WILLIAM & MARY
VIMS
Virginia Institute of Marine Science
School of Marine Science
Department of Physical Sciences

September 16, 2003

Barry S. Drucker
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381 Elden Street, MS 4030
Herndon, VA 20170-4817

Dear Mr. Drucker:

This letter is the tenth Bi-Monthly Status Letter for Cooperative Agreement Number 1435-01-02-CA-85050, *Field Testing of a Physical/Biological Monitoring Methodology for Offshore Dredging and Mining Operations*.

Task 1: Biology: Robert Diaz and Janet Nestlerode report that post-dredge benthic sampling took place August 12-19, 2003. Samples collected are currently being processed. Near bottom visibility was too poor at the time of sampling to complete the video sled portion of the field effort. They plan to return to the study site to complete this work in September.

Task 2: Shoreline and Beach Studies: Scott Hardaway and Donna Milligan report that they continue to monitor the shoreline position with the "Pug" surveys as described in previous status letters.

Task 3: Bottom Imagery and Bathymetry: Jesse McNinch and his student Grace Browder have submitted the following report.

There is growing evidence that framework geology may influence sediment transport and, ultimately, beach and nearshore morphodynamics. We believe that the Minerals Management Service needs to be aware of other variables that might be responsible for increased beach erosion other than those that may result from mining/renourishment. Knowing these variables before beginning any construction project may limit potential liability.

A research cruise was conducted on June 26, 2003 and June 27, 2003 in the nearshore region of Sandbridge, VA and at several locations off the Outer Banks of North Carolina. CHIRP seismic and sidescan sonar were used to investigate the presence of relict channels. The study sites were chosen based on previous discoveries of paleo channels offshore. The purpose of this investigation is to determine if there is a correlation between relict channels preserved in the framework geology and instances of excessive beach erosion. More specifically, we would like to determine if there is any relationship between these channels and the transverse bars and gravel outcrops that we have observed at erosional hotspots in these regions.

While it is too early to draw any conclusions from the data, initial processing shows a well-defined channel at the Sandbridge site as exemplified in Figure 1, in the vicinity of previously identified

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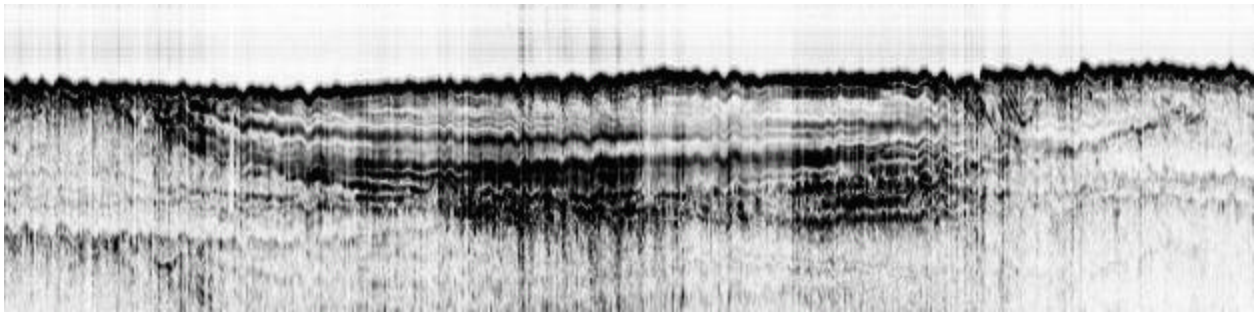

Figure 1. CHIRP image of Pleistocene channel near Sandbridge, VA.

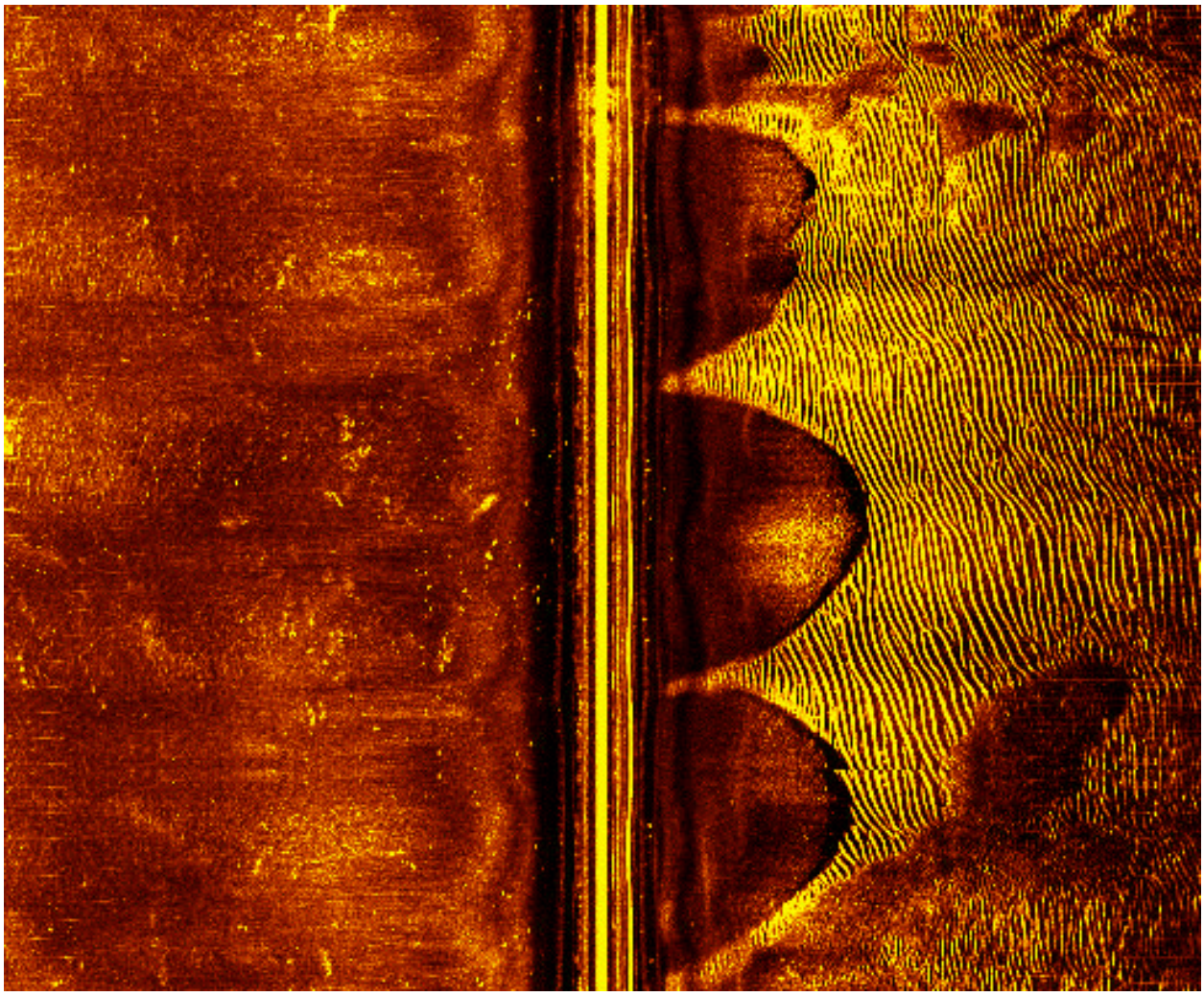

Figure 2. Sidescan image of transverse bars and gravel outcrops near Sandbridge, VA

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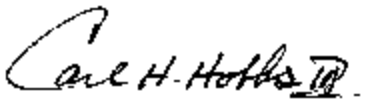
bars and outcrops. Figure 2 shows a sidescan image of one of the gravel outcrops, believed to be a Pleistocene surface. Analysis is ongoing to spatially correlate the relict channels, transverse bars and gravel outcrops to areas of anomalously high beach erosion.

Task 4: Wave Studies: Jerome Maa reports that he has successfully installed a Furuno 8251 marine radar with an 8 ft open array antenna on the roof of Byrd Hall on the VIMS campus. He has carefully selected an angle of about 100 degrees for test operation. This will allow us to look at a portion of the York River. The VIMS Safety Officer has put all necessary precautions for a safe operation. We are currently working on the radar image acquisition. Although he does not expect to see waves from the York River images because of the relatively small wave activity in this river, the data acquisition programs he has developed here should work later for ocean waves applications.

Task 5: Project Management. I have no problems to report and everything appears to be on track. During the next two month reporting period I will be making a presentation about the combined set of MMS-VIMS cooperative agreements at an MMS sponsored meeting at the Delaware Geological Survey and, perhaps, at the meeting of the Virginia Shore and Beach Preservation Association.

As this report is being prepared we are anticipating impacts from Hurricane Isabel within the next 36 hours or so. Should there be substantial impacts along the Sandbridge-Virginia Beach shoreline, it is likely that we will be in contact with you to assess potential modifications to the research program in line with the adaptive management concept.

Respectfully submitted,



Carl H. Hobbs, III
Associate Professor and Project Manager

Copy: MMS: J. Kendall, W. Adcox, J. Rowland, R. Amato
VIMS: R. Diaz, J. Nestlerode, J. McNinch, S. Hardaway, D. Milligan, J. Maa, C. Harris, M. Fonner, G. Browder