

**2010-2011 Water Quality Monitoring of Physical Parameters in
San Diego Bay, San Diego, CA
Port of San Diego Agreement No. 55783/Tierra Data Inc. No. 09-11
Status Report**

Date of Work: September 1, 2010 – September 30, 2010

Cumulative Dollar Costs Incurred: \$66,126.47

Percentage of Work Completed: 57.47%

Expected Completion Date: December 31, 2012

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1) Monitoring results:

- a) Data sondes are in place and collecting data within specified parameters and displaying expected results at all three stations. Water temperatures appeared seasonal low compared to previous years. Station A recorded daily temperature fluctuations between 58 °F (14.6 °C) and 67°F (19.6°C) within one tidal cycle in early September.
- b) Interesting relationships have been observed with respect to the location of individual monitoring stations, turbidity, and chlorophyll a concentrations. At station A, in the North Bay, higher turbidity values have been observed during the falling tide and Station B has displayed similar results but to a lesser degree. Chlorophyll a concentrations at Station A averaged 5.01 mg /L, 5.16 mg/L at Station B, and only 2.29 mg/L at Station C in September calculated from data collected through the 22nd of the month. This likely represents the retention of south bay waters within the south bay associated limited input of productive oceanic water during moderate tides. Once the tidal exchange increases more of the south bay water likely exits the bay and is exchanged with relatively clear water from the nearshore. Station B displayed the most consistent results with temperature varying only 1-2 degrees.

2) Discussion of activities conducted:

- a) Initial sonde deployment occurred on April 20th, 2010 at all three stations. Water quality monitoring units, YSI 6920 V2 sondes, are currently in place and collecting data at Stations A, B, and C (Figure 1). Data was downloaded from sondes on September 8th and September 22nd, 2010. Instruments displayed various degrees of biological fouling and were cleaned, calibrated, and redeployed after each bimonthly download. A large Data was downloaded directly to an YSI 650 MDS data logger and transferred to the Tierra Data Inc (TDI) server for archiving and review. Data files were reviewed after each servicing for accuracy and integrated into station working files for analysis and graphical display.
- b) Additional data was collected on each of the three sampling locations during each visit by performing vertical casts using an YSI 6920 V2 sonde.

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- c) Monthly sondes at each of the fixed stations are fully serviced, batteries replaced, wipers exchanged, and antifouling coatings reapplied. Affixed sonde housings are scrubbed to reduce data inconsistencies from attached algae and invertebrates.

3) Problems encountered/resolutions:

- a) Station B appeared to have low battery voltage that resulted in the loss of three days of data. A large Bay Blenny (*Hypsoblennius gentilis*) lives in the upper portion of the sonde housing at Station B and has attacked the diver on several occasions.

4) Activities planned for next reporting period:

- a) Subsequent sonde downloading and redeployment is expected to be performed on regular two week intervals. Upcoming service dates are projected to be October 6th and September 20nd, 2010.

Table 2. Project Deliverables:

Quarterly Progress Reports	April 1, 2010 – combined with July 1, 2010 Report due to late start.
	July 1, 2010 – Submitted
	October 1, 2010 – in prep
	January 1, 2011
	April 1, 2011
	July 1, 2011
	October 1, 2011
Draft Report	October 31, 2011
Final Report	December 31, 2011

Location Map for Port of San Diego Water Quality Sensors

