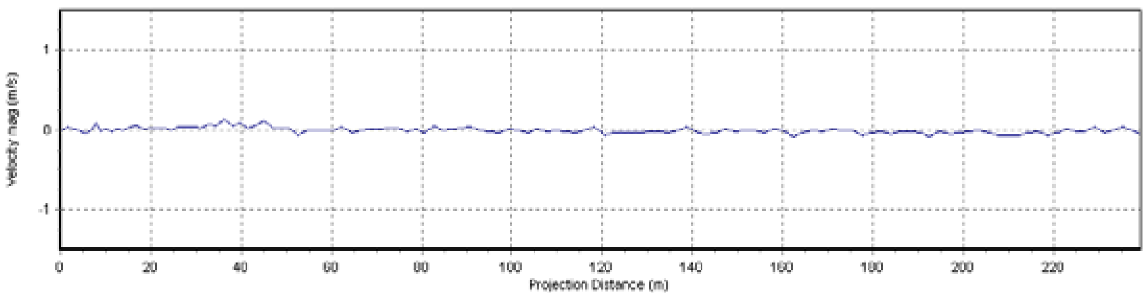




| Suspended Sediment Concentration & Flux | | *Data by:* *processed* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* |
| | | *I/RA/11265/05.014MSA* |

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 11:06 | HW +0:36 | 63 E Transect |
|---|---|---|---|

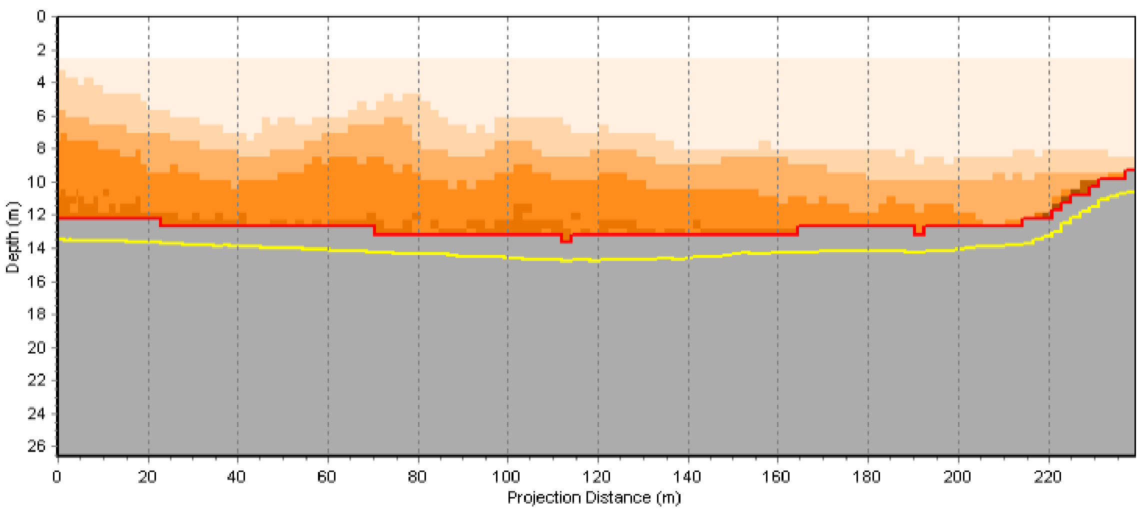


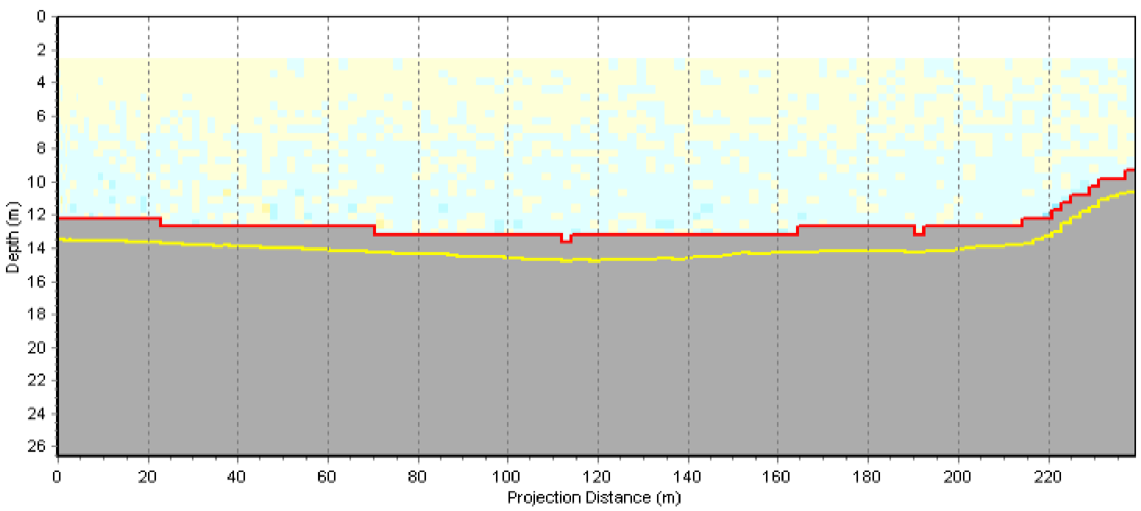




| Perpendicular & Parallel Velocity Depth Averaged Velocity | | *Data processed by:* IMDC |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* wl \| delft hydraulics, GEMS International *I/RA/11265/05.014MSA* |

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 11:06 | HW +0:36 | 63 E Transect |
|---|---|---|---|




| Suspended Sediment Concentration & Flux | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* *I/RA/11265/05.014MSA* |

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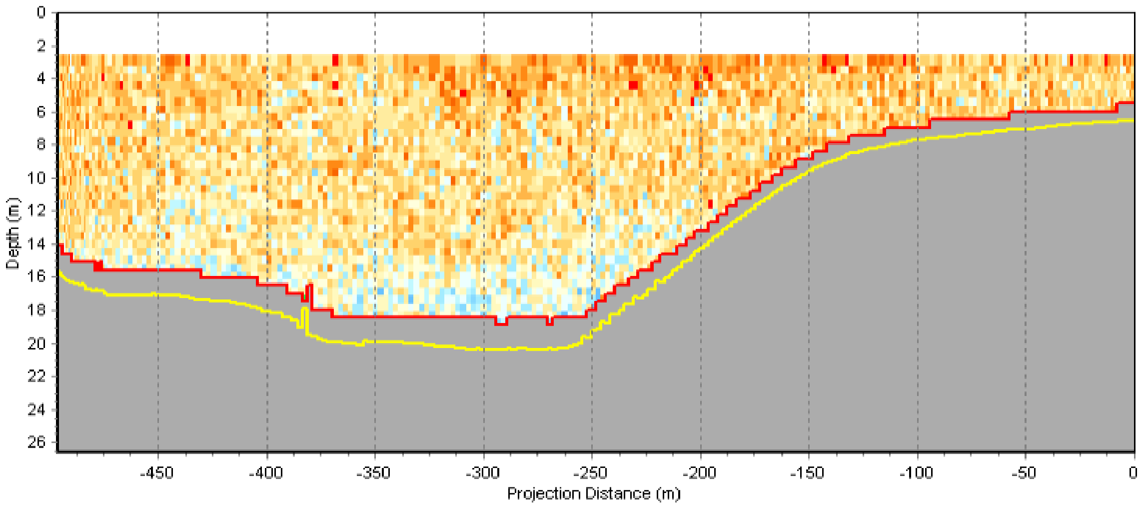
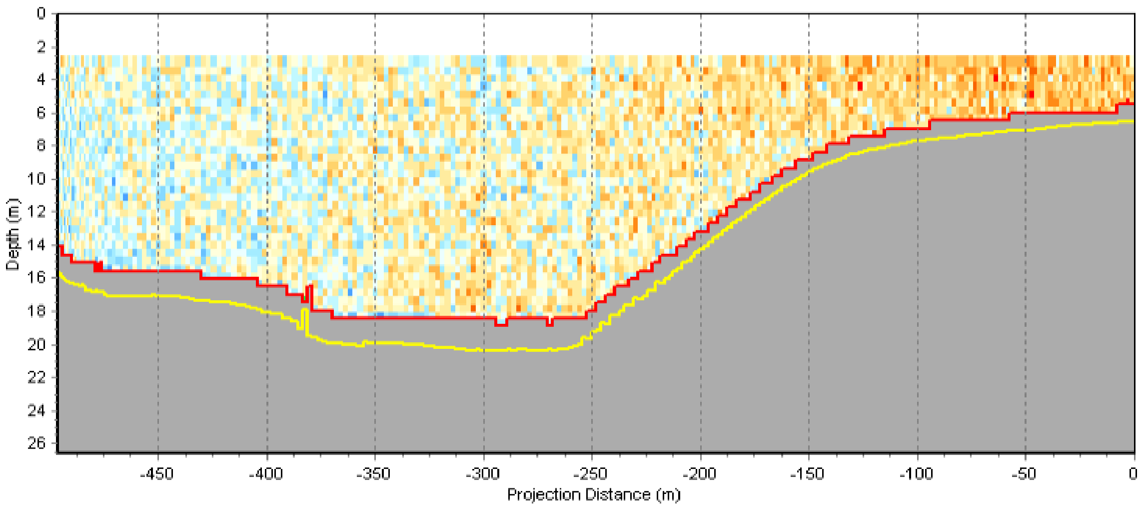
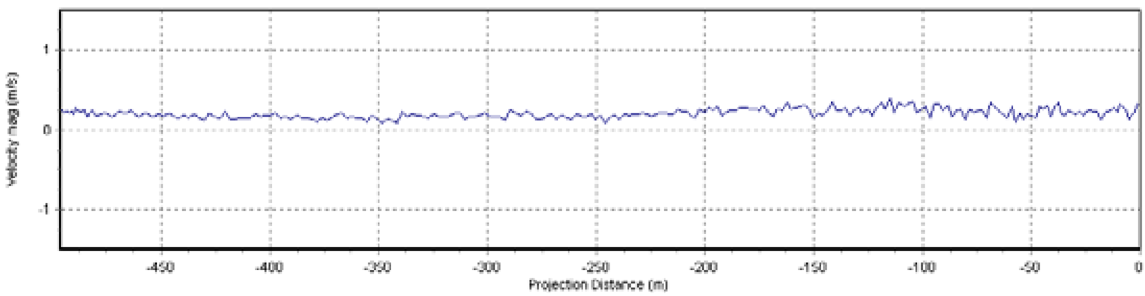
## J.3 Transect D

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 11:48 | HW +1:18 | 69 D Transect |
|---|---|---|---|




Perpendicular & Parallel Velocity
Depth Averaged Velocity

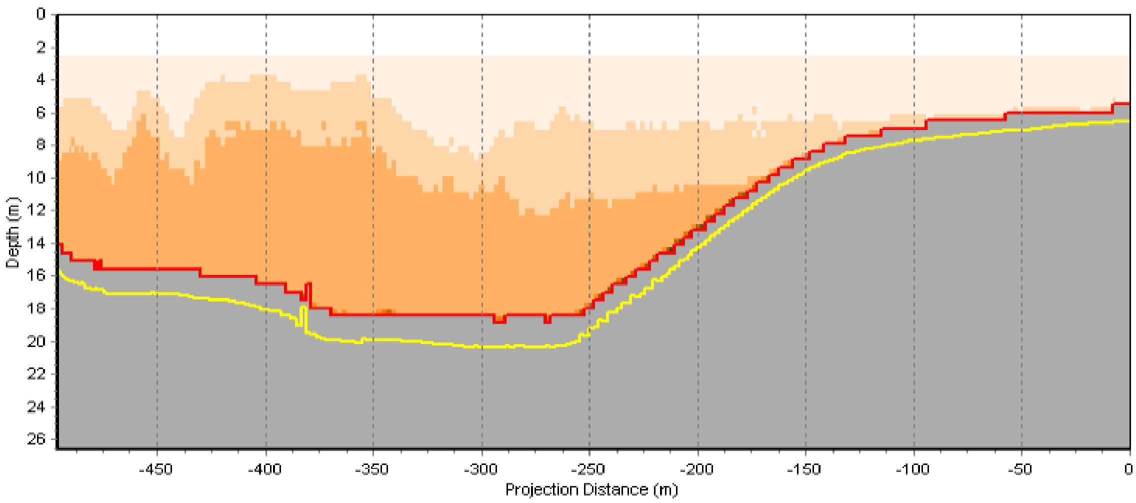
| Location: Kallo | Date: 18/02/2005 |
|---|---|

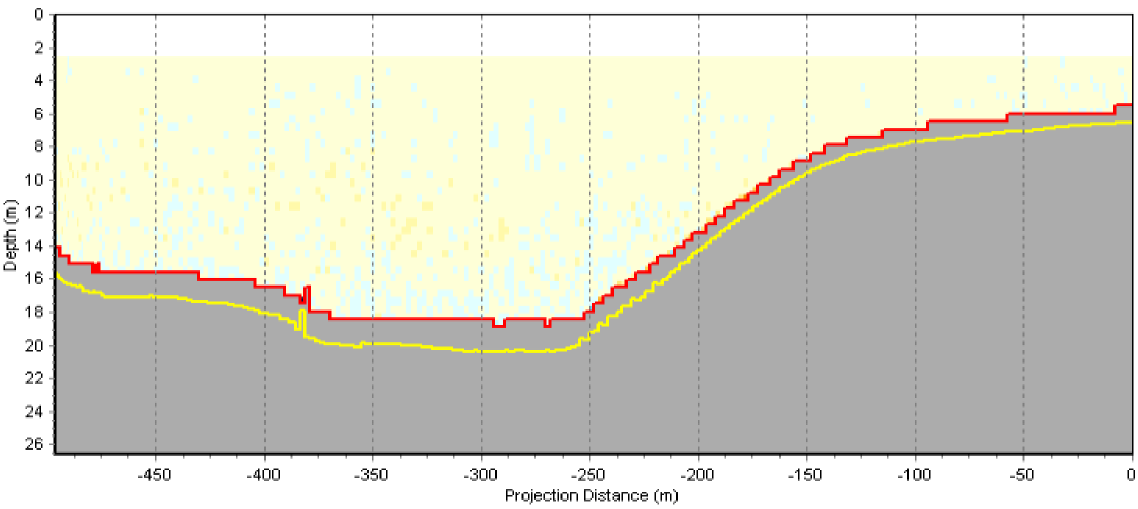
*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 11:48 | HW +1:18 | 69 D Transect |
|---|---|---|---|

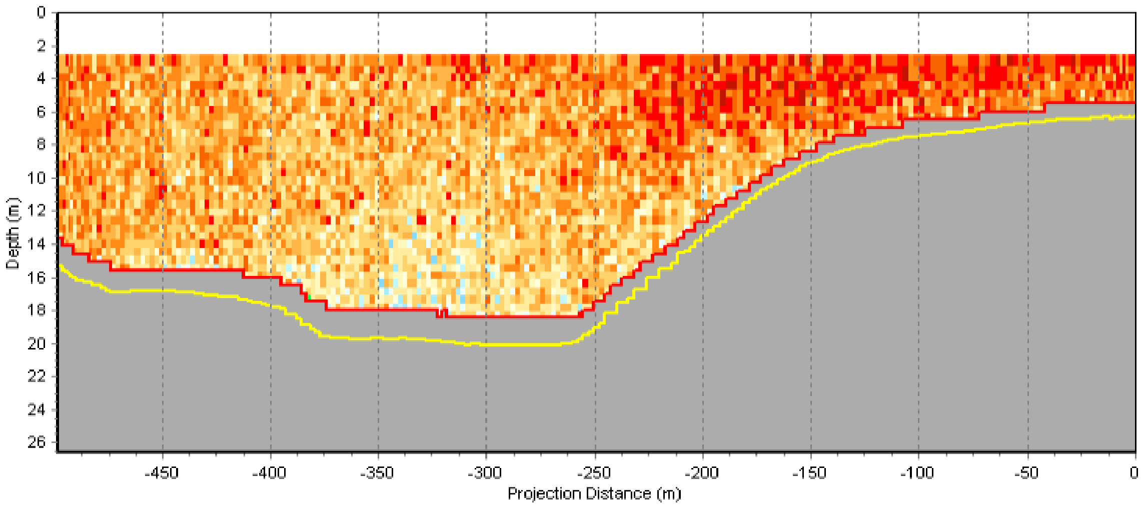


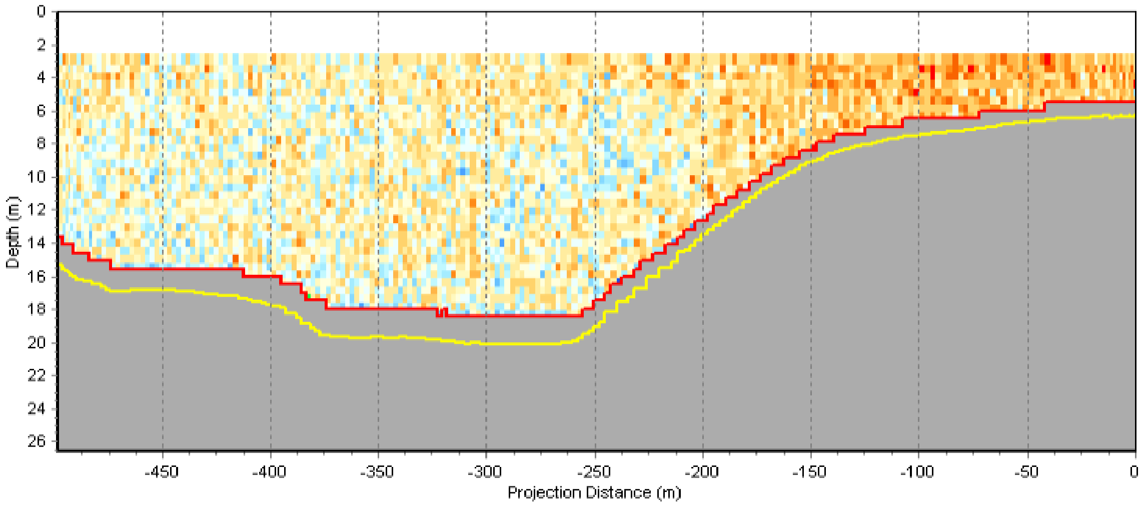



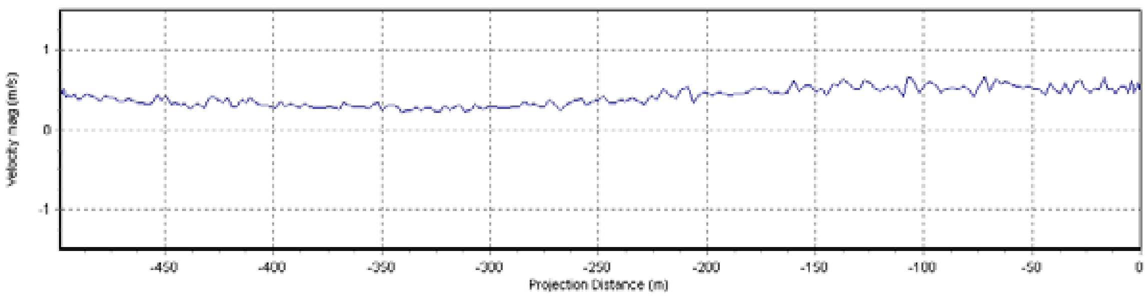

| Suspended Sediment Concentration & Flux | | *Data by:* | *processed* |
|---|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In with:* | *association* |

*I/RA/11265/05.014MSA*

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 12:11 | HW +1:41 | 75 D Transect |
|---|---|---|---|



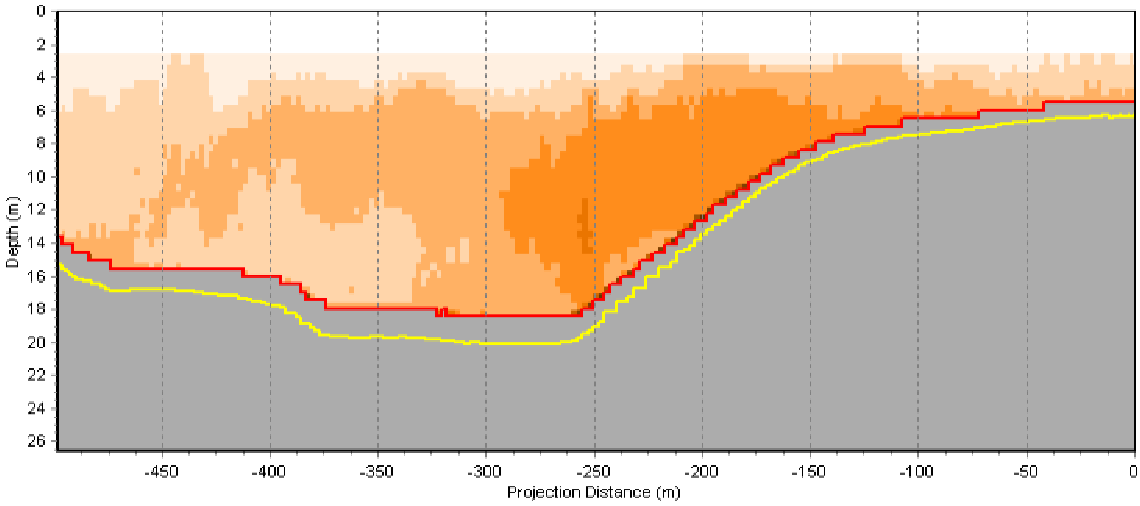



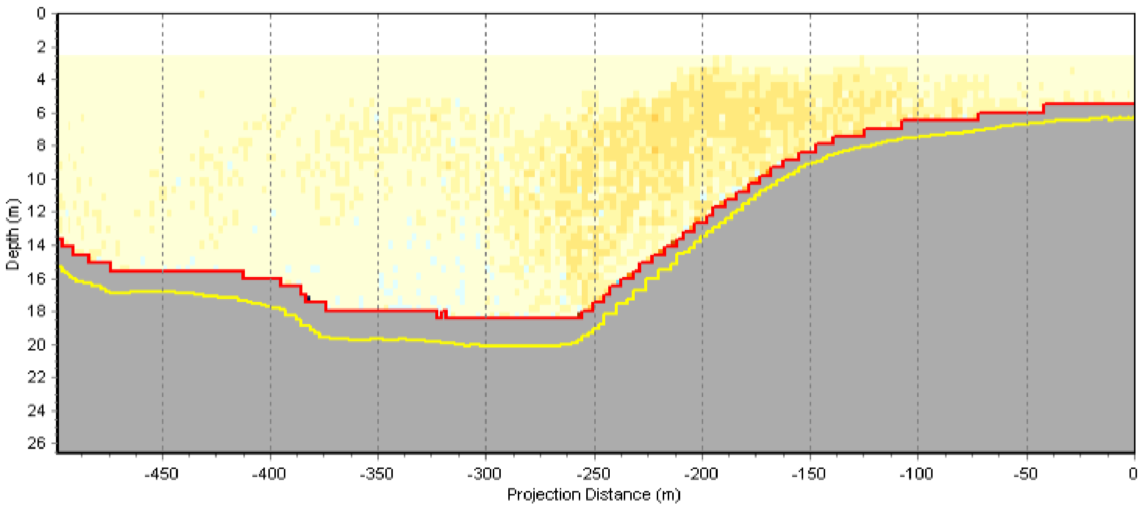




Perpendicular & Parallel Velocity
Depth Averaged Velocity

| Location: Kallo | Date: 18/02/2005 | *Data processed by:* IMDC *In association with:* WL \| delft hydraulics, GEMS International *I/RA/11265/05.014MSA* |
|---|---|---|

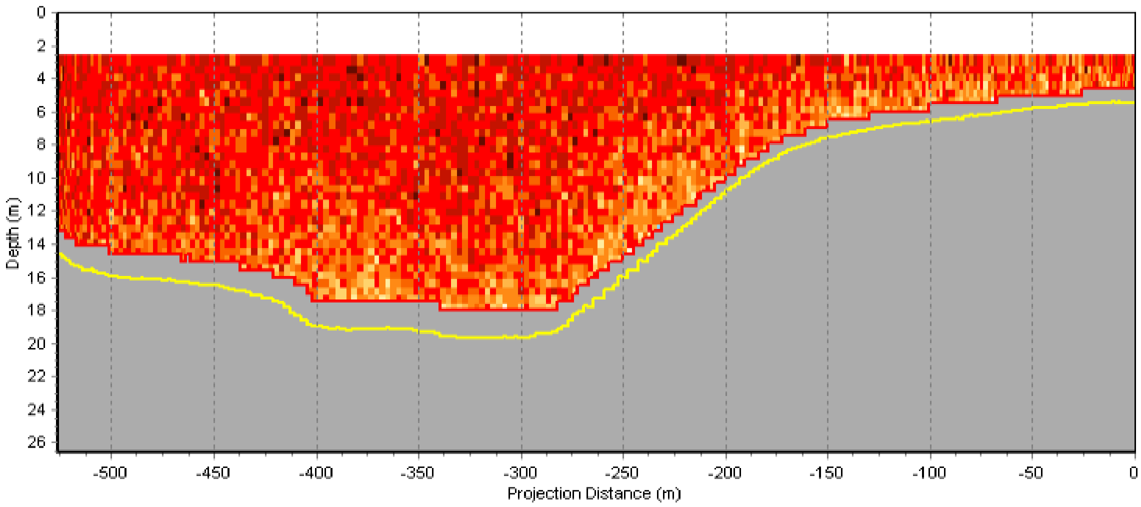
| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 12:11 | HW +1:41 | 75 D Transect |
|---|---|---|---|

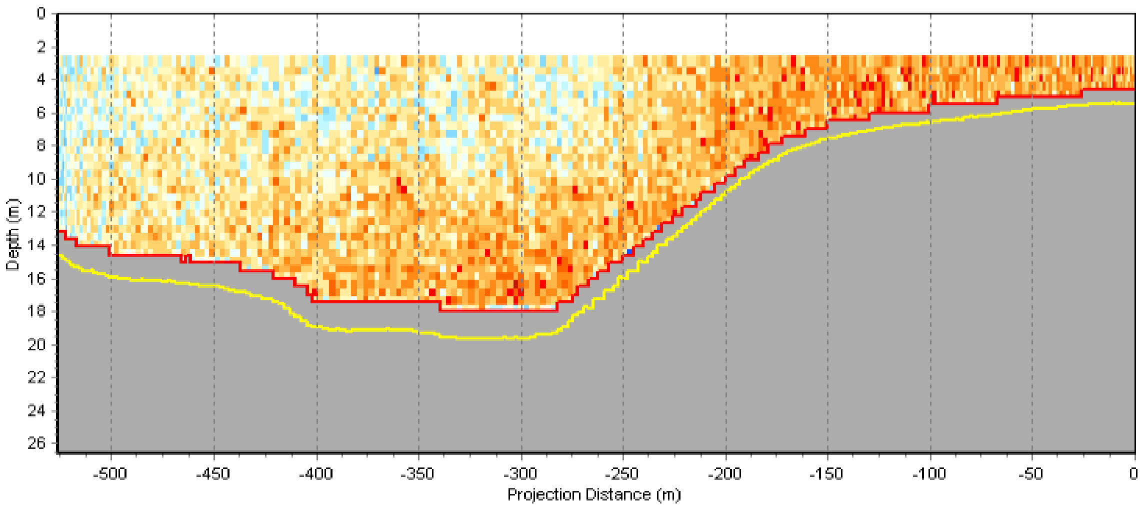


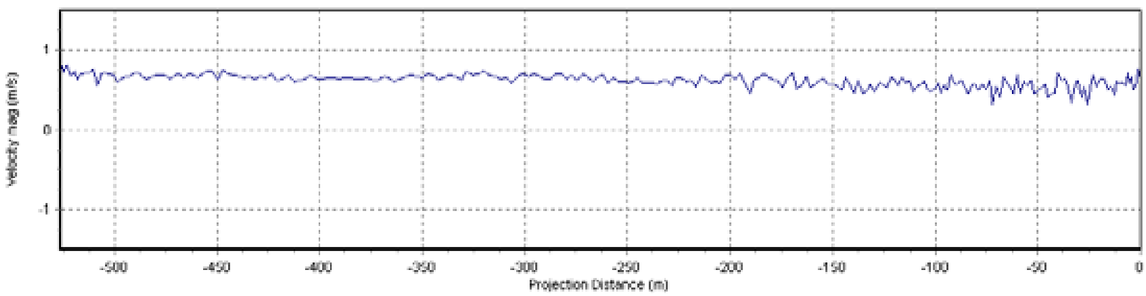




| Suspended Sediment Concentration & Flux | | *Data processed by:* *In association with:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *I/RA/11265/05.014MSA* |

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 12:54 | HW +2:24 | 81 D Transect |
|---|---|---|---|




Perpendicular & Parallel Velocity
Depth Averaged Velocity

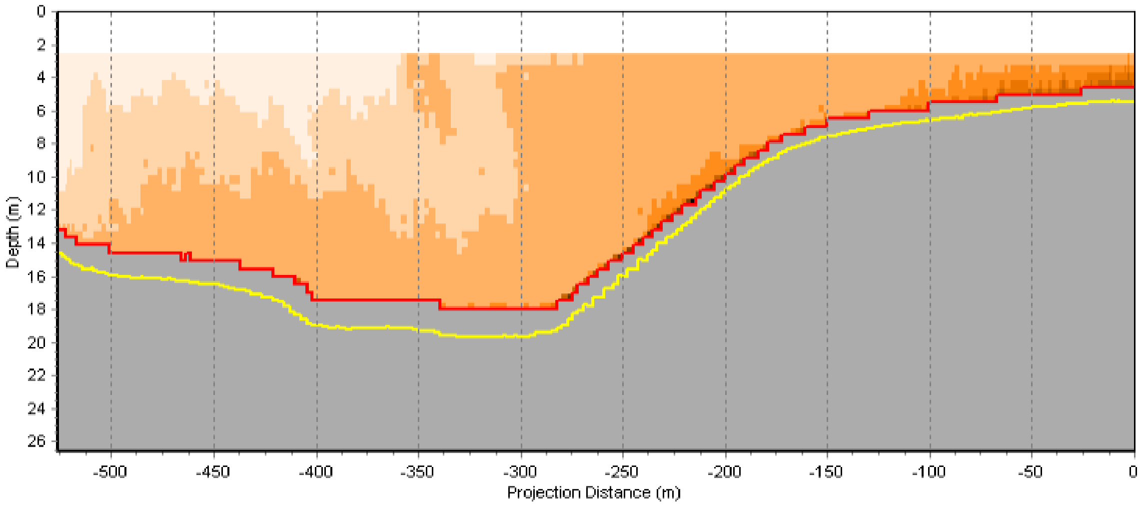
| Location: Kallo | Date: 18/02/2005 |
|---|---|

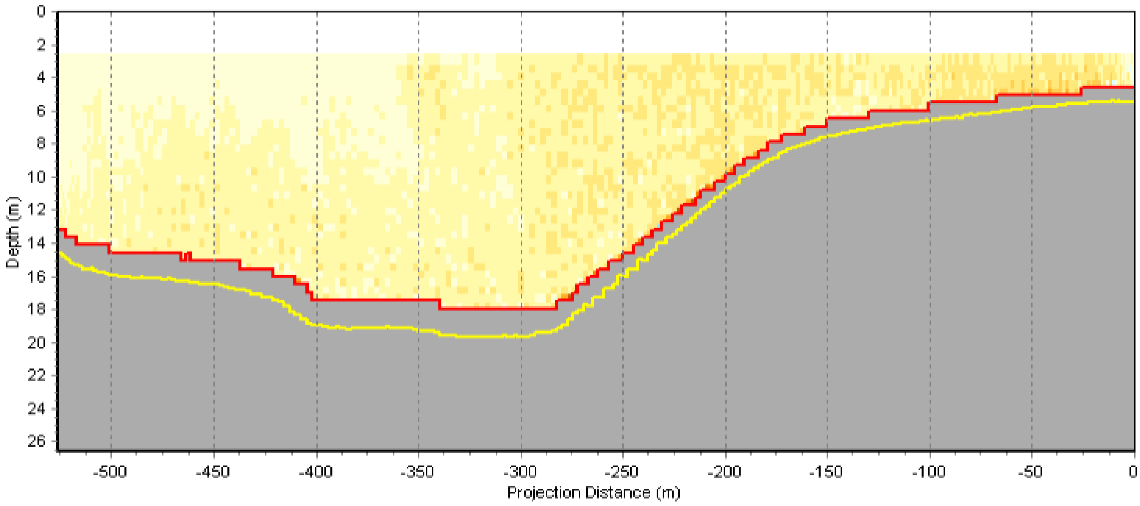
*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

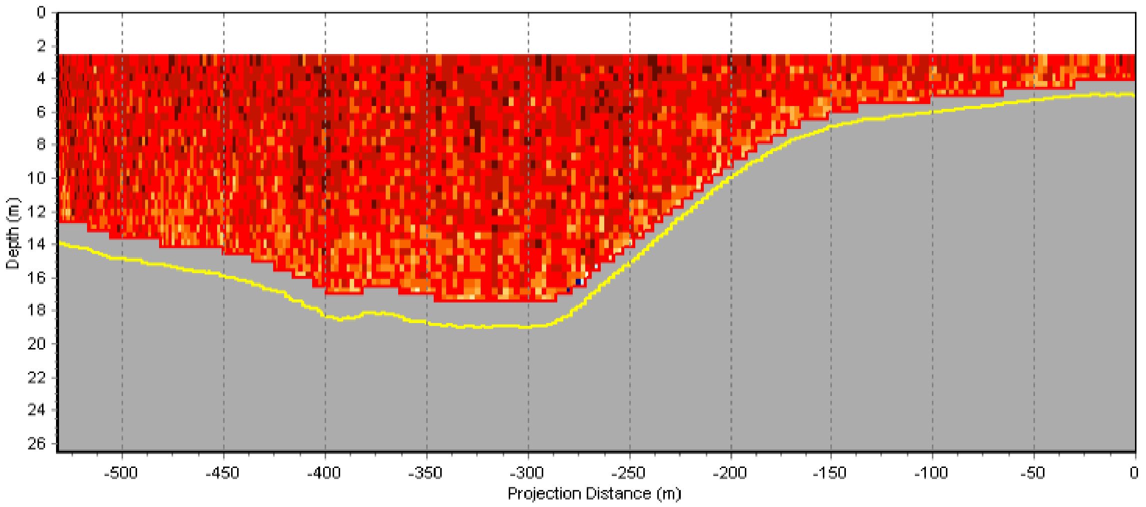
| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 12:54 | HW +2:24 | 81 D Transect |
|---|---|---|---|

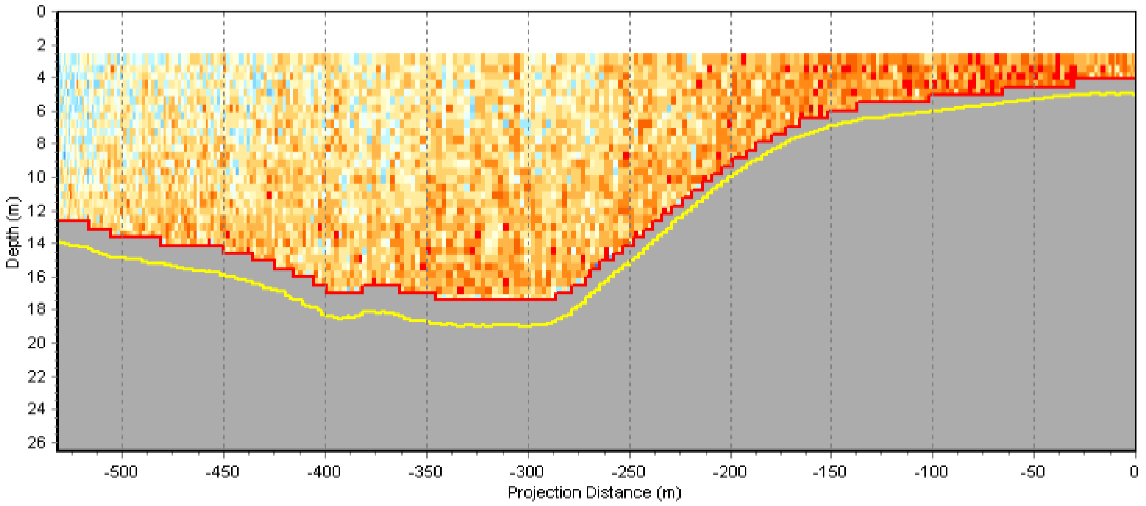


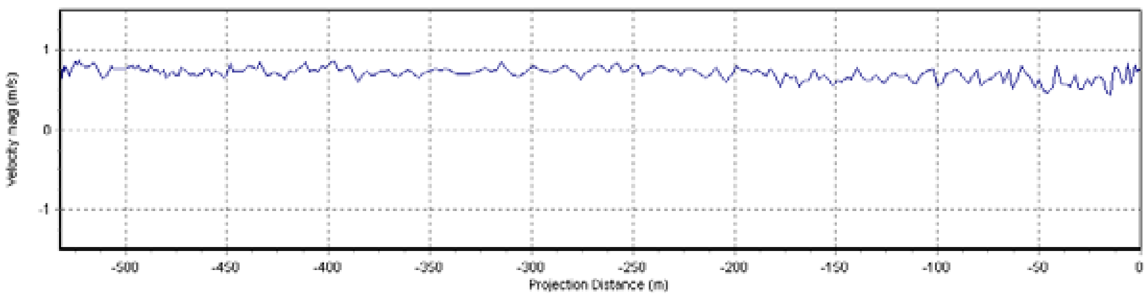




| Suspended Sediment Concentration & Flux | | *Data processed by:* *In association with:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *I/RA/11265/05.014MSA* |

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 13:32 | HW +3:02 | 89 D Transect |
|---|---|---|---|

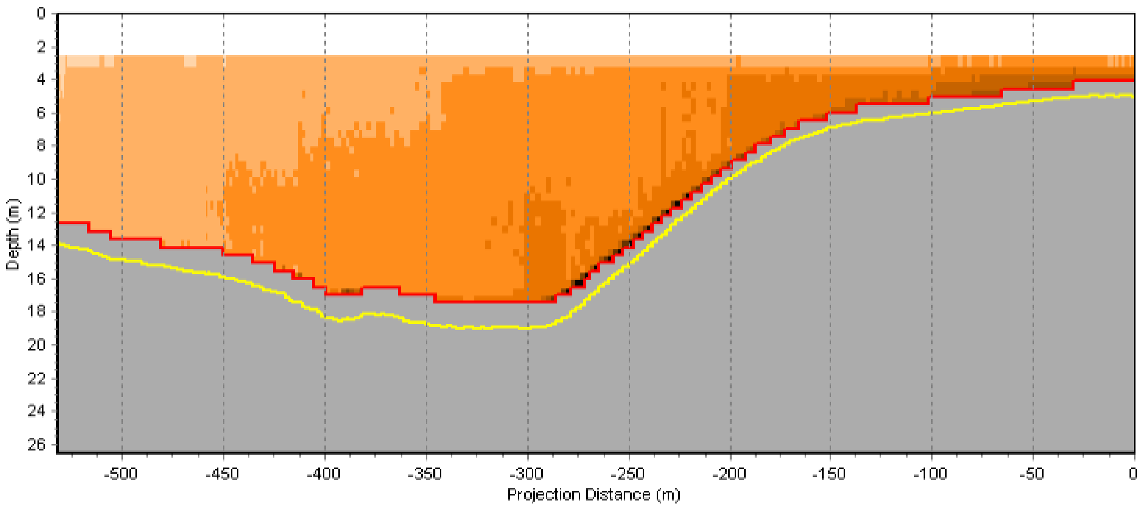


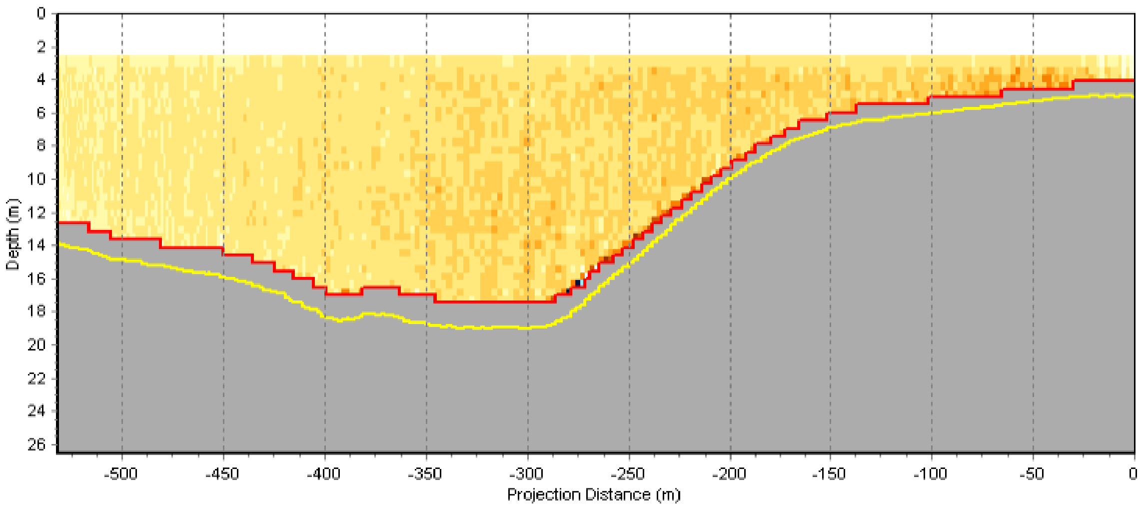




| Perpendicular & Parallel Velocity Depth Averaged Velocity | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* |
| | | *I/RA/11265/05.014MSA* |

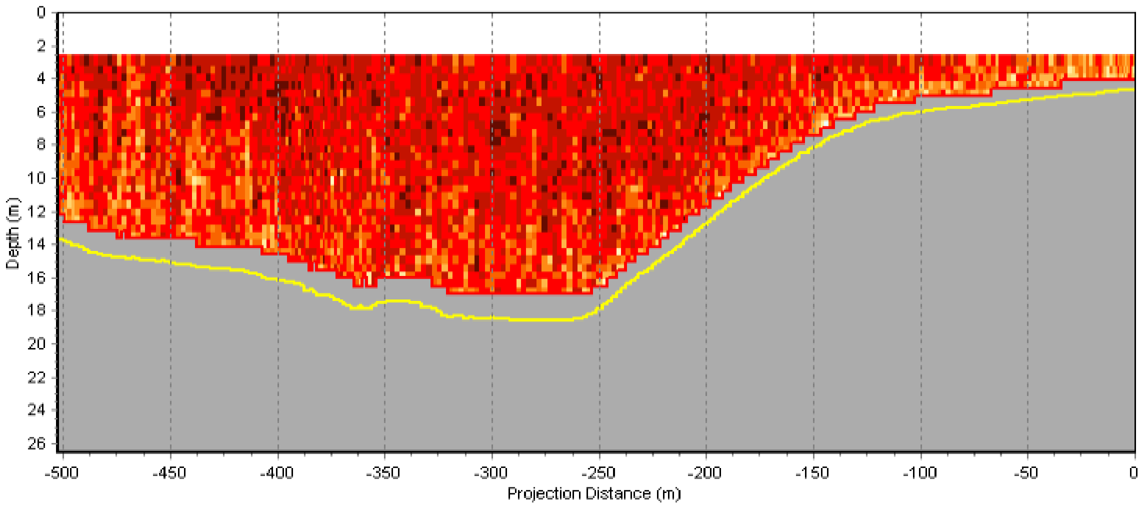
| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 13:32 | HW +3:02 | 89 D Transect |
|---|---|---|---|

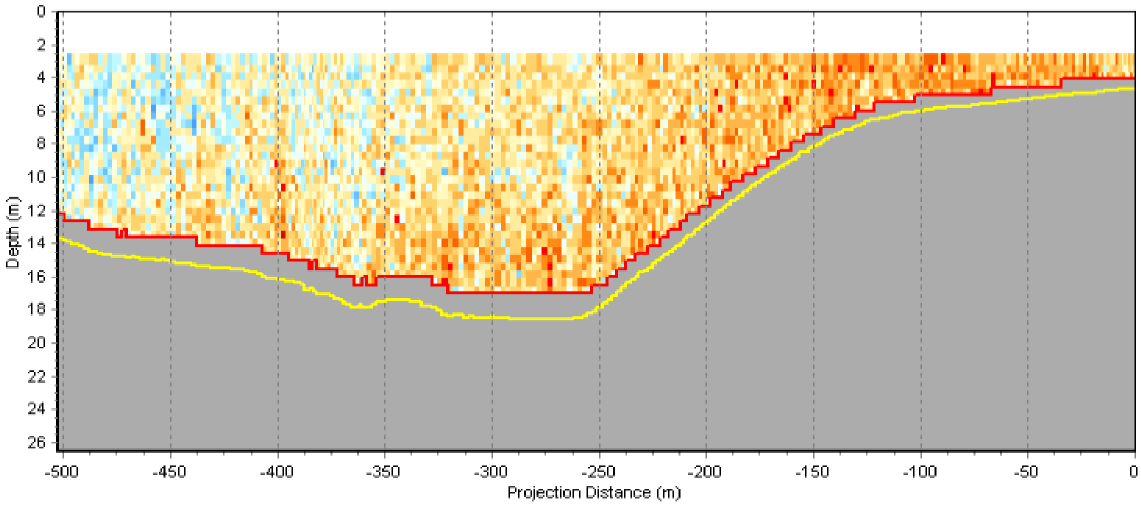


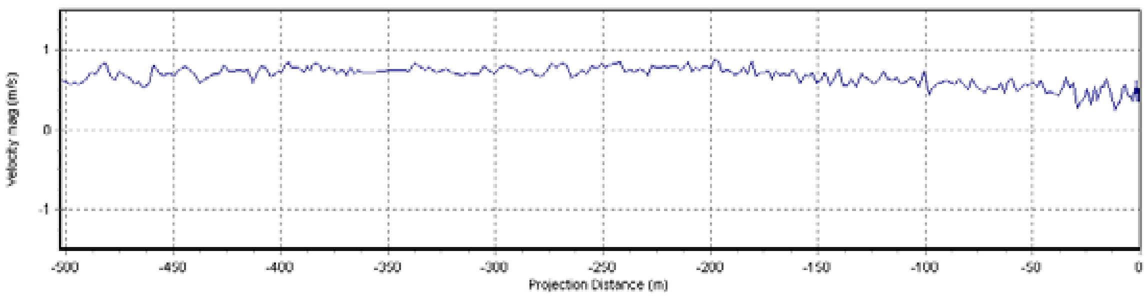




| Suspended Sediment Concentration & Flux | | *Data processed by:* / *In association with:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *I/RA/11265/05.014MSA* |

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 14:04 | HW +3:34 | 94bis D Transect |
|---|---|---|---|

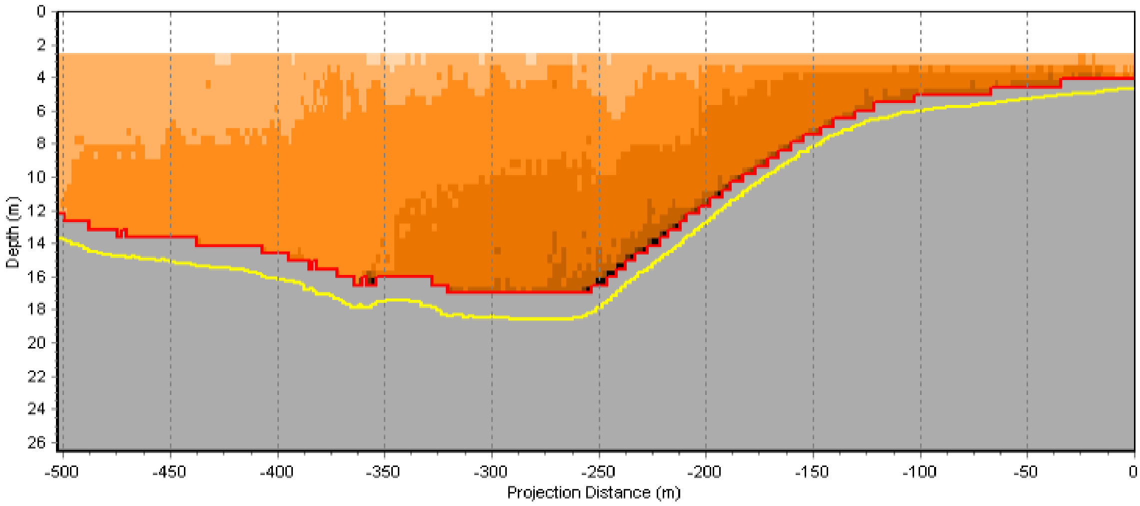


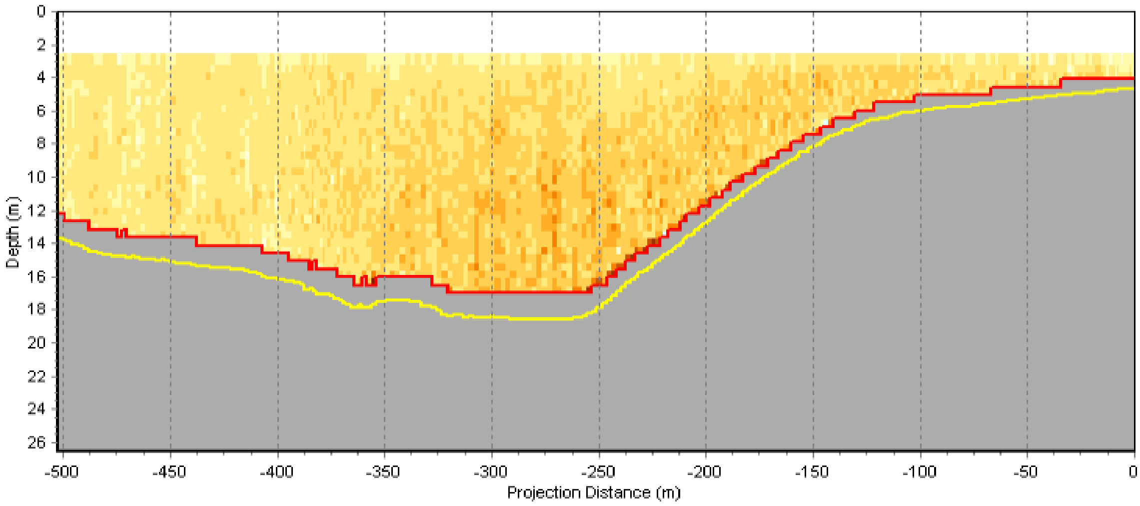




| Perpendicular & Parallel Velocity<br>Depth Averaged Velocity | | *Data processed by:*<br><br>*In association with:* |
|---|---|---|
| Location:<br>Kallo | Date:<br>18/02/2005 | *I/RA/11265/05.014MSA* |

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 14:04 | HW +3:34 | 94bis D Transect |
|---|---|---|---|

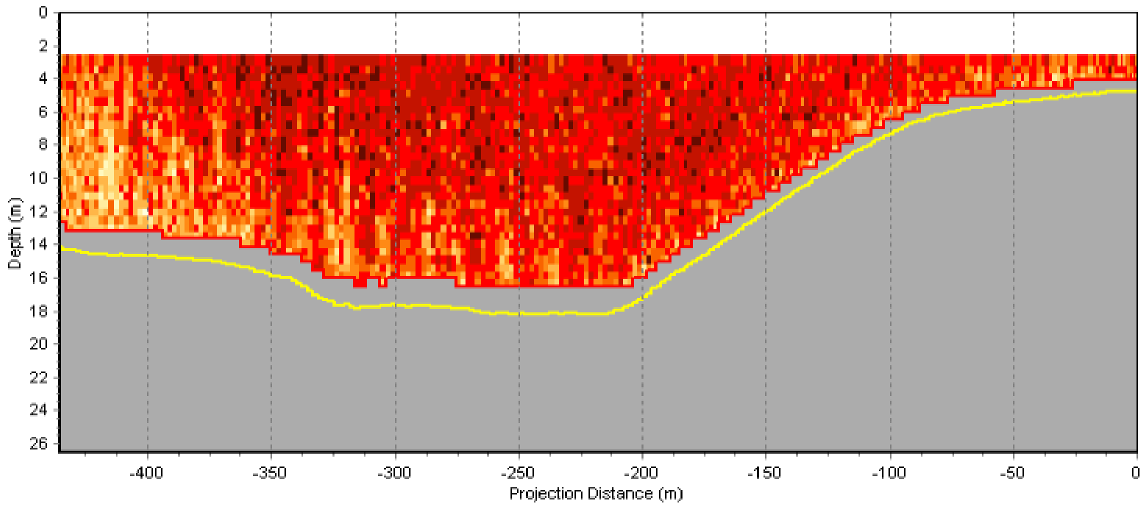


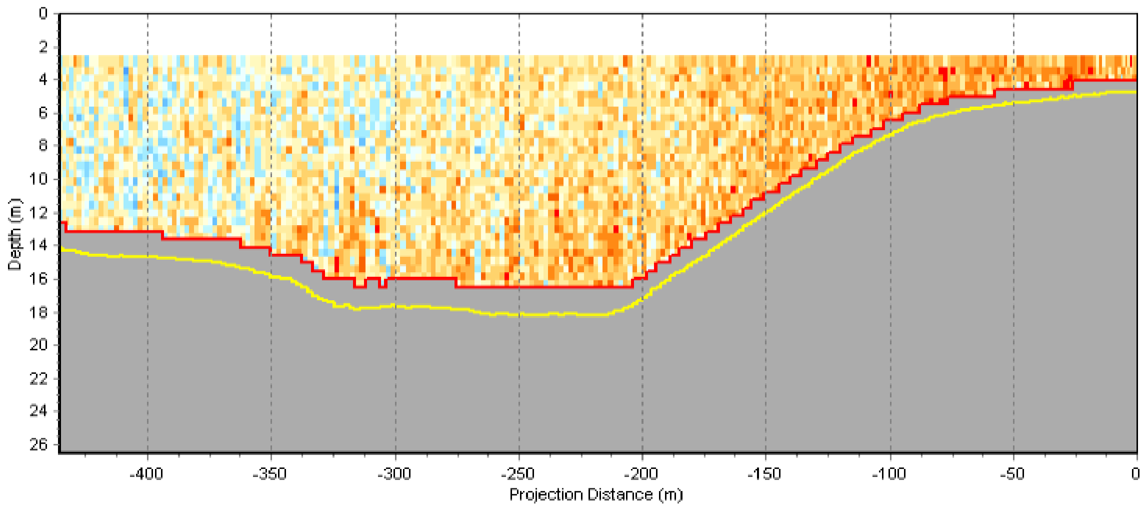



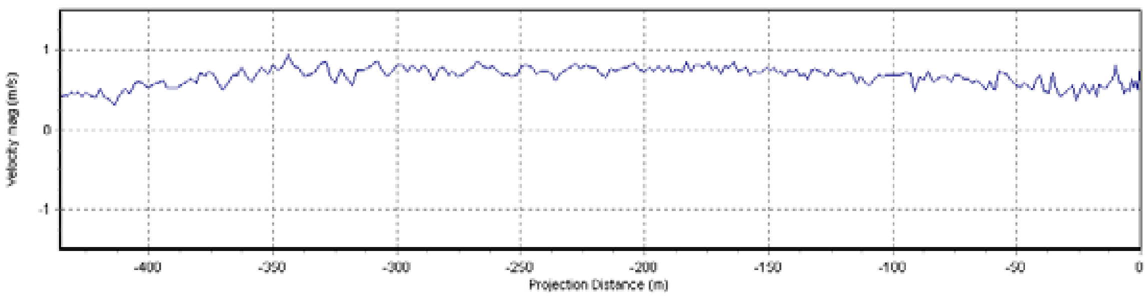

| Suspended Sediment Concentration & Flux | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* |

*I/RA/11265/05.014MSA*

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 14:42 | HW +4:12 | 99 D Transect |
|---|---|---|---|

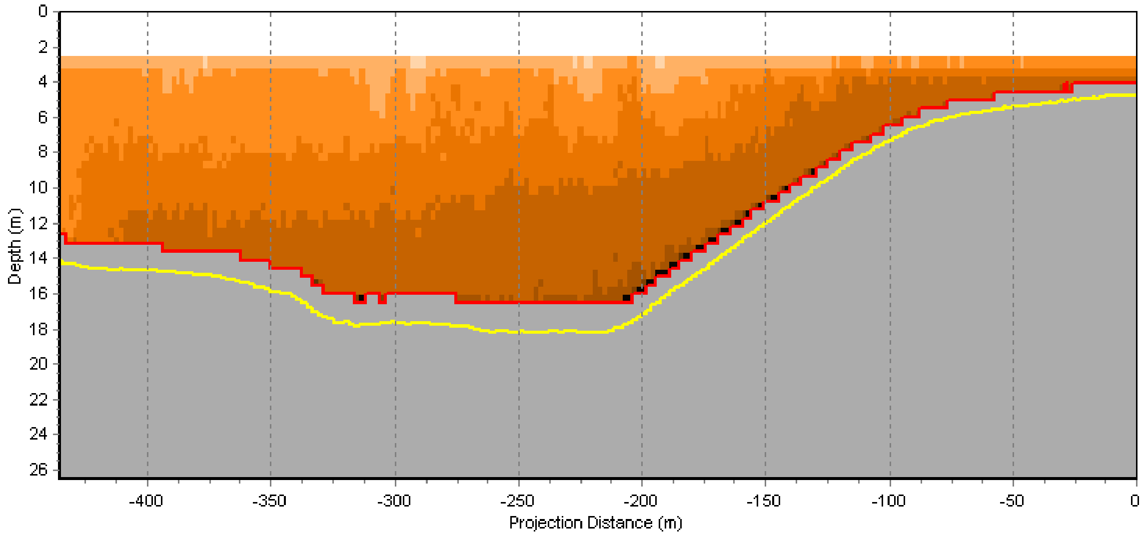


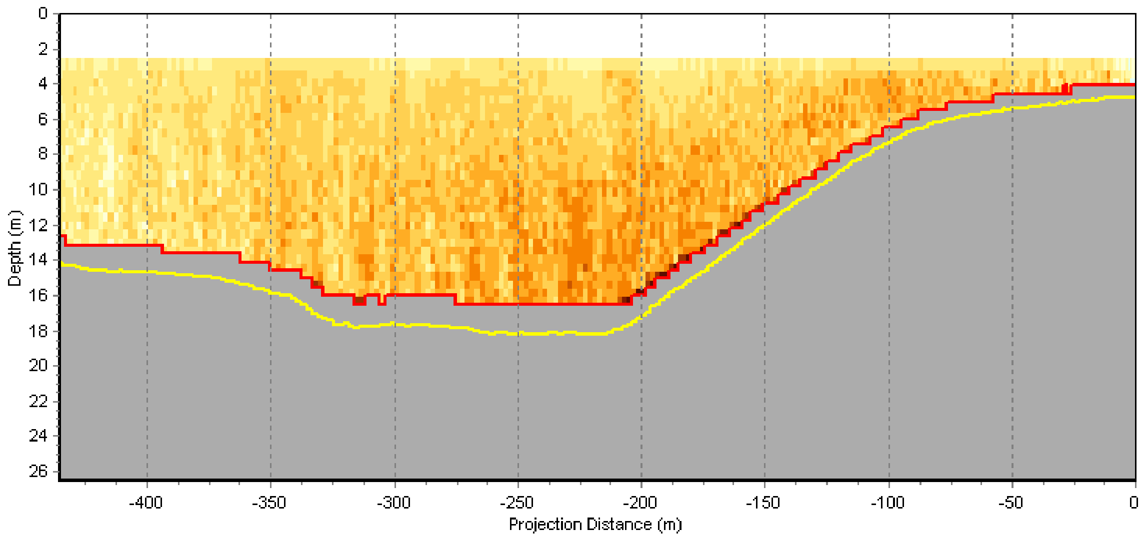




| Perpendicular & Parallel Velocity Depth Averaged Velocity | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* |
| | | *I/RA/11265/05.014MSA* |

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 14:42 | HW +4:12 | 99 D Transect |
|---|---|---|---|

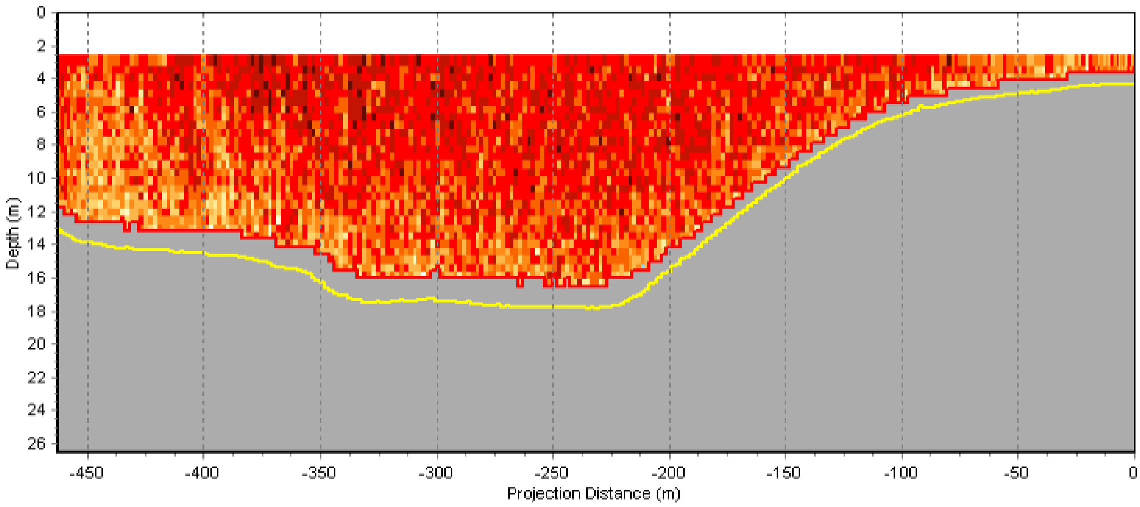


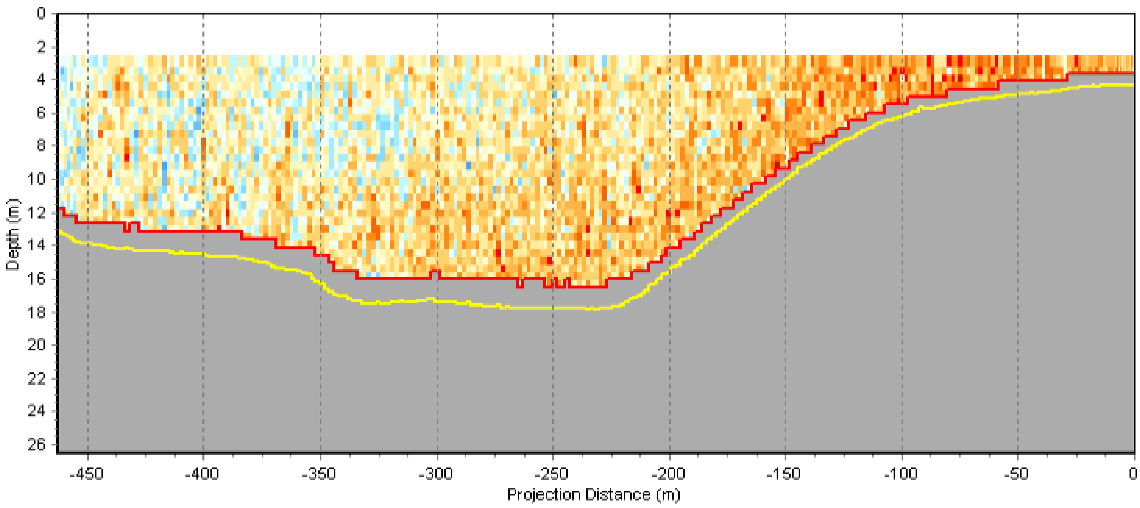



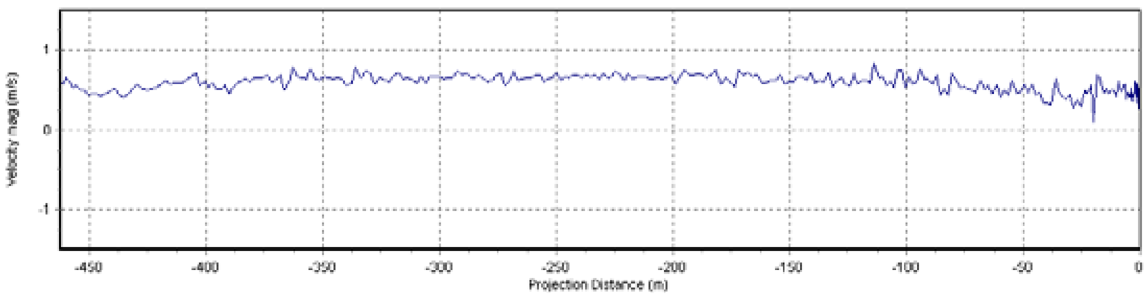

| Suspended Sediment Concentration & Flux | | Data processed by: |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | In association with: |

I/RA/11265/05.014MSA

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 15:16 | HW +4:46 | 104 D Transect |
|---|---|---|---|




Perpendicular & Parallel Velocity
Depth Averaged Velocity

Location:
Kallo

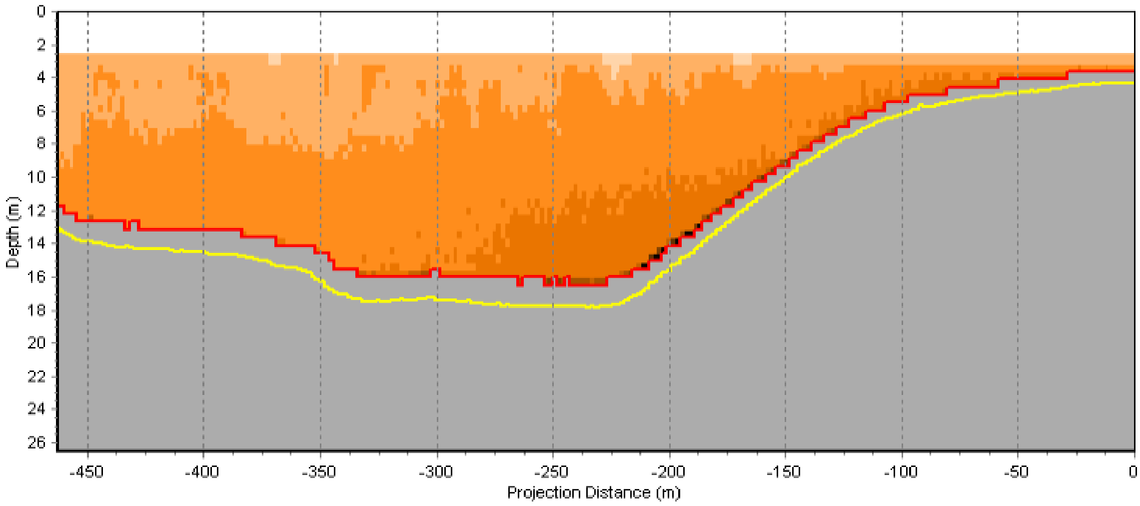
Date:
18/02/2005

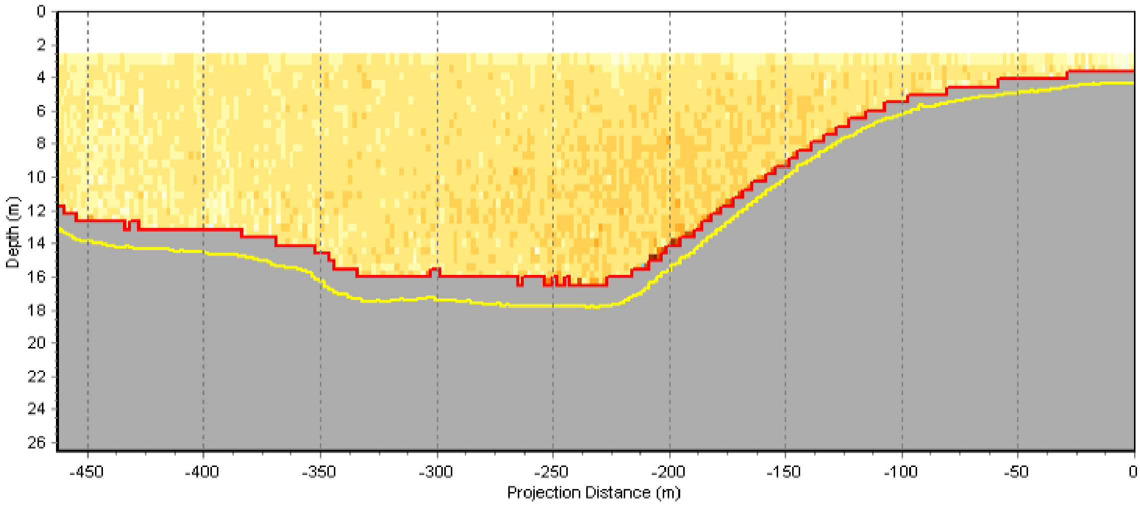
*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

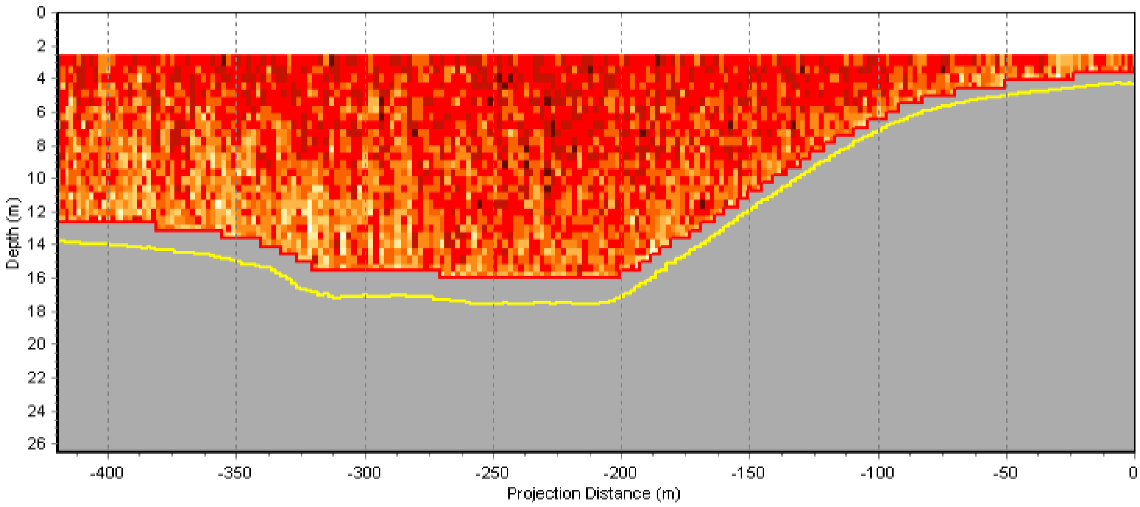
| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 15:16 | HW +4:46 | 104 D Transect |
|---|---|---|---|

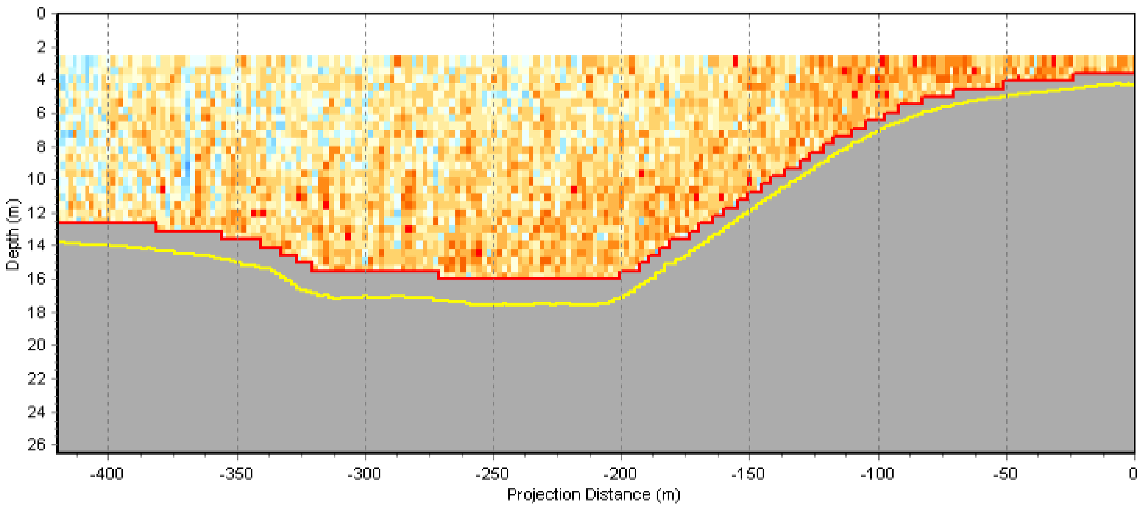


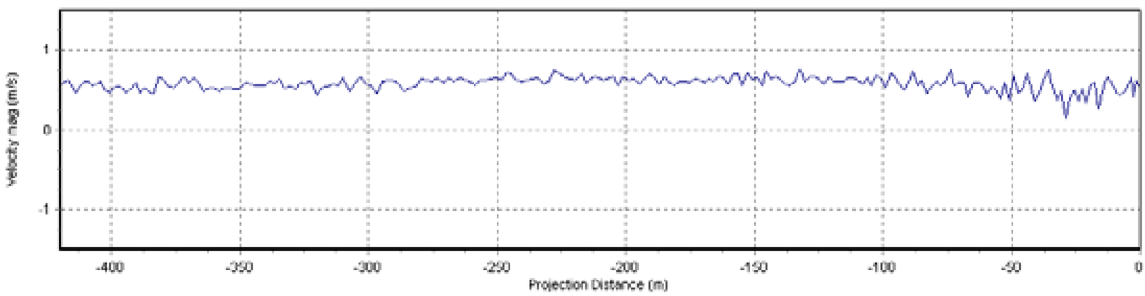




| Suspended Sediment Concentration & Flux | | Data processed by: IMDC<br>In association with: WL \| delft hydraulics, GEMS International<br>I/RA/11265/05.014MSA |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | |

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 15:41 | HW +5:11 | 109 D Transect |
|---|---|---|---|




Perpendicular & Parallel Velocity
Depth Averaged Velocity

Location: Kallo

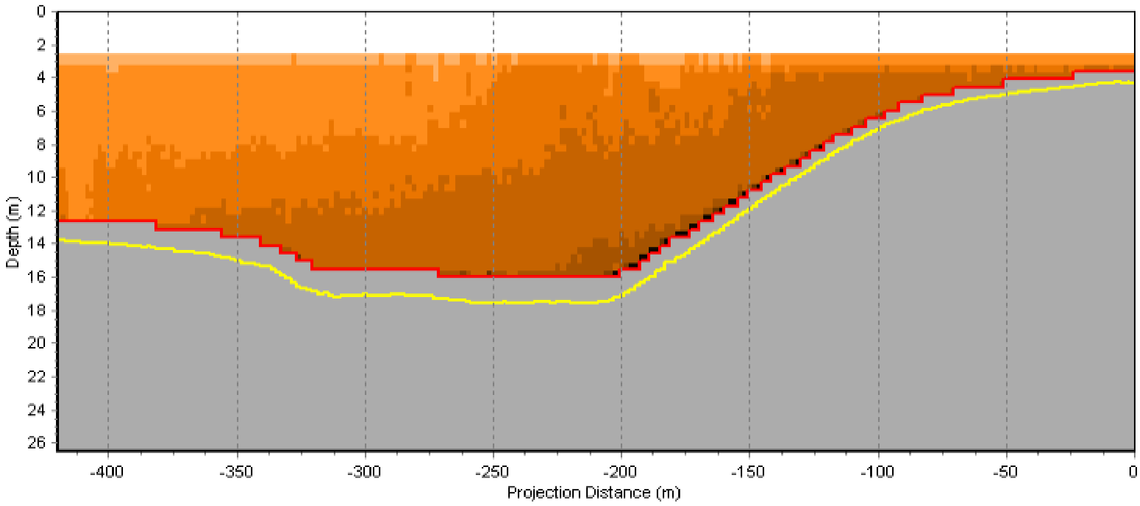
Date: 18/02/2005

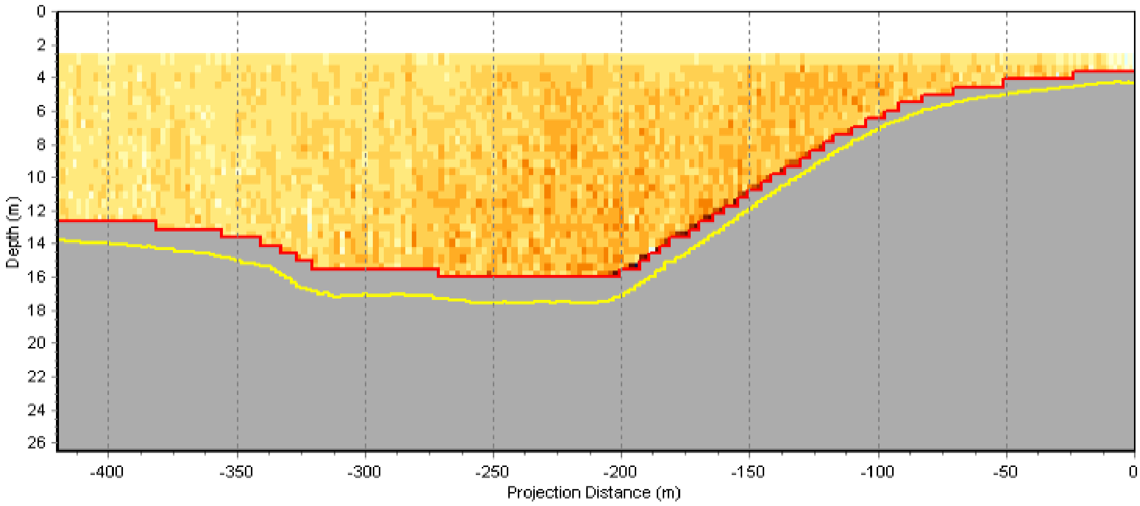
*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

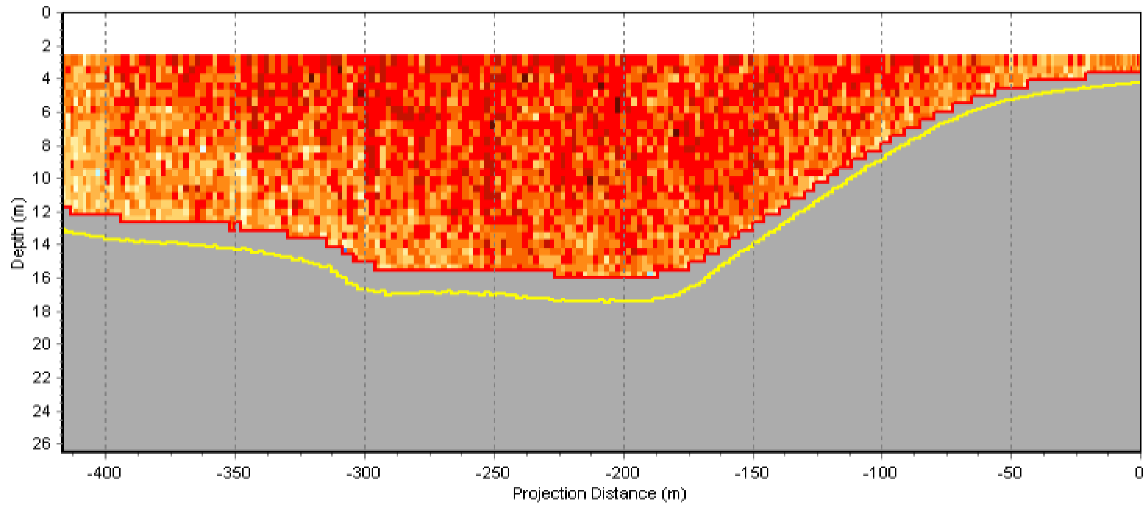
| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 15:41 | HW +5:11 | 109 D Transect |
|---|---|---|---|

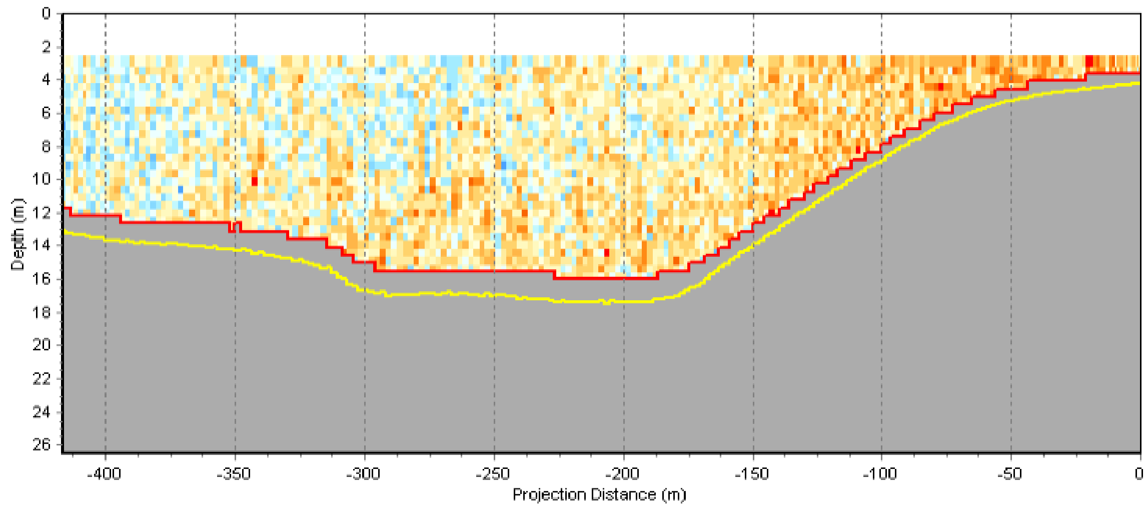


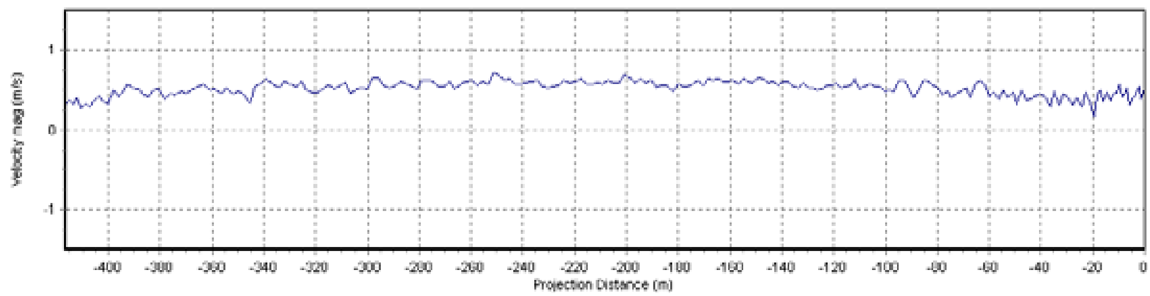




| Suspended Sediment Concentration & Flux | | Data processed by: In association with: I/RA/11265/05.014MSA |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | |

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 16:05 | HW +5:35 | 114 D Transect |
|---|---|---|---|

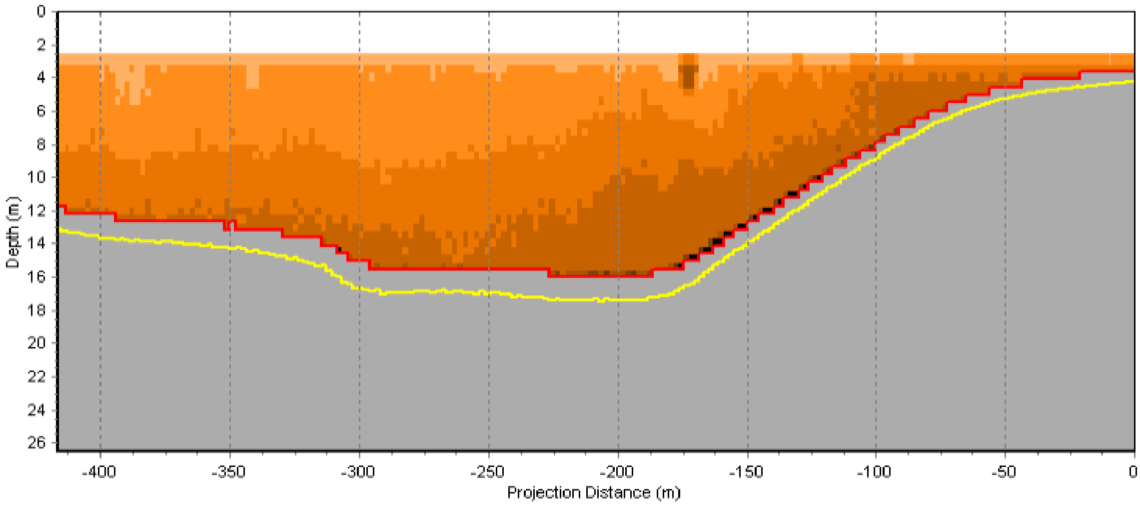


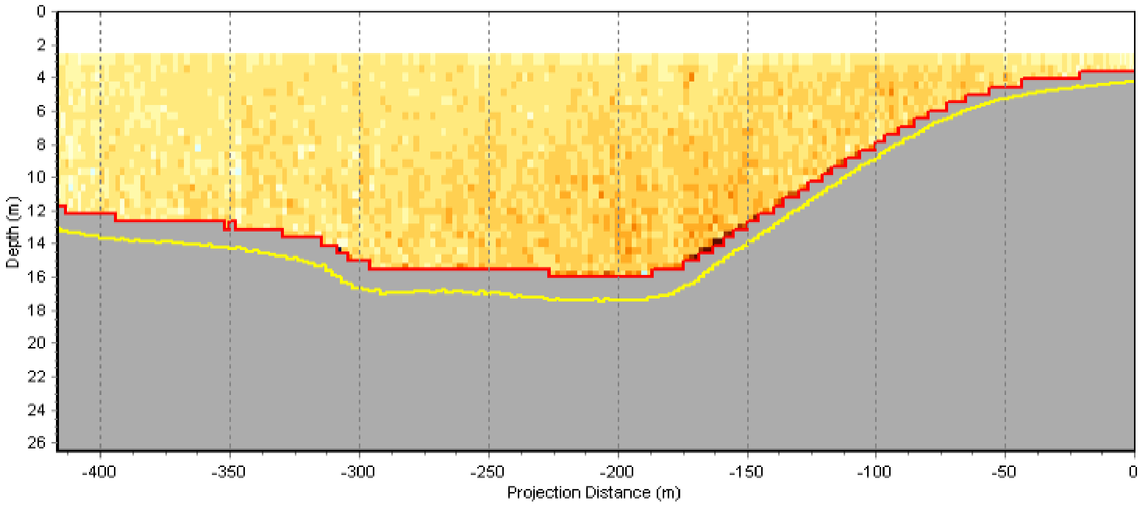




| Perpendicular & Parallel Velocity<br>Depth Averaged Velocity | | *Data processed by:*<br><br>*In association with:*<br><br>*I/RA/11265/05.014MSA* |
|---|---|---|
| Location:<br>Kallo | Date:<br>18/02/2005 | |

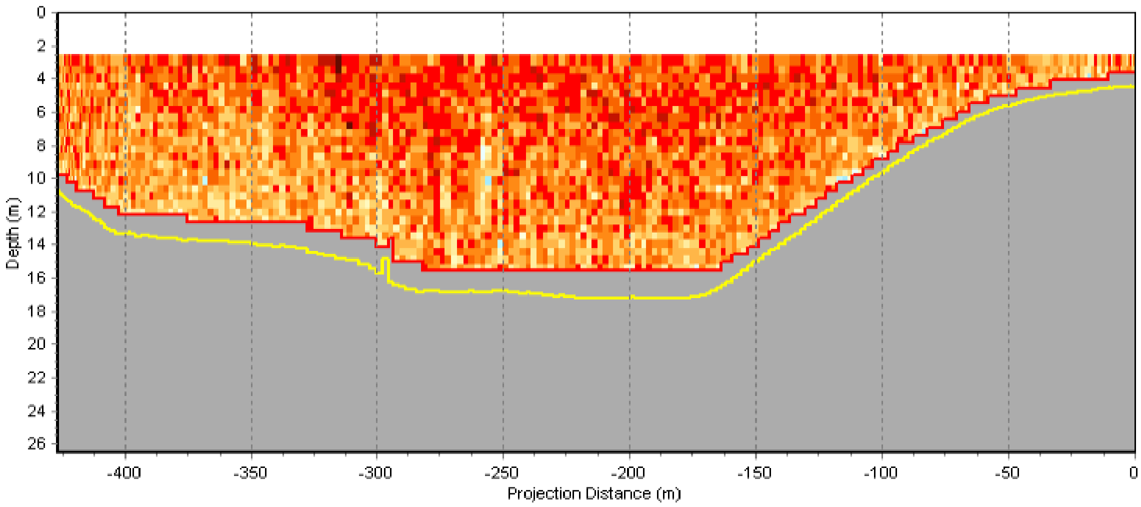
| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 16:05 | HW +5:35 | 114 D Transect |
|---|---|---|---|

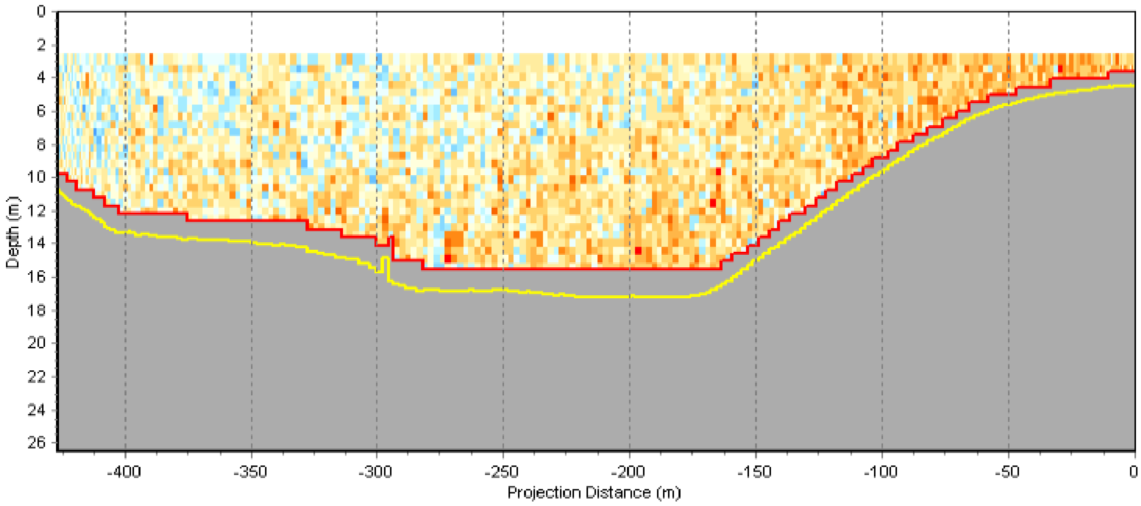


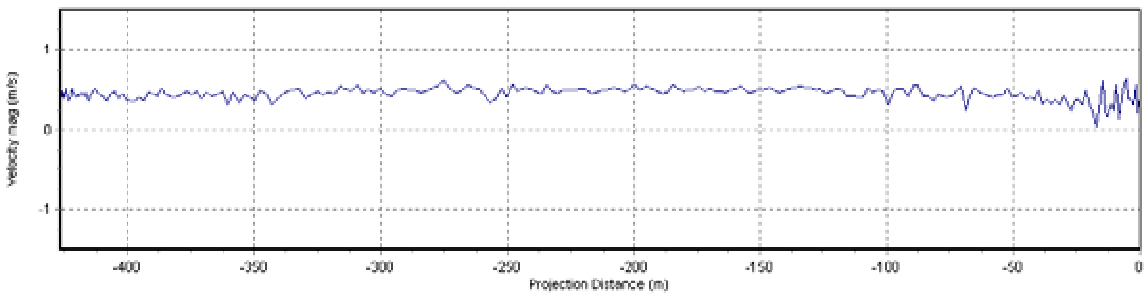




| Suspended Sediment Concentration & Flux | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* *I/RA/11265/05.014MSA* |

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 16:29 | HW +5:59 | 119 D Transect |
|---|---|---|---|

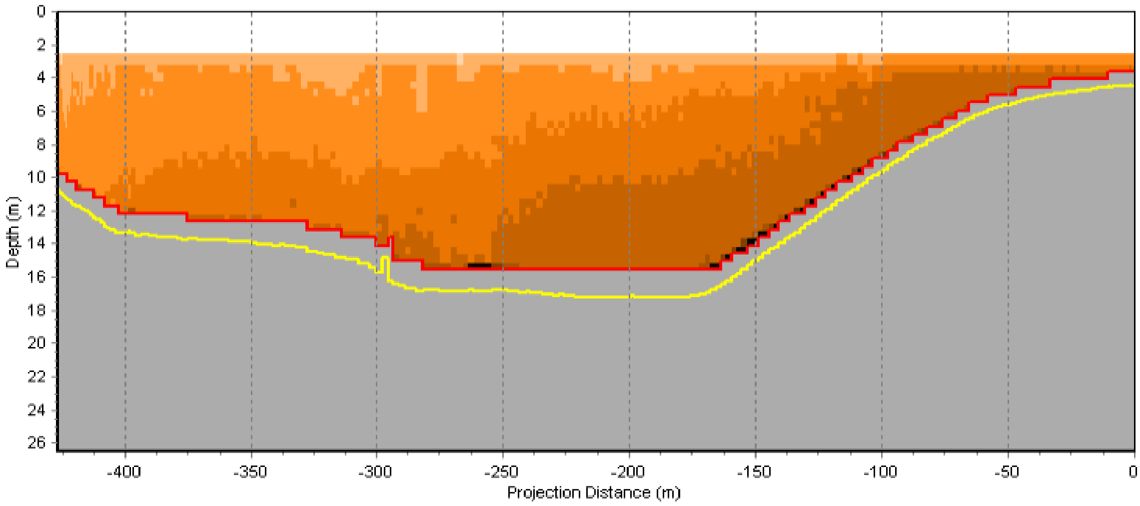


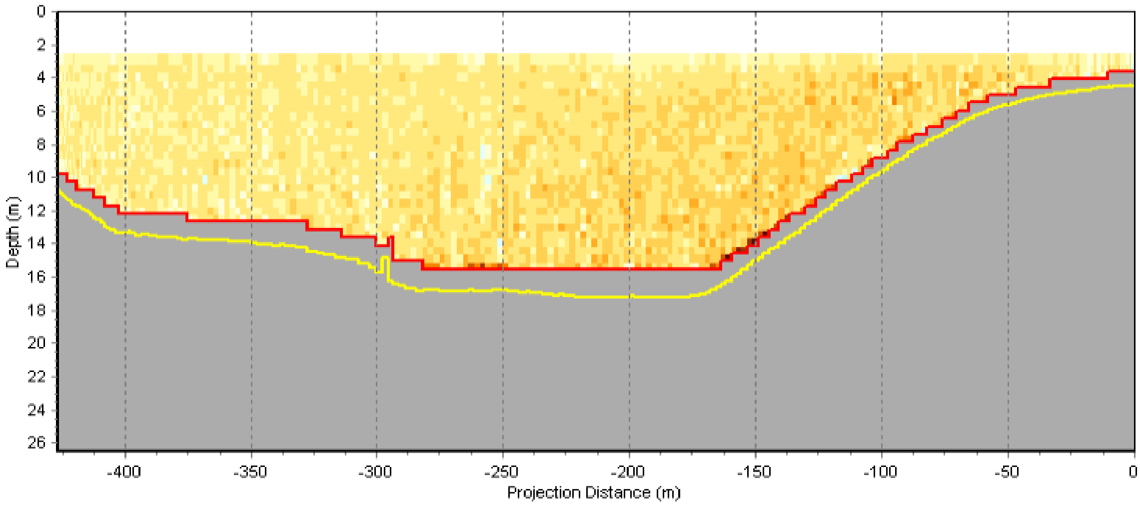




| Perpendicular & Parallel Velocity Depth Averaged Velocity | | *Data processed by:* IMDC |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* wl \| delft hydraulics, GEMS International *I/RA/11265/05.014MSA* |

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 16:29 | HW +5:59 | 119 D Transect |
|---|---|---|---|

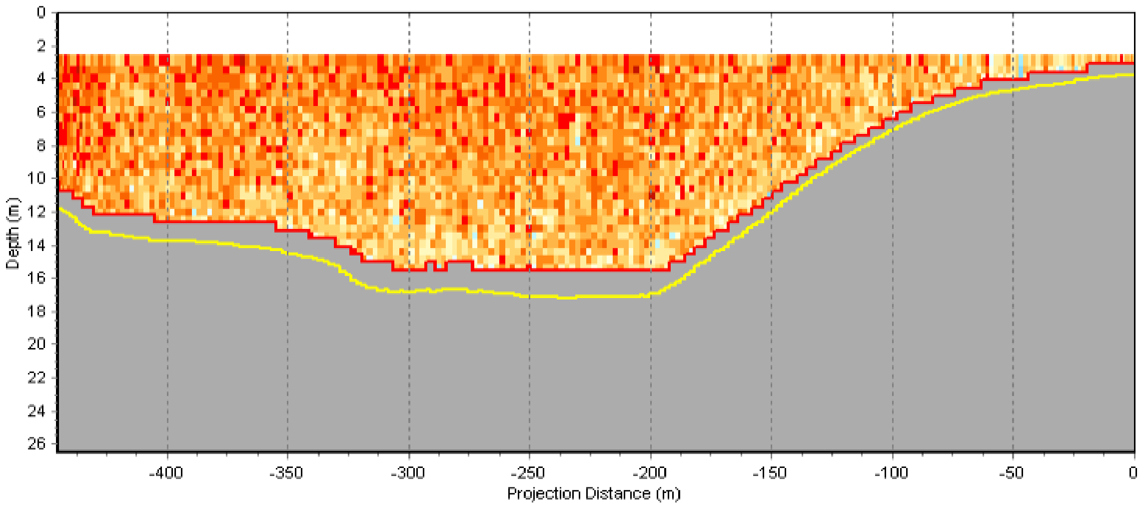


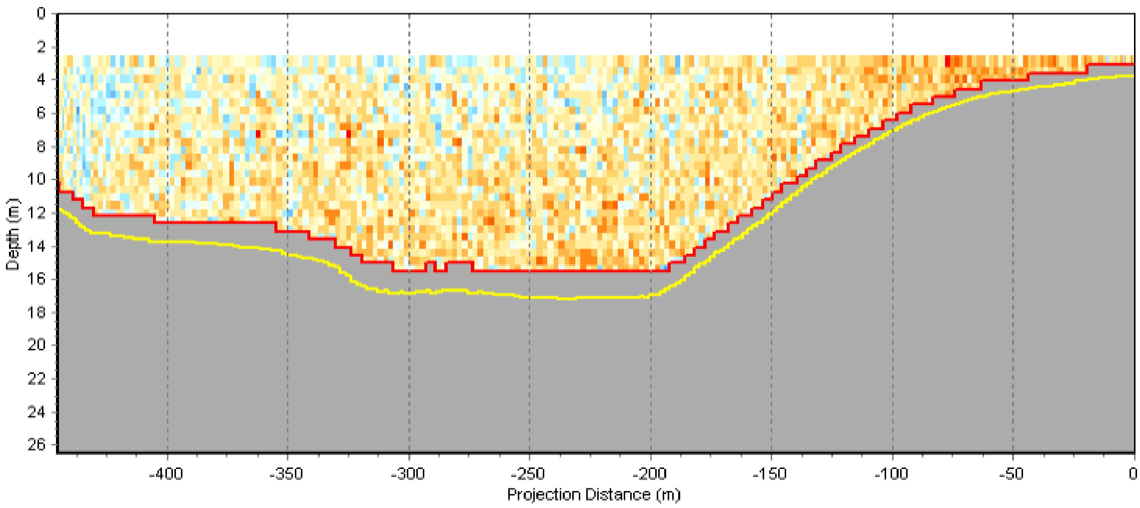



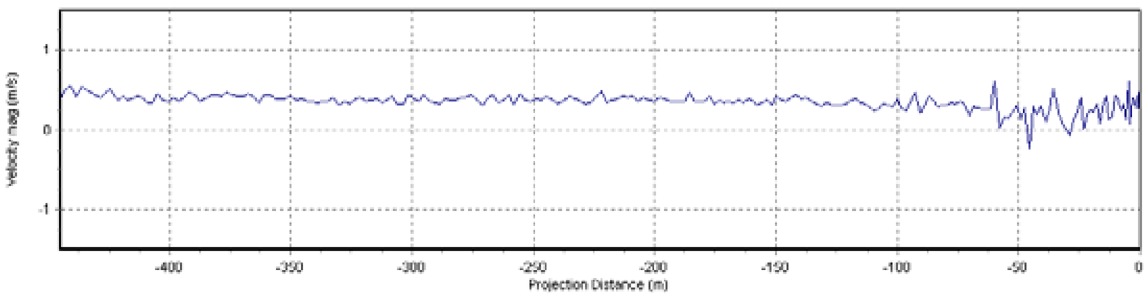

| Suspended Sediment Concentration & Flux | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* |

*I/RA/11265/05.014MSA*

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 16:50 | HW -6:59 | 124 D Transect |
|---|---|---|---|




Perpendicular & Parallel Velocity
Depth Averaged Velocity

Location: Kallo

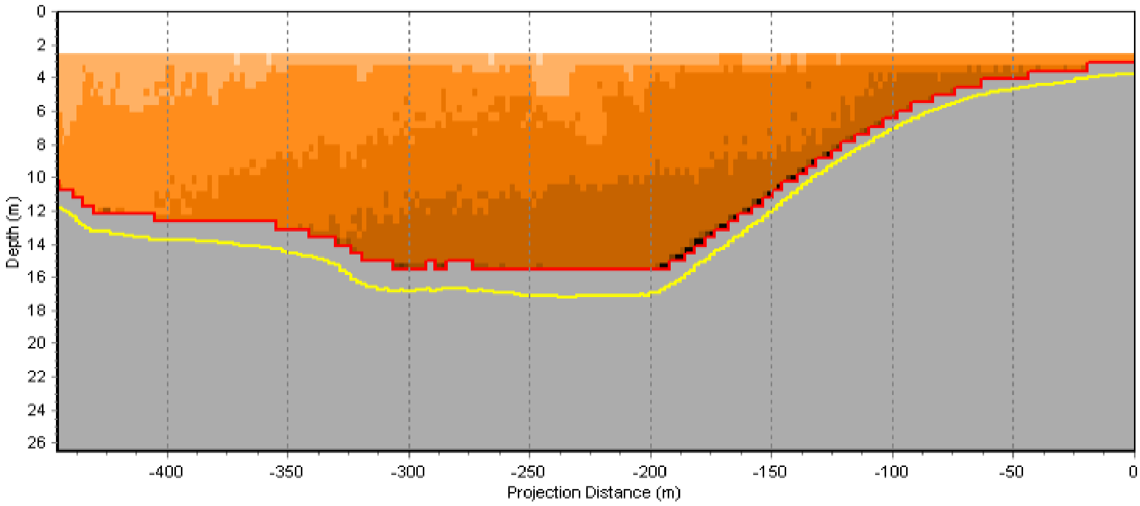
Date: 18/02/2005

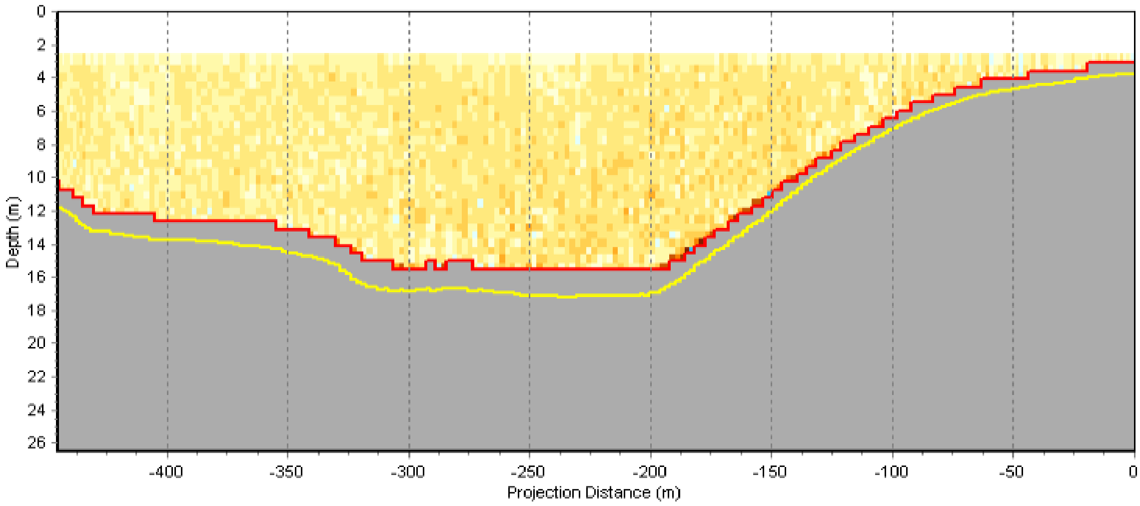
*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

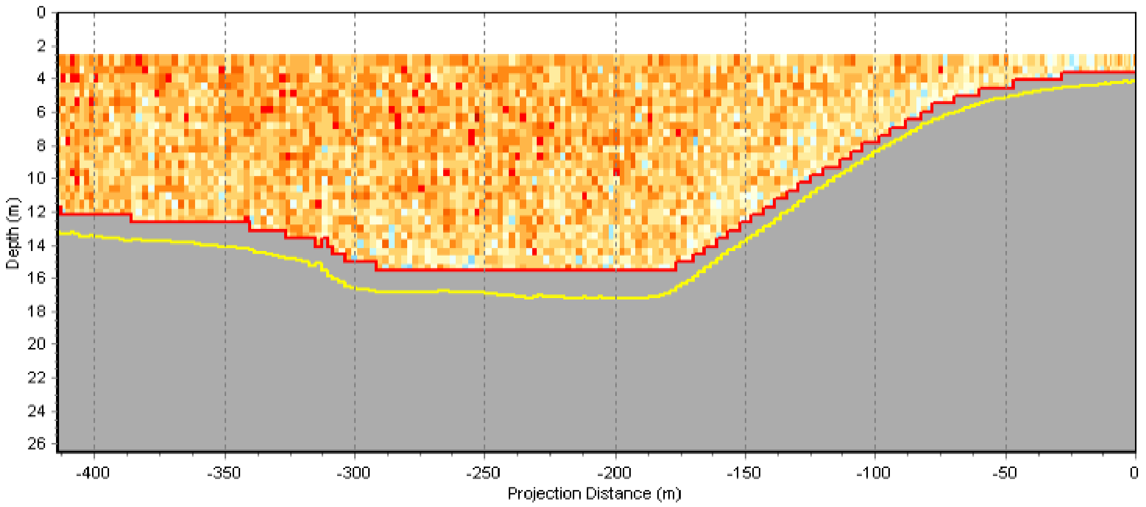
| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 16:50 | HW -6:59 | 124 D Transect |
|---|---|---|---|

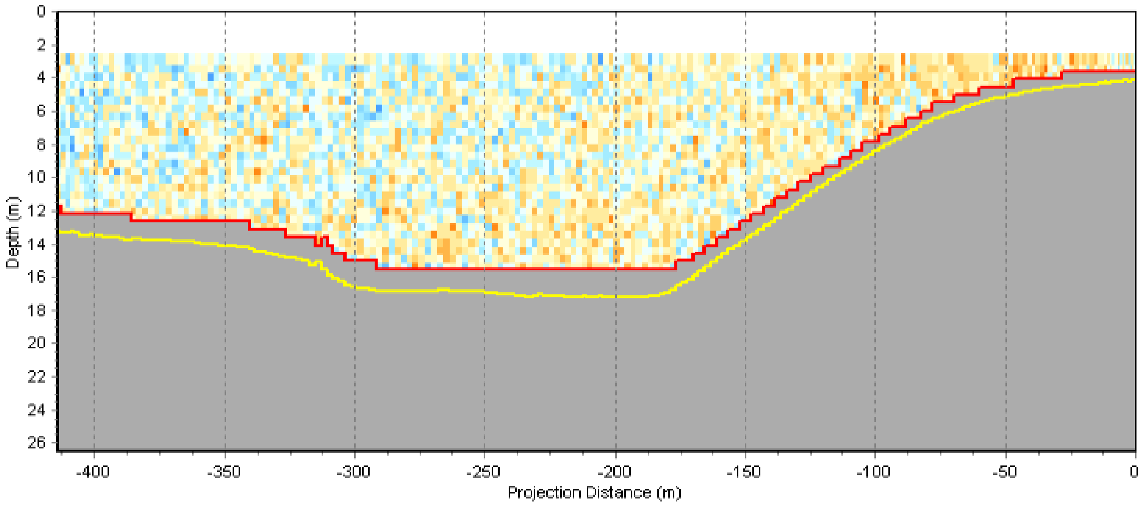


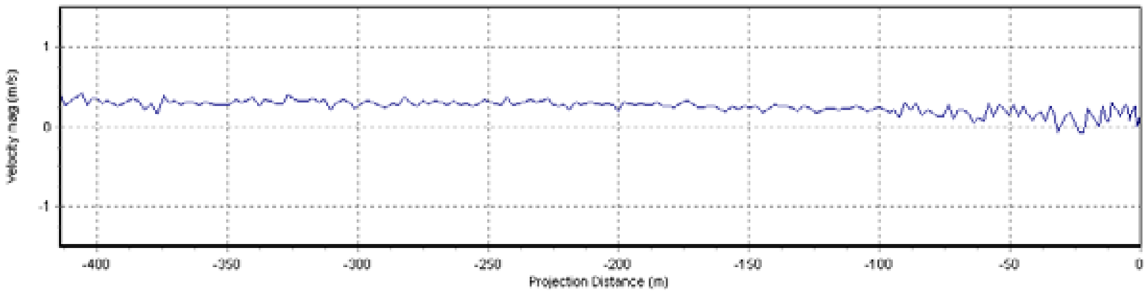




| Suspended Sediment Concentration & Flux | | *Data processed by:* *In association with:* *I/RA/11265/05.014MSA* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | |

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 17:08 | HW -6:41 | 129 D Transect |
|---|---|---|---|

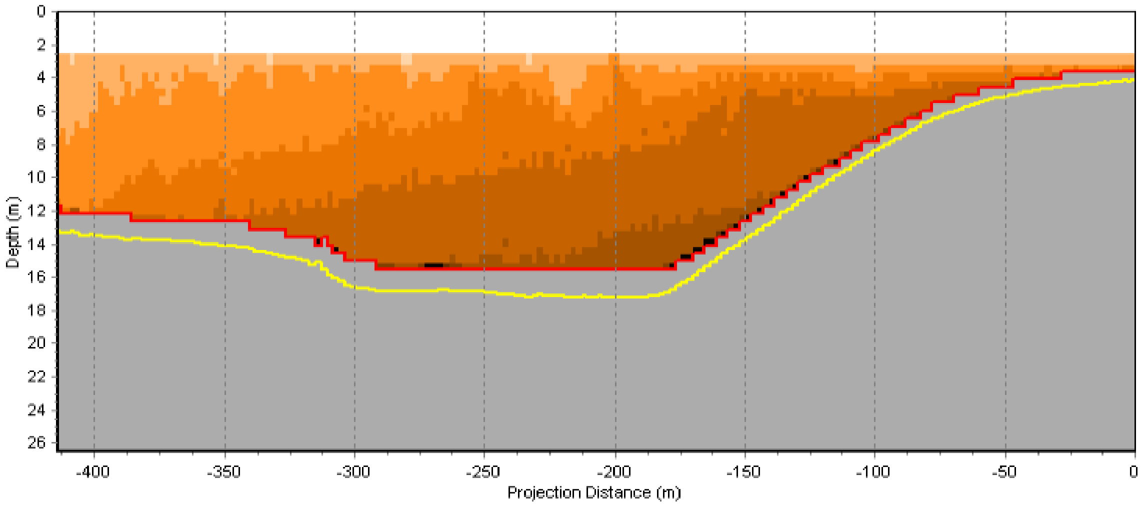


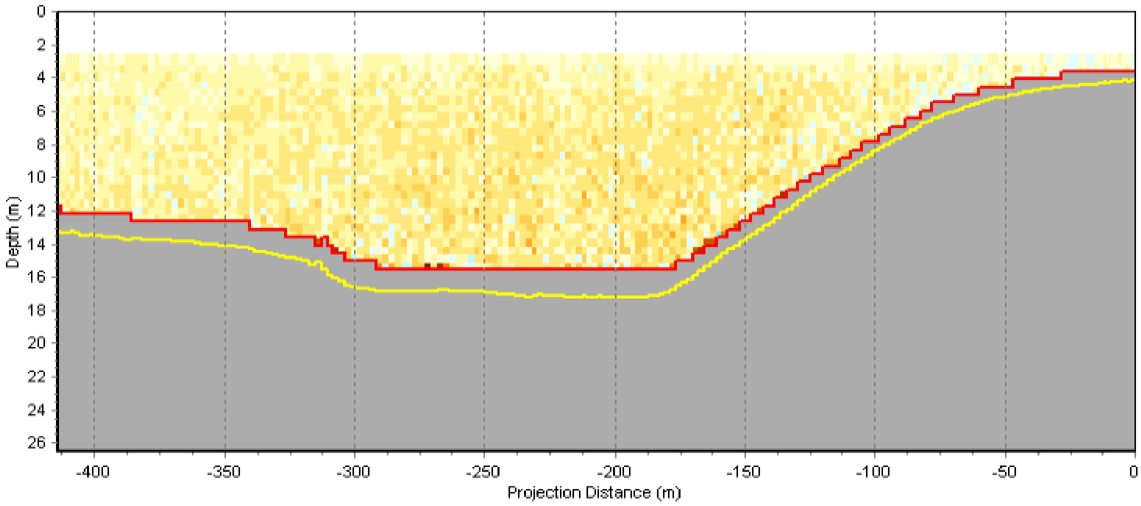




| Perpendicular & Parallel Velocity<br>Depth Averaged Velocity | | *Data processed by:*<br>*In association with:* |
|---|---|---|
| Location:<br>Kallo | Date:<br>18/02/2005 | *I/RA/11265/05.014MSA* |

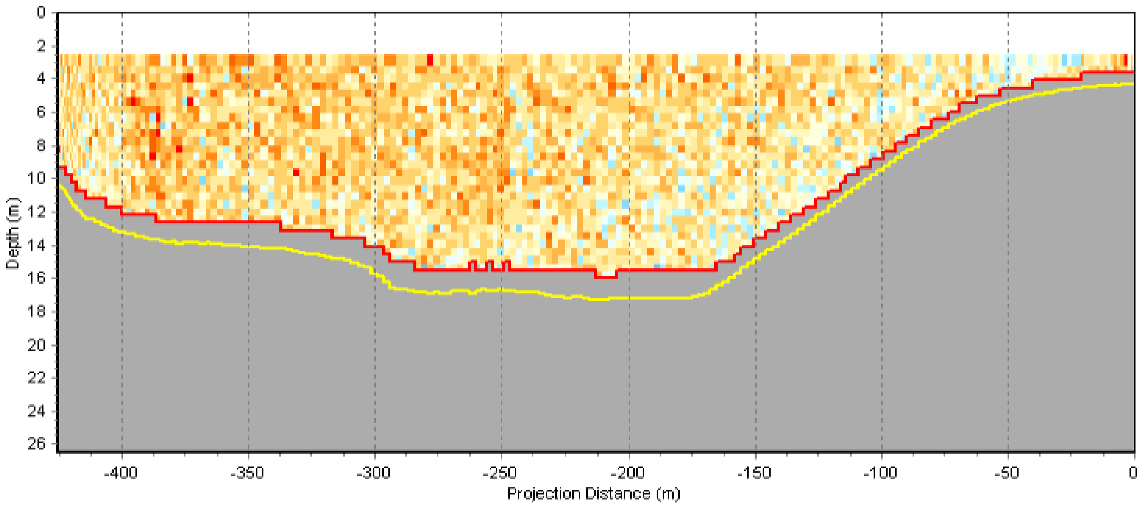
| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 17:08 | HW -6:41 | 129 D Transect |
|---|---|---|---|

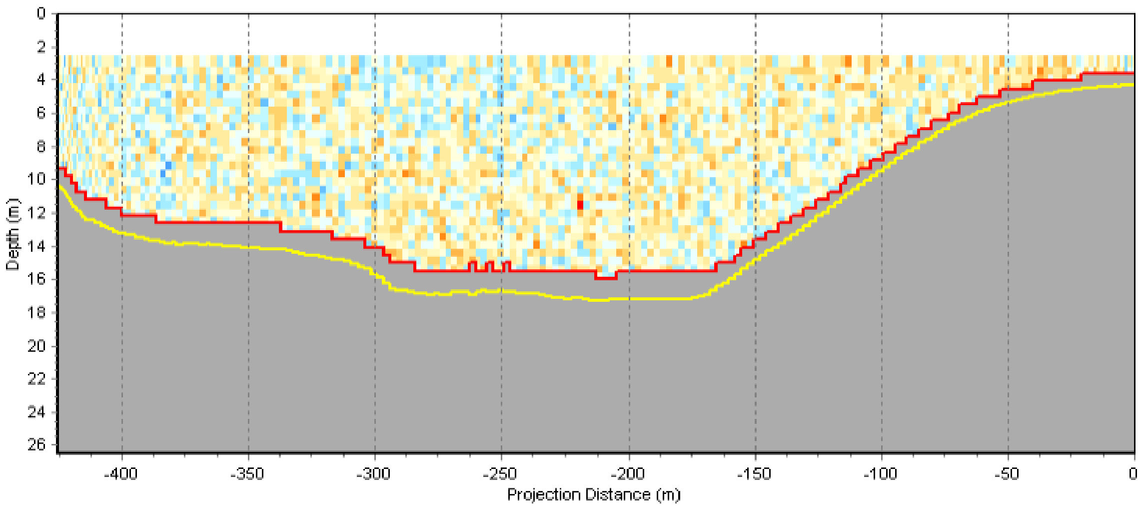


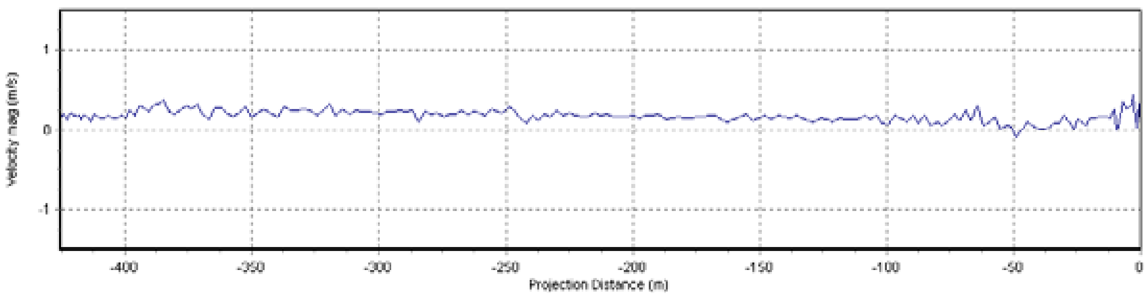




| Suspended Sediment Concentration & Flux | | *Data processed by:* IMDC *In association with:* wl \| delft hydraulics GEMS International *I/RA/11265/05.014MSA* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | |

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 17:29 | HW -6:20 | 134 D Transect |
|---|---|---|---|



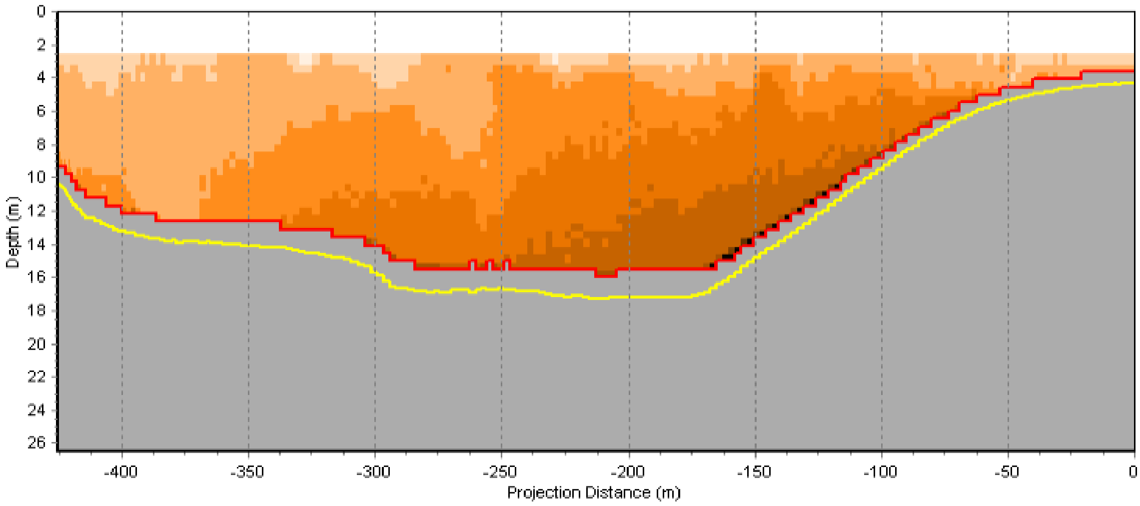



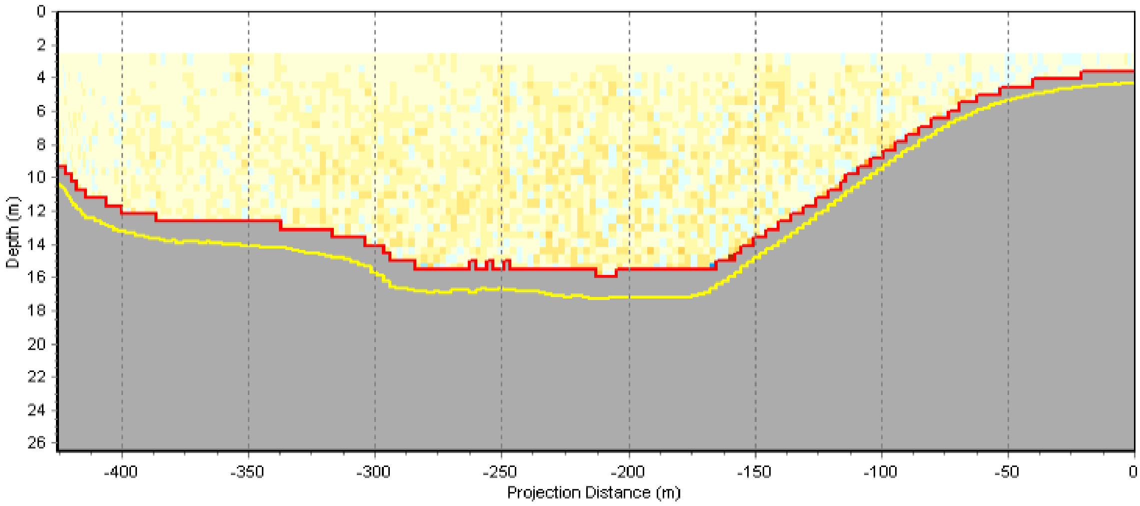




| Perpendicular & Parallel Velocity Depth Averaged Velocity | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* |

*I/RA/11265/05.014MSA*

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 17:29 | HW -6:20 | 134 D Transect |
|---|---|---|---|

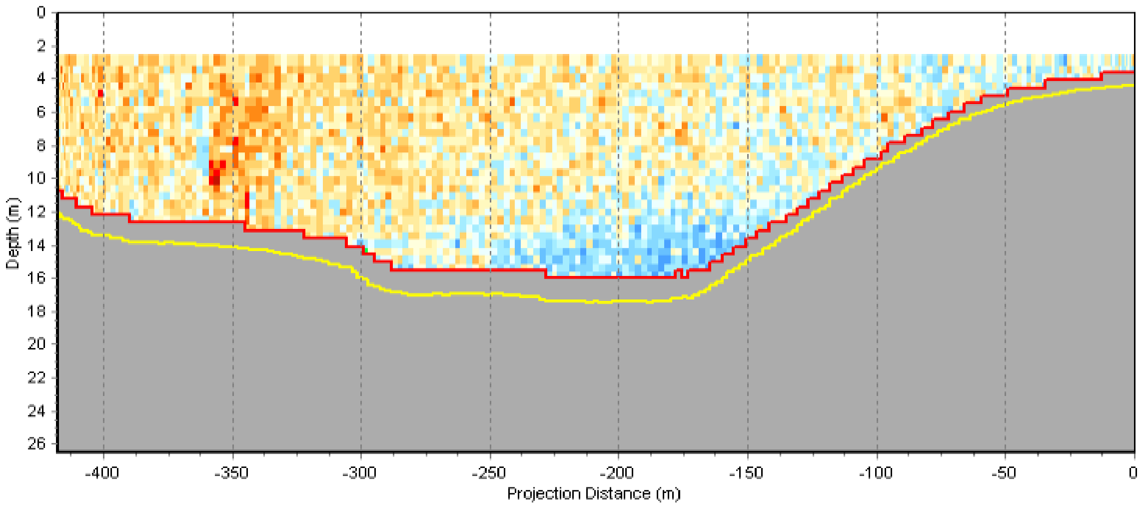


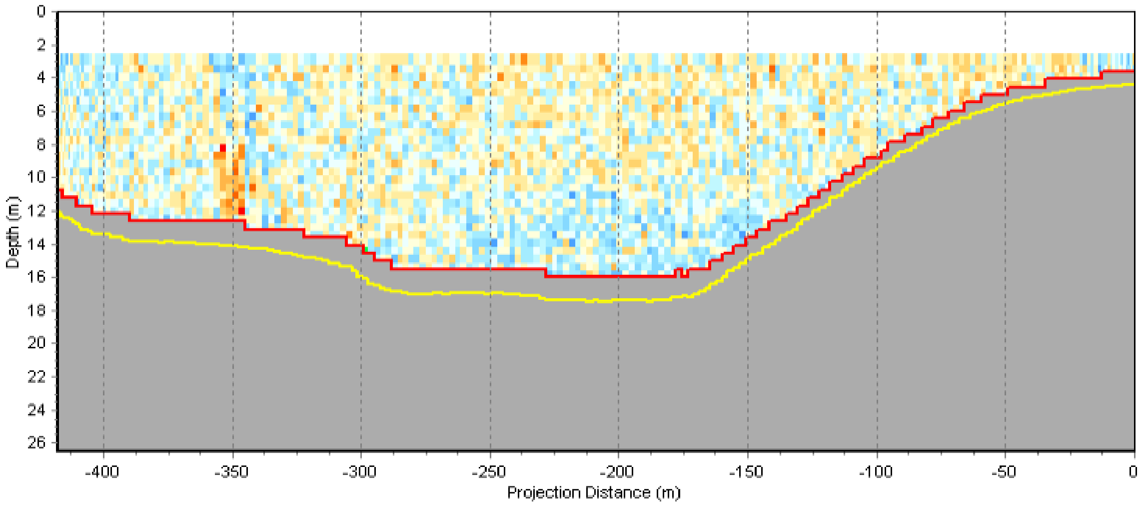



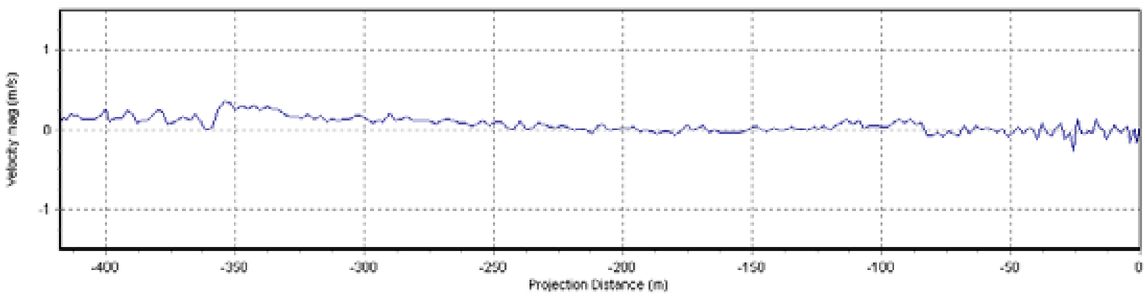

| Suspended Sediment Concentration & Flux | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* |

*I/RA/11265/05.014MSA*

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 17:50 | HW -5:59 | 139 D Transect |
|---|---|---|---|

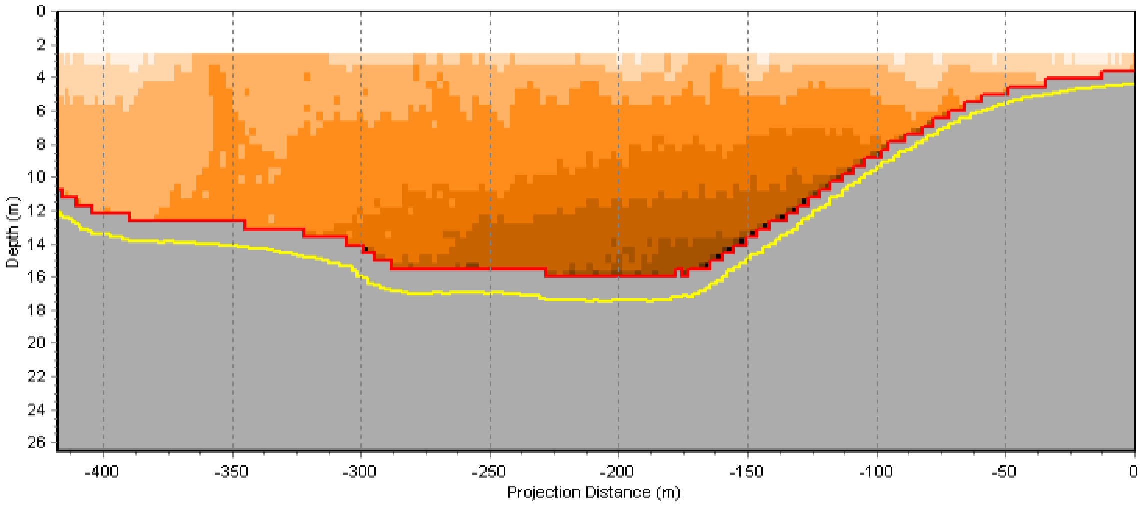


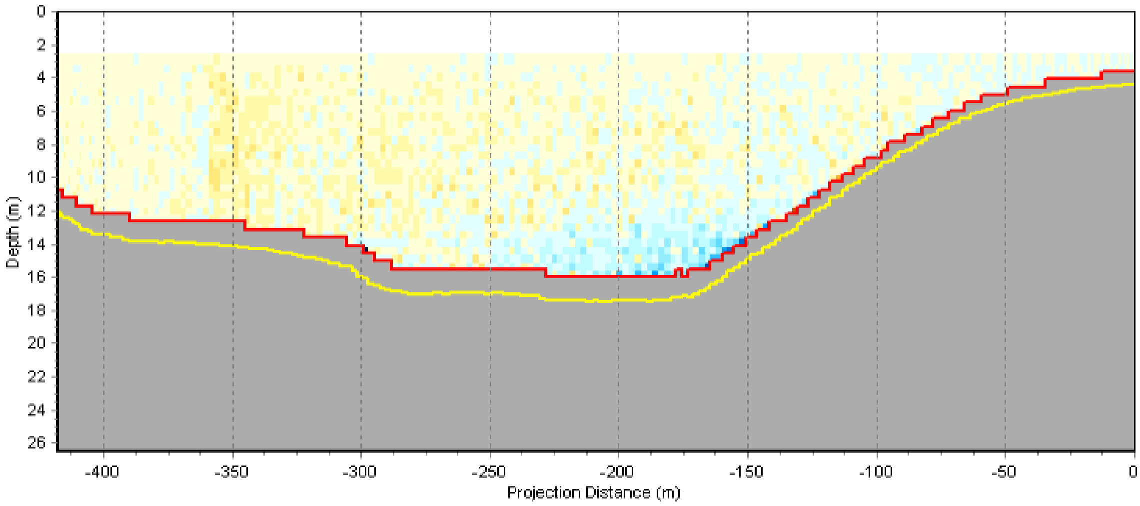




| Perpendicular & Parallel Velocity<br>Depth Averaged Velocity | | *Data processed by:*<br><br>*In association with:* |
|---|---|---|
| Location:<br>Kallo | Date:<br>18/02/2005 | *I/RA/11265/05.014MSA* |

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 17:50 | HW -5:59 | 139 D Transect |
|---|---|---|---|

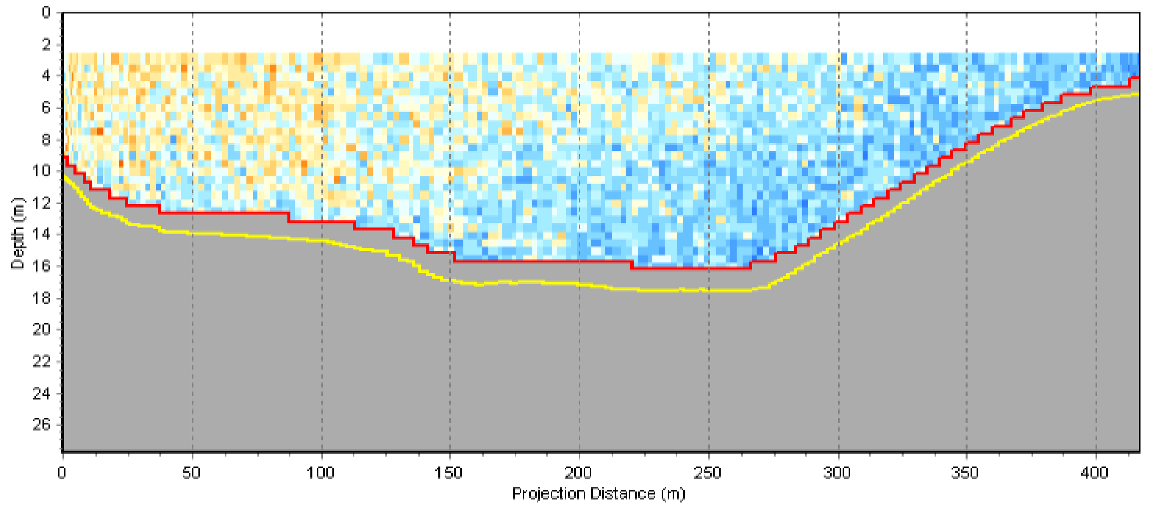


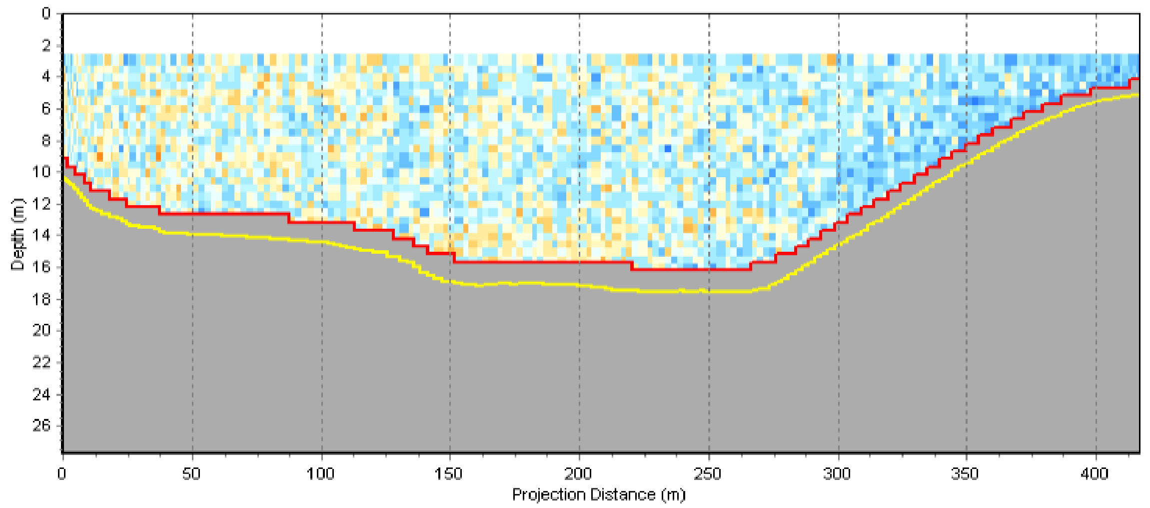



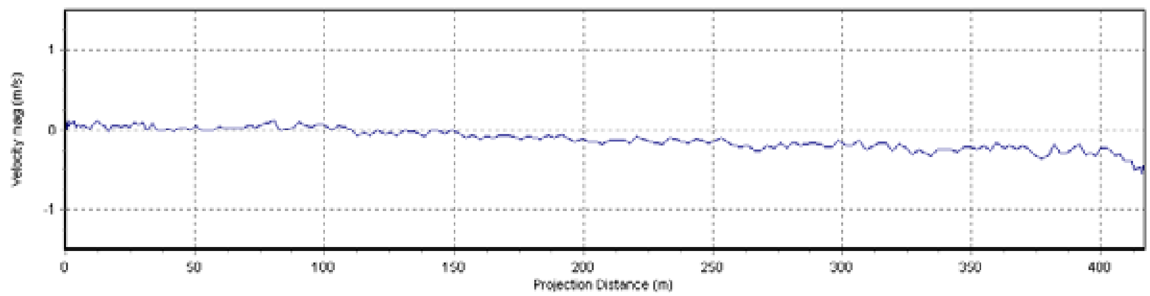

| Suspended Sediment Concentration & Flux | | *Data processed by:* IMDC |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* wl \| delft hydraulics, GEMS International |

*I/RA/11265/05.014MSA*

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 18:13 | HW -5:36 | 144 D Transect |
|---|---|---|---|




Perpendicular & Parallel Velocity
Depth Averaged Velocity

Location: Kallo

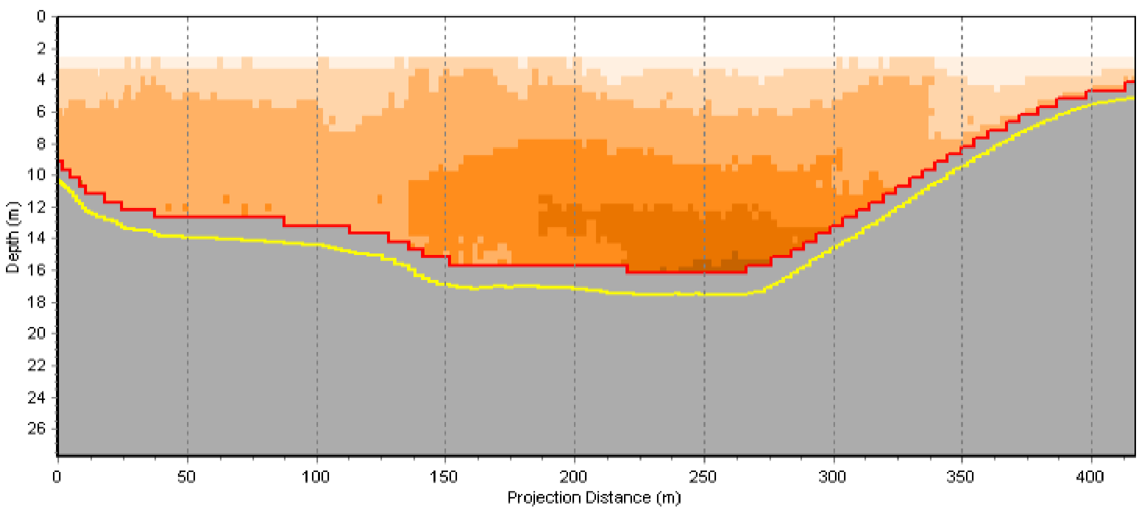
Date: 18/02/2005

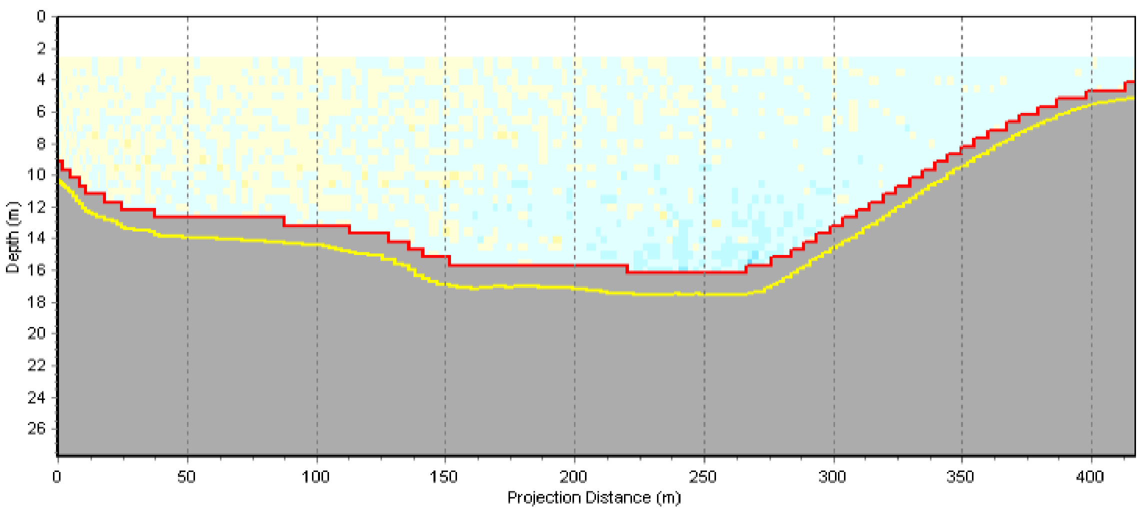
*Data processed by:*

*In association with:*

*I/RA/11265/05.014MSA*

| 11265 HCBS - FEBRUARY 2005 SURVEY | MET 18:13 | HW -5:36 | 144 D Transect |
|---|---|---|---|




| Suspended Sediment Concentration & Flux | | *Data processed by:* |
|---|---|---|
| Location: Kallo | Date: 18/02/2005 | *In association with:* |

*I/RA/11265/05.014MSA*

## 11265 HCBS - FEBRUARY 2005 SURVEY

| Current | Sediment concentration | Sediment flux |
|---|---|---|
| Bad data | Bad data | Bad data |
| > -1.00 m/sec | 25.0 mg/l | > -1000.00 gm/sq m per sec |
| -1.00 m/sec | 50.0 mg/l | -1000.00 gm/sq m per sec |
| -0.80 m/sec | 100.0 mg/l | -750.00 gm/sq m per sec |
| -0.60 m/sec | 150.0 mg/l | -500.00 gm/sq m per sec |
| -0.40 m/sec | 200.0 mg/l | -300.00 gm/sq m per sec |
| -0.30 m/sec | 300.0 mg/l | -200.00 gm/sq m per sec |
| -0.20 m/sec | 500.0 mg/l | -150.00 gm/sq m per sec |
| -0.10 m/sec | 750.0 mg/l | -100.00 gm/sq m per sec |
| -0.05 m/sec | 1000.0 mg/l | -50.00 gm/sq m per sec |
| 0.00 m/sec | > 1000.0 mg/l | -25.00 gm/sq m per sec |
| 0.05 m/sec | | 25.00 gm/sq m per sec |
| 0.10 m/sec | | 50.00 gm/sq m per sec |
| 0.20 m/sec | | 100.00 gm/sq m per sec |
| 0.30 m/sec | | 150.00 gm/sq m per sec |
| 0.40 m/sec | | 200.00 gm/sq m per sec |
| 0.50 m/sec | | 300.00 gm/sq m per sec |
| 0.60 m/sec | | 500.00 gm/sq m per sec |
| 0.80 m/sec | | 750.00 gm/sq m per sec |
| 1.00 m/sec | | 1000.00 gm/sq m per sec |
| > 1.00 m/sec | | > 1000.00 gm/sq m per sec |

- Perpendicular flow velocities and fluxes are positive for downstream flow (ebb), negative for upstream flow (flood).
- Parallel flow velocities are positive for flow going from the left bank to the right bank, and negative for flow going from the right bank to the left bank.
- All depths are absolute and positive from the water surface to the bottom.

Legend

Location: Kallo

Date: 17/02/2005

*Data processed by:* IMDC

*In association with:* WL | delft hydraulics, GEMS International

*I/RA/11265/05.014MSA*

# APPENDIX K.

# DISCHARGE, SEDIMENT CONCENTRATION AND SEDIMENT FLUX FOR THE TOTAL CROSS-SECTION

| Transect Name | End time [hh:mm MET] | Time of HW [hh:mm] | Discharges [m³/s] | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Q Mid | Q Top | Q Bottom | Q Left | Q Right | Total Q |
| 6 F Transect | 6:07 | -4:22 | -1505 | -501 | -162 | -197 | -194 | -2559 |
| 12 F Transect | 6:36 | -3:53 | -2336 | -781 | -248 | -180 | -231 | -3777 |
| 18 F Transect | 7:08 | -3:21 | -2599 | -914 | -260 | -189 | -245 | -4207 |
| 24 F Transect | 7:49 | -2:40 | -2958 | -1013 | -283 | -156 | -336 | -4745 |
| 29 F Transect | 7:18 | -3:11 | -991 | -486 | -126 | | -347 | -1950 |
| 31 F Transect | 7:24 | -3:05 | -2693 | -716 | -222 | -133 | | -3764 |
| 29+31 F Transect | 7:24 | -3:05 | -3684 | -1202 | -348 | -133 | -347 | -5713 |
| | | | | | | | | |
| 37 E Transect | 8:58 | -1:31 | -89 | -33 | -8 | 14 | -10 | -126 |
| 42 E Transect | 9:17 | -1:12 | -119 | -17 | -10 | 17 | 8 | -123 |
| 47 E Transect | 9:42 | -0:47 | -131 | 5 | -12 | 29 | -9 | -118 |
| 53 E Transect | 10:10 | -0:19 | -107 | 33 | -9 | 30 | -25 | -78 |
| 58 E Transect | 10:30 | 0:00 | -86 | 43 | -7 | 32 | -100 | -118 |
| 63 E Transect | 11:06 | 0:36 | -20 | 85 | -2 | 16 | -17 | 62 |
| | | | | | | | | |
| 69 D Transect | 11:48 | 1:18 | 997 | 418 | 89 | 94 | 325 | 1923 |
| 75 D Transect | 12:11 | 1:41 | 1855 | 683 | 172 | 164 | 527 | 3401 |
| 81 D Transect | 12:54 | 2:24 | 3212 | 1028 | 289 | 281 | 510 | 5318 |
| 89 D Transect | 13:32 | 3:02 | 3463 | 1095 | 316 | 270 | 542 | 5686 |
| 90 D Transect | 14:04 | 3:34 | 3208 | 1025 | 288 | 195 | 337 | 5052 |
| 94bis D Transect | 14:42 | 4:12 | 2792 | 875 | 260 | 185 | 487 | 4599 |
| 104 D Transect | 15:16 | 4:46 | 2526 | 843 | 234 | 195 | 296 | 4094 |
| 109 D Transect | 15:41 | 5:11 | 2191 | 762 | 206 | 260 | 442 | 3861 |
| 114 D Transect | 16:05 | 5:35 | 2045 | 676 | 185 | 120 | 363 | 3388 |
| 119 D Transect | 16:29 | 5:59 | 1825 | 616 | 168 | -95 | 334 | 2849 |
| 124 D Transect | 16:50 | -6:59 | 1435 | 490 | 135 | 131 | 236 | 2427 |
| 129 D Transect | 17:08 | -6:41 | 1018 | 333 | 91 | 133 | 80 | 1655 |
| 134 D Transect | 17:29 | -6:20 | 727 | 236 | 65 | 39 | 159 | 1226 |
| 139 D Transect | 17:50 | -5:59 | 318 | 120 | 26 | 37 | 70 | 572 |
| 144 D Transect | 18:13 | -5:36 | -399 | -47 | -39 | 14 | -530 | -1001 |

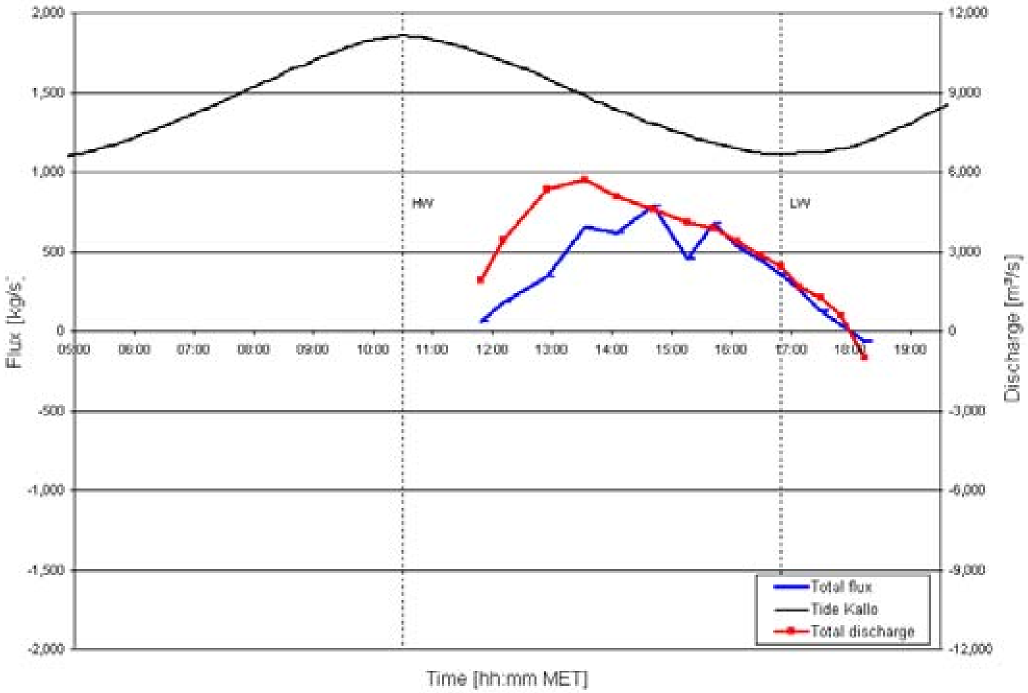
| Transect Name | End time [hh:mm MET] | Time of HW [hh:mm] | Concentration [g/m³] | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | C Mid | C Top | C Bottom | C Left | C Right | Total C |
| 6 F Transect | 6:07 | -4:22 | 62 | 16 | 120 | 68 | 35 | 55 |
| 12 F Transect | 6:36 | -3:53 | 58 | 12 | 145 | 46 | 55 | 53 |
| 18 F Transect | 7:08 | -3:21 | 54 | 16 | 147 | 31 | 58 | 50 |
| 24 F Transect | 7:49 | -2:40 | 81 | 19 | 205 | 117 | 57 | 75 |
| 29 F Transect | 7:18 | -3:11 | 86 | 35 | 164 | | 72 | 76 |
| 31 F Transect | 7:24 | -3:05 | 177 | 49 | 480 | 173 | | 170 |
| 29+31 F Transect | 7:24 | -3:05 | 152 | 43 | 366 | 173 | 72 | 138 |
| | | | | | | | | |
| 37 E Transect | 8:58 | -1:31 | 49 | 45 | 169 | 58 | 118 | 60 |
| 42 E Transect | 9:17 | -1:12 | 70 | 54 | 145 | 55 | 55 | 77 |
| 47 E Transect | 9:42 | -0:47 | 54 | 27 | 135 | 74 | 31 | 56 |
| 53 E Transect | 10:10 | -0:19 | 63 | 8 | 130 | 85 | 34 | 76 |
| 58 E Transect | 10:30 | 0:00 | 69 | 13 | 110 | 31 | 52 | 88 |
| 63 E Transect | 11:06 | 0:36 | 603 | 9 | 123 | 95 | 21 | 170 |
| | | | | | | | | |
| 69 D Transect | 11:48 | 1:18 | 36 | 12 | 71 | 43 | 16 | 29 |
| 75 D Transect | 12:11 | 1:41 | 64 | 18 | 93 | 33 | 43 | 52 |
| 81 D Transect | 12:54 | 2:24 | 56 | 42 | 109 | 25 | 159 | 65 |
| 89 D Transect | 13:32 | 3:02 | 116 | 77 | 198 | 55 | 167 | 115 |
| 90 D Transect | 14:04 | 3:34 | 131 | 70 | 233 | 85 | 110 | 121 |
| 94bis D Transect | 14:42 | 4:12 | 181 | 83 | 381 | 130 | 176 | 171 |
| 104 D Transect | 15:16 | 4:46 | 119 | 67 | 210 | 94 | 102 | 111 |
| 109 D Transect | 15:41 | 5:11 | 187 | 101 | 369 | 132 | 169 | 174 |
| 114 D Transect | 16:05 | 5:35 | 167 | 86 | 348 | 145 | 140 | 157 |
| 119 D Transect | 16:29 | 5:59 | 164 | 84 | 325 | 119 | 157 | 157 |
| 124 D Transect | 16:50 | -6:59 | 162 | 85 | 303 | 105 | 119 | 147 |
| 129 D Transect | 17:08 | -6:41 | 175 | 68 | 379 | 104 | 118 | 156 |
| 134 D Transect | 17:29 | -6:20 | 120 | 51 | 228 | 79 | 46 | 101 |
| 139 D Transect | 17:50 | -5:59 | 58 | 44 | 181 | 63 | 48 | 60 |
| 144 D Transect | 18:13 | -5:36 | 105 | 15 | 120 | 48 | 33 | 64 |

| Transect Name | End time [hh:mm MET] | Time of HW [hh:mm] | Sediment fluxes [kg/s] | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Flux Mid | Flux Top | Flux Bottom | Flux Left | Flux Right | Total Flux |
| 6 F Transect | 6:07 | -4:22 | -93.0 | -7.9 | -19.4 | -13.5 | -6.8 | -140.5 |
| 12 F Transect | 6:36 | -3:53 | -134.6 | -9.1 | -35.9 | -8.3 | -12.6 | -200.5 |
| 18 F Transect | 7:08 | -3:21 | -139.4 | -14.8 | -38.1 | -5.8 | -14.2 | -212.2 |
| 24 F Transect | 7:49 | -2:40 | -239.5 | -19.0 | -58.1 | -18.3 | -19.1 | -354.0 |
| 29 F Transect | 8:18 | -3:11 | -85.2 | -16.8 | -20.7 | | -24.9 | -147.6 |
| 31 F Transect | 8:24 | -3:05 | -475.7 | -35.2 | -106.7 | -22.9 | | -640.5 |
| 29+31 F Transect | 8:24 | -3:05 | -560.9 | -52.1 | -127.3 | -22.9 | -24.9 | -788.2 |
| | | | | | | | | |
| 37 E Transect | 8:58 | -1:31 | -4.4 | -1.5 | -1.3 | 0.8 | -1.2 | -7.6 |
| 42 E Transect | 9:17 | -1:12 | -8.4 | -0.9 | -1.5 | 0.9 | 0.4 | -9.5 |
| 47 E Transect | 9:42 | -0:47 | -7.0 | 0.1 | -1.6 | 2.1 | -0.3 | -6.6 |
| 53 E Transect | 10:10 | -0:19 | -6.7 | 0.3 | -1.2 | 2.6 | -0.8 | -5.9 |
| 58 E Transect | 10:30 | 0:00 | -6.0 | 0.5 | -0.8 | 1.0 | -5.2 | -10.4 |
| 63 E Transect | 11:06 | 0:36 | -12.2 | 0.7 | -0.3 | 1.5 | -0.3 | -10.6 |
| | | | | | | | | |
| 69 D Transect | 11:48 | 1:18 | 35.4 | 4.9 | 6.3 | 4.0 | 5.2 | 55.9 |
| 75 D Transect | 12:11 | 1:41 | 118.9 | 12.1 | 15.9 | 5.5 | 22.9 | 175.2 |
| 81 D Transect | 12:54 | 2:24 | 180.2 | 43.5 | 31.5 | 7.0 | 80.9 | 343.2 |
| 89 D Transect | 13:32 | 3:02 | 401.8 | 84.8 | 62.7 | 14.7 | 90.6 | 654.7 |
| 90 D Transect | 14:04 | 3:34 | 421.0 | 71.6 | 67.3 | 16.5 | 37.2 | 613.6 |
| 94bis D Transect | 14:42 | 4:12 | 504.5 | 72.8 | 98.9 | 24.1 | 86.0 | 786.2 |
| 104 D Transect | 15:16 | 4:46 | 301.4 | 56.3 | 49.1 | 18.4 | 30.1 | 455.3 |
| 109 D Transect | 15:41 | 5:11 | 410.8 | 76.8 | 76.2 | 34.3 | 74.6 | 672.6 |
| 114 D Transect | 16:05 | 5:35 | 341.6 | 58.3 | 64.3 | 17.3 | 50.7 | 532.3 |
| 119 D Transect | 16:29 | 5:59 | 299.9 | 51.5 | 54.7 | -11.3 | 52.4 | 447.2 |
| 124 D Transect | 16:50 | -6:59 | 232.6 | 41.9 | 40.9 | 13.7 | 28.1 | 357.2 |
| 129 D Transect | 17:08 | -6:41 | 177.9 | 22.6 | 34.6 | 13.9 | 9.4 | 258.3 |
| 134 D Transect | 17:29 | -6:20 | 87.0 | 12.0 | 14.9 | 3.1 | 7.3 | 124.3 |
| 139 D Transect | 17:50 | -5:59 | 18.6 | 5.3 | 4.8 | 2.3 | 3.3 | 34.3 |
| 144 D Transect | 18:13 | -5:36 | -41.7 | -0.7 | -4.6 | 0.7 | -17.6 | -63.9 |

# APPENDIX L.

# TEMPORAL VARIATION OF TOTAL FLUX AND TOTAL DISCHARGE

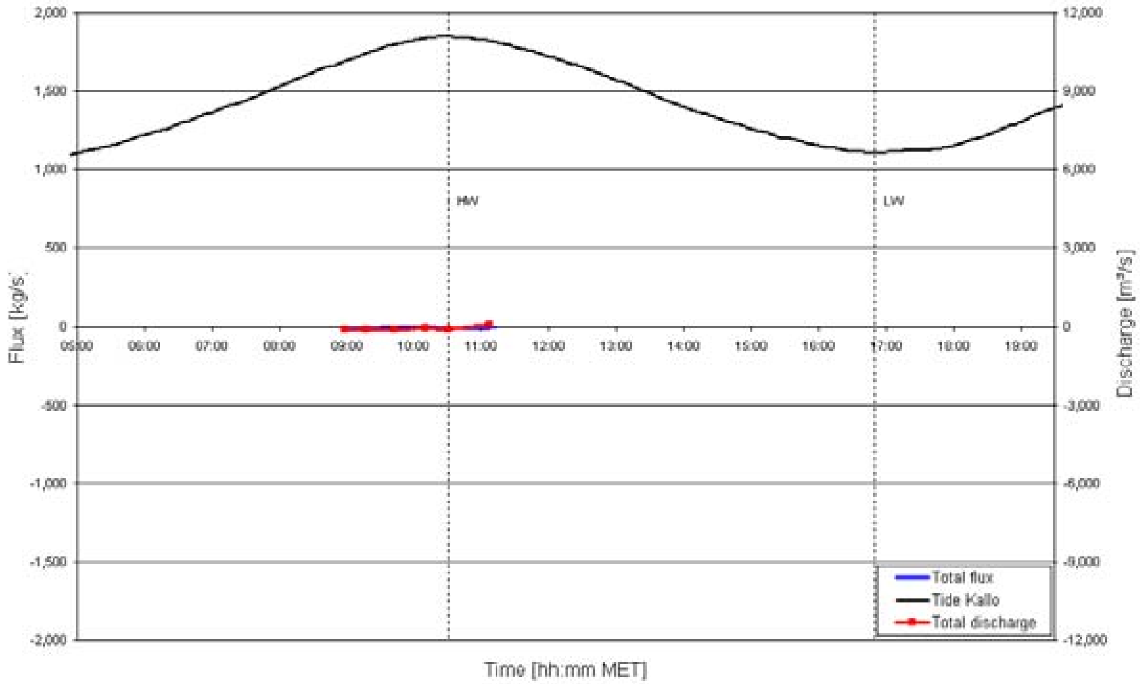
# 11265 HCBS - FEBRUARY 2005 SURVEY




| Total sediment flux and discharge | Time HW : 10:30 | Time LW: 16:50 | *Data processed by:* |
|---|---|---|---|
| Location: Kallo : Transect D | Date: 18/02/2005 | | *In association with:* |

*I/RA/11265/05.014MSA*

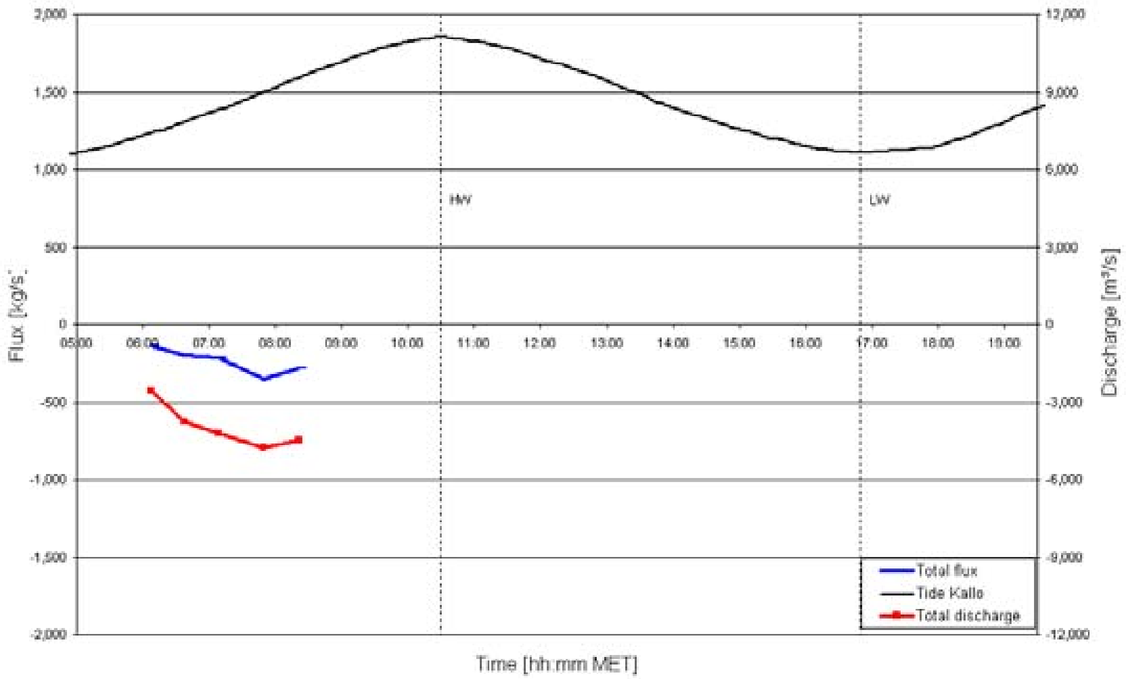
# 11265 HCBS - FEBRUARY 2005 SURVEY




| Total sediment flux and discharge | Time HW : 10:30 | Time LW: 16:50 | *Data processed by:* |
|---|---|---|---|
| Location: Kallo : Transect E | Date: 18/02/2005 | | *In association with:* |

*I/RA/11265/05.014MSA*

# 11265 HCBS - FEBRUARY 2005 SURVEY




| Total sediment flux and discharge | Time HW : 10:30 | Time LW: 16:50 | *Data processed by:* |
|---|---|---|---|
| Location: Kallo : Transect F | Date: 18/02/2005 | | *In association with:* |

*I/RA/11265/05.014MSA*