Environmental Baseline Survey Report

Underwater Portions of MRSs 09 and 13
Culebra, Puerto Rico

PREPARED FOR:

U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE

Contract No. W912DY-04-D-0006
Task Order No. 0022
Geographical District: CESAJ

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Final

May 2014

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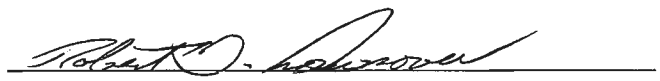
Report Approval:



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ACRONYMS AND ABBREVIATIONS

ASI	Aqua Survey Inc.
ASR	Archives Search Report
CFR	Code of Federal Regulation
CH	Critical Habitat
DGPS	Differential GPS
DNER	Department of Natural and Environmental Resources
DA	Department of the Army
DoD	Department of Defense
DQO	Data Quality Objective
DVD	Digital Versatile Disc
EBS	Environmental Baseline Survey
°F	Degrees Fahrenheit
EFH	Essential Fish Habitat
EOD	Explosive Ordnance Disposal
EM	Electromagnetic
EPA	Environmental Protection Agency
EQB	Environmental Quality Board
ESA	Endangered Species Act
FUDS	Formerly Used Defense Site
GIS	Geographical Information System
GPS	Global Positioning System
HA	Hazard Assessment
IAW	In Accordance With
IHO	International Hydrographic Organization
MBS	Multibeam Bathymetry Survey
MC	Munitions Constituents
MDAS	Material Documented as Safe
MEC	Munitions and Explosives of Concern
MPPEH	Material Potentially Presenting an Explosive Hazard
MRS	Munitions Response Site
MRU	motion reference unit
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NWR	National Wildlife Refuge
OSHA	Occupational Safety and Health Administration
PDA	Personal Digital Assistant
PDT	Project Delivery Team
PLS	Professional Licensed Surveyor
PM	Project Management
PR	Puerto Rico
PWS	Performance Work Statement
QA	Quality Assurance

QC	Quality Control
RAB	Restoration Advisory Board
RI/FS	Remedial Investigation/Feasibility Study
ROV	Remotely Operated Vehicle
RTK-DGPS	real-time kinematic differential GPS
SLRA	screening level risk assessment
SOP	Standard Operating Procedure
SP	Snorkeling Plan
SSS	Side Scan Sonar
TPP	Technical Project Planning
USACE	U.S. Army Corps of Engineers
USAESCH	U.S. Army Engineering and Support Center, Huntsville
USA	USA Environmental, Incorporated
USFWS	U.S. Fish and Wildlife Service
U/W	Underwater
UXO	Unexploded Ordnance
WP	Work Plan

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CHAPTER 1. INTRODUCTION

1.1 PROJECT AUTHORIZATION

The United States Army Engineering and Support Center, Huntsville (USAESCH) contracted USA Environmental, Incorporated (USA) to conduct an Environmental Baseline Survey (EBS) for the underwater portions of munition response sites (MRS) 09 and 13. USA has completed the required data collection activities for this project task in accordance with (IAW) the 10 February 2012 Performance Work Statement (PWS), Amendment of Solicitation/Modification of Contract No. W912DY-04-D-0006-0022, dated 23 April 2012, and the Work Plan Approval and Notice to Proceed letter dated 29 October 2012.

1.2 PURPOSE AND SCOPE OF THE EBS

The primary purpose and scope was to perform an in-depth study designed to gather the data necessary to determine the underwater (U/W) habitat within the Culebra Island MRSs 09 and 13 (water areas) for use in subsequent phases of a Remedial Investigation/Feasibility Study (RI/FS). The intent of this EBS was not to perform an in-depth biological study; rather, it was to document the actual area where the RI activities will take place. The EBS is the first of three (3) phases of the Remedial Investigation/Feasibility Study (RI/FS) being conducted within the underwater portions MRSs 09 and 13. The overall objective of the RI/FS is to determine the nature and extent of any contamination related to munitions and explosives of concern (MEC) and/or munitions constituents (MC) within the underwater portions of these MRSs. The results of the EBS, as presented in this report, will be used for decision making purposes during the subsequent Technical Planning Process (TPP) meetings for Phases 2 and 3; the underwater geophysical surveys and intrusive investigations/environmental sampling, respectively. In addition, this report includes any data related to material potentially presenting an explosive hazard (MPPEH) that was observed during EBS field activities. MPPEH data will be included in the overall RI evaluation and associated MEC hazard assessment (MEC HA).

This report details the results of the following EBS field activities that were conducted:

- Phase 1A: Hydrographic Surveys (Deployment of Multi-beam Bathymetry and Side Scan Sonar systems); Field work completed in November 2012
- Phase 1B: Underwater Visual Surveys (U/W Video/still camera systems and snorkeling); Field work completed in January 2013

All activities involving work in areas potentially containing MEC hazards were conducted in full compliance with USAESCH, U.S. Army Corps of Engineers (USACE), Department of the Army (DA), and Department of Defense (DoD) requirements regarding personnel, equipment, and procedures, and with Occupational Safety and Health Administration (OSHA) Standard 29 Code of Federal Regulation (CFR) Part 1910. In addition, field personnel adhered to the established Standard Operation Procedures (SOP)s developed for endangered species avoidance/mitigation (Appendix M of the final WP). These SOPs were reviewed on a daily basis to ensure compliance with the requirements.

1.3 REPORT ORGANIZATION

This EBS report has been divided into Chapters 1 through 5, with associated documents provided either as appendices herein, or as standalone documents, or on Digital Versatile Disc (DVD)s. Together, the report and associated documents present the project history, work elements, and EBS results in an organized manner. Table 1-1 describes the general structure and organization of this report. References are frequently made between various sections in the WP and the associated documents.

Table 1-1: EBS Report Structure

Chapter Number	Descriptor	Information
1	Introduction	A statement of the project objectives, project authorization, purpose and scope; summary of work plan organization, project location, site descriptions, and project organization.
2	EBS Approach	Describes the EBS approach, related Data Quality Objectives (DQO)s, and a summary of the data collection activities.
3	EBS Results	Provides details related to the EBS results, including discussions related to the delineated benthic habitats, the observed species and essential fish habitats within them. Included is identification of federally listed species present within the water portions of the MRSs.
4	Proposed RI Actions	Provides details related to the field activities anticipated for Phase 2 (underwater geophysical surveys) and Phase 3 (intrusive investigations/ environmental sampling) and their potential on the observed benthic habitats. Provides recommended RI field activity implementation measures, including selection of appropriate equipment and mitigation measures and procedures related to data collection activities.
5	References	Provides references applicable to the overall RI/FS project and EBS report.

The following appendices are included in this WP:

Appendix A Maps
Appendix B Photographs
Appendix C Hydrographic Data and GIS files (DVD)
Appendix D Transect Video Files (DVD)
Appendix E Field Reports/ Quality Control Reports

1.4 PROJECT LOCATION

The project location is Culebra Island, Munition MRS 09 and 13, approximately 17 miles east of the main island of Puerto Rico (PR) and also includes surrounding islands Cayo Luis Peña (MRS 13), located approximately three-quarter mile off the western coast of Culebra Island, and Soldado Point (MRS 09), located on the southern peninsula of Culebra Island.

1.5 SITE DESCRIPTION

1.5.1 Location

Site location is described in Subsection 1.4 and shown in Figure 1-1 and Figure 1-2.

1.5.2 Topography

Culebra Island and the surrounding cays are comprised of sandy beaches, irregular rugged coastlines, lagoons, coastal wetlands, steep mountains, and narrow valleys. Ninety percent of the island is mountainous. The highest point on Culebra is Mount Resaca at approximately 630 feet above sea level.

Culebra Island is underlain by both intrusive and extrusive volcanic rock of Upper Cretaceous age. The volcanic rock exhibits little or no porosity because of compaction and filling of the pores with quartz and calcite.

Cayo Luis Peña (MRS 13) is comprised of sandy beaches, irregular rugged coastlines and steep mountains. A peak of 476 feet above sea level is located in the center of the Cayo and a smaller peak of 171 feet above sea level exists on the northern peninsular of the Cayo.

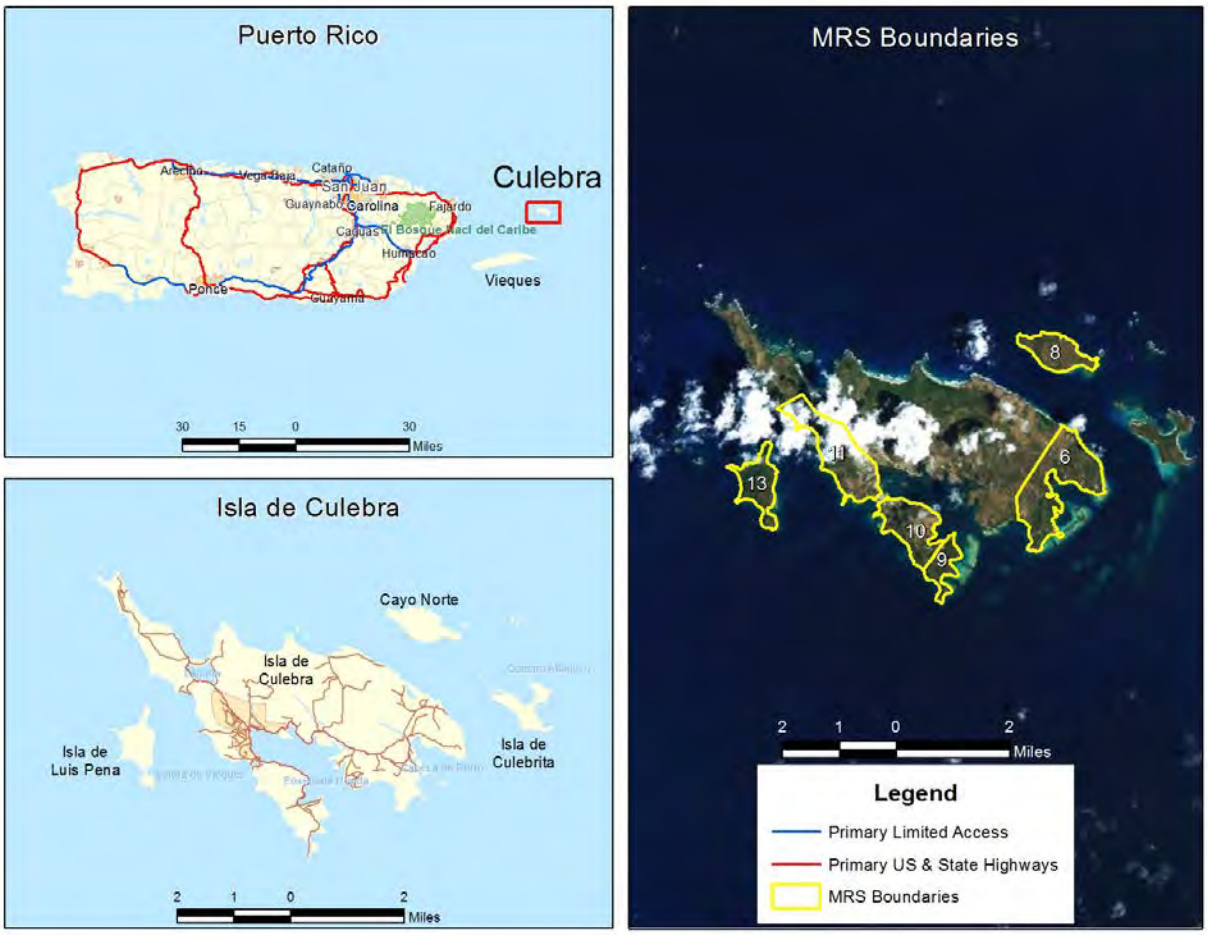

Figure 1-1: Location Map of Culebra, PR and MRS Boundaries

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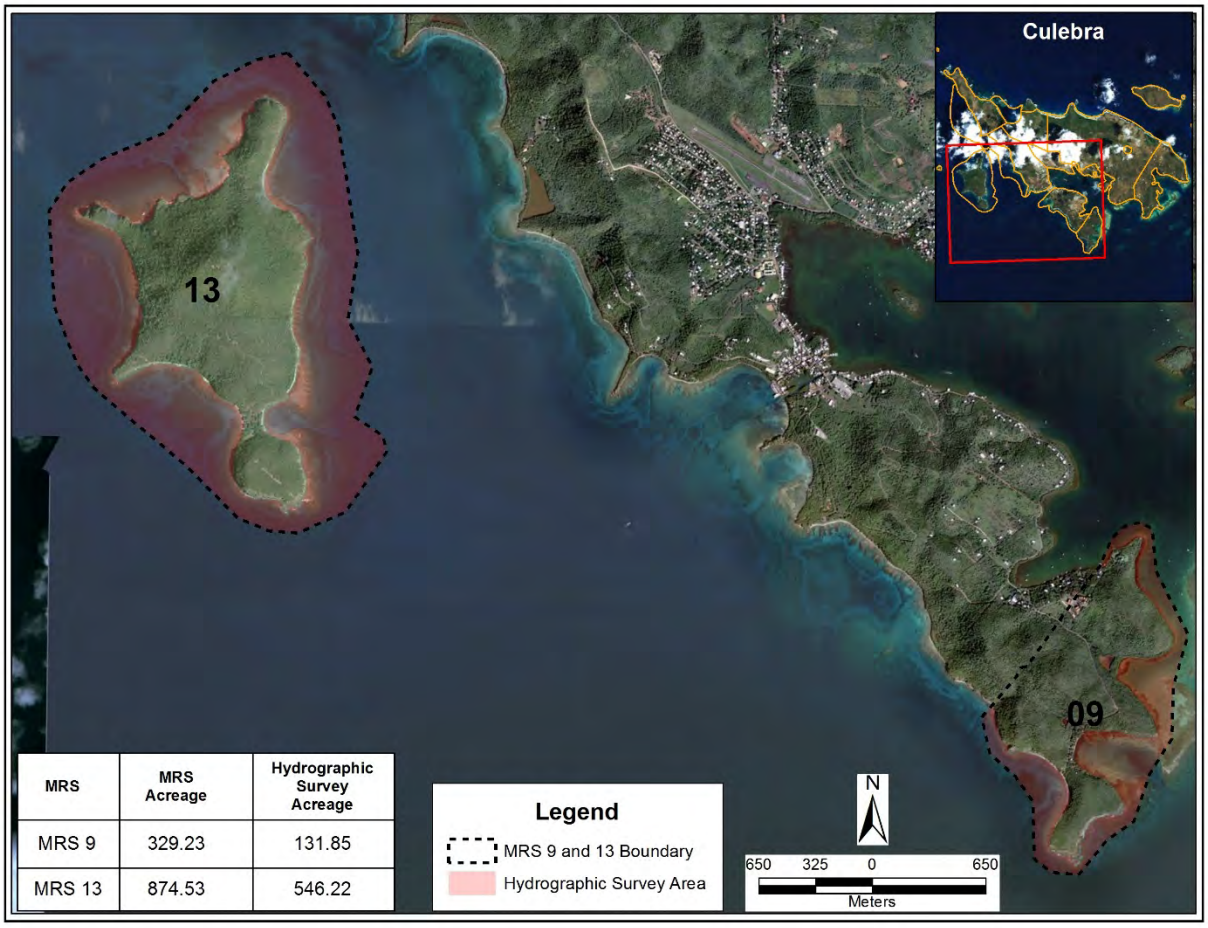

Figure 1-2: Location Map of MRS 09 and MRS 13, Culebra, PR and MRS Boundaries

1.5.3 Climate

The weather on Culebra Island is generally warm year round due to its tropical marine climate. Yearly average rainfall is approximately 36 inches. The months of August through November are considered the wet season, and the driest months are January through April. Yearly average daily temperatures average 80 degrees Fahrenheit (°F) year round with an average maximum of 86 °F and an average low of 74 °F. Winds are generally from the east-northeast during November through January and from the east during February through October. Yearly average wind speed is 8 knots. Hurricane season is from June through November, and severe hurricanes hit Culebra every 10 to 20 years. The yearly average rainfall for Culebra is provided in Table 1-2 (source: www.weather.com).

Phase 1a field work was executed during the month of November of 2012. Sea state is often the limiting factor for marine operations. The combination of wave swells and waves generated by winds did not impact the field work for Phase 1a. Winds averaged 10-14 knots. However for Phase 1b the winds averaged 15-20 knots creating small craft warnings throughout the length of the project. To take full advantage of the conditions presented the field teams worked on the lee of the islands when the sea state was high and when the sea state was light or moderate the field teams would concentrate their efforts on the windward side of the MRS's.

Table 1-2: Average Rainfall, Culebra Island

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
inches	2.38	1.48	1.42	2.74	3.06	2.53	2.85	3.74	5.58	5.42	5.23	2.96	39.39

1.6 PROJECT ORGANIZATION

For this project to be successful, close coordination and cooperation between the stakeholders, community, regulators, and technical support personnel was necessary during the development of the EBS WP. Figure 1-3 depicts the organizational structure of the USA project team with respect to the USACE. Other team members include the Culebra site stakeholders/TPP members. The roles of the primary team members are described below.

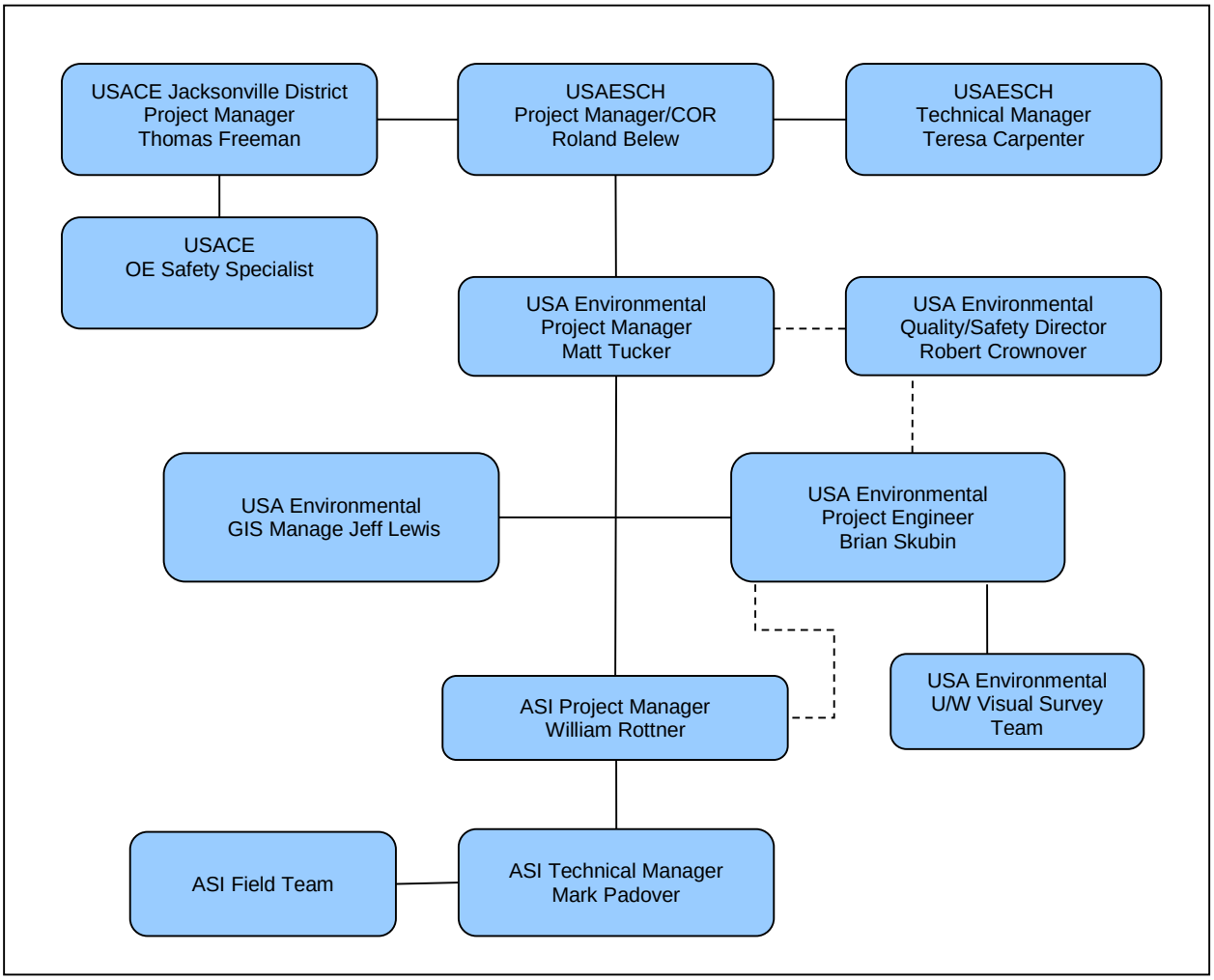

Figure 1-3: Project Organization

1.6.1 Project Stakeholders

The project stakeholders are those individuals and organizations directly impacted by the survey activities and the utilization of the resulting EBS Report data. Stakeholders include (but are not limited to):

- Puerto Rico Department of Natural and Environmental Resources (PR DNER)
- Puerto Rico Environmental Quality Board (PR EQB)
- United States Environmental Protection Agency (EPA)
- Culebra National Wildlife Refuge
- US Fish and Wildlife Service (USFWS)
- National Oceanic and Atmospheric Administration (NOAA)
- National Marine Fisheries Service (NMFS)

The stakeholders listed above participated in the Technical Project Planning (TPP) process for Culebra Formerly Used Defense Sites (FUDS) projects.

1.6.1.1 USACE, Jacksonville District

USACE Jacksonville District is the project management and funding agency for this project. Responsibilities of the USACE Jacksonville District, in addition to overall project management, include review of project plans and documents, coordination with the news media and the public, and coordination with national, state and local regulatory agencies on issues pertaining to protection of ecological and cultural resources.

1.6.1.2 USAESCH

USAESCH is the lead technical agency for this project. Responsibilities of USAESCH include procurement of contract services, review and coordination of project plans and documents, and supporting USACE Jacksonville District in working with the news media, the public, and the regulators. USAESCH provides technical expertise for MEC activities. As the Technical Project Manager, USAESCH is responsible for controlling the budget and schedule. As the contracting agency, USAESCH is responsible for directing the contractor.

1.6.1.3 USA Environmental, Inc.

USA is the prime contractor to USAESCH for this project. USA provides staff to perform all aspects of field work (Phases 1A and 1B) and provides oversight of field sampling activities. USA assigns project personnel based on management and technical experience and abilities. USA subcontracts to Aqua Survey Inc. (ASI) to conduct hydrographic surveys. USA provides personnel, equipment, and a survey vessel for Phase 1B field activities.

1.6.1.4 Aqua Survey Inc.

ASI is USA's hydrographic subcontractor for this project. ASI provides field personnel, a survey vessel, and equipment to perform all hydrographic surveys, to include side scan sonar (SSS) and multi-beam bathymetry surveys (MBS) for Phase 1A. ASI also provides a marine scientist for the visual surveys in Phase 1B. ASI conducts all work under USA PM oversight.

CHAPTER 2. ENVIRONMENTAL BASELINE SURVEY APPROACH

2.1 EBS TECHNICAL APPROACH SUMMARY

The overall objective of the RI is to determine the nature and extent of MEC and MC within MRSs 09 and 13. During project development, it was determined by USACE that an initial effort would be required to establish the baseline environmental conditions of the investigation areas (underwater portions of MRS 09 and 13) given the sensitive environments (benthic habitats) that were present. These benthic habitats contain species that are sensitive to anthropogenic activities and could be impacted by RI data collection activities, i.e. conducting geophysical and intrusive investigations. To address this, USA developed a two-stage approach (Phase 1A and Phase 1B) for collecting data necessary to delineate the benthic habitats present within the RI areas, with the goal of utilizing the data to plan subsequent RI field work.

2.1.1 Phase 1A: Hydrographic Surveys

Phase 1A, the initial data collection stage, consisted of conducting hydrographic surveys (side scan sonar and multi-beam bathymetry) IAW the DQOs. After hydrographic data was collected, an analysis was performed to compare the location of the initial idealized RI transects (underwater geophysical survey lines) against the benthic terrain (i.e., coral structures and sand beds) detailed by the side scan sonar and multi-beam bathymetry data (Appendix C). Analysis of the hydrographic data was essential for selecting an appropriate platform for deploying geophysical equipment along the RI transects close to or on the sea floor surface.

The hydrographic data analysis included a review and comparison of benthic features previously delineated by the National Oceanic and Atmospheric Administration (NOAA) in a report titled *Methods Used to Map the Benthic Habitats of Puerto Rico and the U.S. Virgin Islands* (Kendall, M.S., et al. 2001*).* This Report, which is contained in Appendix Q of the EBS WP, provides the detailed methodology for delineation of benthic habitats using aerial photography and GIS to map the various benthic features within Puerto Rico and the U.S. Virgin Islands. USA was able to modify the benthic GIS files (shape files) based on the hydrographic data collected. This refinement was necessary given the wide area assessment nature of the NOAA data. As a result of this analysis, USA revised the idealized RI transect positioning/alignment based on avoiding significant benthic features proud of the seafloor (e.g., significant coral structures, boulders, or large debris). The revised RI transects are shown in the maps provided in Appendix A of this report.

2.1.2 Phase 1B: Underwater Visual Surveys

In order to ground truth both the hydrographic data (Phase 1A) and the NOAA benthic GIS data, USA conducted Phase 1B, which consisted of deploying vessel-based underwater camera systems along the re-aligned RI transects to collect video footage. Given that the objective of the EBS is to document the benthic habitat where RI activities will occur, video was collected only along the re-aligned transects and in select areas of interest (MPPEH items). The intent of this stage of Phase 1 was not to perform an in-depth biological study; rather, it was to document the actual area where the RI activities will take place.

Video footage was reviewed and correlated with the hydrographic data and the NOAA refined benthic GIS data. In addition USA utilized a remotely operated vehicle (ROV) to perform “spot” investigations of various benthic features including representative species that populate the benthic habitats within MRSs 09 and 13. This information was captured on video (Appendix D). As a sample of opportunity, USA also collected ROV video footage of MPPEH items that were observed along the video transect surveys. This data will be saved for later use in the RI.

2.1.3 EBS Data Quality Objectives

2.1.3.1 Preliminary Project Goals (EBS)

The preliminary project goal of the EBS is to document, in the form of this report, the various underwater benthic habitats that present within the water portions of MRSs 09 and 13 in order to establish the

parameters for conducting the subsequent RI/FS field activities (Underwater geophysical surveys and Intrusive Investigations/ environmental sampling) within MRSs 09 and 13. Based on this preliminary project goal, site characterization goals are as stated in Step 2 of the DQO process in Table 2-1.

2.1.3.2 Data Quality Objectives

DQOs are qualitative and quantitative statements that clarify project objectives, define the appropriate type of data, and specify the tolerable levels of potential decision errors that are used as the basis for establishing the quality and quantity of data needed to support decisions. These project specific statements describe the intended data use; the data need requirements; and the means to achieve acceptable data quality for the intended use. DQOs established for the EBS activities meet the EPA QA/G-4HW Guidance's 7 step DQO criteria. The DQOs developed for the EBS WP are presented in Table 2-1.

Table 2-1: EBS DQOs

DQO STEPS	Water Acreage of MRS 09 and MRS 13
1. State Problem	The overarching problem is determining the nature and extent of MEC/MC within the accessible areas[1] of the underwater portions of MRSs 09 and 13 while minimizing disturbance to endangered and threatened species and sensitive underwater environments within the investigation footprint. An initial Baseline Survey effort (Phase 1) will be required in order to establish the parameters for conducting subsequent RI/FS field activities (Underwater Electromagnetic (EM) Surveys and Intrusive Investigations) within MRSs 09 and 13.
2. Identify the Goal of the Study	• Document the bathymetry within the water portions of the MRSs. • Document and verify the types of benthic habitats that are located within the proposed MEC and MC investigation areas of each MRS. • Identify and locate (map) coral, sea grass, sandy areas, essential fish habitats, and endangered and threatened species within the underwater portions of the MRSs. • Investigate and document suspected MEC items that may be located on the surface of the sea floor within the MRSs. • Develop appropriate mapping unit, considering comparable existing maps. • Establish an RI transect design for conducting subsequent underwater geophysical surveys and intrusive investigations that considers the locations of sensitive habitat and endangered and threatened species.
3. Identify Information Inputs	• Collect multi-beam bathymetry and side scan sonar data (International Hydrographic Organization (IHO) Order I Hydrographic Survey); • Collect and analyze underwater visual survey data (Underwater camera systems deployed by vessels or snorkelers with integrating positioning using GPS systems); • Analyze documented Puerto Rico/Caribbean benthic habitats and endangered/ threatened species and their locations within the investigation footprints; • Locate suspected surface MEC items within accessible water areas of the MRS boundary.

DQO STEPS	Water Acreage of MRS 09 and MRS 13
4. Define the Boundaries of the Study	The MRS boundary defines the population to be sampled and the decision units to which the data will be applied. Step-out visual investigations may be required to modify/expand MRS boundary in areas where MEC has been identified on the seafloor. The population for this project consists of the underwater (benthic) areas of MRSs 09 and 13. The boundary may be reconfigured to relocate inaccessible[1] acreage, to investigate the underwater areas of eastern Culebrita.
5. Develop a Decision Rule	Data gathering requirements for completing a Baseline Survey Report will be considered met after the following items have been achieved: • A hydrographic survey within the accessible[1] water areas for MRSs 09 and 13 is completed. Hydrographic surveys will be conducted from a vessel in waters no less than 4-ft depth. Depths less than 4-ft will be surveyed by a snorkeling team. • Hydrographic survey data are sufficient to plan follow-on Phase 2 and Phase 3 investigations. • The benthic habitats and endangered/threatened species within the accessible[1] underwater areas of MRSs 09 and 13 have been mapped. The anticipated survey areas are established along idealized transects in the approved Baseline Survey Work Plan. • Step-out visual investigations within the MRS boundary will be conducted in a 100-ft (horizontal) radius around MEC items located along the idealized visual transects (spaced at 250-ft). If additional MEC are located within the first step-out, an additional 100-ft radius will be visually investigated. Step-outs will stop when crossing overlapping step-out areas, or if no additional MEC are located within a 100-ft radius. • For MEC items located within 100 horizontal feet from the MRS boundary, the initial step-out will be 100-ft, the second 100-ft (if required), and the PDT will be consulted if additional step outs are needed. • If access is restricted by coral reefs or other features exposed to the water surface that do not allow for survey activities to be safely conducted, the Project Delivery Team (PDT) will be consulted.
6. Specify Performance or Acceptance Criteria	• Measurable decision errors are limited to the field and analytical Quality Control (QC) processes identified in the Baseline Survey Work Plan for survey coverage. Work will be performed in accordance with established SOPs for underwater surveys. • Acceptable survey data for hydrographic surveys will be coverage of all accessible areas of the water portions of each MRS. • The completed hydrographic survey meets IHO Order I parameters and meets the quality standards outlined in the Quality Control Plan (Chapter 4 of the Baseline Survey Work Plan). TPP approval of Phase 1a data will be sought. • Acceptable underwater visual survey coverage will be stationed on idealized geophysical transects at 250-ft (RI design) based on the hydrographic survey data. Width of visual coverage (corridor along transects) will vary depending on conditions.

DQO STEPS	Water Acreage of MRS 09 and MRS 13
7. Develop the Detailed Plan for Obtaining Data	Data collection procedures and associated QC measurements are included in the Baseline Survey Work Plan. A combination of Visual Sample Plan and visual analysis of accessible[1] areas within the investigation footprints were used to develop the transect design reflected in the Baseline Survey Work Plan. Hydrographic data collected during Phase 1A will be utilized to refine the transect locations for the visual survey conducted in Phase 1B.

Footnotes:
[1] *For the purposes of this DQO: "accessible" means:*

- *For Vessels: That access to the water portions of the MRS is not hindered by water depth, shallow rock or coral formations, or unsafe sea state conditions (consistently rough seas).*
- For Snorkeling Personnel: *That access to the water portions of the MRS are not hindered by or unsafe sea state conditions (consistently rough seas).*

2.1.4 EBS Work Plan

The final EBS WP was approved on 29 October 2012 and incorporates all of the approved field activities necessary to collect data to satisfy the EBS DQOs (Table 2-1 above, WP Table 3-1). References in this report are frequently made to the WP and/or its appendices.

2.2 SUMMARY OF FIELD WORK

2.2.1 Phase IA Data Collection Activities

Although the basis of the RI technical approach is to conduct geophysical surveys along idealized survey transects (1 meter wide), the Phase 1A EBS data collection activities (hydrographic surveys) were conducted in all of the accessible areas of each MRS, as defined by the DQOs. Figures A-1 and A-2 in Appendix A show the Phase 1A coverage areas with the initial idealized RI transects. Given the nature of the benthic setting within the accessible areas of the MRS, various survey spacings were utilized to ensure the hydrographic survey coverage required by the DQOs. Survey lines were planned with 50 meters spacing at MRS 13 and 20 meter spacing at MRS 09, and were planned roughly parallel to the shoreline. The narrower lane spacing at MRS 09 was due to the decreased swath width of the multibeam system, due to the shallow waters present through most of the MRS.

2.2.1.1 Multibeam Bathymetry Survey (MBS)

2.2.1.1.1 Instrumentation

ASI's MBS and positioning system were composed of the following items. A Sea SWATHplus 488kHz high-resolution Interferometric bathymetric sonar was used to acquire the sounding data. Positioning data was supplied by a Trimble SPS 750 max (Base), DSM 232 (Rover), GNSS GPS Real Time Kinematic (RTK) positioning system. Heading data came from a Hemisphere Crescent VS110 GPS heading device with antennas mounted 2 meters apart. Vessel motion was tracked and recorded from a SMC IMU-108 motion reference unit (MRU). Sound velocity data came from a Valport Sound Velocity Mini SVS and Profiler: Mini SVP. For surveying in areas which did not have a direct line of sight to the RTK base station, a Trimble Trimark 3 Radio Modem was mounted on a small boat which was anchored outside the survey area and served as a repeater. Multibeam data was acquired and processed using SWATHplus Processor and Grid and Hypack/Hysweep.

2.2.1.1.2 Survey

Prior to deploying the survey vessel, benchmarks provided by a Licensed Puerto Rico Land Survey at Melones and Soldiers Points were occupied using the RTK GPS units, benchmark to be used on survey to

confirm positional accuracy. This was performed daily. A copy of the Professional Licensed Surveyor (PLS) survey Report is included in Appendix E.

Prior to starting the survey, the MBS system was calibrated to ensure data accuracy. An MBS system is a complex system that requires complete synchronization of all of its individual instruments. In order for the multibeam sonar to collect accurate bathymetric data, the alignment of the following instruments must be calibrated collectively: the sonar head, heading device, and the motion reference unit. SWATHplus Processor and Grid software were used to perform and apply patch test results.

During this calibration, data is collected on specific terrain types at different speeds and directions of travel in order to measure the alignment of the sonar system's instruments. Once the Patch Test is completed, the system is corrected for pitch, roll, yaw, and latency, and the results are entered into the SWATHplus Processor software as offsets. Patch tests were run daily. Sound velocity measurements are recorded at the sonar head continuously during data collection. Sound velocity casts of the entire water column were taken twice daily and entered into SWATHplus Processor during data processing.

The survey was conducted concurrently with a towed SSS system. A minimum overlap of 10% was maintained with all adjacent survey lines. Daily cross lines were also run as an additional QC check. Copies of the QC results are included in Appendix E.

The study area was surveyed in sections, to efficiently utilize the GPS radio signal's effective range and locations with the best sea conditions.

The objective of MBS was to collect as much bathymetric information of the bottom as could be safely attained. Due to shallow water conditions and navigational obstructions such as boulders, coral heads, reefs, etc., data coverage does not extend all the way to the shoreline in all areas. These shallow water areas were avoided in order to prevent damaging the environment, and to ensure the safety of the survey crew and multibeam survey equipment and vessel.

2.2.1.1.3 Data Processing

SWATHplus Processor and Grid was used to process raw information gathered from each instrument, including the following data inputs: sonar, heading, GPS, MRU, sound velocity, instrument offsets, and collective time stamps. Data was filtered to remove noise from the water column and filtered to reject any values outside of that which was possible. Then, each survey line was individually examined for inconsistent and irregular values. Cross lines were examined to see if depths were the same. At this point during data processing, anomalies were rejected and cleaned from the data set.

The dataset was exported as an x,y,z file for final cleaning, as a preparation for final output in Hysweep. Data was again checked for anomalies and, if required, the original data was rechecked. Soundings were then gridded to create a 2 meter by 2 meter surface. Copies of the raw and processed MBS data are included in Appendix C of this Report.

2.2.1.1.4 MBS QC

The positioning system QC results showed daily RTK accuracies ranging from 0.0108 to 0.0178 meters. MBS QC involved pre-survey system calibration and patch tests. Additional partial patch tests were run to confirm that no change to mounting orientation took place (none did). Transiting conditions to the work areas were rough, the project had a high mobilization and demobilization costs and we didn't want to get to the end and find out there was a problem with the data. Sound velocity measurements were recorded at the sonar head continuously during data collection. Sound velocity casts of the entire water column were taken twice daily and entered into SWATHplus Processor during data processing. Sound velocity was found to consistent from the water surface to bottom as well as from day to day, with a total range for the entire survey from 1540.971 to 1542.413 m/s. Daily cross lines were also run as an additional QC check. Detailed MBS QC results are included in Appendix E. All MBS QC tests passed and met project requirements.

2.2.1.2 Side Scan Sonar Survey

2.2.1.2.1 Instrumentation

An Edgetech 4125-FS dual frequency 400kHz/900kHz CHIRP side SSS system was the primary system used for this survey. A Klein 3000H system was initially deployed but replaced due to technical issues. Positioning was supplied by the same RTK positioning system as the multibeam system used. The offsets from the antenna mounting position was measured and entered into the sonar acquisition software prior to commencing the survey. During the survey, the amount of cable out was recorded and used for layback corrections during data processing.

2.2.1.2.2 Survey

Prior to departing the dock each day, the side scan sonar was powered and the towfish functionality was tested with a 'rub test'. Daily Quality Assurance (QA) runs were conducted over a known object (the wreck of a plane on the seafloor) to ensure the equipment was functioning correctly. Range scale was set to 50 meters, which resulted in 200 percent or greater insonification of the survey areas. Data quality was monitored real time as well as the towfish altitude. The cable tender was in constant communication with the sonar operator to ensure the towfish maintained a safe altitude above the sea floor.

2.2.1.2.3 Data Processing

The sonar records were mosaiced using Chesapeake Technologies Sonar Wiz Map 5.0 software to provide a better overall view of the areas surveyed and to produce a single geo-referenced image of the survey areas. This image was combined with the multibeam results in Hypack 2010 to allow better interpretation of the data sets. Each individual sonar file was bottom tracked through a combination of automated bottom tracking as well as manual inspection and correction of inaccurate bottom detection. Gains were adjusted to level out the intensities of the bottom returns across the sonar ping. Navigational corrections for layback were applied as necessary. Layback accuracy was checked by reviewing records for isolated objects or edges of reefs and comparing their plotted locations on survey lines run in opposite directions.

The primary frequency used for analysis was 900 kHz due to the greater amount of detail in the sonar records. The mosaics were output in sections as geo-tiffs with a resolution of 0.2 meters per pixel. This resolution gave sufficient detail in the sonar mosaics while allowing manageable file sizes.

Post analysis of the SSS data, to identify potential MPPEH, did not reveal any obvious targets indicative of ordnance items because of the abundant number of benthic features in the data. Given that the majority of the observed benthic features were similar in size and shape, they effectively flooded out or camouflaged any MPPEH targets in the sonar mosaic data. Therefore, no shapefiles for MPPEH targets were created. After Phase 1B was completed, USA attempted to look at the SSS data that corresponded with the MPPEH items that were located by the ROV. However, it was difficult to ascertain in the data what was benthic related and what may have been MPPEH. The results of the ROV investigations can be found in Section 2.2.2 Phase 1b Data Collection Activities. The ROV investigations of MPPEH items during Phase 1b did result in shapefiles being created. The apparent lack of SSS MPPEH targets does not mean that MPPEH items are absent from an area. Phases 2 and 3 of the underwater Remedial Investigation will further define the presence or absence of MPPEH.

Copies of the raw and processed SSS data are included in Appendix C of this Report.

2.2.1.3 Revised RI Transect Design

Based on the results of the multibeam, side scan sonar surveys and analysis of the NOAA benthic GIS files, transects were revised to maximize the efficiency of the survey while minimizing the potential environmental impact and still maintained sufficient coverage to obtain the desired results. The most efficient way of surveying while minimizing the environmental impact involved creating transects which roughly followed the bathymetric contours and habitat types. The multibeam data provided high resolution bathymetry for the initial revised transect positioning. As different bottom types have different acoustic reflectivities, the side scan sonar images allowed for rough differentiation of bottom types. Areas which have both highly reflective surfaces and large numbers of shadows are typical of hard coral reef or large

rocks or boulders. Grass beds with have the appearance of fine sand paper showing light texture without shadows. Areas of pure sand are typically seen as a wavy bottom. As soft corals do not reflect sound well, they are difficult to image acoustically and do not show up well in the side scan sonar results. An initial determination of survey methodology to be used on each section of transect was also made based on the remote sensing results, and were taken into account during the planning of the proposed transects (Figures A-3 through A-13 in Appendix A). These proposed transects were then surveyed in Phase 1B to ground truth the remote sensing results, verify the benthic habitat types and finalize proposed methodology per transect section as illustrated in Figure 2-1 below.

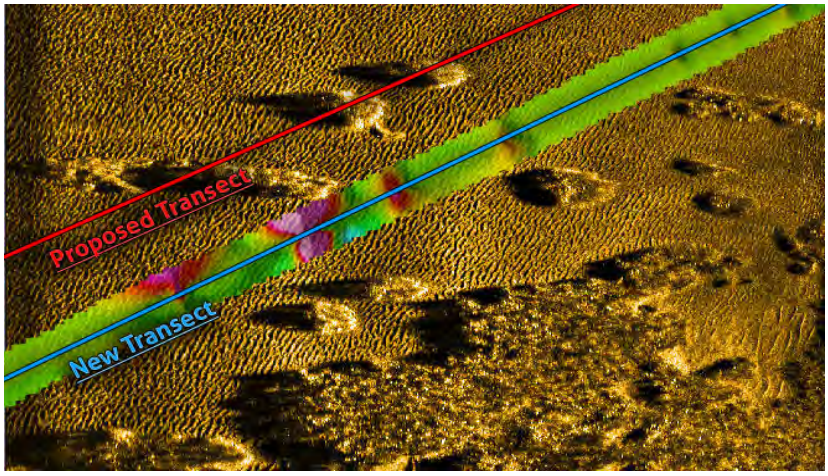

Figure 2-1: Example RI Transect Re-alignment

2.2.2 Phase IB Data Collection Activities

2.2.2.1 Underwater Video Transect Surveys

Where water depths and site conditions allow access by small boat, a pole/hull-mounted underwater video camera was deployed and monitored as the vessel progressed down each of the re-aligned RI transects. The survey vessel was accurately maneuvered through use of a RTK-DGPS-integrated Personal Digital Assistant (PDA) displaying the re-aligned transects, while a marine scientist and Unexploded Ordnance (UXO) Technician monitored the video display. Digital video footage was recorded onto a laptop computer, noting the latitude and longitude of the camera position. The ASI marine scientist monitored the video feed to make preliminary notes of the various underwater benthic habitats. The UXO technician noted any suspected MEC items that were encountered during the survey. In addition, a post survey review of the video footage was conducted by the ASI marine scientist who then compared the visual data to the NOAA underwater benthic habitat GIS data. Coverage maps showing the GPS track log of the video surveys are contained in Appendix A (Figures A-14 and A-15).

Underwater video transect surveys were conducted IAW with the EBS WP and adhered to the SOPs contained in Appendix M of the EBS WP.

2.2.2.2 Snorkeling Transects

The primary purpose of snorkeling operations was to collect supplemental Environmental Baseline Survey data (i.e. Depth soundings and visual video survey, etc.) within shallow water areas (less than 5-feet of depth) of the MRSs. Snorkeling operations were conducted in order to complete the following tasks:

- Visual surveys of the sea floor to survey marine habitat types
- Visual survey of suspected MEC items
- Collection of related underwater data (water depth, site conditions, etc.)

Snorkelers completed surveys of the sea floor, advancing along the required distance of idealized transect lines while visually surveying a 5-ft-wide path. Snorkelers utilized a hand held GPS enabled PDA and handheld depth sounder to collect and record depth information along the survey transects. Snorkelers were also equipped with underwater digital video cameras to photograph/ shoot video of the underwater habitat. Snorkeling activities satisfied the related project DQOs. Coverage maps showing the GPS track log of the video surveys are contained in Appendix A (Figures A-14 and A-15). The video data collected by the snorkelers is included in the EBS Report findings and supporting figures.

USA conducted snorkeling activities IAW the Snorkeling Plan (SP), Appendix N of the EBS WP. The SP reflects the procedures and methods USA utilized to safely perform snorkeling surveys of the shallow underwater environment in support of subsequent EBS activities. USA personnel also conducted snorkeling activities IAW the SOPs contained in Appendix M of the EBS WP.

2.2.2.3 VideoRay Surveys

2.2.2.3.1 Biological Spot Investigations

Following the video transect survey, locations were chosen within each MRS to visit with the ROV in order to collect representative video of habitat types present. Locations were chosen based on video images from the transects as well as from the results of the multi-beam and side scan sonar surveys. A variety of bottom types were seen in the previously collected data sets. Locations were chosen to get more detailed information about those habitats and species present as well as to confirm the presence of threatened species that were possibly seen during the video transect surveys.

Twenty-two locations were chosen at MRS-13 and eleven locations were chosen at MRS-9. Results of the ROV investigations assisted with species identification as well as providing representative images of the habitats. Figures A-16 and A-17 (Appendix A) and Table 2-2 provide the locations and information related to each of the biological spot investigations conducted within MRS 09 and 13.

2.2.2.3.2 MPPEH Investigations

Items that visually reflected characteristics of MPPEH items were reacquired and investigated further with the ROV, as required in order to capture the position, record video footage of the item, and document the surrounding underwater environment. USA located 11 suspected MPPEH items. For the purposes of safety, the locations of these items are not being disclosed outside of USACE purview. MPPEH items during the EBS could not be confirmed as MEC or MD and were classified as MPPEH. The RI will evaluate these items and further define as MEC or MD.

2.2.2.3.3 Phase 2B QC

Daily QC checks on the RTK's accuracy (11-cm repeatability) along with operational checks on the underwater video/ROV/handheld cameras were completed prior to the days evolutions. QC checks on the GEO XT (2-m repeatability) were performed when Snorkeling Video Transects were to be conducted.

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Table 2-2: Biological Spot Investigations (ROV)

Location ID	Description	Photo ID (Appendix B)	Longitude	Latitude	Benthic Habitat Classification
MRS 13- 1	Sea Rods (various species), *Pseudopterogorgia sp.*(sea plumes), *Gorgonia ventalina*(common sea fan), *Montastraea sp*. **(star corals), tube sponges	MRS 13- 1	18.29721415	-65.332436	Coral Reef and Colonized Hardbottom
MRS 13- 2	*Syringodium filiforme* (manatee grass), *Udotea sp.* (Mermaid's fans), *Halimeda sp*.(leaf algae), finger sponges.	MRS 13- 2	18.2981211	-65.3352354	Submerged Vegetation-Macro algae - patchy
MRS 13- 3	*Thalassia testudinum* (turtle grass)	MRS 13- 3	18.29951801	-65.3347057	Submerged Vegetation-Seagrass - continuous
MRS 13- 4	Sea Rods (various species), *Pseudopterogorgia sp*.(sea plumes), *Gorgonia ventalina* (common sea fan), tube sponges, barrel sponges	MRS 13- 4	18.29367263	-65.3284048	Coral Reef and Colonized Hardbottom
MRS 13- 5	Sea Rods (various species), *Pseudopterogorgia sp*.(sea plumes), *Gorgonia ventalina* (common sea fan), *Montastraea sp*. **(star corals), *Porites porites* (finger coral)	MRS 13- 5	18.29611126	-65.3266864	Coral Reef and Colonized Hardbottom
MRS 13- 6	Sea Rods (various species), *Pseudopterogorgia sp*.(sea plumes), *Gorgonia ventalina* (common sea fan), *Montastraea sp.* **(star corals)	MRS 13- 6	18.29744294	-65.3250887	Coral Reef and Colonized Hardbottom
MRS 13- 7	*Syringodium filiforme* (manatee grass), *Udotea sp.* (Mermaid's fans), *Halimeda sp*.(leaf algae), *Dictyota sp.* (Y-branched algae), finger sponges.	MRS 13- 7	18.29916625	-65.3254717	Submerged Vegetation-Macro algae - patchy
MRS 13- 8	Sea Rods (various species), *Pseudopterogorgia sp*.(sea plumes), *Gorgonia ventalina* (common sea fan), *Montastraea sp.* **(star corals), *Porites porites* (finger coral)	MRS 13- 8	18.30170373	-65.3271679	Coral Reef and Colonized Hardbottom
MRS 13- 9	Sea Rods (various species), *Pseudopterogorgia sp.(*sea plumes), *Gorgonia ventalina (*common sea fan), *Montastraea sp.*** (star corals)	MRS 13- 9	18.30197092	-65.3256028	Coral Reef and Colonized Hardbottom
MRS 13- 10	Sea Rods (various species), *Pseudopterogorgia sp*.(sea plumes), *Gorgonia ventalina*(common sea fan), *Montastraea sp.* **(star corals)	MRS 13- 10	18.30221059	-65.3264071	Coral Reef and Colonized Hardbottom
MRS 13- 11	*Syringodium filiforme* (manatee grass), *Udotea sp.* (Mermaid's fans), *Halimeda sp*.(leaf algae), *Dictyota sp.* (Y-branched algae)	MRS 13- 11	18.30569582	-65.3256058	Submerged Vegetation-Macro algae - patchy
MRS 13- 12	Sea Rods (various species), *Pseudopterogorgia sp*.(sea plumes), *Gorgonia ventalina* (common sea fan), *Montastraea sp*. **(star corals), *Porites porites* (finger coral)	MRS 13- 12	18.3057034	-65.327029	Coral Reef and Colonized Hardbottom
MRS 13- 13	*Acropora cervicornis* (staghorn coral), Sea Rods (various species), *Pseudopterogorgia sp.(*sea plumes), *Gorgonia ventalina*(common sea fan), *Montastraea sp.* **(star corals), *Porites porites* (finger coral), *Briareum abestinum* (corky sea fingers)	MRS 13- 13	18.30643876	-65.3275741	Coral Reef and Colonized Hardbottom
MRS 13- 14	*Syringodium filiforme* (manatee grass), *Udotea sp.* (Mermaid's fans), *Halimeda sp*.(leaf algae), *Dictyota sp*. (Y-branched algae), finger sponges.	MRS 13- 14	18.31230841	-65.326197	Submerged Vegetation-Macro algae - patchy
MRS 13- 15	*Syringodium filiforme* (manatee grass), *Udotea sp*. (Mermaid's fans), *Dictyota sp*. (Y-branched algae)	MRS 13- 15	18.31207968	-65.3276657	Submerged Vegetation-Macro algae - patchy
MRS 13- 16	*Thalassia testudinum* (turtle grass), *Penicillus dumetosus* (bristle ball brush algae), *Udotea sp*. (Mermaid's fans)	MRS 13- 16	18.31217208	-65.3291389	Submerged Vegetation-Seagrass - continuous
MRS 13- 17	Sea Rods (various species), *Pseudopterogorgia* sp.(sea plumes), *Gorgonia ventalina* (common sea fan), black ball sponges, finger sponges, vase sponges, *Mycetophyllia ferox* **(Rough Cactus Coral)	MRS 13- 17	18.31725585	-65.3291371	Scattered Coral/Rock in Unconsolidated Sediment

Location ID	Description	Photo ID (Appendix B)	Longitude	Latitude	Benthic Habitat Classification
MRS 13- 18	*Acropora cervicornis* *(staghorn coral), Sea Rods (various species), *Pseudopterogorgia sp*.(sea plumes), *Gorgonia ventalina* (common sea fan), *Montastraea sp.* **(star corals), *Porites porites* (finger coral), *Briareum abestinum* (corky sea fingers), *Siderastrea radians* (lesser starlet coral)	MRS 13- 18	18.31501783	-65.3327668	Coral Reef and Colonized Hardbottom
MRS 13- 19	Scattered rocks with Sea Rods (various species)	MRS 13- 19	18.31212072	-65.3391418	Scattered Coral/Rock in Unconsolidated Sediment
MRS 13- 20	*Thalassia testudinum* (turtle grass), finger sponges, *Syringodium filiforme* (manatee grass), *Dictyota sp*. (Y-branched algae)	MRS 13- 20	18.30584494	-65.3409675	Submerged Vegetation-Seagrass - patchy
MRS 13- 21	*Thalassia testudinum* (turtle grass), finger sponges, *Syringodium filiforme* (manatee grass), *Dictyota sp*. (Y-branched algae), *Udotea sp*. (Mermaid's fans)	MRS 13- 21	18.30705374	-65.3404282	Submerged Vegetation-Seagrass - patchy
MRS 13- 22	*Thalassia testudinum* (turtle grass), *Udotea sp*. (Mermaid's fans)	MRS 13- 22	18.30546668	-65.3385791	Submerged Vegetation-Seagrass - continuous
MRS 9-1	*Syringodium filiforme* (manatee grass), *Thalassia testudinum* (turtle grass), *Penicillus dumetosus* (bristle ball brush algae), *Udotea sp*. (Mermaid's fans)	MRS 9-1	18.28099933	-65.2876258	Submerged Vegetation-Seagrass - continuous
MRS 9-2	Sea Rods (various species), *Pseudopterogorgia sp*.(sea plumes), *Gorgonia ventalina* (common sea fan), *Montastraea sp.*** *(*star corals), *Porites porites* (finger coral), *Briareum abestinum* (corky sea fingers)	MRS 9-2	18.28049341	-65.2870604	Coral Reef and Colonized Hardbottom
MRS 9-3	Sea Rods (various species), *Pseudopterogorgia sp.(*sea plumes), *Gorgonia ventalina* (common sea fan), *Montastraea sp*.** (star corals), tube sponges, vase sponges, finger sponges	MRS 9-3	18.27810792	-65.2881317	Coral Reef and Colonized Hardbottom
MRS 9-4	*Acropora palmata**(elkhorn coral), *Acropora cervicornis* *(staghorn coral), Sea Rods (various species), *Gorgonia ventalina*(common sea fan), *Montastraea sp*.** (star corals), *Diploria sp*.(brain corals)	MRS 9-4	18.27844986	-65.2839924	Coral Reef and Colonized Hardbottom
MRS 9-5	*Thalassia testudinum* (turtle grass), *Syringodium filiforme* (manatee grass), *Dictyota sp*. (Y-branched algae)	MRS 9-5	18.2821685	-65.2822333	Submerged Vegetation-Seagrass - patchy
MRS 9-6	*Thalassia testudinum* (turtle grass), *Syringodium filiforme* (manatee grass),*Dictyota sp*. (Y-branched algae)	MRS 9-6	18.28177264	-65.2827746	Submerged Vegetation-Seagrass - patchy
MRS 9-7	*Syringodium filiforme* (manatee grass), *Halimeda sp*.(leaf algae), *Dictyota sp.* (Y-branched algae)	MRS 9-7	18.28244939	-65.2848129	Submerged Vegetation-Seagrass - patchy
MRS 9-8	*Syringodium filiforme* (manatee grass), *Halimeda sp*.(leaf algae), *Dictyota sp*. (Y-branched algae), *Penicillus dumetosus* (bristle ball brush algae)	MRS 9-8	18.28274019	-65.2840068	Submerged Vegetation-Seagrass - patchy
MRS 9-9	*Syringodium filiforme* (manatee grass), *Dictyota sp.* (Y-branched algae)	MRS 9-9	18.287082	-65.2817737	Submerged Vegetation-Seagrass - patchy
MRS 9-10	*Caulerpa sp*. (feather algae), *Halimeda sp*.(leaf algae),*Udotea sp*. (Mermaid's fans) with scattered rocks	MRS 9-10	18.29063372	-65.281651	Scattered Coral/Rock in Unconsolidated Sediment
MRS 9-11	*Thalassia testudinum* (turtle grass) *NOTES: (*) indicates a species currently listed as threatened or endangered* *(**) indicates a species proposed for listing as threatened or endangered*	MRS 9-11	18.29419589	-65.2830515	Submerged Vegetation-Seagrass - patchy

2

CHAPTER 3. EBS RESULTS

3.1 ESA AND NWR BACKGROUND INFORMATION

The main island of Puerto Rico and its associated islands support 75 federally listed threatened and endangered species consisting of 26 animals and 49 plants. Among this diverse group of fauna and flora are multiple species that are known to exist, potentially exist, or temporarily use areas within the Culebra Island archipelago. Of the 75 federally listed species, nine are known or are suspected to occupy Culebra Island and/or the associated cayos. In addition to the federally listed species, two state-listed species are known to occupy Culebra Islands. The federally and state-listed species include both terrestrial and marine life. The federally listed species of most concern for the wildlife refuge are the green sea turtle, hawksbill sea turtle, leatherback sea turtle, and loggerhead sea turtle. Due to declining populations, the elkhorn and staghorn corals in the surrounding waters are federally listed as threatened species. In addition to the species listed under the Endangered Species Act (ESA), the Center for Biological Diversity petitioned NMFS on 20 October 2007 to list 83 species of corals as threatened or endangered under the ESA, and to designate critical habitat for these corals. NMFS received and reviewed the petition and determined that the requested listing actions may be warranted for 82 of the 83 coral species. The completed status review and management report (NOAA Technical Memorandum NMFS-PIFSC-27) was issued in September of 2011. All of the Atlantic coral species have the potential to be found in waters around Culebra.

According to the National Wildlife Refuge (NWR) System, portions of Culebra Island and 22 of the associated cayos are considered NWR area. The three largest cayos are Culebrita, Cayo Norte (privately owned), and Luis Peña. These resemble Culebra in that they all have sandy beaches, rugged coastline, and gentle to steep hills. Vegetation ranges from moderate to extremely dense. The smaller cayos are primarily solid rock with sparse or no vegetation. A few of the smaller cayos have small beaches; however, most are rugged rock all around.

According to the PR DNER, the conservation priority areas for Culebra and associated cayos are as follows:

- Designated Critical Habitat
- All of the lagoons on Culebra
- Monte Resaca
- All beaches around Culebra
- The designated critical habitat area for the Virgin Islands Boa
- Flamenco Peninsula
- Puerto del Manglar
- Los Canos
- Punta Soldado
- Bahia (also called “Ensenada”) Cementerio
- All cayos and cayos around Culebra
- The Culebra NWR
- The Canal Luis Peña Natural Reserve

3.2 OBSERVED BENTHIC HABITAT TYPES

3.2.1 Description of Observed Benthic Habitats in MRS 09 and 13

The following section provides a description of the results from the benthic habitat analysis performed by USA. USA utilized the data collected for hydrographic (Appendix C) and underwater towed camera video surveys which includes snorkeler video surveys (Appendix D), along with the NOAA benthic GIS, to characterize the benthic habitat classifications. According to the NOAA GIS effort (Kendall, M.S., et al. 2001), there are twenty-six (26) distinct benthic habitats located within near shore waters of Puerto Rico

and the U.S. Virgin Islands. During the course of completing the EBS analysis, it was observed that the benthic habitats located within the water portions of MRSs 09 and 13 consist primarily of unconsolidated sediments (sand), submerged vegetation (sea grass/microalgae), and coral reef/hardbottom (colonized and uncolonized pavement) habitats. For the purposes of evaluating the implementability of subsequent RI fieldwork actions (conducting Geophysical surveys and intrusive investigations), USA considered two main benthic habitats; unconsolidated sediments/submerged vegetation and coral/hardbottom classifications. The following paragraphs summaries the observations for these two classifications. Figures A-18 and A-19 in Appendix A illustrate the two benthic classifications projected on GIS within both MRSs 09 and 13.

3.2.1.1 Unconsolidated Sediments/Submerged Vegetation

The unconsolidated sediments habitat classification consists primarily of mud or sand with varying coverage (density) of submerged vegetation (sea grass and macro algae). Submerged vegetation populated the unconsolidated sediment habitats over much of the survey area. For MRS 09 both mud and sand cover were observed with sand being the majority of this classification. In MRS 13, sand was observed to be the primary cover, given the amount of wave energy present in most areas. A moderate amount of unconsolidated sediments within MRSs 09 and 13 were observed to be adjacent to hard bottom areas where sand cover over hard bottom is present. Some areas contained individual corals or rocks that were distinctive, but made up a very small percentage of the total cover. Species indentified in this habitat type included, but are not limited to: *Thalassia testudinum* (turtle grass), *Syringodium filiforme* (manatee grass), *Dictyota sp.* (Y-branched algae), *Halimeda sp*. (leaf algae), *Penicillus dumetosus* (bristle ball brush algae), *Caulerpa sp.* (feather algae), *Udotea sp.* (Mermaid's fans), and *Galaxaura sp*. (tubular thicket algae). These areas can be seen in side scan sonar mosaic as being flat with no relief or sand ridges.

For representative photographs and further description of these two habitat classifications, please refer to Appendix Q of the WP as well as the photographs in Appendix B of this document.

3.2.1.2 Colonized or Uncolonized Hard Bottom and Coral Reef

The second observed class consisted of colonized or uncolonized hard bottom and coral reef. This class also included scattered coral or rock in unconsolidated sediment. In both MRS 09 and 13 the majority of hard bottom structure was considered to be the pavement cover; in the form of flat, low-relief, solid carbonate rock with coverage of macroalgae, hard coral, zoanthids, and other sessile invertebrates that are dense enough to have begun to obscure the underlying surface. The various species identified included, but are not limited to: *Briareum abestinum* (corky sea fingers), *sea rods* (various species), *Pseudopterogorgia sp*.(sea plumes), *Gorgonia ventalina* (common sea fan), *Acropora palmate* (elkhorn coral), *Acropora cervicornis* (staghorn coral), *Porites porites* (finger coral), *Dendrogyra cylindricus* (pillar coral), *Madracis sp.* (finger coral), *Montastraea sp.* (star corals), *Dichocoenia stokesi* (elliptical star coral), *Siderastrea sp*.(starlet coral), and *Diploria sp.*(brain corals). These areas can be seen in the side scan sonar mosaic as appearing rough in texture and having closely packed light and dark spots caused by the high reflectivity and vertical relief of the structures.

For representative photographs and further description of these two habitat classifications, please refer to Appendix Q of the WP as well as the photographs in Appendix B of this document.

3.3 PRESENCE OF ESSENTIAL FISH HABITATS

3.3.1 List and Description

Essential fish habitat (EFH) is identified for species managed in Fishery Management Plans under the Magnuson-Stevens Fishery Conservation and Management Act. Essential fish habitat is the habitat necessary for managed fish to complete their life cycle, thus contributing to a fishery that can be harvested sustainably. EFH applies to each life stage of approximately 1,000 managed species. Different life stages of the same species often use different habitats. Habitat types used by different life stages of fish include sand bottoms, submerged aquatic vegetation, coral reefs, and mangrove areas. For example, submerged aquatic vegetation helps stabilize sand and mud bottoms, filter polluted runoff, provide living space and refuge from predators. It acts as a food source as well as a nursery area to fish, crabs, and other aquatic

species. Coral reefs support sharks, turtles, and more than 4,000 species of fish worldwide. They offer refuge from predators as well as places to feed and reproduce. Mangrove areas serve as spawning grounds, nurseries, and shelter for different life stages of various fish.

As identified by the NOAA EFH mapper, the waters around Culebra have the potential to be EFHs for corals, queen conch, two species of lobster, three species of shark, and 43 different species of fish at either certain stages of or through their entire life cycle.

Two species of coral are currently listed as threatened under the ESA, staghorn coral and elkhorn coral. As both MRS-13 and MRS-9 contain live specimens of these species, areas of these MRS's should be considered CH for these species as well as for the green sea turtle for the planning of future activities.

3.4 PRESENCE OF THREATENED AND ENDANGERED SPECIES

3.4.1 Federally Listed Species Potentially Present

3.4.1.1 List and Descriptions

3.4.1.1.1 Endangered Species (Descriptions in the EBS WP):

- *Balaenoptera musculus* (Blue whale)
- *Balaenoptera physalus* (Fin whale)
- *Megaptera novaeangliae* (Humpback Whale)
- *Balaenoptera borealis* (Sei Whale)
- *Physeter macrocephalus* (Sperm Whale)
- *Trichechus manatus mantus* (Antillean Manatee)
- *Eretmochelys imbricate* (Hawksbill Sea Turtle)
- *Dermochelys coriacea* (Leatherback sea turtle)

3.4.1.1.2 Threatened Species (Descriptions in the EBS WP)

- *Chelonia mydas* (Green sea turtle)
- *Caretta Caretta* (Loggerhead sea turtle)
- *Acropora cervicornis* (staghorn coral) is currently listed as a threatened species and is being considered for change to endangered species status. It is found in shallow waters from 1 to up to 160 feet depending on water conditions (though rarely seen below 60 feet). Colonies form antler-like racks of cylindrical branches that often grow in great tangles. The surface is covered in small, protruding, tubular corallites. Live staghorn coral is brown to yellow-brown. Once abundant throughout the region, it suffered mass mortality since the early 1990s in many areas due to white band disease. Though it was not observed in waters greater than 20 feet during the video transect survey, it has the potential to be in deeper water, therefore, all areas of reef within both MRSs were considered to have staghorn present.

- *Acropora palmata* (elkhorn coral) is currently listed as a threatened species and is being considered for change to endangered species status. It is found in shallow waters from 1 to up to 55 feet depending on water conditions (though rarely seen below 35 feet). Colonies form flattened branches resembling the horns of moose or elk. The surface is covered in small, protruding, tubular corallites. Live elkhorn coral is brown to yellow-brown. Once abundant throughout the region, it suffered mass mortality since the early 1990s in many areas due to white band disease. Though it was not observed in waters greater than 20 feet during the video transect survey, it has the potential to be in deeper water, therefore all areas of reef within both MRSs are considered to have elkhorn present.

NOAA is proposing that the currently threatened coral species be changed to endangered status as well as adding seven more Caribbean coral species to the threatened and endangered species list. These additional potentially endangered species include *Dendrogyra cylindrus* (pillar coral), *Montastraea annularis* (boulder star coral), *Montastraea faveolata* (mountainous star coral), *Montastraea franksii* (mountainous star coral), *Mycetophyllia ferox* (rough cactus coral) all of which are or have the potential to be located within the waters surrounding Culebra. The additional potentially threatened species include *Dichocoenia stokesi* (elliptical star coral) and *Agaricia lamarki* (Lamarck's sheet coral) which also are or have the potential to be located within the waters surrounding Culebra. While not currently included on the endangered/threatened species list at the time of the writing of this report, the areas in which they are found were not impacted by survey activities. All future survey activities in areas of coral will be conducted using remote sensing equipment which does not contact the seafloor; therefore, these potentially listed species should not be impacted in the future.

During Phase 1a and 1b, *Acropora cervicornis* (staghorn coral) and *Acropora palmata* (elkhorn coral) were present in both MRS 09 and MRS 13 as indicated in Table 2-2 and Appendix A (Figures A-22 and A-23).

3.4.1.2 Critical habitat (CH)

CH is designated for the survival and recovery of species listed as threatened or endangered under the ESA. CH includes those areas occupied by the species, in which are found physical and biological features that are essential to the conservation of an ESA listed species, and which may require special management considerations or protection. As of 2 September 1998, all waters surrounding Culebra from the high water mark out 3 nautical miles, as well as the surrounding cayos, were designated as CH for the green sea turtle. Green sea turtles are generally found in fairly shallow waters (except when migrating) inside reefs, bays, and inlets. The turtles are attracted to lagoons and shoals with an abundance of marine grass and algae. Open beaches with a sloping platform and minimal disturbance are required for nesting. These conditions are present at both MRSs 09 and 13.

3.4.1.3 Threatened or Endangered Species Observed

During all phase 1A and 1B survey activities, avoidance measures were strictly followed as defined in the USACE SOP, *Endangered Species and Conservation and Their Critical Habitat During Underwater Investigations at DERP-FUDS Property No. I02PR0068, Culebra Island, Puerto Rico*. No species currently on the endangered species list as indicated in section 3.4.1.1.1 were encountered during the phase 1A or 1B survey activities. Threatened species observed include staghorn and elkhorn corals as well as green sea turtles (See Appendix A, Figures A-22 and A-23). Proposed species that were seen during video and snorkeling surveys included *Montastraea sp* (star corals), *Mycetophyllia ferox* (rough cactus coral), and *Dendrogyra cylindrus* (pillar coral).

At MRS-13, green sea turtles were observed off both the eastern and western sides of Luis Pena. Two were observed on the surface. Two were seen in the underwater videos. Those seen in the underwater videos appeared to be traveling at a normal pace and did not appear disturbed or stressed by the camera. Staghorn and elkhorn corals were observed along the eastern side of the island as well as in the northwest cove. *Montastraea sp* (star corals), *Mycetophyllia ferox* (rough cactus coral), and *Dendrogyra cylindrus* (pillar coral) were all observed within MRS-13. Star corals were observed as part of the reef surrounding Luis Pena. The cactus coral was observed during ROV inspection dive 17. The pillar coral was seen during the video transect surveys within the northwest cove of Luis Pena.

At MRS-9, no sea turtles were observed. Staghorn coral is found in the reef area along the eastern side of the bay in the southwest corner of the MRS. The coral is growing both naturally and being raised for transplantation into other areas. Elkhorn coral was observed off the cove to the southeastern shore of Punta del Soldado. It was observed in both the transect video and during an ROV dive. *Montastraea sp* (star corals) and *Dendrogyra cylindrus* (pillar coral) were observed within MRS-9. The star corals were seen along the reef bordering the shoreline around the southern point. The pillar coral was seen in the same vicinity as the staghorn coral.

CHAPTER 4. PHASE 2 TRANSECT DESIGN

4.1 PHASE 2: UNDERWATER GEOPHYSICAL TRANSECT SURVEYS

As mentioned previously, Phase 2 field activities will consist of performing geophysical surveys along the re-aligned RI transects established during Phase 1 (See Figures A3 through A13 in Appendix A). The objective of these activities will be to collect EM anomaly data while creating the least amount of impact and still acquiring the highest quality data possible. The data collected during phases 1a and 1b is used to plan out the Phase 2 technical approach. The underwater EM Tx/Rx geophysical coil will be deployed using three types of system platforms. As there is not one single EM system that is both highly efficient and can guarantee no environmental impact in all habitat types present in the areas surveyed, multiple platforms will be used to survey the designated areas. The system used in any given area will depend primarily on depth of water and habitat type present. Based on the analysis of all of the EBS data, USA has assigned suggested EM platforms along each segment (as required) to each of the RI transects based on benthic habitat avoidance. Figures A-20 and A-21 illustrate the suggested EM platform deployment for MRSs 09 and 13. Each EM platform shown on these figures are color coded.

4.1.1 EM Platform Selection Process

The underwater video and side scan sonar data collected for each transect was reviewed by the RI team. While evaluating the side scan sonar data and video of each of the transects, transect segment were designated an EM platform that would be best suited for the transect surveys during Phase 2. Consideration was provided to the depth of water (bathymetry data), type of bottom (corals, seagrass, etc.) as interpolated from SSS data and validated by transect videos, and the anticipated sea state and the means in which the platform would be moved along segments of the transect. The start and stop points were also clearly identified by GPS coordinates to ensure the EM platforms are switched out at the correct points within the transect. Based on this analysis, maps were then generated depicting the proposed EM platform to be used for each RI transect segment (see Appendix A).

The following is a list of the EM platforms anticipated to be used during Phase 2:

- EM Sled or Cart
    - The EM sled is designed to keep the Tx/Rx coil as close to the sea floor as possible to maximize the detection depth of buried MEC/UXO. The system can be towed across the sea floor on wheels or skids depending on bottom conditions. The sled can have a forward facing camera mounted on it with a real-time feed to the survey vessel detection.
    - The EM sled is best suited for unconsolidated sediments and submerged low-lying vegetation. The EM sled has a usable depth range of 15-ft to 60-ft.
    - The EM cart is best suited for bottoms that are flat or slightly sloping and are free of corals, rubble and rocks. The EM cart may be used in firm sediments and uncolonized hardbottoms. The EM cart has a usable depth range of 0-ft to 13-ft.
- EM ROV
    - The EM ROV platform is used to propel the Tx/Rx EM coil along the RI transect. The ROV is equipped with a pressure sensor, altimeter, pitch sensor, roll sensor, and video cameras so real time monitoring of the coil The ROV is maintained under positive control by the ROV operator at all times, lending the ability to maneuver the ROV/EM coil around challenging bottom types (coral heads/ boulders). The EM coil is mounted in front of the ROV so it will be visible in the camera view at all times. Accurate positioning for the ROV and coil will be supplied by an ultra-short baseline (USBL) system set up between the survey vessel and the ROV system.
    - The EM ROV provides the most versatility of the EM platforms but is not necessarily the best choice for all of the benthic habitats that it can be used in. The best use of the EM

ROV is in coral reef and colonized hardbottom. The EM ROV can also be used in unconsolidated sediments, uncolonized hardbottom and submerged vegetation. It has a depth limitation of 15-ft to 100-ft.

- EM Float
    - The Tx/Rx EM coil attached to a floating platform allows for the EM coil to be deployed at a set depth in the water column. The EM floating platform provides a means to float the EM coil in shallow waters along the bathymetric contour line. The EM float can be towed by a boat or pushed along by snorkelers. RTK-DGPS provides real time positioning by using the antenna mounted on the floating platform which is centered over the EM coil which is mounted to the bottom of a rigid mast below the float.
    - The EM Float is best used in shallow water over coral reef and colonized hardbottoms which do not have great vertical relief and where the EM sled cannot be employed. The bottom conditions and depth should be consistent to avoid frequently adjusting the depth of the EM coil. It can be used in all of the other benthic habitats within its depth capabilities of 2-ft to 18-ft.

4.2 PHASE 3: INTRUSIVE INVESTIGATIONS AND ENVIRONMENTAL SAMPLING

4.2.1 Underwater Intrusive Investigations

It should be noted that specific methods for conducting follow on underwater intrusive investigations as a part of Phase 3 will be finalized during the TPP process. Phase 3 activities will likely include underwater intrusive investigations of selected EM anomalies located along the RI (or EM) transects that will be EM surveyed as part of Phase 2. USA anticipates utilizing UXO SCUBA divers (meeting DDESB TP-18 requirements) to perform intrusive investigations of these anomalies.

This EBS documented the transects where the RI activities will take place. The results provided an understanding of the bottom conditions and benthic habitats along the surveyed transects. The EBS also provided awareness of the presence of listed and proposed to be listed threatened and endangered species. The Data Quality Objectives (DQOs) for Phase 3 will take the findings of the EBS into consideration. Some of the anticipated measures to be put into place minimizing impact to the natural resources witnessed during the EBS follow:

- Excavation of anomalies during Phase 3 will be limited to unconsolidated sediments and submerged vegetation protecting the coral reef.
- When excavation takes place in submerged vegetation, which is a critical habitat for the green sea turtle, procedures minimizing any lasting impact to the seagrass will be employed.
- Corals that are listed or proposed to be listed as threatened or endangered will be avoided. This also applies if they are attached to MEC/MPPEH items.
- The EBS will be used as a tool in the coordination with the natural resource agencies when planning for the disposal of the MEC/MPPEH items discovered during Phase 1.
- To the full extent possible MEC/MPPEH items that are required to be disposed of by detonation will be removed from the water and detonated on land.

The Intrusive Investigation Field Team will use the EBS as a planning and training tool:

- The field team supervisors executing Phase 3 will be able to utilize the information provided by the EBS such as benthic habitat maps and the locations where proposed or listed species had been sighted in their daily planning.
- The field teams will be able to view the EBS ROV and transect digital videos allowing the team members to be fully prepared for the bottom conditions and the measures needed to avoid impact to the natural resources encountered.

4.2.2 Environmental Sampling

To investigate the nature and extent of any MC contamination, the USA investigation team will collect marine sediment samples. Analysis of the sampling data will involve a screening level risk assessment (SLRA) for human and ecological receptors. At present, USA intends to only collect discrete marine sediment samples. Further DQOs will be developed through the TPP process to establish the actual data requirements; however, it is anticipated that samples will be taken at locations where MD or suspected MPPEH items are observed. USA does not anticipate sampling soft or hard corals, sea grass, or other species for the purposes of the SRLA.

Specific methods for collecting marine sediment samples will be finalized during the TPP process; however USA does anticipate collecting samples using UXO SCUBA divers. Divers will utilize hand core samplers to collect marine sediment samples from locations not containing soft or hard corals, sea grass, or macro algae. All efforts will be made not to harm or harass species located directly adjacent to sample locations.

4.3 SUMMARY

USA has evaluated the anticipated field activities; considering their potential impact on benthic habitats (including EFH and ESA); the implementation measures needed to safely mitigate those impacts; to obtain quality data required for the underwater RI/FS. The RI/FS project team will utilize the EBS information presented in this report during Phase 2 and Phase 3 TPP meetings in order to develop their respective DQOs and subsequent work plans. USA understands that the information and suggestions presented in this report do not constitute a Section 7 consultation and that any significant changes to the RI technical approach are subject to an additional evaluation against the EBS data.

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CHAPTER 5. REFERENCES

The following are references applicable to the overall RI/FS project and EBS report. Following all applicable requirements and regulations listed in the following publications will ensure compliance with all federal and local law.

5.1 U.S. ARMY CORPS OF ENGINEERS GUIDANCE DOCUMENTS

- EM 200-1-4. Environmental Quality – Risk Assessment Handbook, 1999.
- EM 1110-1-1002. Engineering and Design – Survey Markers and Monumentation, 1990.
- EM 1110-1-4009. Engineering and Design – Military Munitions Response Actions, 2007.
- EM-1110-1-100 Engineering and Design – Conceptual Site Models for Ordnance and Explosives (OE) and Hazardous, Toxic, and Radioactive Wastes (HTRW) Projects, 2003.
- EM 385-1-97 Explosives Safety and Health Requirements Manual
- EM 385-1-1. Safety and Health Requirements Manual, 2008.
- ER 200-3-1. Environmental Quality – Formerly Used Defense Sites (FUDS) Program Policy, 2004.
- ER 385-1-92. Safety - Safety and Occupational Health Requirements for Hazardous, Toxic, and Radioactive Waste (HTRW) Activities, 2007.
- ER 1110-1-12. Engineering and Design – Quality Management, 2006.
- EP 1110-1-18. Military Munitions Response Process, 2006.
- EP 1110-3-8. Engineering and Design – Public Participation in the Defense Environmental Restoration Program (DERP) for Formerly Used Defense Sites (FUDS), 2004.
- EP 1110-1-24. Establishing and Maintaining Institutional Controls for Ordnance and Explosives Projects, 2000.
- EP 75-1-2. Munitions and Explosives of Concern (MEC) Support During Hazardous, Toxic, and Radioactive Waste (HTRW) and Construction Activities
- EP 75-1-4. Recurring Reviews on Ordnance and Explosives (OE) Response Actions, 2003.

5.2 U.S. ARMY DOCUMENTS

- Army MMRP, Remedial Investigation / Feasibility Study Guidance, 2009.
- TM 60A 1-1-31, Explosive Ordnance Disposal Procedures, 1994.
- AR 385-64, Ammunition and Explosives Safety Standards, 1999.
- AR 190-11, Physical Security of Arms, Ammunition and Explosives, 2006.

5.3 DEPARTMENT OF DEFENSE DOCUMENTS

- DOD 6055.9-M, Ammunition and Explosive Safety Standards
- DOD 4145.26-M, Contractor's Safety Manual for Ammunition and Explosives
- DDESB TP-18, Minimum Qualifications for Unexploded Ordnance (UXO) Technicians and Personnel

5.4 OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

Occupational Safety and Health Administration (OSHA) 1994 *General Industry Standards*, 29 CFR 1910 and *Construction Industry Standards*, 29 CFR 1926; especially 1910.120/29CFR 1926.65-*Hazardous Waste Site Operations and Emergency Response*.

5.5 U.S. ENVIRONMENTAL PROTECTION AGENCY

Risk Assessment Guidance for Superfund (RAGS), 1989.

5.6 FEDERAL REGULATION

- Code of Federal Regulations (CFR)
  - 33 CFR 320 Wetlands Protection Act
  - 40 CFR 300.430 National Oil and Hazardous Substances Pollution Contingency Plan (NCP) 1993.
  - 40 CFR Part 261.23 Resource Conservation and Recovery Act.
  - 49 CFR Parts 100-199 Transportation.
  - 62 Federal Register 6622, 1997 Military Munitions Rule.
- Fish and Wildlife Coordination Act 16 U.S.C. 661 et seq.
- Endangered Species Act 16 U.S.C. 1531-154.
- Migratory Bird Treaty Act 16 U.S.C. 703-712.
- National Historic Preservation Act 16 U.S.C. 1470.
- Clean Water Act 33 U.S.C. 1151 et seq., 1251 et seq., 40 U.S.C. 3906 et seq.
- Comprehensive Environmental Response, Compensation, and Liability Act 42 U.S.C. 9601-11050.
- U.S. Fish & Wildlife Service, Culebra National Wildlife Refuge, undated.

5.7 OTHER DOCUMENTATION/SURVEYS AND STUDIES FOR THE EBS REPORT

- Kendall, M.S., M.E. Monaco, K.R. Buja, J.D. Christensen, C.R. Kruer, and M. Finkbeiner, R.A. Warner. 2001. (On-line). Methods Used to Map the Benthic Habitats of Puerto Rico and the U.S. Virgin Islands URL: http://biogeo.nos.noaa.gov/projects/mapping/caribbean/startup.htm. Also available on U.S. National Oceanic and Atmospheric Administration. National Ocean Service, National Centers for Coastal Ocean Science Biogeography Program. 2001. (CD-ROM).Benthic Habitats of Puerto Rico and the U.S. Virgin Islands. Silver Spring, MD: National Oceanic and Atmospheric Administration.
  - NOAA National Ocean Service, Biogeography Branch; N/SCI 1, SSMC4; 1305 East West Highway; Silver Spring, MD 20910
  - NOAA Coastal Services Center, 2234 South Hobson Avenue; Charleston, SC 29405

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APPENDIX A. MAPS

This appendix presents the following EBS maps for MRS 09 and MRS 13:

- A-1 MRS 09 Baseline Survey Coverage Map
- A-2 MRS 13 Baseline Survey Coverage Map
- A-3 MRS 09 Underwater DGM Revised Transect Coverage
- A-4 MRS 09 Underwater DGM Revised Transect Coverage- (Central) Map
- A-5 MRS 09 Underwater DGM Revised Transect Coverage- (North) Map
- A-6 MRS 09 Underwater DGM Revised Transect Coverage- (South) Map
- A-7 MRS 13 Underwater DGM Revised Transect Coverage Map
- A-8 MRS 13 Underwater DGM Revised Transect Coverage- (East) Map
- A-9 MRS 13 Underwater DGM Revised Transect Coverage- (NorthEast) Map
- A-10 MRS 13 Underwater DGM Revised Transect Coverage- (NorthWest) Map
- A-11 MRS 13 Underwater DGM Revised Transect Coverage- (SouthEast) Map
- A-12 MRS 13 Underwater DGM Revised Transect Coverage- (SouthWest) Map
- A-13 MRS 13 Underwater DGM Revised Transect Coverage- (West) Map
- A-14 MRS 09 Revised Underwater Camera Transects Map
- A-15 MRS 13 Revised Underwater Camera Transects Map
- A-16 MRS 09 Biological ROV Spot Investigations Map
- A-17 MRS 13 Biological ROV Spot Investigations Map
- A-18 MRS 09 Benthic Habitat Map
- A-19 MRS 13 Benthic Habitat Map
- A-20 MRS 09 EM Platform Map
- A-21 MRS 13 EM Platform Map
- A-22 MRS 09 Threatened Species Sightings
- A-23 MRS 13 Threatened Species Sightings.

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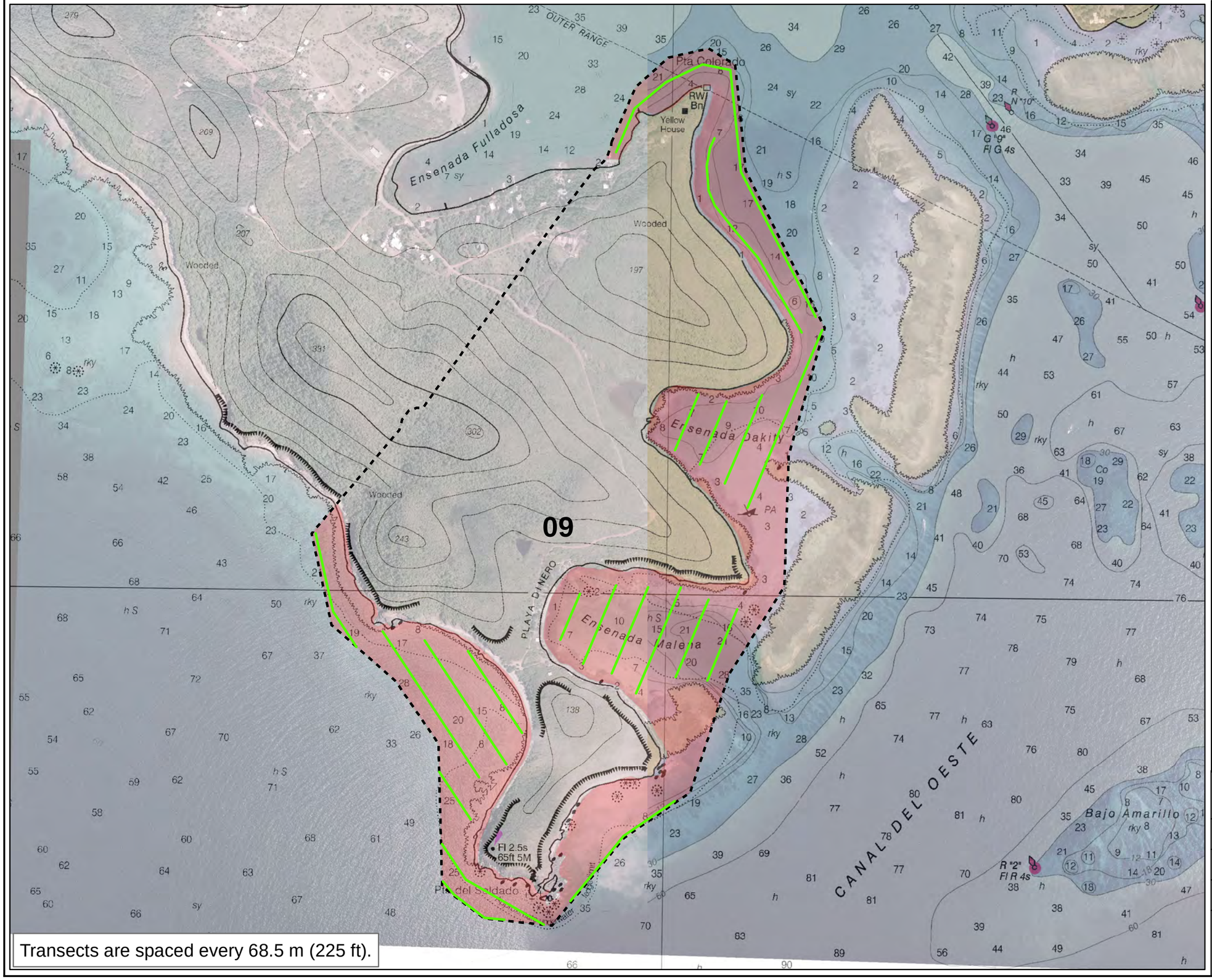


N

215 0 215

Meters

Soundings in Feet.
At mean lower low water.

Data is projected to the UTM Coordinate System: NAD 1983 UTM Zone 20N

Remedial Action/ Feasibility Study

Figure A-1

MRS 9 Baseline Survey Coverage Map

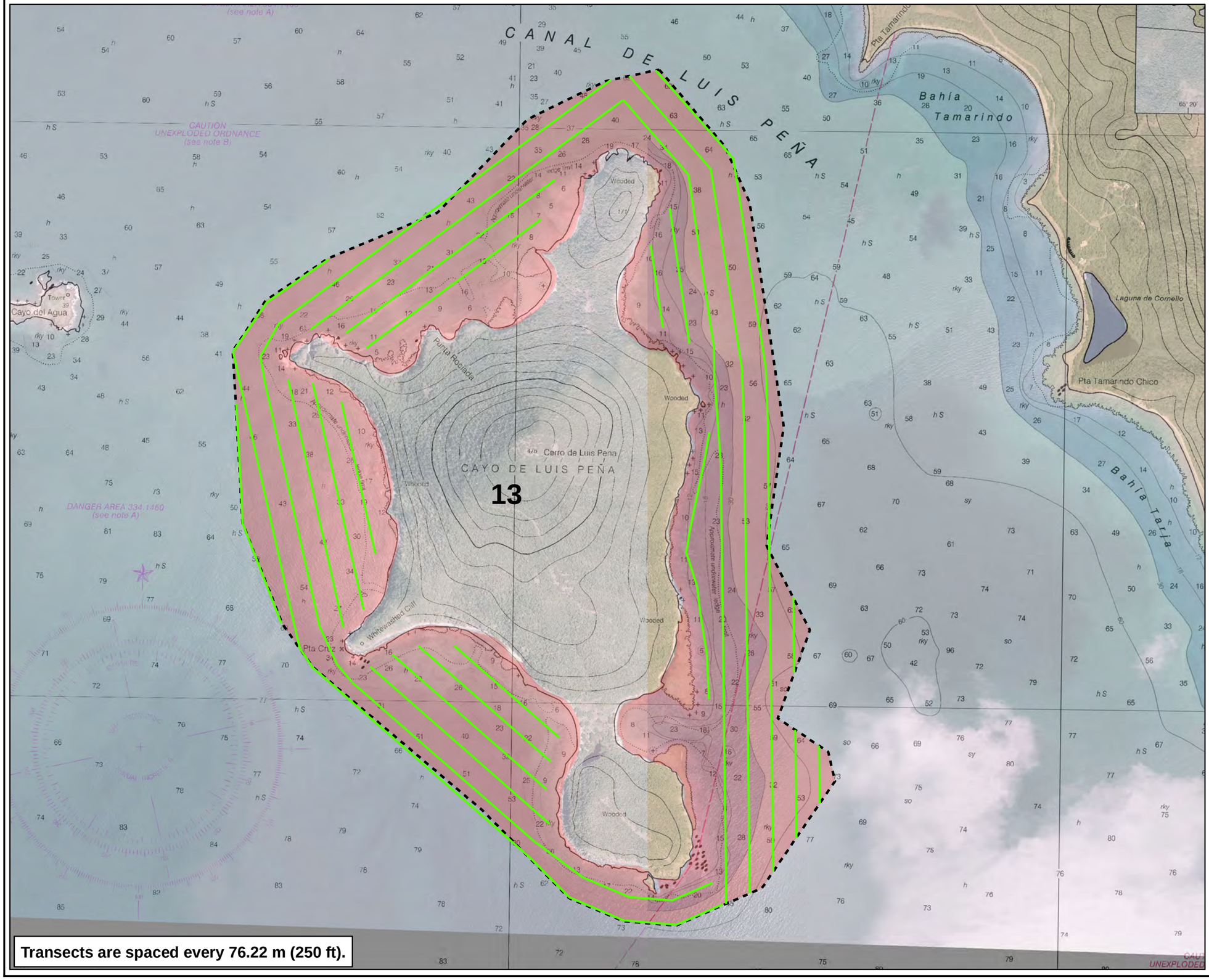
Culebra Island Site, Puerto Rico

Legend

- Visual Survey Transects (3.62 miles/1.32 acres)
- MRS 09 Boundary
- Hydrographic Survey Area

USA Environmental, Inc.	US Army Engineering And Support Center Huntsville, Alabama
Drawn By: JAL	Scale: 1 inch = 215 meters
Checked By:	Date Drawn: 5/6/2013
Submitted By: MT	Revision Date:

Path: S:\Culebra\RIFS 2009\EBS Report Maps\MXD\A-1 MRS 9 Baseline Survey Coverage



N

300 0 300

Meters

Soundings in Feet.
At mean lower low water.

Data is projected to the UTM Coordinate System: NAD 1983 UTM Zone 20N

Remedial Action/ Feasibility Study

Figure A-2

MRS 13 Baseline Survey Coverage Map

Culebra Island Site, Puerto Rico

Legend

- Visual Survey Transects (15.84 miles/5.76 acres)
- Hydrographic Survey Area
- MRS 09 Boundary

USA Environmental, Inc.	US Army Engineering And Support Center Huntsville, Alabama
Drawn By: JAL	Scale: 1 inch = 300 meters
Checked By:	Date Drawn: 5/6/2013
Submitted By: MT	Revision Date:

Path: S:\Culebra\RIFS 2009\EBS Report Maps\MXD\A-2 MRS 13 Baseline Survey Coverage

N

220 0 220

Meters

Data is projected to the UTM Coordinate System: Zone 20 North, NAD83, Units in Meters.

Remedial Investigation/ Feasibility Study

Figure A-3

MRS 9 Underwater DGM Revised Transect Coverage

Culebra Island Site, Puerto Rico

Legend

- Revised Underwater Transects (3.61 miles)
- Side Scan Sonar Coverage
- MRS 13 Boundary

USA Environmental, Inc.	US Army Engineering And Support Center Huntsville, Alabama	
Drawn By: JAL	Scale: 1 inch = 220 meters	Rev: 1
Checked By:	Date Drawn: 5/6/2013	
Submitted By: MT	Revision Date: 9-4-2013	
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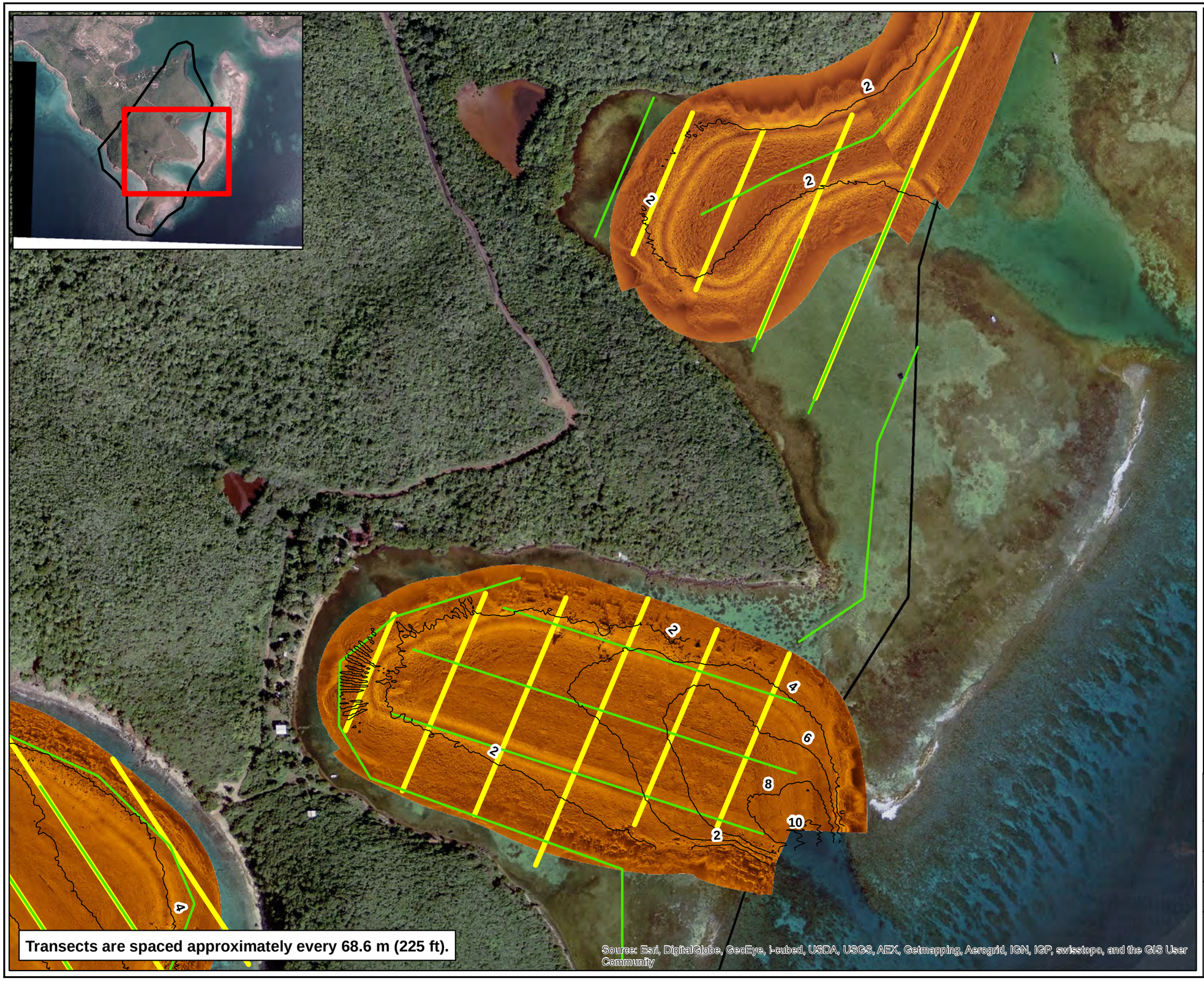

N

85 0 85

Meters

Data is projected to the UTM Coordinate System: Zone 20 North, NAD83, Units in Meters.

Remedial Investigation/ Feasibility Study

Figure A-4

MRS 9 Underwater DGM Revised Transect Coverage- Central

Culebra Island Site, Puerto Rico

Legend

- MRS 9 Bathometric Contours (Meters)
- Revised Underwater Transects (3.61 miles)
- Original Underwater Transects (3.69 miles)
- Side Scan Sonar Coverage
- MRS 13 Boundary

USA Environmental, Inc.		US Army Engineering And Support Center Huntsville, Alabama	
Drawn By:	JAL	Scale: 1 inch = 85 meters	Rev: 1
Checked By:		Date Drawn:	5/6/2013
Submitted By:	MT	Revision Date:	9-4-2013

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N

70 0 70

Meters

Data is projected to the UTM Coordinate System: Zone 20 North, NAD83, Units in Meters.

Remedial Investigation/ Feasibility Study

Figure A-5

MRS 9 Underwater DGM Revised Transect Coverage- North

Culebra Island Site, Puerto Rico

Legend

- MRS 9 Bathometric Contours (Meters)
- Revised Underwater Transects (3.61 miles)
- Original Underwater Transects (3.69 miles)
- Side Scan Sonar Coverage
- MRS 13 Boundary

USA Environmental, Inc.		US Army Engineering And Support Center Huntsville, Alabama
Drawn By: JAL	Scale: 1 inch = 70 meters	Rev: 1
Checked By:	Date Drawn: 5/6/2013	
Submitted By: MT	Revision Date: 9-4-2013	

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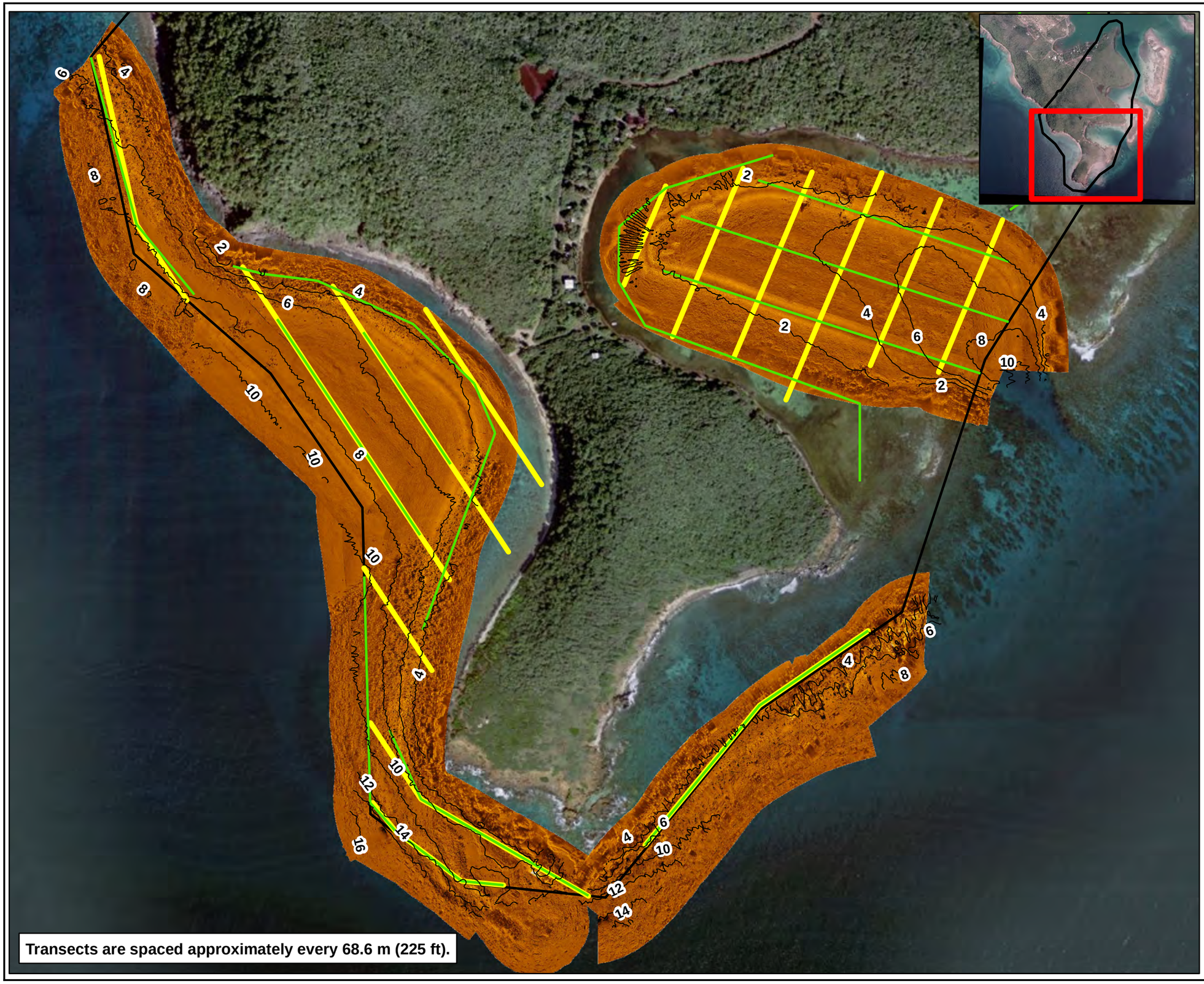

N

100 0 100

Meters

Data is projected to the UTM Coordinate System: Zone 20 North, NAD83, Units in Meters.

Remedial Investigation/ Feasibility Study

Figure A-6

MRS 9 Underwater DGM Revised Transect Coverage- South

Culebra Island Site, Puerto Rico

Legend

- MRS 9 Bathometric Contours (Meters)
- Revised Underwater Transects (3.61 miles)
- Original Underwater Transects (3.69 miles)
- Side Scan Sonar Coverage
- MRS 13 Boundary

USA Environmental, Inc.	US Army Engineering And Support Center Huntsville, Alabama

Drawn By:	JAL	Scale:	1 inch = 100 meters	Rev:	1
Checked By:		Date Drawn:	5/6/2013		
Submitted By:	MT	Revision Date:	9-4-2013		

Path:S:\Culebra\RIFS 2009\EBS Report Maps\MXD\A-6 MRS 9 Revised Transects_South.mxd

N

280 0 280

Meters

Data is projected to the UTM Coordinate System: Zone 20 North, NAD83, Units in Meters.

Remedial Investigation/ Feasibility Study

Figure A-7

MRS 13 Underwater DGM Revised Transect Coverage

Culebra Island Site, Puerto Rico

Legend

- Revised MRS 13 Underwater Transects (15.73 miles)
- Luis Pena 100 Yard Boundary
- Side Scan Sonar Coverage
- Luis Pena MRS Boundary (367 acres)

USA Environmental, Inc.	US Army Engineering And Support Center Huntsville, Alabama

Drawn By:	JAL	Scale:	1 inch = 280 meters	Rev:	1
Checked By:		Date Drawn:	5/6/2013		
Submitted By:	MT	Revision Date:	9-4-2013		

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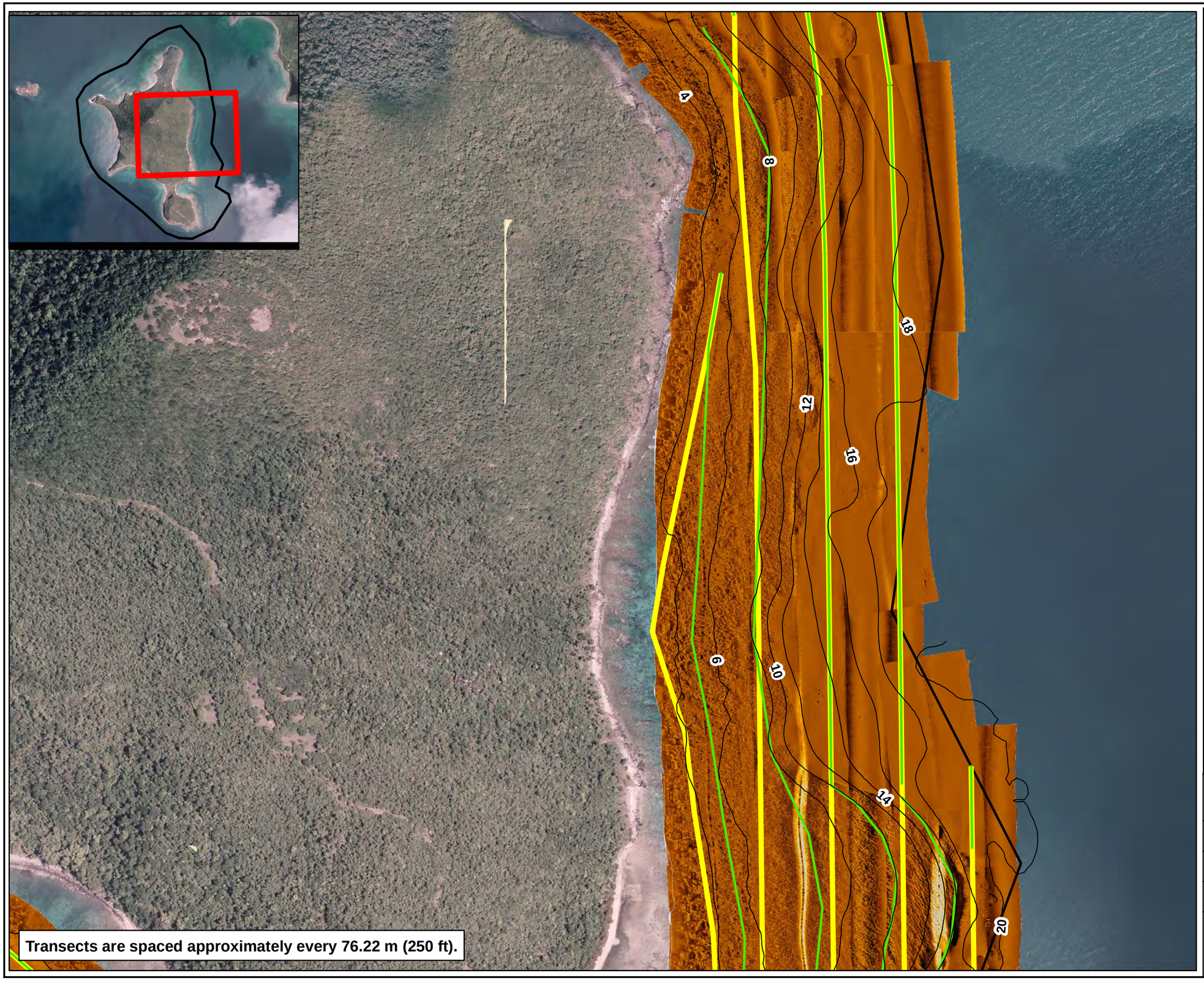


N

100 0 100

Meters

Data is projected to the UTM Coordinate System: Zone 20 North, NAD83, Units in Meters.

Remedial Investigation/ Feasibility Study

Figure A-8

MRS 13 Underwater DGM Revised Transect Coverage- East

Culebra Island Site, Puerto Rico

Legend

- MRS 13 Bathometric Contours (Meters)
- Revised Underwater Transects (15.73 miles)
- Original Underwater Transects (15.84 miles)
- Side Scan Sonar Coverage
- MRS 13 Boundary

USA Environmental, Inc.	US Army Engineering And Support Center Huntsville, Alabama

Drawn By:	JAL	Scale: 1 inch = 100 meters	Rev: 1
Checked By:		Date Drawn:	5/6/2013
Submitted By:	MT	Revision Date:	9-4-2013

Path:S:\Culebra\RIFS 2009\EBS Report Maps\MXD\A-8 MRS 13 Revised Transects_E.mxd

N

100 0 100

Meters

Data is projected to the UTM Coordinate System: Zone 20 North, NAD83, Units in Meters.

Remedial Investigation/ Feasibility Study

Figure A-9

MRS 13 Underwater DGM Revised Transect Coverage- NorthEast

Culebra Island Site, Puerto Rico

Legend

- MRS 13 Bathometric Contours (Meters)
- Revised Underwater Transects (15.73 miles)
- Original Underwater Transects (15.84 miles)
- Side Scan Sonar Coverage
- MRS 13 Boundary

USA Environmental, Inc.	US Army Engineering And Support Center Huntsville, Alabama

Drawn By:	JAL	Scale:	1 inch = 100 meters	Rev:	1
Checked By:		Date Drawn:	5/6/2013		
Submitted By:	MT	Revision Date:	9-4-2013		

Path:S:\Culebra\RIFS 2009\EBS Report Maps\MXD\A-9 MRS 13 Revised Transects_NE.mxd

Transects are spaced approximately every 76.22 m (250 ft).

N

100 0 100

Meters

Data is projected to the UTM Coordinate System: Zone 20 North, NAD83, Units in Meters.

Remedial Investigation/ Feasibility Study

Figure A-10

MRS 13 Underwater DGM Revised Transect Coverage- NorthWest

Culebra Island Site, Puerto Rico

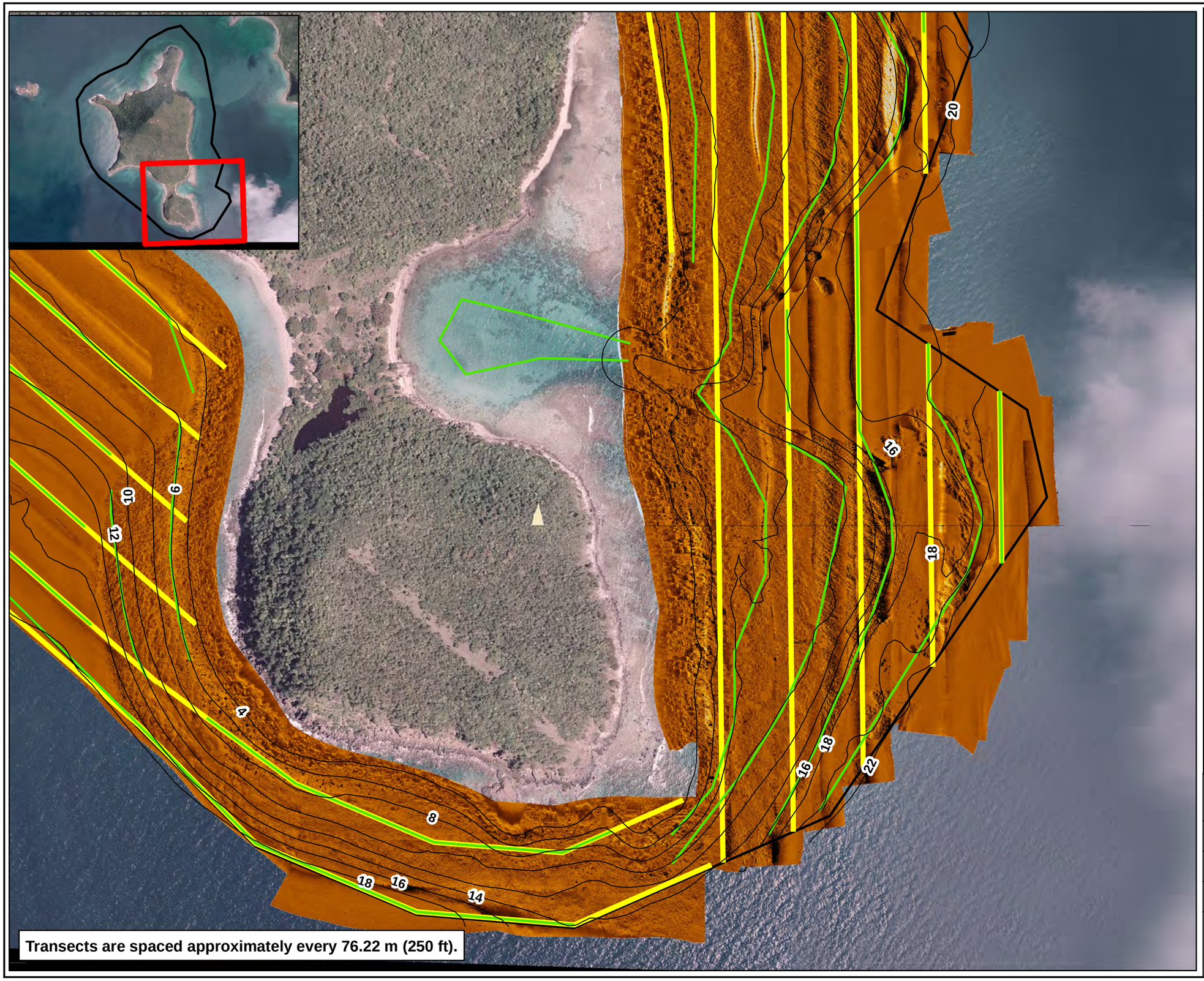
Legend

- MRS 13 Bathometric Contours (Meters)
- Revised Underwater Transects (15.73 miles)
- Original Underwater Transects (15.84 miles)
- Side Scan Sonar Coverage
- MRS 13 Boundary

USA Environmental, Inc.	US Army Engineering And Support Center Huntsville, Alabama

Drawn By:	JAL	Scale: 1 inch = 100 meters	Rev: 1
Checked By:		Date Drawn:	5/6/2013
Submitted By:	MT	Revision Date:	9-4-2013

Path:S:\Culebra\RIFS 2009\EBS Report Maps\MXD\A-10 MRS 13 Revised Transects_NW.mxd



N

100 0 100

Meters

Data is projected to the UTM Coordinate System: Zone 20 North, NAD83, Units in Meters.

Remedial Investigation/ Feasibility Study

Figure A-11

MRS 13 Underwater DGM Revised Transect Coverage- SouthEast

Culebra Island Site, Puerto Rico

Legend

- MRS 13 Bathometric Contours (Meters)
- Revised Underwater Transects (15.73 miles)
- Original Underwater Transects (15.84 miles)
- Side Scan Sonar Coverage
- MRS 13 Boundary

USA Environmental, Inc.	US Army Engineering And Support Center Huntsville, Alabama

Drawn By:	JAL	Scale: 1 inch = 100 meters	Rev: 1
Checked By:		Date Drawn:	5/6/2013
Submitted By:	MT	Revision Date:	9-4-2013

Path:S:\Culebra\RIFS 2009\EBS Report Maps\MXD\A-11 MRS 13 Revised Transects_SE.mxd

Transects are spaced approximately every 76.22 m (250 ft).

N

130 0 130

Meters

Data is projected to the UTM Coordinate System: Zone 20 North, NAD83, Units in Meters.

Remedial Investigation/ Feasibility Study

Figure A-12

MRS 13 Underwater DGM Revised Transect Coverage- SouthWest

Culebra Island Site, Puerto Rico

Legend

- MRS 13 Bathometric Contours (Meters)
- Revised Underwater Transects (15.73 miles)
- Original Underwater Transects (15.84 miles)
- Side Scan Sonar Coverage
- MRS 13 Boundary

USA Environmental, Inc.	US Army Engineering And Support Center Huntsville, Alabama
Drawn By: JAL	Scale: 1 inch = 130 meters; Rev: 1
Checked By:	Date Drawn: 5/6/2013
Submitted By: MT	Revision Date: 9-4-2013

Path:S:\Culebra\RIFS 2009\EBS Report Maps\MXD\A-12 MRS 13 Revised Transects_SW.mxd

Transects are spaced approximately every 76.22 m (250 ft).

N

100 0 100

Meters

Data is projected to the UTM Coordinate System: Zone 20 North, NAD83, Units in Meters.

Remedial Investigation/ Feasibility Study

Figure A-13

MRS 13 Underwater DGM Revised Transect Coverage- West

Culebra Island Site, Puerto Rico

Legend

- MRS 13 Bathometric Contours (Meters)
- Revised Underwater Transects (15.73 miles)
- Original Underwater Transects (15.84 miles)
- Side Scan Sonar Coverage
- MRS 13 Boundary

USA Environmental, Inc.	US Army Engineering And Support Center Huntsville, Alabama
Drawn By: JAL	Scale: 1 inch = 100 meters; Rev: 1
Checked By:	Date Drawn: 5/6/2013
Submitted By: MT	Revision Date: 9-4-2013

Path:S:\Culebra\RIFS 2009\EBS Report Maps\MXD\A-13 MRS 13 Revised Transects_W.mxd

N

215 0 215

Meters

Data is projected to the UTM Coordinate System: Zone 20 North, NAD83, Units in Meters.

Remedial Investigation/ Feasibility Study

Figure A-14

MRS 9 Revised Underwater Camera Transects

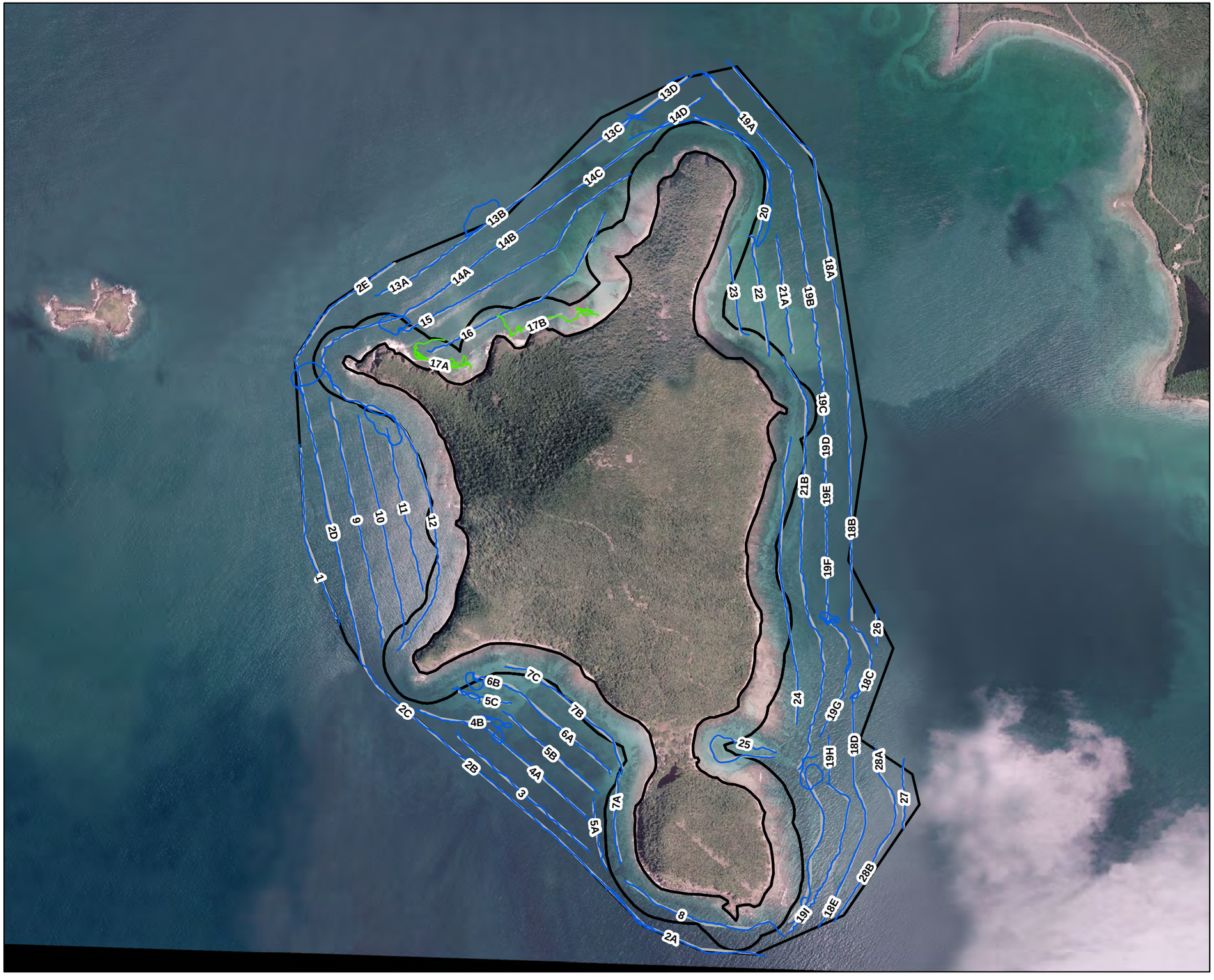
Culebra Island Site, Puerto Rico

Legend

- Actual Snorkel Video Transects
- Actual Underwater Video Transects
- Planned Underwater Camera Transects
- MRS 9 Boundary

USA Environmental, Inc.	US Army Engineering And Support Center Huntsville, Alabama
Drawn By: JAL	Scale: 1 inch = 215 meters
Checked By:	Date Drawn: 5/6/2013
Submitted By: MT	Revision Date:

Path:S:\Culebra\RIFS 2009\EBS Report Maps\MXD\A-14 MRS 9 Camera Transects.mxd



N

300 150 0 300

Meters

Data is projected to the UTM Coordinate System: Zone 15 North, WGS84, Units in Meters.

Remedial Investigation/ Feasibility Study

Figure A-15

MRS 13 Revised Underwater Camera Transects

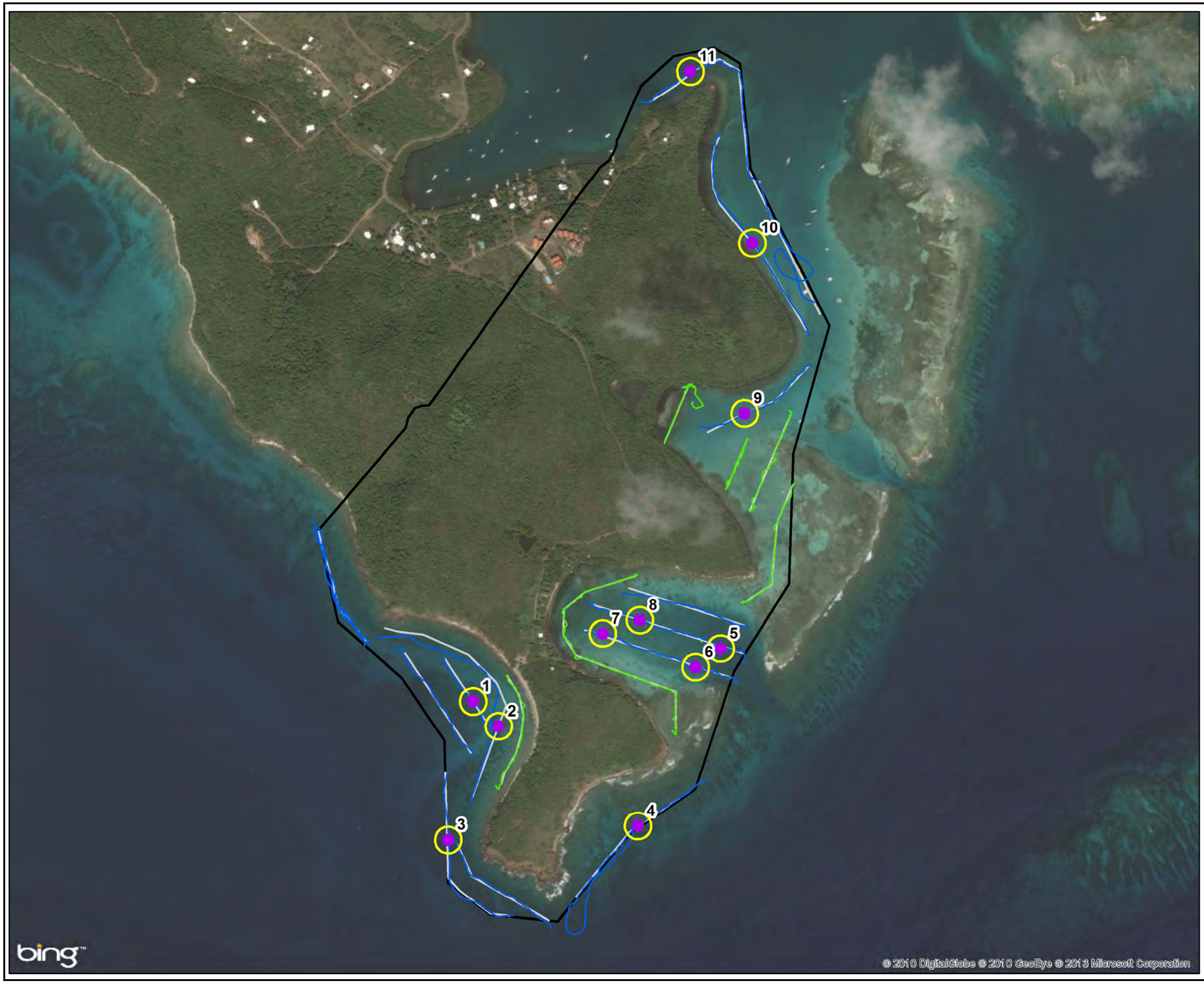
Culebra Island Site, Puerto Rico

Legend

- Actual Snorkel Camera Transects
- Actual Underwater Camera Transects
- Planned Underwater Camera Transects
- Luis Pena MRS Boundary (367 acres)

USA Environmental, Inc.	US Army Engineering And Support Center Huntsville, Alabama
Drawn By: JAL	Scale: 1 inch = 300 meters
Checked By: MT	Date Drawn: 5/6/2013
Submitted By:	Revision Date:

Path: S:\Culebra\RIFS 2009\EBS Report Maps\MXD\A-15 MRS 13 Camera Transects.mxd



N

215 107.5 0 215

Meters

Data is projected to the UTM Coordinate System: Zone 20 North, NAD83, Units in Meters.

Remedial Investigation/ Feasibility Study

Figure A-16 MRS 09 Biological ROV Spot Investigations

Culebra Island Site, Puerto Rico

Legend

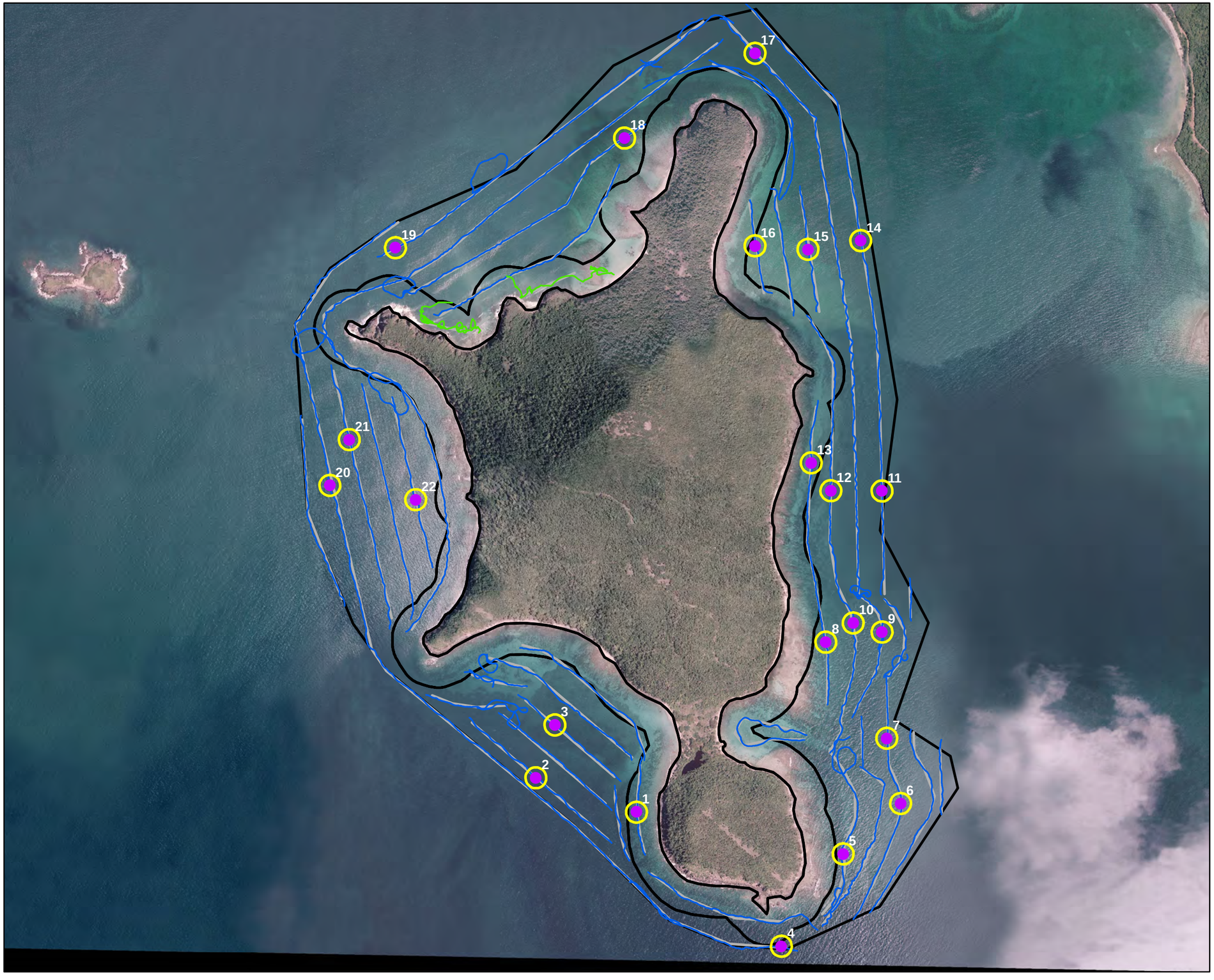
- Biological Investigations
- Actual Snorkel Video Transects
- Actual Underwater Video Transects
- Planned Underwater Camera Transects
- MRS 9 Boundary

ROV Investigations (100ft Radius)

- Biological Investigation

USA Environmental, Inc.	US Army Engineering And Support Center Huntsville, Alabama	
Drawn By: JAL	Scale: 1 inch = 215 meters	Rev:
Checked By: MT	Date Drawn: 5/6/2013	
Submitted By:	Revision Date:	

Path:S:\Culebra\RIFS 2009\EBS Report Maps\MXD\A-16 MRS 9 ROV Biological Investigations.mxd



N

300 150 0 300

Meters

Data is projected to the UTM Coordinate System: Zone 15 North, WGS84, Units in Meters.

Remedial Investigation/ Feasibility Study

Figure A-17 MRS 13 Biological ROV Spot Investigations

Culebra Island Site, Puerto Rico

Legend

- Biological Investigation
- Actual Snorkel Camera Transects
- Actual Underwater Camera Transects
- Planned Underwater Camera Transects
- Luis Pena MRS Boundary (367 acres)

ROV Investigations (100ft Radius)

- Biological Investigation

USA Environmental, Inc.		US Army Engineering And Support Center Huntsville, Alabama	
Drawn By:	JAL	Scale: 1 inch = 300 meters	Rev:
Checked By:	MT	Date Drawn:	5/6/2013
Submitted By:		Revision Date:	
Path:	S:\Culebra\RIFS 2009\EBS Report Maps\MXD\A-17 MRS 13 ROV Biological Investigations.mxd		

N

215 107.5 0 215

Meters

Data is projected to the UTM Coordinate System: Zone 15 North, WGS84, Units in Meters.

Remedial Investigation/ Feasibility Study

Figure A-18

MRS 9 Benthic Habitat Map

Culebra Island Site, Puerto Rico

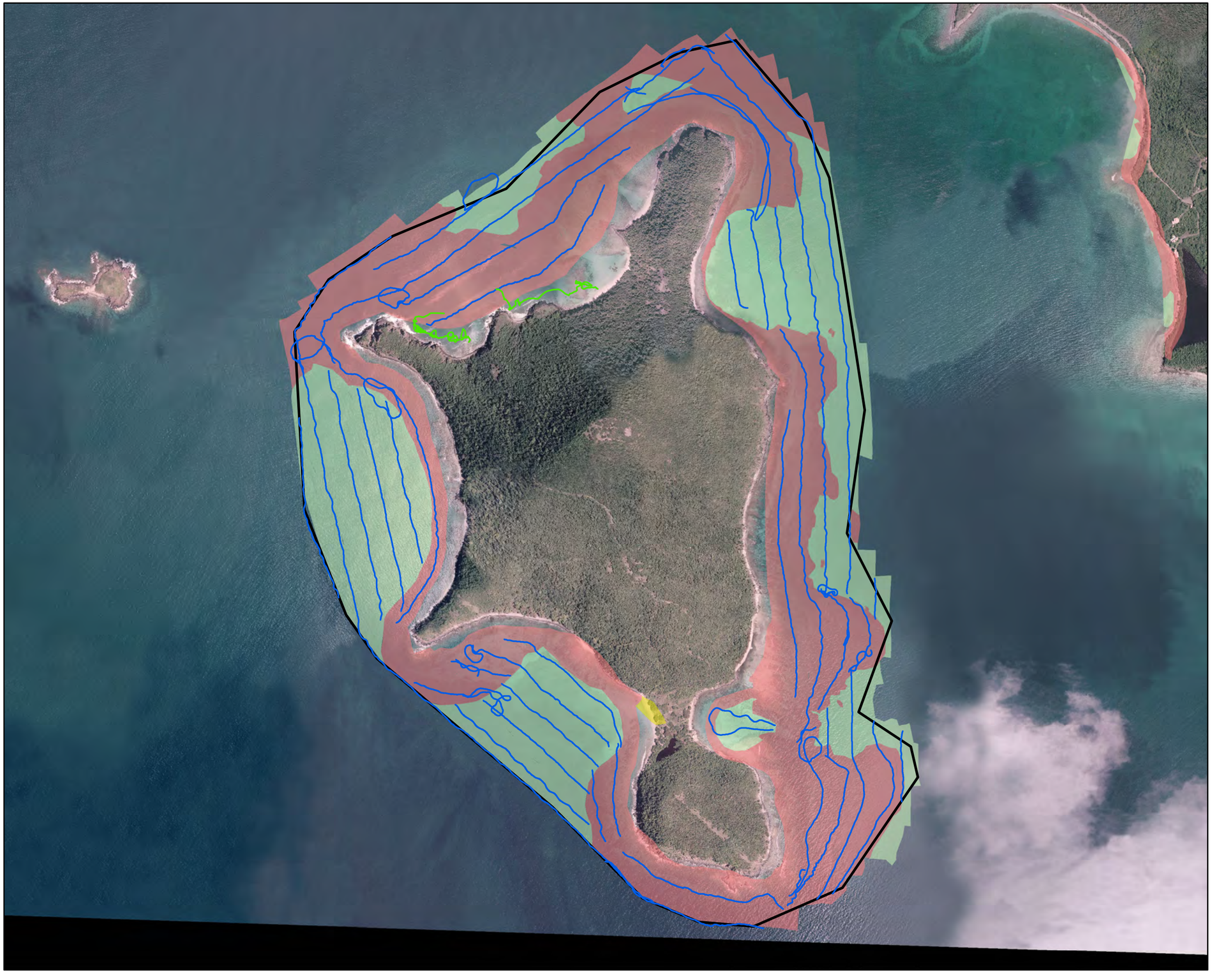
Legend

- Actual Snorkel Camera Transects
- Actual Underwater Video Transects
- MRS 9 Boundary

HABITAT

- Coral Reef and Colonized Hardbottom
- Submerged Vegetation
- Uncolonized Hardbottom
- Unconsolidated Sediments

USA Environmental, Inc.	US Army Engineering And Support Center Huntsville, Alabama
Drawn By: JAL	Scale: 1 inch = 215 meters
Checked By: MT	Date Drawn: 5/6/2013
Submitted By:	Revision Date:
Path: S:\Culebra\RIFS 2009\EBS Report Maps\MXD\A-18 MRS 9 Benthic Habitat.mxd	



N

300 150 0 300

Meters

Data is projected to the UTM Coordinate System: Zone 15 North, WGS84, Units in Meters.

Remedial Investigation/ Feasibility Study

Figure A-19

MRS 13 Benthic Habitat Map

Culebra Island Site, Puerto Rico

Legend

- Actual Snorkel Camera Transects
- Actual Underwater Camera Transects
- MRS 13 Boundary

HABITAT

- Coral Reef and Colonized Hardbottom
- Submerged Vegetation
- Uncolonized Hardbottom
- Unconsolidated Sediments

USA Environmental, Inc.	US Army Engineering And Support Center Huntsville, Alabama
Drawn By: JAL	Scale: 1 inch = 300 meters
Checked By: MT	Date Drawn: 5/6/2013
Submitted By:	Revision Date:

Path: S:\Culebra\RIFS 2009\EBS Report Maps\MXD\A-19 MRS 13 Benthic Habitat.mxd

N

215 107.5 0 215

Meters

Data is projected to the UTM Coordinate System: Zone 15 North, WGS84, Units in Meters.

Remedial Investigation/ Feasibility Study

Figure A-20

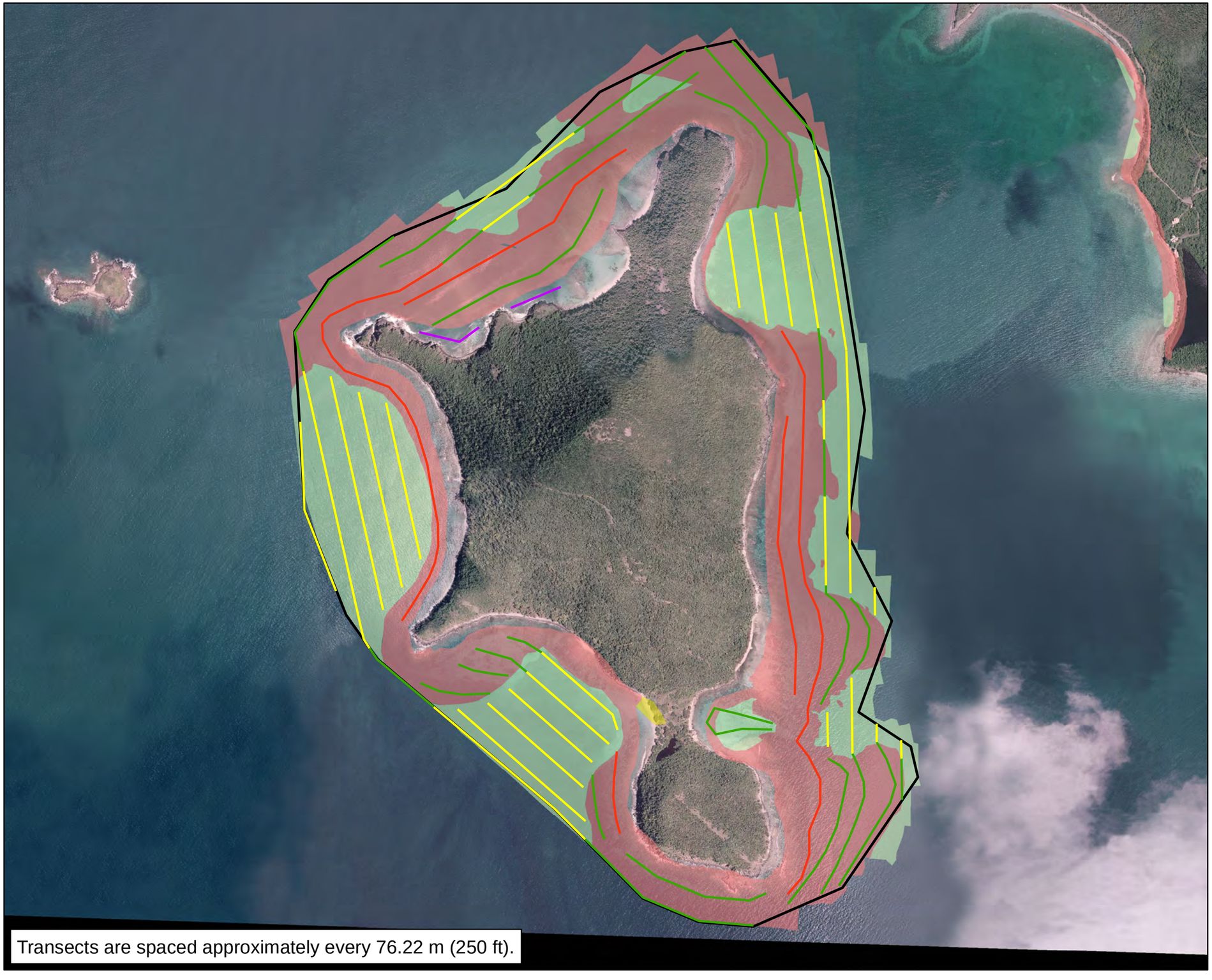
MRS 9 EM Platform Map

Culebra Island Site, Puerto Rico

Legend

DGM Method	HABITAT
EM Float (1.61 mi)	Coral Reef and Colonized Hardbottom
EM ROV (0.46 mi)	Submerged Vegetation
EM Sled (1.00 mi)	Uncolonized Hardbottom
EM Snorkel (1.06 mi)	Unconsolidated Sediments
MRS 9 Boundary	

USA Environmental, Inc.		US Army Engineering And Support Center Huntsville, Alabama	
Drawn By:	JAL	Scale: 1 inch = 215 meters	Rev:
Checked By:	MT	Date Drawn: 5/6/2013	
Submitted By:		Revision Date:	
Path: S:\Culebra\RIFS 2009\EBS Report Maps\MXD\A-20 MRS 9 EM Platform Map.mxd			



N

300 150 0 300

Meters

Data is projected to the UTM Coordinate System: Zone 15 North, WGS84, Units in Meters.

Remedial Investigation/ Feasibility Study

Figure A-21

MRS 13 EM Platform Map

Culebra Island Site, Puerto Rico

Legend

DGM Method	HABITAT
EM Float (3.32 mi)	Coral Reef and Colonized Hardbottom
EM ROV (6.05 mi)	Submerged Vegetation
EM Sled (6.32 mi)	Uncolonized Hardbottom
EM Snorkel (0.23 mi)	Unconsolidated Sediments
MRS 13 Boundary	

USA Environmental, Inc.

US Army Engineering And Support Center Huntsville, Alabama

Drawn By:	JAL	Scale: 1 inch = 300 meters	Rev:
Checked By:	MT	Date Drawn: 5/6/2013	
Submitted By:		Revision Date:	

Path: S:\Culebra\RIFS 2009\EBS Report Maps\MXD\A-21 MRS 13 EM Platform Map.mxd

N

215 0 215

Meters

Soundings in Feet.
At mean lower low water.

Data is projected to the UTM Coordinate System: NAD 1983 UTM Zone 20N

Remedial Action/ Feasibility Study

Figure A-22

MRS 09 Threatened Species Sightings

Note: No Endangered Species were sighted during Phase 1a/1b

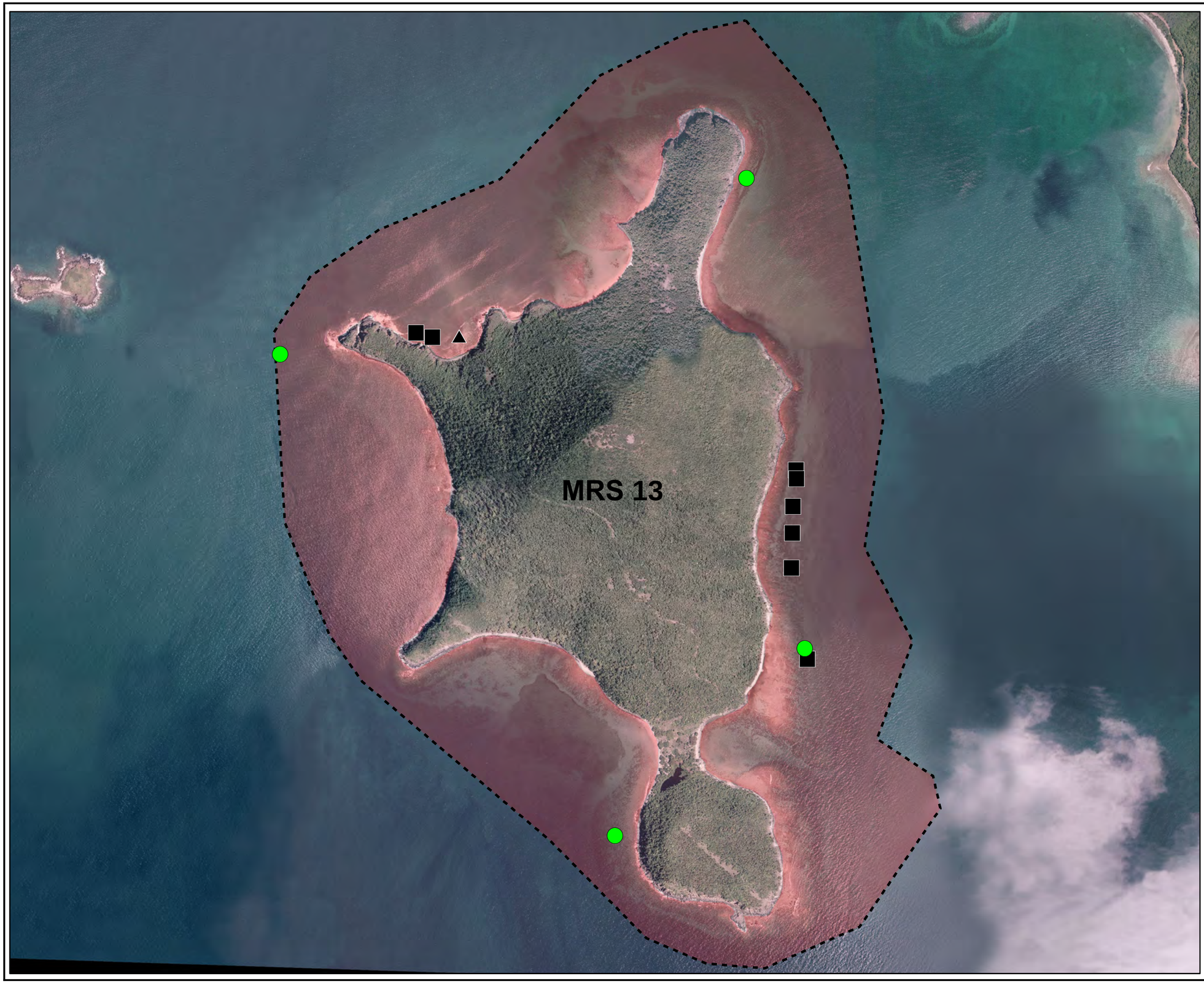
Culebra Island Site, Puerto Rico

Legend

Threatened/Endangered Species Sightings

- Elkhorn Coral
- Staghorn Coral
- Sea Turtle
- MRS 09 Boundary
- Hydrographic Survey Area

USA Environmental, Inc.	US Army Engineering And Support Center Huntsville, Alabama
Drawn By: JAL	Scale: 1 inch = 215 meters
Checked By:	Date Drawn: 9/4/2013
Submitted By: MT	Revision Date:
Path: S:\Culebra\RIFS 2009\EBS Report Maps\MXD\A-22 MRS 9 T_E Species Sightings.mxd	



N

270 0 270

Meters

Soundings in Feet.
At mean lower low water.

Data is projected to the UTM Coordinate System: NAD 1983 UTM Zone 20N

Remedial Action/ Feasibility Study

Figure A-23

MRS 13 Threatened Species Sightings

Note: No Endangered Species were sighted during Phase 1a/1b

Culebra Island Site, Puerto Rico

Legend

Threatened/Endangered Species Sightings

- Elkhorn Coral
- Staghorn Coral
- Sea Turtle
- MRS 09 Boundary
- Hydrographic Survey Area

USA Environmental, Inc.	US Army Engineering And Support Center Huntsville, Alabama

Drawn By:	JAL	Scale: 1 inch = 270 meters	Rev:
Checked By:		Date Drawn: 9/4/2013	
Submitted By:	MT	Revision Date:	

Path: S:\Culebra\RIFS 2009\EBS Report Maps\MXD\A-23 MRS 13 T_E Species Sightings.mxd

APPENDIX B. PHOTOGRAPHS

This appendix presents the following:

- Biological ROV Spot Investigations Photographs
  - MRS 09
  - MRS 13
- Operations Photographs
- Representative Species Photographs
- EM Platform Photographs.

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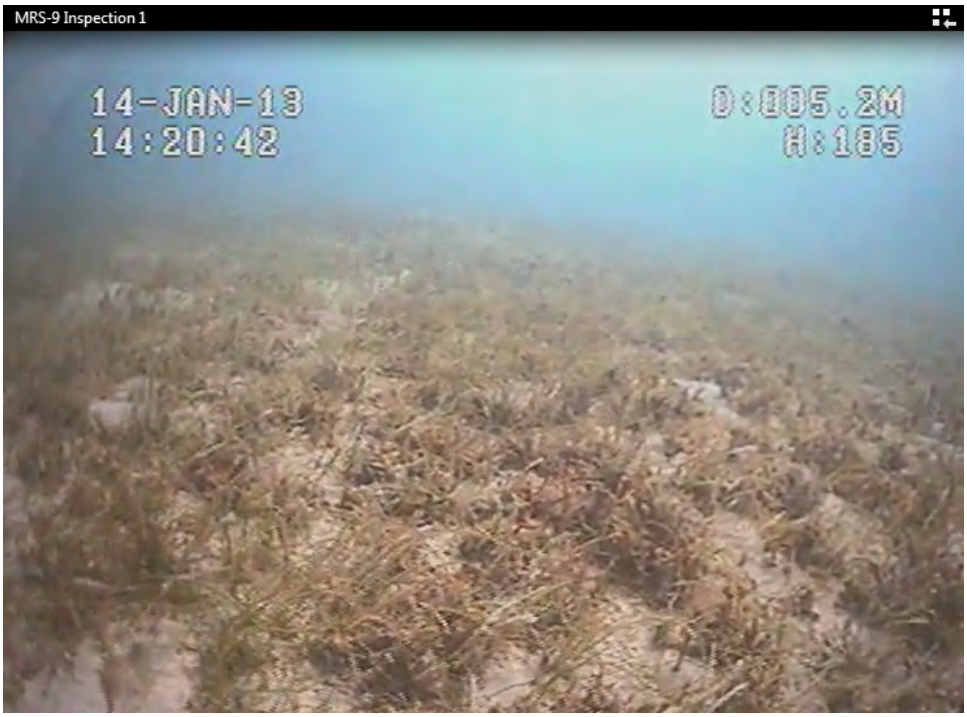
Biological Spot Investigations (ROV) Photograph Log
(Refer to Table 2-2 of the EBS Report for further Information)



Biological ROV Spot Investigation MRS 9-1

Biological ROV Spot Investigation MRS 9-2

Biological Spot Investigation MRS 9-3

Biological ROV Spot Investigation MRS 9-4

Biologic ROV Spot Site Investigation MRS 9-5

Biologic ROV Spot Site Investigation MRS 9-6

Biologic ROV Spot Site Investigation MRS 9-7

Biologic ROV Spot Site Investigation MRS 9-8

Biologic ROV Spot Site Investigation MRS 9-9

Biologic ROV Spot Site Investigation MRS 9-10

Biologic ROV Spot Site Investigation MRS 9-11

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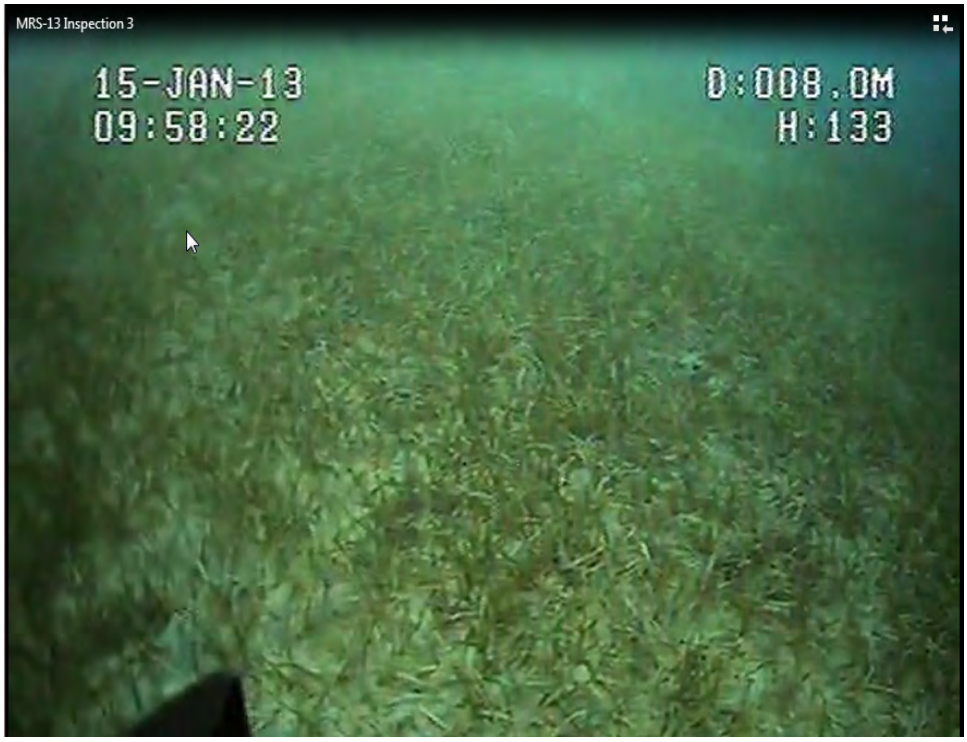
Biologic ROV Spot Site Investigation MRS 13-1

Biologic ROV Spot Site Investigation MRS 13-2



Biologic ROV Spot Site Investigation MRS 13-.3

Biologic ROV Spot Site Investigation MRS 13-4

Biologic ROV Spot Site Investigation MRS 13-5

Biologic ROV Spot Site Investigation MRS 13-6

Biologic ROV Spot Site Investigation MRS 13-7

Biologic ROV Spot Site Investigation MRS 13-8

Biologic ROV Spot Site Investigation MRS 13-9

Biologic ROV Spot Site Investigation MRS 13-10

Biologic ROV Spot Site Investigation MRS 13-11

Biologic ROV Spot Site Investigation MRS 13-12

Biologic ROV Spot Site Investigation MRS 13-13

Biologic ROV Spot Site Investigation MRS 13-14

Biologic ROV Spot Site Investigation MRS 13-15

Biologic ROV Spot Site Investigation MRS 13-16

Biologic ROV Spot Site Investigation MRS 13-17

Biologic ROV Spot Site Investigation MRS 13-18

Biologic ROV Spot Site Investigation MRS 13- 19

Biologic ROV Spot Site Investigation MRS 13-20

Biologic ROV Spot Site Investigation MRS 13-21

Biologic ROV Spot Site Investigation MRS 13-22

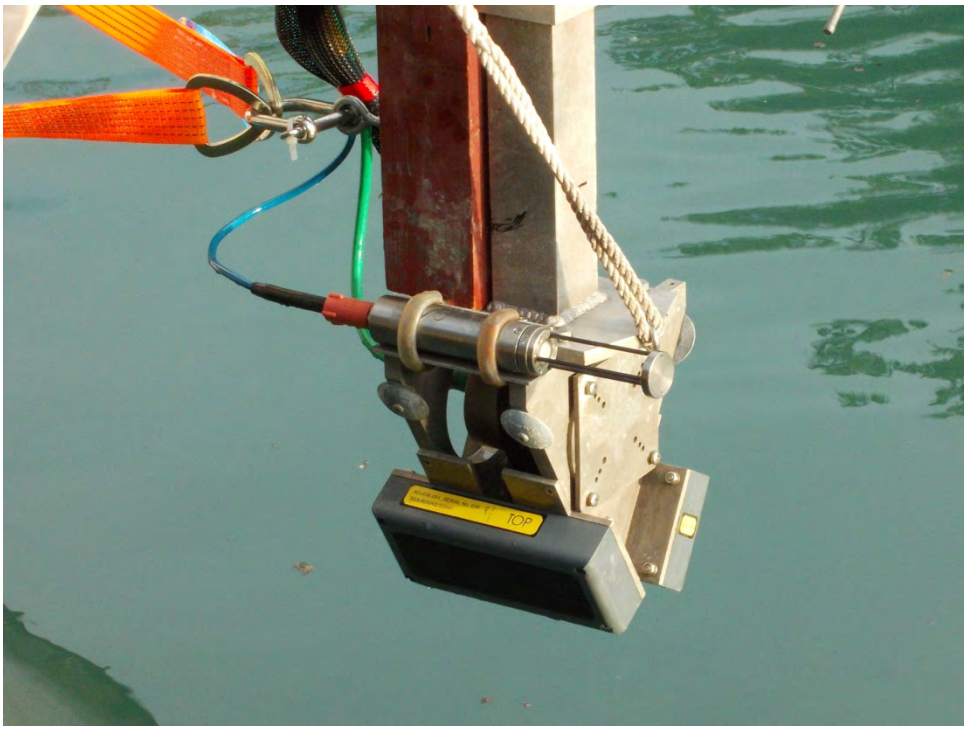
Operational Photographs

DGPS Repeater

Hydrographic Monitors

Klein 3900 Side Scan Sonar

Melones Beach RTK DGPS Base Station

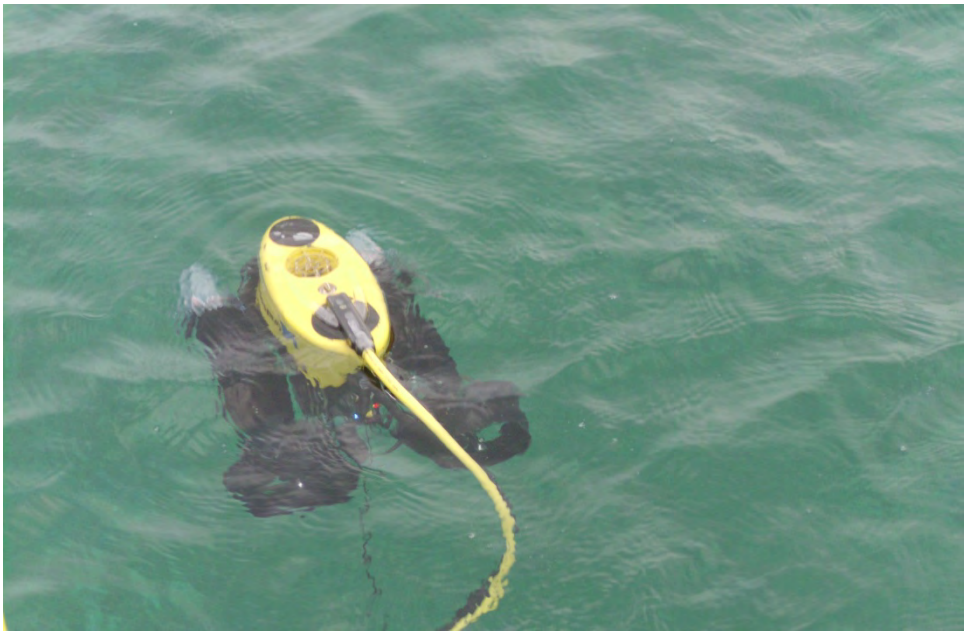


Multi-Beam Sonar and Velocity Sound Profiler

Multi Beam Sonar

Sunken Aircraft SSS QC Check
(Aircraft is circled)

Underwater Video Monitor and ROV Controls

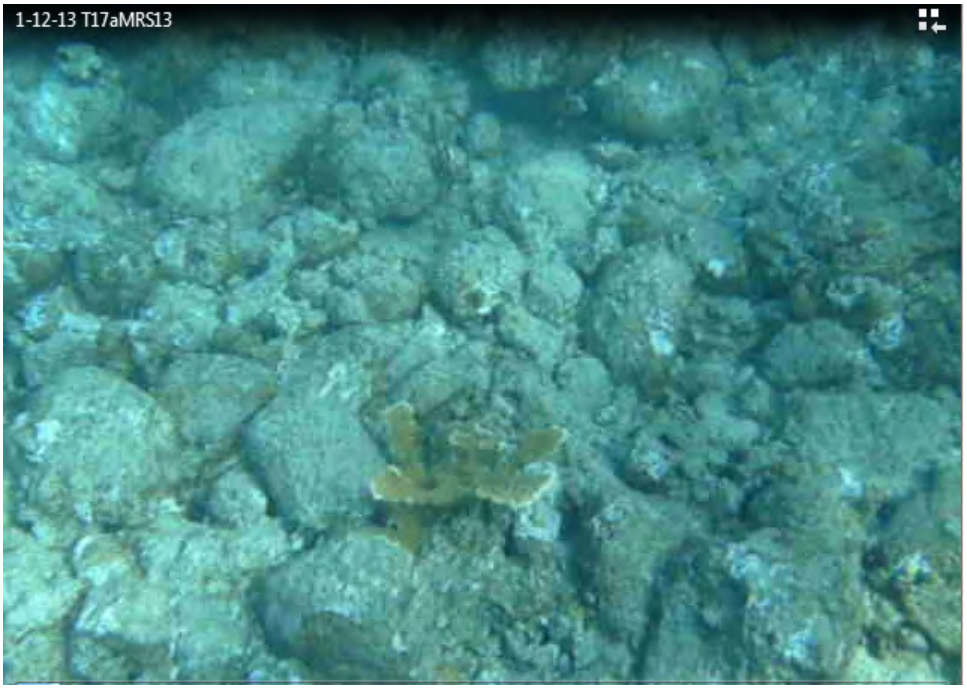


VideoRay ROV

VideoRay and GPS Smart Tether

Representative EDS Photographs

Elkhorn Coral Example



Small Elkhorn Example

Staghorn Coral Example

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EM Platform Photographs

Sled EM Platform

ROV EM Platform

Float EM Platform

Diver Assisted EM Platform

APPENDIX C. HYDROGRAPHIC DATA AND GIS FILES

This appendix presents the Hydrographic Data and GIS files for MRS 09 and MRS 13; these files are included on the following DVDs:

- Disk 1 – MultiBeam Bathymetry and Side Scan Sonar Geo Tiffs
- Disk 2 – Side Scan Sonar Raw Data
- Disk 3 – Side Scan Sonar Raw Data
- Disk 4 – Side Scan Sonar Raw Data
- Disk 5 – Side Scan Sonar Raw Data
- Disk 6 – Side Scan Sonar Raw Data
- Disk 7 – Side Scan Sonar QC Data and SSS Raw Data
- Disk 8 – GIS Data Set

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APPENDIX D. TRANSECT VIDEO FILES

This appendix presents the Transect Video Files for MRS 09 and MRS 13; these files are provided on DVD only.

The DVDs contain the following files:

- Disk 1 – MRS 09 & MRS 13, Biological ROV Investigations
- Disk 2 – MRS 13, Suspect MPPEH ROV Investigations.

  Suspect MPPEH Item 1 through 11
  Note: No Suspect MPPEH items were identified for MRS 09
- Disk 3 – MRS 09 Underwater Video Transects 1-12 & GPS Quality Control File
- Disk 4 – MRS 09 Underwater Video Transects 13-19
- Disk 5 – MRS 13 Underwater Video Transects 1-10
- Disk 6 – MRS 13 Underwater Video Transects 12-18
- Disk 7 – MRS 13 Underwater Video Transects 11 & 18-23
- Disk 8 – MRS 13 Underwater Video Transects 24-28.

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APPENDIX E. FIELD REPORTS/QUALITY CONTROL REPORTS

This appendix presents the Field Reports, Quality Control Reports, and PLS report for MRS 9 and MRS 13, Phase 1a and Phase 1b.

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USA Environmental, Inc.

DAILY SITE REPORT

SECTION 1	GENERAL INFORMATION				
Project Name: EBS Culebra Island Site, P.R.		**Customer(s) Name:**			**Report No.:**
Contract No.:W912DY-04-D-0006	**TO No.: 0022**	**Completion Date:**	**Location:**		**Date of Report:**
SUXOS Name:		**Telephone No.:**		**Email Address:**	
UXOSO/QC John W. Stoddart		843-437-5535		jstoddartis@hotmail.com	
Site Manager's Name:		**Telephone No.:**		**Email Address:**	
Customer POC Name:		**Telephone No.:**		**Email Address:**	
Project Web Portal Address:					

SECTION 2		WEATHER			
Temp: High / Low		**Precipitation / Humidity**		**Wind:**	**Work Impact / Remarks:**
86	76	None	93%	3 Knots	None

SECTION 3	USA ASSIGNED PERSONNEL				
Position:	**No. Assigned:**	**No. Present:**	**Position:**	**No. Assigned:**	**No. Present:**
UXOSO/QC	1	1			

SECTION 4	SUBCONTRACTOR ASSIGNED PERSONNEL				
Position:	**No. Assigned:**	**No. Present:**	**Position:**	**No. Assigned:**	**No. Present:**
Boat Captain (CMS)	1	1			
Crew (CMS)	1	1			
Survey Personnel	3	3			

SECTION 5	SUBCONTRACTOR / RENTAL HEAVY EQUIPMENT ONSITE			
Description:	**Quantity:**	**Operational:**	**Owner:**	**Remarks:**
Side Scan Sonar	1	1	Aqua Survey Inc.	
Multi-beam Sonar	1	1	Aqua Survey Inc.	
Work Boat	1	1	**Carribbean Marine Services**	
Support Boat	1	1	**Carribbean Marine Services**	

SECTION 6	TASK(S) PERFORMED				
Task Performed:	**Acres/Grids:**	**Transects:**	**Re-Acquire:**	**Digs:**	**Other:**
Surface					
Subsurface					
DGM / GIS					
Devegetation					
Demolition					
Survey					
Support					
SSS/MBS					**Set-up & Op. Test**

USA Environmental, Inc.

SECTION 7	WORK DETAILS			
Acres/Grids:	**Transects:**	**Re-Acquire:**	**Digs:**	**Remarks:**

SECTION 8	SAFETY DATA		
1) Were safety inspections held? ☑ Y ☐ N		2) Was HW found or recovered today? ☐ Y ☑ N	
General ☑ Tailgate ☐ Task Specific ☐		Type:	
3) Were there any accidents? ☐ Y ☑ N		4) Was a "Competent Person" required? ☐ Y ☑ N	
1st Aid ☐ Clinic ☐ Hospital ☐		Type:	
5) Were there any near misses? ☐ Y ☑ N		6) Was PPE up or down graded today? ☐ Y ☑ N	
Brief Description:		Changed to:	

SECTION 9	QUALITY CONTROL DATA		
1) Were QC inspections held? ☑ Y ☐ N		2) Was a QA submittal made today? ☐ Y ☑ N	
Site ☐ MEC ☐ DGM ☐ Other ☑		Submitted by:	
3) Were there any failures? ☐ Y ☑ N		4) Was a Stop Work or CAR issued? ☐ Y ☑ N	
Minor ☐ Major ☐ Critical ☐		Issued by:	
5) Were there any corrections? ☐ Y ☑ N		6) Was a Form 948 issued? ☐ Y ☑ N	
Brief Description:		Issued for:	

SECTION 10	MPPEH / MDAS		
No. of MPPEH items found.		Lbs. of MDAS recovered.	
No. of MPPEH items consolidated.		Lbs. of MDAS placed in a "sealed" container.	

SECTION 11	MEC / UXO SUMMARY				
Type:	**Quantity:**	**Live:**	**Practice:**	**Unknown:**	**Location:**
Projectiles					
Grenades					
Rockets					
Bombs					
Mines					
Missiles					
Pyrotechnics					
ICM / Submunitions					

SECTION 12	DEMOLITION OPERATIONS	
Location:	**No. of Items Destroyed:**	**Remarks:**

SECTION 13	DAILY COMMENTS
USAE, ASI and CMS personnel completed final equipment preparation, set-up, pre-op checks and operational testing. Tasks completed included establishment and QC of Melones Beach Base Station, confirmation of RTK-DGPS functionality, deployment of side-scan sonar in the location of an adequate target and patch test area, deployment and calibration of multi-beam sonar head and sound velocity meter, and boat operations in support of aforementioned tasks. Forthcoming activities scheduled for 11/10/12 will be the commencement of EBS transects located on the eastern side of MRS 13, Cay Luis Pena.	
CUSTOMER/REGULATORY INSTRUCTIONS ISSUED:	

SECTION 14	SIGNATURE BLOCKS	
Type or Print SUXOS Name:	**Signature:**	**Date:**
UXOSO/QC John W. Stoddart	John W Stoddart	11/09/12
Type or Print Site Manager's Name:	**Signature**	**Date:**

CC to:					
Government Representative	☐	**Project Manager**	☑	**Customer Representative**	☐
Other – Specify:					

Note: Sections 2 through 13 above may have additional information found in inspection forms, preprinted forms, information sheets, or tabulated data sets (i. e., Sign-In / Sign-out Log, MEC Summary Log, Demolitions Records, QC Inspection Form, Safety Inspection Form). Attach additional information or continuation sheets to this report as needed.

USA Environmental, Inc.

DAILY SITE REPORT

SECTION 1	GENERAL INFORMATION				
Project Name: EBS Culebra Island Site, P.R.		Customer(s) Name:			Report No.: 11-02
Contract No.:W912DY-04-D-0006	TO No.: 0022	Completion Date:	Location:		Date of Report:111012
SUXOS Name:		Telephone No.:		Email Address:	
UXOSO/QC John W. Stoddart		843-437-5535		jstoddartis@hotmail.com	
Site Manager's Name:		Telephone No.:		Email Address:	
Customer POC Name:		Telephone No.:		Email Address:	
Project Web Portal Address:					

SECTION 2	WEATHER			
Temp: High / Low		Precipitation / Humidity	Wind:	Work Impact / Remarks:
85	78	None 90%	10-15 Knots	None

SECTION 3	USA ASSIGNED PERSONNEL				
Position:	No. Assigned:	No. Present:	Position:	No. Assigned:	No. Present:
UXOSO/QC	1	1			

SECTION 4	SUBCONTRACTOR ASSIGNED PERSONNEL				
Position:	No. Assigned:	No. Present:	Position:	No. Assigned:	No. Present:
Boat Captain (CMS)	1	1			
Crew (CMS)	1	1			
Survey Personnel (ASI)	3	3			

SECTION 5	SUBCONTRACTOR / RENTAL HEAVY EQUIPMENT ONSITE			
Description:	Quantity:	Operational:	Owner:	Remarks:
Side Scan Sonar	1	1	Aqua Survey Inc.	
Multi-beam Sonar	1	1	Aqua Survey Inc.	
Work Boat 30ft	1	1	Carribbean Marine Services	
Support Boat 17ft	1	1	Carribbean Marine Services	

SECTION 6	TASK(S) PERFORMED				
Task Performed:	Acres/Grids:	Transects:	Re-Acquire:	Digs:	Other:
Surface					
Subsurface					
DGM / GIS					
Devegetation					
Demolition					
Survey (SSS & MBS)		X			
Support					

SECTION 7	WORK DETAILS			
Acres/Grids:	**Transects:**	**Re-Acquire:**	**Digs:**	**Remarks:**
	9.85 Line Miles			Pending ASI QC post processing verification

SECTION 8	SAFETY DATA		
1) Were safety inspections held? ☑ Y ☐ N		2) Was HW found or recovered today? ☐ Y ☑ N	
General ☑ Tailgate ☐ Task Specific ☐		Type:	
3) Were there any accidents? ☐ Y ☑ N		4) Was a "Competent Person" required? ☐ Y ☑ N	
1st Aid ☐ Clinic ☐ Hospital ☐		Type:	
5) Were there any near misses? ☐ Y ☑ N		6) Was PPE up or down graded today? ☐ Y ☑ N	
Brief Description:		Changed to:	

SECTION 9	QUALITY CONTROL DATA		
1) Were QC inspections held? ☑ Y ☐ N		2) Was a QA submittal made today? ☐ Y ☑ N	
Site ☐ MEC ☐ DGM ☐ Other ☑		Submitted by:	
3) Were there any failures? ☐ Y ☑ N		4) Was a Stop Work or CAR issued? ☐ Y ☑ N	
Minor ☐ Major ☐ Critical ☐		Issued by:	
5) Were there any corrections? ☐ Y ☑ N		6) Was a Form 948 issued? ☐ Y ☑ N	
Brief Description:		Issued for:	

SECTION 10	MPPEH / MDAS		
No. of MPPEH items found.		Lbs. of MDAS recovered.	
No. of MPPEH items consolidated.		Lbs. of MDAS placed in a "sealed" container.	

SECTION 11	MEC / UXO SUMMARY				
Type:	**Quantity:**	**Live:**	**Practice:**	**Unknown:**	**Location:**
Projectiles					
Grenades					
Rockets					
Bombs					
Mines					
Missiles					
Pyrotechnics					
ICM / Submunitions					

SECTION 12	DEMOLITION OPERATIONS	
Location:	**No. of Items Destroyed:**	**Remarks:**

SECTION 13	DAILY COMMENTS
USAE, ASI and CMS personnel commenced survey of EBS transects located on the eastern side of MRS 13, Cay Luis Pena. 3.33 hours of day devoted specifically to environmental bottom survey operations resulting in 9.85 line miles. Equipment configured and tested; minor issues satisfactorily addressed. Patch test and reciprocal (lay-back) tests completed. Additional programming parameters entered into software as needed. Set software parameters and modification to equipment positioning should result in expedited preparatory actions, thus increased survey coverage/line miles. Evolutions planned for 11/11/12 consists of completing eastern side of Cay Luis Pena, then proceeding to western side. Location of further survey operations, north west or south west, will be dependent upon environmental conditions. 17ft support boat will be used as the repeater platform. USACE Representative, Kelly Rodriguez, on site.	
CUSTOMER/REGULATORY INSTRUCTIONS ISSUED:	

SECTION 14	SIGNATURE BLOCKS	
Type or Print SUXOS Name:	**Signature:**	**Date:**
UXOSO/QC John W. Stoddart	John W Stoddart	11/10/12
Type or Print Site Manager's Name:	**Signature**	**Date:**

CC to:		
Government Representative ☐	**Project Manager** ☑	**Customer Representative** ☐
Other – Specify:		

Note: Sections 2 through 13 above may have additional information found in inspection forms, preprinted forms, information sheets, or tabulated data sets (i. e., Sign-In / Sign-out Log, MEC Summary Log, Demolitions Records, QC Inspection Form, Safety Inspection Form). Attach additional information or continuation sheets to this report as needed.

DAILY SITE REPORT

SECTION 1	GENERAL INFORMATION				
Project Name: EBS Culebra Island Site, P.R.		Customer(s) Name:			Report No.: 11-04
Contract No.:W912DY-04-D-0006	TO No.: 0022	Completion Date:	Location:		Date of Report: 11/12/12
SUXOS Name:		Telephone No.:		Email Address:	
UXOSO/QC John W. Stoddart		843-437-5535		jstoddartis@hotmail.com	
Site Manager's Name:		Telephone No.:		Email Address:	
Customer POC Name:		Telephone No.:		Email Address:	
Project Web Portal Address:					

SECTION 2	WEATHER				
Temp: High / Low		Precipitation / Humidity		Wind:	Work Impact / Remarks:
85	78	Light	94%	12-17 Knots	Small craft advisory – unable to perform SSS/MBS ops

SECTION 3	USA ASSIGNED PERSONNEL				
Position:	No. Assigned:	No. Present:	Position:	No. Assigned:	No. Present:
UXOSO/QC	1	1			

SECTION 4	SUBCONTRACTOR ASSIGNED PERSONNEL				
Position:	No. Assigned:	No. Present:	Position:	No. Assigned:	No. Present:
Boat Captain (CMS)	1	1			
Crew (CMS)	1	1			
Survey Personnel (ASI)	3	3			

SECTION 5	SUBCONTRACTOR / RENTAL HEAVY EQUIPMENT ONSITE			
Description:	Quantity:	Operational:	Owner:	Remarks:
Side Scan Sonar	1	1	Aqua Survey Inc.	
Multi-beam Sonar	1	1	Aqua Survey Inc.	
Work Boat 30ft	1	1	**Carribbean Marine Services**	
Support Boat 17ft	1	1	**Carribbean Marine Services**	

SECTION 6	TASK(S) PERFORMED				
Task Performed:	Acres/Grids:	Transects:	Re-Acquire:	Digs:	Other:
Surface					
Subsurface					
DGM / GIS					
Devegetation					
Demolition					
Survey (SSS & MBS)		X			
Support					

X				
Acres/Grids:	**Transects:**	**Re-Acquire:**	**Digs:**	**Remarks:**
	0 Line Miles			Sea state not conducive to SSS/MBS operation

SECTION 8	**SAFETY DATA**		
1) Were safety inspections held?	[X] Y [ ] N	**2)** Was HW found or recovered today?	[ ] Y [X] N
General [X] Tailgate [ ] Task Specific [ ]		Type:	
3) Were there any accidents?	[ ] Y [X] N	**4)** Was a "Competent Person" required?	[ ] Y [X] N
1st Aid [ ] Clinic [ ] Hospital [ ]		Type:	
5) Were there any near misses?	[ ] Y [X] N	**6)** Was PPE up or down graded today?	[ ] Y [X] N
Brief Description:		Changed to:	

SECTION 9	**QUALITY CONTROL DATA**		
1) Were QC inspections held?	[ ] Y [X] N	**2)** Was a QA submittal made today?	[ ] Y [X] N
Site [ ] MEC [ ] DGM [ ] Other [ ]		Submitted by:	
3) Were there any failures?	[ ] Y [X] N	**4)** Was a Stop Work or CAR issued?	[ ] Y [X] N
Minor [ ] Major [ ] Critical [ ]		Issued by:	
5) Were there any corrections?	[ ] Y [X] N	**6)** Was a Form 948 issued?	[ ] Y [X] N
Brief Description:		Issued for:	

SECTION 10	**MPPEH / MDAS**		
No. of MPPEH items found.		Lbs. of MDAS recovered.	
No. of MPPEH items consolidated.		Lbs. of MDAS placed in a "sealed" container.	

SECTION 11 **MEC / UXO SUMMARY**

Type:	Quantity:	Live:	Practice:	Unknown:	Location:
Projectiles					
Grenades					
Rockets					
Bombs					
Mines					
Missiles					
Pyrotechnics					
ICM / Submunitions					

SECTION 12 **DEMOLITION OPERATIONS**

Location:	No. of Items Destroyed:	Remarks:

SECTION 13	DAILY COMMENTS

USAE, ASI and CMS personnel commenced load-out and established Melones Beach base station. Small craft advisory in effect. Environmental conditions improved, but not conducive to SSS/MBS operations. Proceeded with equipment checks and noted an immediate problem with the high frequency during SSS rub test; initial corrective action did not produce a consistent result. MBS unit operational; minor electrical component failure corrected. Proceeded to patch test area and attempted to correct SSS deficiency; ASI personnel unable to implement corrective action. Continued to Cay Luis Pena for test of repeater unit and identification of optimum placement. Repeater unit functional, although unable to maintain continued contact with 30ft workboat due to sea-state; base station to repeater connectivity stable. Continued attempts to effect SSS repair via contact with company technical representative throughout the day; no resolution. Replacement unit scheduled for delivery to Carolina, P.R. 10/13/12 with arrival on Culebra later that day. Continuation of SSS/MBS operations contingent on conditions and equipment.

CUSTOMER/REGULATORY INSTRUCTIONS ISSUED:

USACE: Contractor to incorporate a coverage map with the daily reports depicting the cumulative MBS/SSS survey progress.

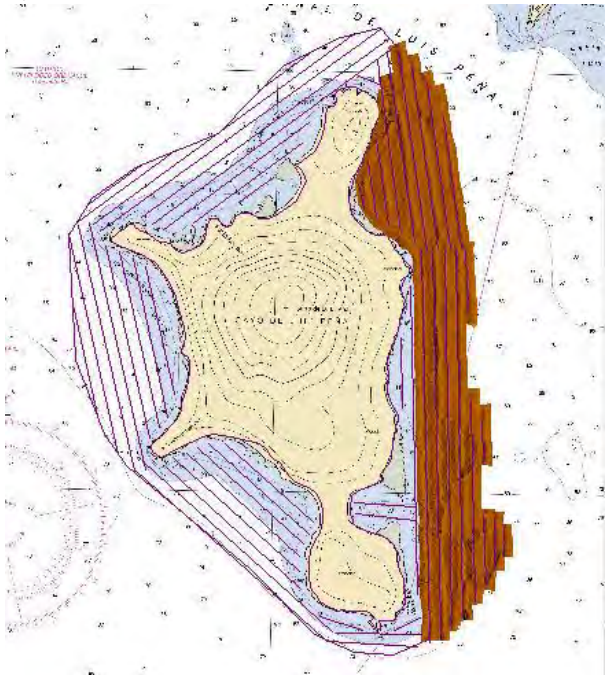
SECTION 14	SIGNATURE BLOCKS	
Type or Print SUXOS Name:	**Signature:**	**Date:**
John W. Stoddart UXOSO/QC	John W Stoddart	11/12/12
Type or Print Site Manager's Name:	**Signature**	**Date:**
☐	☐	☐

CC to:

Government Representative	Project Manager X	Customer Representative

Other – Specify:

Note: Sections 2 through 13 above may have additional information found in inspection forms, preprinted forms, information sheets, or tabulated data sets (i. e., Sign-In / Sign-out Log, MEC Summary Log, Demolitions Records, QC Inspection Form, Safety Inspection Form). Attach additional information or continuation sheets to this report as needed.



Progress Map

DAILY SITE REPORT

SECTION 1	GENERAL INFORMATION				
Project Name: EBS Culebra Island Site, P.R.		Customer(s) Name:		Report No.: 11-06	
Contract No.:W912DY-04-D-0006	TO No.: 0022	Completion Date:	Location:	Date of Report: 11/14/12	
SUXOS Name:		Telephone No.:		Email Address:	
UXOSO/QC John W. Stoddart		843-437-5535		jstoddartis@hotmail.com	
Site Manager's Name:		Telephone No.:		Email Address:	
Customer POC Name:		Telephone No.:		Email Address:	
Project Web Portal Address:					

SECTION 2	WEATHER				
Temp: High / Low		Precipitation / Humidity		Wind:	Work Impact / Remarks:
85	77	None	84%	11-15 Knots	Small craft advisory/Limited available op areas

SECTION 3	USA ASSIGNED PERSONNEL				
Position:	No. Assigned:	No. Present:	Position:	No. Assigned:	No. Present:
UXOSO/QC	1	1			
Op Support/GIS Mgr.	1	1			

SECTION 4	SUBCONTRACTOR ASSIGNED PERSONNEL				
Position:	No. Assigned:	No. Present:	Position:	No. Assigned:	No. Present:
Boat Captain (CMS)	1	1			
Crew (CMS)	1	1			
Survey Personnel (ASI)	2	2			

SECTION 5	SUBCONTRACTOR / RENTAL HEAVY EQUIPMENT ONSITE			
Description:	Quantity:	Operational:	Owner:	Remarks:
Side Scan Sonar	1	1	Aqua Survey Inc.	
Multi-beam Sonar	1	1	Aqua Survey Inc.	
Work Boat 30ft	1	1	**Carribbean Marine Services**	
Support Boat 17ft	1	1	**Carribbean Marine Services**	

SECTION 6	TASK(S) PERFORMED				
Task Performed:	Acres/Grids:	Transects:	Re-Acquire:	Digs:	Other:
Surface					
Subsurface					
DGM / GIS					
Devegetation					
Demolition					
Survey (SSS & MBS)		X			
Support					

X				
Acres/Grids:	**Transects:**	**Re-Acquire:**	**Digs:**	**Remarks:**
	3.4 Line Miles			MRS 09 Soldado Point

SECTION 8	**SAFETY DATA**		
1) Were safety inspections held?	[X] Y [ ] N	**2)** Was HW found or recovered today?	[ ] Y [X] N
General [X] Tailgate [ ] Task Specific [ ]		Type:	
3) Were there any accidents?	[ ] Y [X] N	**4)** Was a "Competent Person" required?	[ ] Y [X] N
1st Aid [ ] Clinic [ ] Hospital [ ]		Type:	
5) Were there any near misses?	[ ] Y [X] N	**6)** Was PPE up or down graded today?	[ ] Y [X] N
Brief Description:		Changed to:	

SECTION 9	**QUALITY CONTROL DATA**		
1) Were QC inspections held?	[X] Y [ ] N	**2)** Was a QA submittal made today?	[ ] Y [X] N
Site [X] MEC [ ] DGM [ ] Other [ ]		Submitted by:	
3) Were there any failures?	[ ] Y [X] N	**4)** Was a Stop Work or CAR issued?	[ ] Y [X] N
Minor [ ] Major [ ] Critical [ ]		Issued by:	
5) Were there any corrections?	[ ] Y [X] N	**6)** Was a Form 948 issued?	[ ] Y [X] N
Brief Description:		Issued for:	

SECTION 10	**MPPEH / MDAS**		
No. of MPPEH items found.		Lbs. of MDAS recovered.	
No. of MPPEH items consolidated.		Lbs. of MDAS placed in a "sealed" container.	

SECTION 11 **MEC / UXO SUMMARY**

Type:	Quantity:	Live:	Practice:	Unknown:	Location:
Projectiles					
Grenades					
Rockets					
Bombs					
Mines					
Missiles					
Pyrotechnics					
ICM / Submunitions					

SECTION 12 **DEMOLITION OPERATIONS**

Location:	No. of Items Destroyed:	Remarks:

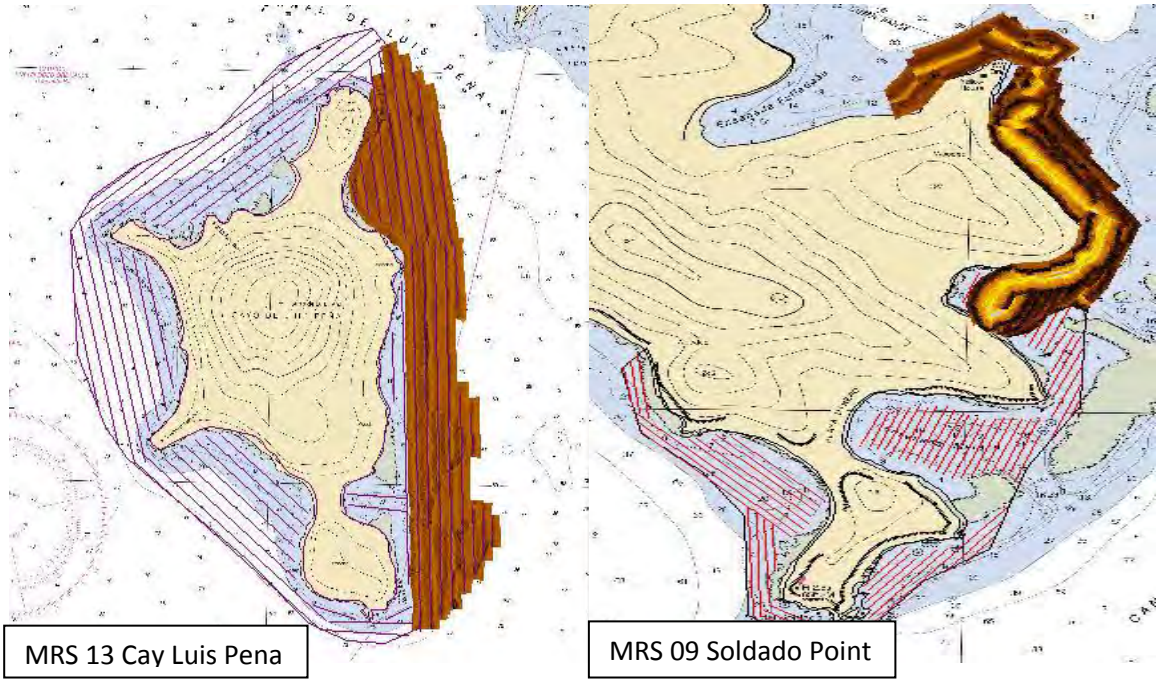
SECTION 13	DAILY COMMENTS
Small craft advisory in effect. Environmental conditions within reef boundary to east side of Soldado Point enabled SSS/MBS operations. Replacement SSS unit operated flawlessly, as did improved 35 watt antenna power supply at base station. Total line miles reduced due to extended SSS coverage extending to shoreline in one shallow water location. Operational area restricted due to limited water depth and coral; either extended areas or smaller separated heads. Evolutions planned for 11/15/12 include the continuance of area east of Soldado Point, working south and around to west side. Follow-on operations and location will be dictated by environmental conditions and time constraints i.e. reestablishment of base station, transit times, available daylight etc. Safety brief will be conducted at 0600 in order to optimize available daylight hours; sunrise 0630. Totals to date: Cay Luis Pena (MRS 13) – 9.85 of 23.94 line miles (41%), Soldado Point (MRS 09) – 3.4 of 11.59 line miles (29%).	
CUSTOMER/REGULATORY INSTRUCTIONS ISSUED:	

SECTION 14	SIGNATURE BLOCKS	
Type or Print SUXOS Name:	**Signature:**	**Date:**
John W. Stoddart UXOSO/QC	John W Stoddart	11/14/12
Type or Print Site Manager's Name:	**Signature**	**Date:**
☐	☐	☐

CC to:		
Government Representative	**Project Manager X**	**Customer Representative**
Other – Specify:		

Note: Sections 2 through 13 above may have additional information found in inspection forms, preprinted forms, information sheets, or tabulated data sets (i. e., Sign-In / Sign-out Log, MEC Summary Log, Demolitions Records, QC Inspection Form, Safety Inspection Form). Attach additional information or continuation sheets to this report as needed.

PROGRESS MAPS



MRS 13 Cay Luis Pena

MRS 09 Soldado Point

DAILY SITE REPORT

SECTION 1	GENERAL INFORMATION				
Project Name: EBS Culebra Island Site, P.R.		Customer(s) Name:		Report No.: 11-07	
Contract No.:W912DY-04-D-0006	TO No.: 0022	Completion Date:	Location:	Date of Report: 11/15/12	
SUXOS Name:		Telephone No.:		Email Address:	
UXOSO/QC John W. Stoddart		843-437-5535		jstoddartis@hotmail.com	
Site Manager's Name:		Telephone No.:		Email Address:	
Customer POC Name:		Telephone No.:		Email Address:	
Project Web Portal Address:					

SECTION 2	WEATHER				
Temp: High / Low		Precipitation / Humidity		Wind:	Work Impact / Remarks:
86	77	None	84%	9-14 Knots	Small craft advisory/No inshore impact

SECTION 3	USA ASSIGNED PERSONNEL				
Position:	No. Assigned:	No. Present:	Position:	No. Assigned:	No. Present:
UXOSO/QC	1	1			

SECTION 4	SUBCONTRACTOR ASSIGNED PERSONNEL				
Position:	No. Assigned:	No. Present:	Position:	No. Assigned:	No. Present:
Boat Captain (CMS)	1	1			
Crew (CMS)	1	1			
Survey Personnel (ASI)	2	2			

SECTION 5	SUBCONTRACTOR / RENTAL HEAVY EQUIPMENT ONSITE			
Description:	Quantity:	Operational:	Owner:	Remarks:
Side Scan Sonar	1	1	Aqua Survey Inc.	
Multi-beam Sonar	1	1	Aqua Survey Inc.	
Work Boat 30ft	1	1	**Carribbean Marine Services**	
Support Boat 17ft	1	1	**Carribbean Marine Services**	

SECTION 6	TASK(S) PERFORMED				
Task Performed:	Acres/Grids:	Transects:	Re-Acquire:	Digs:	Other:
Surface					
Subsurface					
DGM / GIS					
Devegetation					
Demolition					
Survey (SSS & MBS)		X			
Support					

X				
Acres/Grids:	**Transects:**	**Re-Acquire:**	**Digs:**	**Remarks:**
	6.1 Line Miles			MRS-09, Soldado Point, 3:16
	2.8 Line Miles			MRS-13, Cay Luis Pena, 1:05

SECTION 8	**SAFETY DATA**		
1) Were safety inspections held?	[X] Y [ ] N	**2)** Was HW found or recovered today?	[ ] Y [X] N
General [X] Tailgate [ ] Task Specific [ ]		Type:	
3) Were there any accidents?	[ ] Y [X] N	**4)** Was a "Competent Person" required?	[ ] Y [X] N
1st Aid [ ] Clinic [ ] Hospital [ ]		Type:	
5) Were there any near misses?	[ ] Y [X] N	**6)** Was PPE up or down graded today?	[ ] Y [X] N
Brief Description:		Changed to:	

SECTION 9	**QUALITY CONTROL DATA**		
1) Were QC inspections held?	[X] Y [ ] N	**2)** Was a QA submittal made today?	[ ] Y [X] N
Site [X] MEC [ ] DGM [ ] Other [ ]		Submitted by:	
3) Were there any failures?	[ ] Y [X] N	**4)** Was a Stop Work or CAR issued?	[ ] Y [X] N
Minor [ ] Major [ ] Critical [ ]		Issued by:	
5) Were there any corrections?	[ ] Y [X] N	**6)** Was a Form 948 issued?	[ ] Y [X] N
Brief Description:		Issued for:	

SECTION 10	**MPPEH / MDAS**		
No. of MPPEH items found.		Lbs. of MDAS recovered.	
No. of MPPEH items consolidated.		Lbs. of MDAS placed in a "sealed" container.	

SECTION 11 **MEC / UXO SUMMARY**

Type:	Quantity:	Live:	Practice:	Unknown:	Location:
Projectiles					
Grenades					
Rockets					
Bombs					
Mines					
Missiles					
Pyrotechnics					
ICM / Submunitions					

SECTION 12 **DEMOLITION OPERATIONS**

Location:	No. of Items Destroyed:	Remarks:

SECTION 13	DAILY COMMENTS

Small craft advisory had no impact inshore operations. Completed all accessible areas surrounding Soldado Point. Resumed operations in the Cay Luis Pena operations area. Transects completed to the east and north west side of the island utilizing a repeater stationed moored to the north of the island. Continued operations planned around Cay Luis Pena for 11/16/12; to include the western and southern portions; repeater relocation may be required due to due to topography. Anticipate project completion in no more than 2 work days under optimal conditions.

Location/Total coverage total/Total coverage to date & percentage

Soldado Point (MRS-09)/ 6.1 Line miles of 11.59 line miles (82%)*This represents 100% of accessible survey area.

Cay Luis Pena (MRS-13)/ 9.85 Line miles of 23.94 line miles (53%)

CUSTOMER/REGULATORY INSTRUCTIONS ISSUED:

SECTION 14	SIGNATURE BLOCKS	
Type or Print SUXOS Name:	**Signature:**	**Date:**
John W. Stoddart UXOSO/QC	John W Stoddart	11/15/12
Type or Print Site Manager's Name:	**Signature**	**Date:**
☐	☐	☐

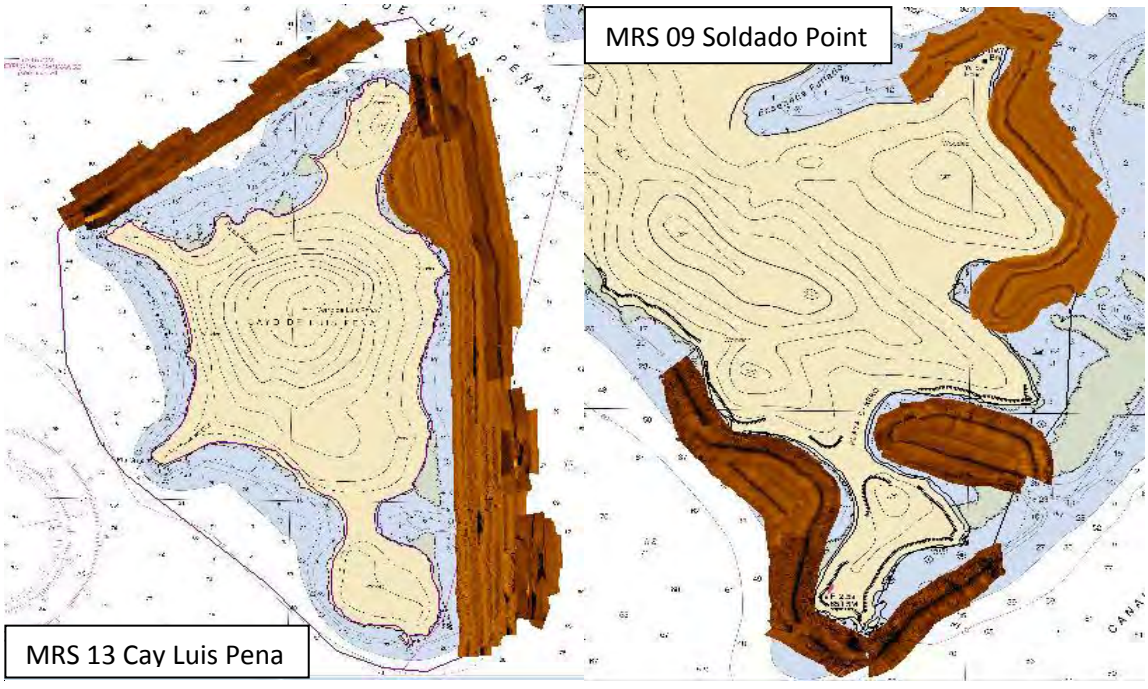
CC to:

Government Representative	Project Manager X	Customer Representative

Other – Specify:

Note: Sections 2 through 13 above may have additional information found in inspection forms, preprinted forms, information sheets, or tabulated data sets (i. e., Sign-In / Sign-out Log, MEC Summary Log, Demolitions Records, QC Inspection Form, Safety Inspection Form). Attach additional information or continuation sheets to this report as needed.

PROGRESS MAPS



DAILY SITE REPORT

SECTION 1	GENERAL INFORMATION				
Project Name: EBS Culebra Island Site, P.R.		Customer(s) Name:		Report No.: 11-08	
Contract No.:W912DY-04-D-0006	TO No.: 0022	Completion Date:	Location:	Date of Report: 11/16/12	
SUXOS Name:		Telephone No.:		Email Address:	
UXOSO/QC John W. Stoddart		843-437-5535		jstoddartis@hotmail.com	
Site Manager's Name:		Telephone No.:		Email Address:	
Customer POC Name:		Telephone No.:		Email Address:	
Project Web Portal Address:					

SECTION 2	WEATHER				
Temp: High / Low		Precipitation / Humidity		Wind:	Work Impact / Remarks:
86	77	Light	85%	9-14 Knots	Small craft advisory/No inshore impact

SECTION 3	USA ASSIGNED PERSONNEL				
Position:	No. Assigned:	No. Present:	Position:	No. Assigned:	No. Present:
UXOSO/QC	1	1			

SECTION 4	SUBCONTRACTOR ASSIGNED PERSONNEL				
Position:	No. Assigned:	No. Present:	Position:	No. Assigned:	No. Present:
Boat Captain (CMS)	1	1			
Crew (CMS)	1	1			
Survey Personnel (ASI)	2	2			

SECTION 5	SUBCONTRACTOR / RENTAL HEAVY EQUIPMENT ONSITE			
Description:	Quantity:	Operational:	Owner:	Remarks:
Side Scan Sonar	1	1	Aqua Survey Inc.	
Multi-beam Sonar	1	1	Aqua Survey Inc.	
Work Boat 30ft	1	1	**Carribbean Marine Services**	
Support Boat 17ft	1	1	**Carribbean Marine Services**	

SECTION 6	TASK(S) PERFORMED				
Task Performed:	Acres/Grids:	Transects:	Re-Acquire:	Digs:	Other:
Surface					
Subsurface					
DGM / GIS					
Devegetation					
Demolition					
Survey (SSS & MBS)		X			
Support					

X				
Acres/Grids:	**Transects:**	**Re-Acquire:**	**Digs:**	**Remarks:**
	14.6 Line Miles			MRS-13, Cay Luis Pena, 3:47 (3.78)

SECTION 8	**SAFETY DATA**		
1) Were safety inspections held?	[X] Y [ ] N	**2)** Was HW found or recovered today?	[ ] Y [X] N
General [X] Tailgate [ ] Task Specific [ ]		Type:	
3) Were there any accidents?	[ ] Y [X] N	**4)** Was a "Competent Person" required?	[ ] Y [X] N
1st Aid [ ] Clinic [ ] Hospital [ ]		Type:	
5) Were there any near misses?	[ ] Y [X] N	**6)** Was PPE up or down graded today?	[ ] Y [X] N
Brief Description:		Changed to:	

SECTION 9	**QUALITY CONTROL DATA**		
1) Were QC inspections held?	[X] Y [ ] N	**2)** Was a QA submittal made today?	[ ] Y [X] N
Site [X] MEC [ ] DGM [ ] Other [ ]		Submitted by:	
3) Were there any failures?	[ ] Y [X] N	**4)** Was a Stop Work or CAR issued?	[ ] Y [X] N
Minor [ ] Major [ ] Critical [ ]		Issued by:	
5) Were there any corrections?	[ ] Y [X] N	**6)** Was a Form 948 issued?	[ ] Y [X] N
Brief Description:		Issued for:	

SECTION 10	**MPPEH / MDAS**		
No. of MPPEH items found.		Lbs. of MDAS recovered.	
No. of MPPEH items consolidated.		Lbs. of MDAS placed in a "sealed" container.	

SECTION 11 **MEC / UXO SUMMARY**

Type:	Quantity:	Live:	Practice:	Unknown:	Location:
Projectiles					
Grenades					
Rockets					
Bombs					
Mines					
Missiles					
Pyrotechnics					
ICM / Submunitions					

SECTION 12 **DEMOLITION OPERATIONS**

Location:	No. of Items Destroyed:	Remarks:

SECTION 13	DAILY COMMENTS
Small craft advisory had no impact on inshore operations. Completed survey of all accessible areas surrounding Cay Luis Pena. Antenna signal coverage was able to be obtained directly on the eastern side of cay, or via a repeater stationed either north west or south west of cay depending upon survey location. 17ft small boat was utilized as repeater platform and moored at designated points. **Location/Total coverage today/Actual survey time today/Total coverage to date & percentage/Total actual survey time** Cay Luis Pena (MRS-13)/ 14.6 Line miles/3:47/24.45 line miles (100%)/8:12	

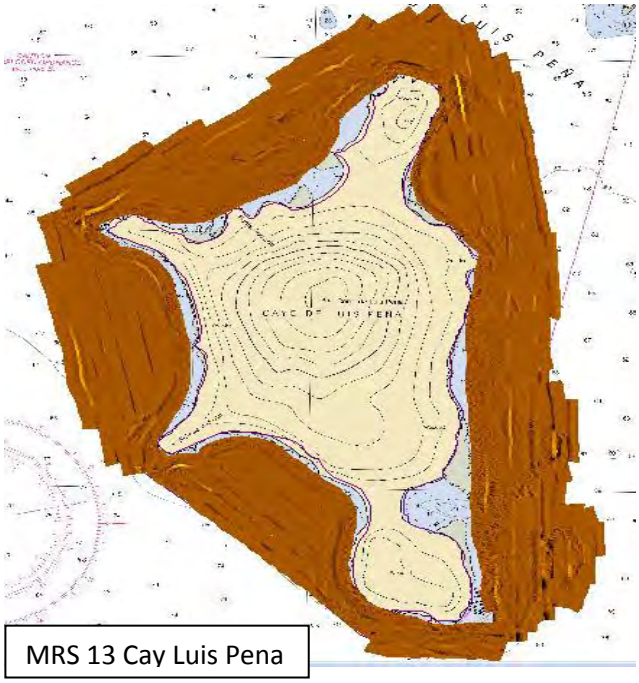
CUSTOMER/REGULATORY INSTRUCTIONS ISSUED:

SECTION 14	SIGNATURE BLOCKS	
Type or Print SUXOS Name:	**Signature:**	**Date:**
John W. Stoddart UXOSO/QC	John W Stoddart	11/16/12
Type or Print Site Manager's Name:	**Signature**	**Date:**
☐	☐	☐

CC to:		
Government Representative	**Project Manager X**	**Customer Representative**
Other – Specify:		

Note: Sections 2 through 13 above may have additional information found in inspection forms, preprinted forms, information sheets, or tabulated data sets (i. e., Sign-In / Sign-out Log, MEC Summary Log, Demolitions Records, QC Inspection Form, Safety Inspection Form). Attach additional information or continuation sheets to this report as needed.

PROGRESS MAP



MRS 13 Cay Luis Pena

SAFETY MEETING/TRAINING RECORD

Date: 11-8-12 **Time:** 0730 ☑ **AM** ☐ **PM**

Location/Site: CULEBRA, PR U.I.T.

1. Reason for Meeting/Training: (Check all that apply):			
☐	Daily Safety Meeting/Training	☐	Periodic Safety Meeting/Training
☑	Initial Site Safety Meeting/Training	☐	New Site Procedures
☐	New Task Briefing	☐	New Site Information
☐	Periodic Review of Site Information	☐	Other (Explain):

2. Personnel Attending Meeting/Training:

Name	Signature	Company
William Rother		ASI
Mark Padover		ASI
James Victus		ASI
Gene Thomas	Gene Thom	Boat Service
Brian Siwbin		USAE
Matt Tucker		USAE
Eric Thomas		Boat Service

3. Topics Covered (Check all that apply)			
☑	Site Safety Personnel	☐	Decontamination Procedures
☑	Site/Work Area Description	☑	Emergency Response Plan
☑	Site Characterization	☑	Hazard Communication
☑	Biological Hazard(s)	☑	On-Site Emergency
☑	Chemical Hazard(s)	☑	On-Site Injuries/Illnesses
☑	Physical Hazard(s)	☑	Evacuation Procedures
☑	Heat Stress	☑	Rally Point(s)
☐	Cold Stress	☑	Emergency Communication
☐	Site Control	☑	Directions to Medical Facility
☑	Work and Support Zones	☑	Drug and Alcohol Policies
☑	PPE	☐	Medical Monitoring Program
☐	Air monitoring	☐	Specific Task Training
☑	Safe Work Practices	☐	Confined Spaces
☐	Engineering Controls and Equipment	☐	Heavy Equipment
☑	Spill Containment Procedures	☐	Other: (Specify)
☑	Equipment Safety	☐	Other: (Specify)

4. Remarks: WP, APP/SS & HP, A HA REVIEW & QC

5. Verification:

I certify that the personnel listed above on this record received the Information and/or Training described as indicated. Personnel not attending this meeting/training will receive said information/training prior to commencing their assigned duties.

John W Stoddard — 11-8-12

Site Safety Officer - Signature **Date:**

SAFETY MEETING/TRAINING RECORD

Date: 11-08-12 Time: 1630 ☐ AM ☑ PM

Location/Site: CULEBRA, PR

1. Reason for Meeting/Training: (Check all that apply):			
☐	Daily Safety Meeting/Training	☐	Periodic Safety Meeting/Training
☐	Initial Site Safety Meeting/Training	☐	New Site Procedures
☑	New Task Briefing	☐	New Site Information
☐	Periodic Review of Site Information	☐	Other (Explain):

2. Personnel Attending Meeting/Training:

Name	Signature	Company
James Nichols		ASI
William Rottner		~~ASI~~
Mark Padron		ASI
Kelly Enriquez	(11/10/12)	USACE
Eric Thomas		CMS
Gene Thomas	Gene Thomas	Boat Captain

3. Topics Covered (Check all that apply)			
☐	Site Safety Personnel	☐	Decontamination Procedures
☐	Site/Work Area Description	☐	Emergency Response Plan
☐	Site Characterization	☐	Hazard Communication
☐	Biological Hazard(s)	☐	On-Site Emergency
☐	Chemical Hazard(s)	☐	On-Site Injuries/Illnesses
☐	Physical Hazard(s)	☐	Evacuation Procedures
☐	Heat Stress	☐	Rally Point(s)
☐	Cold Stress	☐	Emergency Communication
☐	Site Control	☐	Directions to Medical Facility
☐	Work and Support Zones	☐	Drug and Alcohol Policies
☐	PPE	☐	Medical Monitoring Program
☐	Air monitoring	☐	Specific Task Training
☐	Safe Work Practices	☐	Confined Spaces
☐	Engineering Controls and Equipment	☐	Heavy Equipment
☐	Spill Containment Procedures	☐	Other: (Specify)
☐	Equipment Safety	☑	Other: (Specify)

4. Remarks:

CONSERVATION OF ENDANGERED SPECIES AND CRITICAL HABITAT. AVOIDANCE AND REPORTING IN ADDITION TO RECOGNITION AND PREVENTATIVE/FOLLOW-UP ACTIONS.

5. Verification:

I certify that the personnel listed above on this record received the Information and/or Training described as indicated. Personnel not attending this meeting/training will receive said information/training prior to commencing their assigned duties.

John W Stoddard — Date: 1-08-12

Site Safety Officer - Signature

SAFETY MEETING/TRAINING RECORD

Date: 11/11/12 **Time:** 1700 ☐ AM ☑ PM

Location/Site: CULEBRA, P.R.

1. Reason for Meeting/Training: (Check all that apply):			
☐	Daily Safety Meeting/Training	☐	Periodic Safety Meeting/Training
☑	Initial Site Safety Meeting/Training	☐	New Site Procedures
☐	New Task Briefing	☐	New Site Information
☐	Periodic Review of Site Information	☑	Other (Explain):

2. Personnel Attending Meeting/Training:

Name	Signature	Company
Jeff Lewis	Jeff Lewis	USAE

3. Topics Covered (Check all that apply)			
☐	Site Safety Personnel	☐	Decontamination Procedures
☐	Site/Work Area Description	☐	Emergency Response Plan
☐	Site Characterization	☐	Hazard Communication
☐	Biological Hazard(s)	☐	On-Site Emergency
☐	Chemical Hazard(s)	☐	On-Site Injuries/Illnesses
☐	Physical Hazard(s)	☐	Evacuation Procedures
☐	Heat Stress	☐	Rally Point(s)
☐	Cold Stress	☐	Emergency Communication
☐	Site Control	☐	Directions to Medical Facility
☐	Work and Support Zones	☐	Drug and Alcohol Policies
☐	PPE	☐	Medical Monitoring Program
☐	Air monitoring	☐	Specific Task Training
☐	Safe Work Practices	☐	Confined Spaces
☐	Engineering Controls and Equipment	☐	Heavy Equipment
☐	Spill Containment Procedures	☐	Other: (Specify)
☐	Equipment Safety	☑	Other: (Specify) SEE REMARKS

4. Remarks:

REVIEW OF SOP FOR ENDANGERED SPECIES CONSERVATION AND THEIR CRITICAL HABITAT DURING UNDERWATER INVESTIGATION.
WP, APP, SS & HP, AHA REVIEW

5. Verification:

I certify that the personnel listed above on this record received the Information and/or Training described as indicated. Personnel not attending this meeting/training will receive said information/training prior to commencing their assigned duties.

John W Stoddard 11/11/12 **Date:**

Site Safety Officer - Signature

USA Environmental, Inc.

TAILGATE SAFETY BRIEFING

Date: 11-08-12 Location: CULEBRA, PR

Time: 0700 ☑ AM ☐ PM Team #: U.I.T.

1. Reason for Briefing:

☑	Daily Safety Briefing	☐	New Site Procedure
☐	Initial Safety Briefing	☐	New Site Information
☐	New Task Briefing	☐	Review of Site Information
☐	Periodic Safety Meeting	☐	Other (Specify):

2. Personnel Attending:

Name	Signature	Position
Mark Tucker		PM
Brian Skupien		Tech Support
Gene Thurmer		Captain
James Nickels		Geo
Mark Rudow		Geo
William Kettner		PM ASE

3. Briefing Given By:

Name	Signature	Position
STODDART, JOHN W.		11-8-12

4. Topics: (Check All That Apply)

☑	Site Safety Personnel	☐	Decontamination Procedures
☑	Site/Work Area Description	☑	Emergency Response/Equipment
☑	Physical Hazards	☑	On-Site Injuries/Illnesses
☑	Chemical/Biological Hazards	☑	Reporting Procedures
☑	Heat/Cold Stress	☑	Directions to Medical Facility
☑	Work/Support Zones	☑	Drug and Alcohol Policies
☑	PPE	☐	Medical Monitoring
☑	Safe Work Practices	☑	Evacuation/Egress Procedures
☐	Air Monitoring	☑	Communications
☐	Task Training	☐	Confined Spaces
☑	MEC Precautions	☐	Other:

5. Remarks:

TEMP: 90°F, W: S.E 8-11 KNOTS, WH: 2-4FT
HUM: 84%, 20% SHOWERS N.E. SWELLS
SUNSET 1746 LT: 0908 HT: 1533

USA Environmental, Inc.

TAILGATE SAFETY BRIEFING

Date: 11-09-12 Location: CULEBRA, P.R.

Time: 0700 ☑ AM ☐ PM Team #: U.I.T

1. Reason for Briefing:

☑	Daily Safety Briefing	☐	New Site Procedure
☐	Initial Safety Briefing	☐	New Site Information
☐	New Task Briefing	☐	Review of Site Information
☐	Periodic Safety Meeting	☐	Other (Specify):

2. Personnel Attending:

Name	Signature	Position
William Rattner		ASEM
James Nickels		GEO
Eric Thomas		CUL
Gene Thomas		Boat Captain
Mark Podowski		Geo

3. Briefing Given By:

Name	Signature	Position
STODDART, John W		UXOSO/QC

4. Topics: (Check All That Apply)

☑	Site Safety Personnel	☑	Decontamination Procedures
☑	Site/Work Area Description	☑	Emergency Response/Equipment
☑	Physical Hazards	☑	On-Site Injuries/Illnesses
☑	Chemical/Biological Hazards	☑	Reporting Procedures
☑	Heat/Cold Stress	☑	Directions to Medical Facility
☑	Work/Support Zones	☑	Drug and Alcohol Policies
☑	PPE	☐	Medical Monitoring
☑	Safe Work Practices	☑	Evacuation/Egress Procedures
☐	Air Monitoring	☑	Communications
☑	Task Training	☐	Confined Spaces
☐	MEC Precautions	☐	Other:

5. Remarks:

USA Environmental, Inc.

TAILGATE SAFETY BRIEFING

Date: 11/10/12
Time: 0630 ☑ AM ☐ PM

Location: CULEBRA, P.R.
Team #: U.I.T.

1. Reason for Briefing:

☑	Daily Safety Briefing	☐	New Site Procedure
☐	Initial Safety Briefing	☐	New Site Information
☐	New Task Briefing	☐	Review of Site Information
☐	Periodic Safety Meeting	☐	Other (Specify):

2. Personnel Attending:

Name	Signature	Position
Gene Thomas	Gene Thomas	11-10-12
Eric Thomas	Eric Thomas	11-10-12
Mark Padover		11/10/12
James Nickels		11/10/12
William Potter		11-10-12
Kelly Enriquez		11-10-12

3. Briefing Given By:

Name	Signature	Position
STODDART JOHN UXOSO/QC	John Stoddart	UXOSO/QC

4. Topics: (Check All That Apply)

☑	Site Safety Personnel	☑	Decontamination Procedures
☑	Site/Work Area Description	☑	Emergency Response/Equipment
☑	Physical Hazards	☑	On-Site Injuries/Illnesses
☑	Chemical/Biological Hazards	☑	Reporting Procedures
☑	Heat/Cold Stress	☑	Directions to Medical Facility
☑	Work/Support Zones	☑	Drug and Alcohol Policies
☑	PPE	☐	Medical Monitoring
☑	Safe Work Practices	☑	Evacuation/Egress Procedures
☐	Air Monitoring	☑	Communications
☐	Task Training	☐	Confined Spaces
☐	MEC Precautions	☐	Other:

5. Remarks:

COVERED PERFORMANCE OF MAN-OVERBOARD PROCEDURES

USA Environmental, Inc.

TAILGATE SAFETY BRIEFING

Date: 11/11/12 Location: CULEBRA, P.R.

Time: 0630 ☑ AM ☐ PM Team #: U.I.T

1. Reason for Briefing:

☑	Daily Safety Briefing	☐	New Site Procedure
☐	Initial Safety Briefing	☐	New Site Information
☐	New Task Briefing	☐	Review of Site Information
☐	Periodic Safety Meeting	☐	Other (Specify):

2. Personnel Attending:

Name	Signature	Position
Gene Thomas		Captain
Eric Thomas		CMS
Kelly Enriquez		USACE
Mark Padover		ASE
James Nickels		GeO
William Potter		ASE

3. Briefing Given By:

Name	Signature	Position
STODDART, JOHN W		USOSC/QC

4. Topics: (Check All That Apply)

☑	Site Safety Personnel	☑	Decontamination Procedures
☑	Site/Work Area Description	☑	Emergency Response/Equipment
☑	Physical Hazards	☑	On-Site Injuries/Illnesses
☑	Chemical/Biological Hazards	☑	Reporting Procedures
☑	Heat/Cold Stress	☑	Directions to Medical Facility
☑	Work/Support Zones	☑	Drug and Alcohol Policies
☑	PPE	☐	Medical Monitoring
☑	Safe Work Practices	☑	Evacuation/Egress Procedures
☐	Air Monitoring	☑	Communications
☐	Task Training	☐	Confined Spaces
☐	MEC Precautions	☐	Other:

5. Remarks:

USA Environmental, Inc.

TAILGATE SAFETY BRIEFING

Date: 11-12-12 Location: CULEBRA P.R.

Time: 0630 ☑ AM ☐ PM Team #: U.I.T

1. Reason for Briefing:

☑	Daily Safety Briefing	☐	New Site Procedure
☐	Initial Safety Briefing	☐	New Site Information
☐	New Task Briefing	☐	Review of Site Information
☐	Periodic Safety Meeting	☐	Other (Specify):

2. Personnel Attending:

Name	Signature	Position
Jeff Lewis		USAE
William Rother		ASI
James Nichols		ASI
Mark Labow		ASI
Kelly Enriquez		USACE
Gene Thomer		Boat Captain
Eric Thomas		CMS

3. Briefing Given By:

Name	Signature	Position
JOHN W. STODDART		UXOSO/QC

4. Topics: (Check All That Apply)

☑	Site Safety Personnel	☑	Decontamination Procedures
☑	Site/Work Area Description	☑	Emergency Response/Equipment
☑	Physical Hazards	☑	On-Site Injuries/Illnesses
☑	Chemical/Biological Hazards	☑	Reporting Procedures
☑	Heat/Cold Stress	☑	Directions to Medical Facility
☑	Work/Support Zones	☑	Drug and Alcohol Policies
☑	PPE	☑	Medical Monitoring
☑	Safe Work Practices	☑	Evacuation/Egress Procedures
☐	Air Monitoring	☑	Communications
☐	Task Training	☐	Confined Spaces
☐	MEC Precautions	☐	Other:

5. Remarks:

USA Environmental, Inc.

TAILGATE SAFETY BRIEFING

Date: 11/13/12 Location: CULEBRA, P.R.

Time: 0730 ☑ AM ☐ PM Team #: U.I.T

1. Reason for Briefing:

☑	Daily Safety Briefing	☐	New Site Procedure
☐	Initial Safety Briefing	☐	New Site Information
☐	New Task Briefing	☐	Review of Site Information
☐	Periodic Safety Meeting	☐	Other (Specify):

2. Personnel Attending:

Name	Signature	Position
Kelly Enriquez		USACE
Gene Thomas		Boat Cop Tair
James Nickels		Geo
Mark Pedroza		Geo

3. Briefing Given By:

Name	Signature	Position
JOHN W STODDART		UXO SO/QC

4. Topics: (Check All That Apply)

☑	Site Safety Personnel	☑	Decontamination Procedures
☑	Site/Work Area Description	☑	Emergency Response/Equipment
☑	Physical Hazards	☑	On-Site Injuries/Illnesses
☑	Chemical/Biological Hazards	☑	Reporting Procedures
☑	Heat/Cold Stress	☑	Directions to Medical Facility
☑	Work/Support Zones	☑	Drug and Alcohol Policies
☑	PPE	☑	Medical Monitoring
☑	Safe Work Practices	☑	Evacuation/Egress Procedures
☐	Air Monitoring	☑	Communications
☐	Task Training	☐	Confined Spaces
☐	MEC Precautions	☐	Other:

5. Remarks:

USA Environmental, Inc.

TAILGATE SAFETY BRIEFING

Date: 11/14/12 Location: CULEBRA P.R.

Time: 0630 ☑ AM ☐ PM Team #: U.I.T

1. Reason for Briefing:

☑	Daily Safety Briefing	☐	New Site Procedure
☐	Initial Safety Briefing	☐	New Site Information
☐	New Task Briefing	☐	Review of Site Information
☐	Periodic Safety Meeting	☐	Other (Specify):

2. Personnel Attending:

Name	Signature	Position
Kelly Enriquez		USACE
Gene Thomas		Boat Captain
Eric Thomas		CHS
Jeff Lewis		USAE
Mark Palmer		Geo-AST
James Nichols		GEO-AST

3. Briefing Given By:

Name	Signature	Position
JOHN W STODDART		UXOSO/QC

4. Topics: (Check All That Apply)

☑	Site Safety Personnel	☑	Decontamination Procedures
☑	Site/Work Area Description	☑	Emergency Response/Equipment
☑	Physical Hazards	☑	On-Site Injuries/Illnesses
☑	Chemical/Biological Hazards	☑	Reporting Procedures
☑	Heat/Cold Stress	☑	Directions to Medical Facility
☑	Work/Support Zones	☑	Drug and Alcohol Policies
☑	PPE	☑	Medical Monitoring
☑	Safe Work Practices	☑	Evacuation/Egress Procedures
☐	Air Monitoring	☑	Communications
☐	Task Training	☐	Confined Spaces
☐	MEC Precautions	☐	Other:

5. Remarks:

USA Environmental, Inc.

TAILGATE SAFETY BRIEFING

Date: 11/15/12 **Location:** CULEBRA, PR

Time: 0600 ☑ AM ☐ PM **Team #:** U.I.T

1. Reason for Briefing:

☑	Daily Safety Briefing	☐	New Site Procedure
☐	Initial Safety Briefing	☐	New Site Information
☐	New Task Briefing	☐	Review of Site Information
☐	Periodic Safety Meeting	☐	Other (Specify):

2. Personnel Attending:

Name	Signature	Position
Mark Dehaven		ASI Geo
James Nichols		ASI GeO
Kelly Enriquez		USACE
Jeff Lewis		USAE
Gene Thomas		Boat Captain
Eric Thomas		CMS

3. Briefing Given By:

Name	Signature	Position
JOHN W STODDART		UXOSO/QC

4. Topics: (Check All That Apply)

☑	Site Safety Personnel	☑	Decontamination Procedures
☑	Site/Work Area Description	☑	Emergency Response/Equipment
☑	Physical Hazards	☑	On-Site Injuries/Illnesses
☑	Chemical/Biological Hazards	☑	Reporting Procedures
☑	Heat/Cold Stress	☑	Directions to Medical Facility
☑	Work/Support Zones	☑	Drug and Alcohol Policies
☑	PPE	☑	Medical Monitoring
☑	Safe Work Practices	☑	Evacuation/Egress Procedures
☐	Air Monitoring	☑	Communications
☐	Task Training	☐	Confined Spaces
☐	MEC Precautions	☐	Other:

5. Remarks:

USA Environmental, Inc.

TAILGATE SAFETY BRIEFING

Date: 11-16-12 Location: CULEBRA, PR

Time: 0600 ☑ AM ☐ PM Team #: U.I.T

1. Reason for Briefing:

☑	Daily Safety Briefing	☐	New Site Procedure
☐	Initial Safety Briefing	☐	New Site Information
☐	New Task Briefing	☐	Review of Site Information
☐	Periodic Safety Meeting	☐	Other (Specify):

2. Personnel Attending:

Name	Signature	Position
Kelly Enriquez		USACE
Eric Thomas		CMS
Gene Thomas	Gene Thom	Boat Captain
Mark Lafever		Med
James Nichols		AST Geo

3. Briefing Given By:

Name	Signature	Position
JOHN W STODART		UXOSO/QC

4. Topics: (Check All That Apply)

☑	Site Safety Personnel	☑	Decontamination Procedures
☑	Site/Work Area Description	☑	Emergency Response/Equipment
☑	Physical Hazards	☑	On-Site Injuries/Illnesses
☑	Chemical/Biological Hazards	☑	Reporting Procedures
☑	Heat/Cold Stress	☑	Directions to Medical Facility
☑	Work/Support Zones	☑	Drug and Alcohol Policies
☑	PPE	☑	Medical Monitoring
☑	Safe Work Practices	☑	Evacuation/Egress Procedures
☐	Air Monitoring	☑	Communications
☐	Task Training	☐	Confined Spaces
☐	MEC Precautions	☐	Other:

5. Remarks:

USA Environmental, Inc.

SAFETY INSPECTION REPORT

Site / Location: Culebra, P.R.	Date: 11/09/12
Type of Inspection: ☑ Daily ☑ Weekly ☐ Re-Inspection ☐ Other	
Type of Operation Inspected:	
Equipment Inspected (Specify if Safety or Operational in Nature): First aid kit and boat safety equipment.	
Comments: Inventories completed.	
Deficiencies Found or Noted: No deficiencies.	
Corrective Action: N/A	
Re-Inspection Required: ☐ Yes ☑ No	If Yes, Date of Re-Inspection:

Signatures:

Site/Safety Officer John W. Stoddart

SUXOS/Project Manager

*Copy to Supervisor if Deficiencies or Corrective Action were found, noted, or deemed necessary.

USA Environmental, Inc.

SAFETY INSPECTION REPORT

Site / Location: Culebra, P.R.	Date: 11/10/12
Type of Inspection: ☑ Daily ☑ Weekly ☐ Re-Inspection ☐ Other	
Type of Operation Inspected: Man-Overboard Drill	
Equipment Inspected (Specify if Safety or Operational in Nature): Boat safety equipment; PFDs, boat hook, throwable retrieval line, life-ring	
Comments: Crew satisfactorily completed recovery process, associated equipment inventoried and inspected.	
Deficiencies Found or Noted: No deficiencies.	
Corrective Action: N/A	
Re-Inspection Required: ☐ Yes ☑ No	If Yes, Date of Re-Inspection:

Signatures:

Site Safety Officer John W. Stoddart

SUXOS/Project Manager

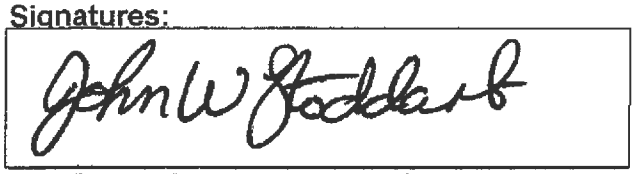
*Copy to Supervisor if Deficiencies or Corrective Action were found, noted, or deemed necessary.

USA Environmental, Inc.

SAFETY INSPECTION REPORT

Site / Location: Culebra, P.R.	Date: 11/12/12
Type of Inspection: ☒ Daily ☐ Weekly ☐ Re-Inspection ☐ Other	
Type of Operation Inspected: Medical response drill (heart attack/cardiac arrest)	
Equipment Inspected (Specify if Safety or Operational in Nature):	
Comments: Crew satisfactorily completed response and follow-on actions.	
Deficiencies Found or Noted: No deficiencies.	
Corrective Action: N/A	
Re-Inspection Required: ☐ Yes ☒ No	If Yes, Date of Re-Inspection:

Signatures:



Site Safety Officer John W. Stoddart

SUXOS/Project Manager

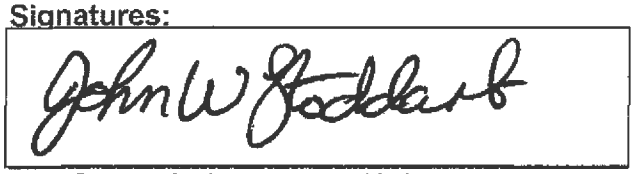
*Copy to Supervisor if Deficiencies or Corrective Action were found, noted, or deemed necessary.

USA Environmental, Inc.

SAFETY INSPECTION REPORT

Site / Location: Culebra, P.R.	Date: 11/13/12
Type of Inspection: ☒ Daily ☐ Weekly ☐ Re-Inspection ☐ Other	
Type of Operation Inspected: Use of hand and power tools.	
Equipment Inspected (Specify if Safety or Operational in Nature): Hand tools and PPE.	
Comments: Observed proper use of power tools and selection/use of appropriate PPE.	
Deficiencies Found or Noted: No deficiencies.	
Corrective Action: N/A	
Re-Inspection Required: ☐ Yes ☒ No	If Yes, Date of Re-Inspection:

Signatures:



Site Safety Officer John W. Stoddart

SUXOS/Project Manager

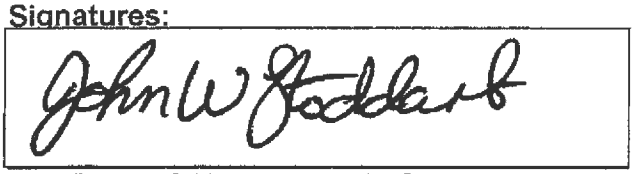
*Copy to Supervisor if Deficiencies or Corrective Action were found, noted, or deemed necessary.

USA Environmental, Inc.

SAFETY INSPECTION REPORT

Site / Location: Culebra, P.R.	Date: 11/14/12
Type of Inspection: ☒ Daily ☐ Weekly ☐ Re-Inspection ☐ Other	
Type of Operation Inspected:	
Equipment Inspected (Specify if Safety or Operational in Nature): Firefighting equipment	
Comments: 3ea, 10lb ABC fire extinguishers inspected for material condition and adequate pressure rating.	
Deficiencies Found or Noted: No deficiencies.	
Corrective Action: N/A	
Re-Inspection Required: ☐ Yes ☒ No	If Yes, Date of Re-Inspection:

Signatures:



Site Safety Officer John W. Stoddart

SUXOS/Project Manager

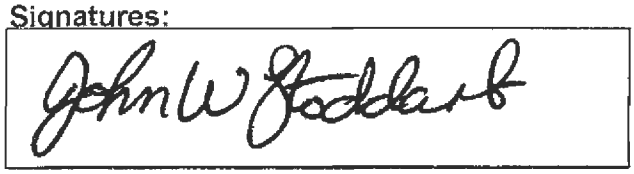
*Copy to Supervisor if Deficiencies or Corrective Action were found, noted, or deemed necessary.

USA Environmental, Inc.

SAFETY INSPECTION REPORT

Site / Location: Culebra, P.R.	Date: 11/15/12
Type of Inspection: ☒ Daily ☐ Weekly ☐ Re-Inspection ☐ Other	
Type of Operation Inspected:	
Equipment Inspected (Specify if Safety or Operational in Nature): Safety - Medical and first aid.	
Comments: Inventoried, inspected material condition and expiration dates. Dated items within periodicity.	
Deficiencies Found or Noted: No deficiencies.	
Corrective Action: N/A	
Re-Inspection Required: ☐ Yes ☒ No	If Yes, Date of Re-Inspection:

Signatures:



Site Safety Officer John W. Stoddart

SUXOS/Project Manager

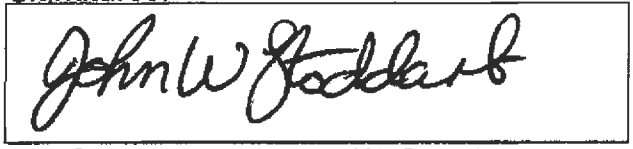
*Copy to Supervisor if Deficiencies or Corrective Action were found, noted, or deemed necessary.

USA Environmental, Inc.

SAFETY INSPECTION REPORT

Site / Location: Culebra, P.R.	Date: 11/16/12
Type of Inspection: ☒ Daily ☐ Weekly ☐ Re-Inspection ☐ Other	
Type of Operation Inspected: Fire drill.	
Equipment Inspected (Specify if Safety or Operational in Nature): Safety - Fire extinguishers.	
Comments: Boat crew familiar with appropriate procedures, notifications and operation of firefighting equipment. All equipment in satisfactory condition.	
Deficiencies Found or Noted: No deficiencies.	
Corrective Action: N/A	
Re-Inspection Required: ☐ Yes ☒ No	If Yes, Date of Re-Inspection:

Signatures:



Site Safety Officer John W. Stoddart

SUXOS/Project Manager

*Copy to Supervisor if Deficiencies or Corrective Action were found, noted, or deemed necessary.

DAILY SITE REPORT

SECTION 1	GENERAL INFORMATION				
Project Name:		**Customer(s) Name:**			**Report No.:**
environmental base line study		**COE Huntsville**			**002**
Contract No.:	**TO No.:**	**Completion Date:**	**Location:**		**Date of Report:**
W912Dy-04-D-0006	0022		Culebra, PR		1-08-13
SUXOS Name:		**Telephone No.:**		**Email Address:**	
SUXOS not assigned/ Tech III, Randall Jenkins					
Site Manager's Name:		**Telephone No.:**		**Email Address:**	
Customer POC Name:		**Telephone No.:**		**Email Address:**	
Roland Belew		256-895-9525			
Project Web Portal Address:					

SECTION 2	WEATHER			
Temp: High / Low		**Precipitation / Humidity**	**Wind:**	**Work Impact / Remarks:**
82	75	0 70	Gust 22	rough seas

SECTION 3	USA ASSIGNED PERSONNEL				
Position:	**No. Assigned:**	**No. Present:**	**Position:**	**No. Assigned:**	**No. Present:**
Site Manager			UXOT II		
SUXOS			UXOT I		
UXOQCS					
UXOSO					
UXOT III	2	2			

SECTION 4	SUBCONTRACTOR ASSIGNED PERSONNEL				
Position:	**No. Assigned:**	**No. Present:**	**Position:**	**No. Assigned:**	**No. Present:**
boat operator	2	2			
Marine Biologist	1	1			

SECTION 5	SUBCONTRACTOR / RENTAL HEAVY EQUIPMENT ONSITE			
Description:	**Quantity:**	**Operational:**	**Owner:**	**Remarks:**
boat	1			

SECTION 6	TASK(S) PERFORMED				
Task Performed:	**Acres/Grids:**	**Transects:**	**Re-Acquire:**	**Digs:**	**Other:**
Surface					
Subsurface					
DGM / GIS					
Devegetation					
Demolition					
Survey		5			
Support					

SECTION 7	WORK DETAILS			
Acres/Grids:	**Transects:**	**Re-Acquire:**	**Digs:**	**Remarks:**

SECTION 8	SAFETY DATA		
1) Were safety inspections held?	☒ Y ☐ N	**2)** Was HW found or recovered today?	☐ Y ☒ N
General ☒ Tailgate ☒ Task Specific ☐		Type:	
3) Were there any accidents?	☐ Y ☒ N	**4)** Was a "Competent Person" required?	☐ Y ☒ N
1st Aid ☐ Clinic ☐ Hospital ☐		Type:	
5) Were there any near misses?	☐ Y ☒ N	**6)** Was PPE up or down graded today?	☐ Y ☒ N
Brief Description:		Changed to:	

SECTION 9	QUALITY CONTROL DATA		
1) Were QC inspections held?	☒ Y ☐ N	**2)** Was a QA submittal made today?	☐ Y ☐ N
Site ☒ MEC ☐ DGM ☐ Other ☒		Submitted by:	
3) Were there any failures?	☐ Y ☒ N	**4)** Was a Stop Work or CAR issued?	☐ Y ☒ N
Minor ☐ Major ☐ Critical ☐		Issued by:	
5) Were there any corrections?	☐ Y ☒ N	**6)** Was a Form 948 issued?	☐ Y ☒ N
Brief Description:		Issued for:	

SECTION 10	MPPEH / MDAS		
No. of MPPEH items found.	0	Lbs. of MDAS recovered.	0
No. of MPPEH items consolidated.	0	Lbs. of MDAS placed in a "sealed" container.	0

SECTION 11	MEC / UXO SUMMARY				
Type:	**Quantity:**	**Live:**	**Practice:**	**Unknown:**	**Location:**
Projectiles					
Grenades					
Rockets					
Bombs					
Mines					
Missiles					
Pyrotechnics					
ICM / Submunitions					

SECTION 12	DEMOLITION OPERATIONS	
Location:	**No. of Items Destroyed:**	**Remarks:**

SECTION 13	DAILY COMMENTS
We were able to complete transects 1A, 1B, 2, 3 and 4 (see attached map) with the underwater camera today on the west side of soldiers point, MRS 9. We initially transited out to the east side of Luis Pena, MRS13 to begin underwater camera ops. After doing a test run prior to running transects we found that the position of the camera needed to be changed due to propeller concerns, and due to weather and currents the speed of the boat caused excessive camera wobble making the camera image to shaky to view clearly. We repositioned the camera added weights and a larger tail fin. Taking weather conditions into account we moved to MRS 9. After Mark Padover reviewed the video it was found to be clear enough to be viewed properly. No UXO were found.	
CUSTOMER/REGULATORY INSTRUCTIONS ISSUED:	

SECTION 14	SIGNATURE BLOCKS	
Type or Print SUXOS Name:	**Signature:**	**Date:**
SUXOS not assigned. Tech III Randall Jenkins		1-08-13
Type or Print Site Manager's Name:	**Signature**	**Date:**
CC to:		
Government Representative ☐	**Project Manager** ☒	**Customer Representative** ☐
Other – Specify:		

Note: Sections 2 through 13 above may have additional information found in inspection forms, preprinted forms, information sheets, or tabulated data sets (i. e., Sign-In / Sign-out Log, MEC Summary Log, Demolitions Records, QC Inspection Form, Safety Inspection Form). Attach additional information or continuation sheets to this report as needed.

J/W DGM transects in MRS 9
be documented by video using the
viewer/ROV systems or snorkeling
n. Snorkeling surveys may be required
ome shallow areas as shown.
er shallow areas of MRS 9 have been
iously documented with
viewer/ROV sytems in 2011.

are spaced approximately every 68.6 m (225 ft).

DAILY SITE REPORT

SECTION 1	GENERAL INFORMATION				
Project Name:		**Customer(s) Name:**			**Report No.:**
environmental base line study		**COE Huntsville**			**002**
Contract No.:	**TO No.:**	**Completion Date:**	**Location:**		**Date of Report:**
W912Dy-04-D-0006	0022		Culebra, PR		1-09-13
SUXOS Name:		**Telephone No.:**		**Email Address:**	
SUXOS not assigned/ Tech III, Randall Jenkins					
Site Manager's Name:		**Telephone No.:**		**Email Address:**	
Customer POC Name:		**Telephone No.:**		**Email Address:**	
Roland Belew		256-895-9525			
Project Web Portal Address:					

SECTION 2	WEATHER			
Temp: High / Low		**Precipitation / Humidity**	**Wind:**	**Work Impact / Remarks:**
81	75	0 71	20 to 25	rough seas impact access to transects on east side of Luis Pena.

SECTION 3	USA ASSIGNED PERSONNEL				
Position:	**No. Assigned:**	**No. Present:**	**Position:**	**No. Assigned:**	**No. Present:**
Site Manager			UXOT II		
SUXOS			UXOT I		
UXOQCS					
UXOSO					
UXOT III	2	2			

SECTION 4	SUBCONTRACTOR ASSIGNED PERSONNEL				
Position:	**No. Assigned:**	**No. Present:**	**Position:**	**No. Assigned:**	**No. Present:**
boat operator	2	2			
Marine Biologist	1	1			

SECTION 5	SUBCONTRACTOR / RENTAL HEAVY EQUIPMENT ONSITE			
Description:	**Quantity:**	**Operational:**	**Owner:**	**Remarks:**
boat	2			

SECTION 6	TASK(S) PERFORMED				
Task Performed:	**Acres/Grids:**	**Transects:**	**Re-Acquire:**	**Digs:**	**Other:**
Surface					
Subsurface					
DGM / GIS					
Devegetation					
Demolition					
Survey		9			
Support					

SECTION 7	WORK DETAILS			
Acres/Grids:	**Transects:**	**Re-Acquire:**	**Digs:**	**Remarks:**

SECTION 8	SAFETY DATA		
1) Were safety inspections held?	☒ Y ☐ N	**2)** Was HW found or recovered today?	☐ Y ☒ N
General ☒ Tailgate ☒ Task Specific ☐		Type:	
3) Were there any accidents?	☐ Y ☒ N	**4)** Was a "Competent Person" required?	☐ Y ☒ N
1st Aid ☐ Clinic ☐ Hospital ☐		Type:	
5) Were there any near misses?	☐ Y ☒ N	**6)** Was PPE up or down graded today?	☐ Y ☒ N
Brief Description:		Changed to:	

SECTION 9	QUALITY CONTROL DATA		
1) Were QC inspections held?	☒ Y ☐ N	**2)** Was a QA submittal made today?	☐ Y ☐ N
Site ☒ MEC ☐ DGM ☐ Other ☒		Submitted by:	
3) Were there any failures?	☐ Y ☒ N	**4)** Was a Stop Work or CAR issued?	☐ Y ☒ N
Minor ☐ Major ☐ Critical ☐		Issued by:	
5) Were there any corrections?	☐ Y ☒ N	**6)** Was a Form 948 issued?	☐ Y ☒ N
Brief Description:		Issued for:	

SECTION 10	MPPEH / MDAS		
No. of MPPEH items found.	0	Lbs. of MDAS recovered.	0
No. of MPPEH items consolidated.	0	Lbs. of MDAS placed in a "sealed" container.	0

SECTION 11	MEC / UXO SUMMARY				
Type:	**Quantity:**	**Live:**	**Practice:**	**Unknown:**	**Location:**
Projectiles					
Grenades					
Rockets					
Bombs					
Mines					
Missiles					
Pyrotechnics					
ICM / Submunitions					

SECTION 12	DEMOLITION OPERATIONS	
Location:	**No. of Items Destroyed:**	**Remarks:**

SECTION 13	DAILY COMMENTS
Transects 3, 4A,B, 5A,B,C, 6A,B, 7A,B,C, 9, 10, 11 and 12 were completed with the underwater camera on the west side of Luis Pena, MRS 13. No UXO were found.	
CUSTOMER/REGULATORY INSTRUCTIONS ISSUED:	

SECTION 14	SIGNATURE BLOCKS	
Type or Print SUXOS Name:	**Signature:**	**Date:**
SUXOS not assigned. Tech III Randall Jenkins		1-09-13
Type or Print Site Manager's Name:	**Signature**	**Date:**

CC to:		
Government Representative ☐	**Project Manager** ☒	**Customer Representative** ☐
Other – Specify:		

Note: Sections 2 through 13 above may have additional information found in inspection forms, preprinted forms, information sheets, or tabulated data sets (i. e., Sign-In / Sign-out Log, MEC Summary Log, Demolitions Records, QC Inspection Form, Safety Inspection Form). Attach additional information or continuation sheets to this report as needed.


100 yard boundary previously surveyed with UW Camera/ROV
Depth soundings w
along with video co
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have been
ly every 76.22 m (250 ft).

DAILY SITE REPORT

SECTION 1	GENERAL INFORMATION				
Project Name:		**Customer(s) Name:**			**Report No.:**
environmental base line study		**COE Huntsville**			**003**
Contract No.:	**TO No.:**	**Completion Date:**	**Location:**		**Date of Report:**
W912Dy-04-D-0006	0022		Culebra, PR		1-10-13
SUXOS Name:		**Telephone No.:**		**Email Address:**	
SUXOS not assigned/ Tech III, Randall Jenkins					
Site Manager's Name:		**Telephone No.:**		**Email Address:**	
Customer POC Name:		**Telephone No.:**		**Email Address:**	
Roland Belew		256-895-9525		roland.g.belew@usace.army.mil	
Project Web Portal Address:					

SECTION 2	WEATHER			
Temp: High / Low		**Precipitation / Humidity**	**Wind:**	**Work Impact / Remarks:**
83	75	0 70	20 to 23	wind and rough seas impact access to transects around Luis Pena.

SECTION 3	USA ASSIGNED PERSONNEL				
Position:	**No. Assigned:**	**No. Present:**	**Position:**	**No. Assigned:**	**No. Present:**
Site Manager			UXOT II		
SUXOS			UXOT I		
UXOQCS					
UXOSO					
UXOT III	2	2			

SECTION 4	SUBCONTRACTOR ASSIGNED PERSONNEL				
Position:	**No. Assigned:**	**No. Present:**	**Position:**	**No. Assigned:**	**No. Present:**
boat operator	2	2			
Marine Biologist	1	1			

SECTION 5	SUBCONTRACTOR / RENTAL HEAVY EQUIPMENT ONSITE			
Description:	**Quantity:**	**Operational:**	**Owner:**	**Remarks:**
boat	2			

SECTION 6	TASK(S) PERFORMED				
Task Performed:	**Acres/Grids:**	**Transects:**	**Re-Acquire:**	**Digs:**	**Other:**
Surface					
Subsurface					
DGM / GIS					
Devegetation					
Demolition					
Survey		6 full, 5 partial			
Support					

SECTION 7	WORK DETAILS			
Acres/Grids:	**Transects:**	**Re-Acquire:**	**Digs:**	**Remarks:**

SECTION 8	SAFETY DATA		
1) Were safety inspections held?	☒ Y ☐ N	**2)** Was HW found or recovered today?	☐ Y ☒ N
General ☒ Tailgate ☒ Task Specific ☐		Type:	
3) Were there any accidents?	☐ Y ☒ N	**4)** Was a "Competent Person" required?	☐ Y ☒ N
1st Aid ☐ Clinic ☐ Hospital ☐		Type:	
5) Were there any near misses?	☐ Y ☒ N	**6)** Was PPE up or down graded today?	☐ Y ☒ N
Brief Description:		Changed to:	

SECTION 9	QUALITY CONTROL DATA		
1) Were QC inspections held?	☒ Y ☐ N	**2)** Was a QA submittal made today?	☐ Y ☐ N
Site ☒ MEC ☐ DGM ☐ Other ☒		Submitted by:	
3) Were there any failures?	☐ Y ☒ N	**4)** Was a Stop Work or CAR issued?	☐ Y ☒ N
Minor ☐ Major ☐ Critical ☐		Issued by:	
5) Were there any corrections?	☐ Y ☒ N	**6)** Was a Form 948 issued?	☐ Y ☒ N
Brief Description:		Issued for:	

SECTION 10	MPPEH / MDAS		
No. of MPPEH items found.	0	Lbs. of MDAS recovered.	0
No. of MPPEH items consolidated.	0	Lbs. of MDAS placed in a "sealed" container.	0

SECTION 11	MEC / UXO SUMMARY				
Type:	**Quantity:**	**Live:**	**Practice:**	**Unknown:**	**Location:**
Projectiles					
Grenades					
Rockets					
Bombs					
Mines					
Missiles					
Pyrotechnics					
ICM / Submunitions					

SECTION 12	DEMOLITION OPERATIONS	
Location:	**No. of Items Destroyed:**	**Remarks:**

SECTION 13	DAILY COMMENTS
Transects 1, 20, 21, 22, 23, 25 were completed with the underwater camera on the east and west side of Luis Pena, MRS 13. Transects partially completed (approximate percentages): 2 - 95%, 13 - 95%, 18 - 75%, 19 - 75%, 21 - 75%. Sea state kept transects from being completed. No UXO were found in completed transects. One suspect item was forund in north west section of transect 2. Video was not clear enough to positively identify the item. The VideoRay submersible remotely operated vehicle (ROV) will be deployed onto the item for positive identification.	

CUSTOMER/REGULATORY INSTRUCTIONS ISSUED:

SECTION 14	SIGNATURE BLOCKS	
Type or Print SUXOS Name:	**Signature:**	**Date:**
SUXOS not assigned. Tech III Randall Jenkins		1-10-13
Type or Print Site Manager's Name:	**Signature**	**Date:**

CC to:		
Government Representative ☐	**Project Manager** ☒	**Customer Representative** ☐
Other – Specify:		

Note: Sections 2 through 13 above may have additional information found in inspection forms, preprinted forms, information sheets, or tabulated data sets (i. e., Sign-In / Sign-out Log, MEC Summary Log, Demolitions Records, QC Inspection Form, Safety Inspection Form). Attach additional information or continuation sheets to this report as needed.


100 yard boundary previously surveyed with UW Camera/ROV
Depth soundings w
along with video co
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have been
y every 76.22 m (250 ft).

DAILY SITE REPORT

SECTION 1	GENERAL INFORMATION				
Project Name:		**Customer(s) Name:**			**Report No.:**
environmental base line study		**COE Huntsville**			**004**
Contract No.:	**TO No.:**	**Completion Date:**	**Location:**		**Date of Report:**
W912Dy-04-D-0006	0022		Culebra, P.R.		1-11-13
SUXOS Name:		**Telephone No.:**		**Email Address:**	
SUXOS not assigned/ Tech III, Randall Jenkins					
Site Manager's Name:		**Telephone No.:**		**Email Address:**	
Customer POC Name:		**Telephone No.:**		**Email Address:**	
Roland Belew		256-895-9525		roland.g.belew@usace.army.mil	
Project Web Portal Address:					

SECTION 2	WEATHER			
Temp: High / Low		**Precipitation / Humidity**	**Wind:**	**Work Impact / Remarks:**
83	72	0 74	10 to 15	n/a

SECTION 3	USA ASSIGNED PERSONNEL				
Position:	**No. Assigned:**	**No. Present:**	**Position:**	**No. Assigned:**	**No. Present:**
Site Manager			UXOT II		
SUXOS			UXOT I		
UXOQCS					
UXOSO					
UXOT III	2	2			

SECTION 4	SUBCONTRACTOR ASSIGNED PERSONNEL				
Position:	**No. Assigned:**	**No. Present:**	**Position:**	**No. Assigned:**	**No. Present:**
boat operator	2	2			
Marine Biologist	1	1			

SECTION 5	SUBCONTRACTOR / RENTAL HEAVY EQUIPMENT ONSITE			
Description:	**Quantity:**	**Operational:**	**Owner:**	**Remarks:**
boat	2	2		

SECTION 6	TASK(S) PERFORMED				
Task Performed:	**Acres/Grids:**	**Transects:**	**Re-Acquire:**	**Digs:**	**Other:**
Surface					
Subsurface					
DGM / GIS					
Devegetation					
Demolition					
Survey		18			
Support					

SECTION 7	WORK DETAILS			
Acres/Grids:	**Transects:**	**Re-Acquire:**	**Digs:**	**Remarks:**

SECTION 8	SAFETY DATA		
1) Were safety inspections held?	☒ Y ☐ N	**2)** Was HW found or recovered today?	☐ Y ☒ N
General ☒ Tailgate ☒ Task Specific ☐		Type:	
3) Were there any accidents?	☐ Y ☒ N	**4)** Was a "Competent Person" required?	☐ Y ☒ N
1st Aid ☐ Clinic ☐ Hospital ☐		Type:	
5) Were there any near misses?	☐ Y ☒ N	**6)** Was PPE up or down graded today?	☐ Y ☒ N
Brief Description:		Changed to:	

SECTION 9	QUALITY CONTROL DATA		
1) Were QC inspections held?	☒ Y ☐ N	**2)** Was a QA submittal made today?	☐ Y ☐ N
Site ☒ MEC ☐ DGM ☐ Other ☒		Submitted by:	
3) Were there any failures?	☐ Y ☒ N	**4)** Was a Stop Work or CAR issued?	☐ Y ☒ N
Minor ☐ Major ☐ Critical ☐		Issued by:	
5) Were there any corrections?	☐ Y ☒ N	**6)** Was a Form 948 issued?	☐ Y ☒ N
Brief Description:		Issued for:	

SECTION 10	MPPEH / MDAS		
No. of MPPEH items found.	0	Lbs. of MDAS recovered.	0
No. of MPPEH items consolidated.	0	Lbs. of MDAS placed in a "sealed" container.	0

SECTION 11	MEC / UXO SUMMARY				
Type:	**Quantity:**	**Live:**	**Practice:**	**Unknown:**	**Location:**
Projectiles					
Grenades					
Rockets					
Bombs					
Mines					
Missiles					
Pyrotechnics					
ICM / Submunitions					

SECTION 12	DEMOLITION OPERATIONS	
Location:	**No. of Items Destroyed:**	**Remarks:**

SECTION 13	DAILY COMMENTS
Transects 7, 8, 9, 10, 11, 12, 16, 18, 19 were completed with the underwater camera at Soldado Point MRS 9. Transects 2, 8, 18, 19, 21, 26, 27, 28, 24 were completed at the south end and east side of Luis Pena MRS 13. Transects video that were reviewed showed no evidence of UXO.	
CUSTOMER/REGULATORY INSTRUCTIONS ISSUED:	

SECTION 14	SIGNATURE BLOCKS	
Type or Print SUXOS Name:	**Signature:**	**Date:**
SUXOS not assigned. Tech III Randall Jenkins		1-11-13
Type or Print Site Manager's Name:	**Signature**	**Date:**
CC to:		
Government Representative ☐	**Project Manager** ☒	**Customer Representative** ☐
Other – Specify:		

Note: Sections 2 through 13 above may have additional information found in inspection forms, preprinted forms, information sheets, or tabulated data sets (i. e., Sign-In / Sign-out Log, MEC Summary Log, Demolitions Records, QC Inspection Form, Safety Inspection Form). Attach additional information or continuation sheets to this report as needed.


100 yard boundary previously surveyed with UW Camera/ROV
Depth sound
along with vi
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be required
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have been
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ely every 76.22 m (250 ft).

W DGM transects in MRS 9
e documented by video using the
iewer/ROV systems or snorkeling
Snorkeling surveys may be required
ne shallow areas as shown.
shallow areas of MRS 9 have been
ously documented with
iewer/ROV sytems in 2011.

re spaced approximately every 68.6 m (225 ft).

DAILY SITE REPORT

SECTION 1	GENERAL INFORMATION				
Project Name:		**Customer(s) Name:**			**Report No.:**
environmental base line study		**COE Huntsville**			**005**
Contract No.:	**TO No.:**	**Completion Date:**	**Location:**		**Date of Report:**
W912Dy-04-D-0006	0022		Culebra, P.R.		1-12-13
SUXOS Name:		**Telephone No.:**		**Email Address:**	
SUXOS not assigned/ Tech III, Randall Jenkins					
Site Manager's Name:		**Telephone No.:**		**Email Address:**	
Customer POC Name:		**Telephone No.:**		**Email Address:**	
Roland Belew		256-895-9525		roland.g.belew@usace.army.mil	
Project Web Portal Address:					

SECTION 2	WEATHER			
Temp: High / Low		**Precipitation / Humidity**	**Wind:**	**Work Impact / Remarks:**
82 / 74		0 / 70	10 to 15	Current, swell and waves limited and prevented access to portions of snorkel transects.

SECTION 3	USA ASSIGNED PERSONNEL				
Position:	**No. Assigned:**	**No. Present:**	**Position:**	**No. Assigned:**	**No. Present:**
Site Manager			UXOT II		
SUXOS			UXOT I		
UXOQCS					
UXOSO					
UXOT III	2	2			

SECTION 4	SUBCONTRACTOR ASSIGNED PERSONNEL				
Position:	**No. Assigned:**	**No. Present:**	**Position:**	**No. Assigned:**	**No. Present:**
boat operator	2	2			
Marine Biologist	1	1			

SECTION 5	SUBCONTRACTOR / RENTAL HEAVY EQUIPMENT ONSITE			
Description:	**Quantity:**	**Operational:**	**Owner:**	**Remarks:**
boat	2	2		

SECTION 6	TASK(S) PERFORMED				
Task Performed:	**Acres/Grids:**	**Transects:**	**Re-Acquire:**	**Digs:**	**Other:**
Surface					
Subsurface					
DGM / GIS					
Devegetation					
Demolition					
Survey					
Support					

SECTION 7	WORK DETAILS			
Acres/Grids:	**Transects:**	**Re-Acquire:**	**Digs:**	**Remarks:**

SECTION 8	SAFETY DATA		
1) Were safety inspections held?	☒ Y ☐ N	**2)** Was HW found or recovered today?	☐ Y ☒ N
General ☒ Tailgate ☒ Task Specific ☐		Type:	
3) Were there any accidents?	☐ Y ☒ N	**4)** Was a "Competent Person" required?	☐ Y ☒ N
1st Aid ☐ Clinic ☐ Hospital ☐		Type:	
5) Were there any near misses?	☐ Y ☒ N	**6)** Was PPE up or down graded today?	☐ Y ☒ N
Brief Description:		Changed to:	

SECTION 9	QUALITY CONTROL DATA		
1) Were QC inspections held?	☒ Y ☐ N	**2)** Was a QA submittal made today?	☐ Y ☐ N
Site ☒ MEC ☐ DGM ☐ Other ☒		Submitted by:	
3) Were there any failures?	☐ Y ☒ N	**4)** Was a Stop Work or CAR issued?	☐ Y ☒ N
Minor ☐ Major ☐ Critical ☐		Issued by:	
5) Were there any corrections?	☐ Y ☒ N	**6)** Was a Form 948 issued?	☐ Y ☒ N
Brief Description:		Issued for:	

SECTION 10	MPPEH / MDAS		
No. of MPPEH items found.	0	Lbs. of MDAS recovered.	0
No. of MPPEH items consolidated.	0	Lbs. of MDAS placed in a "sealed" container.	0

SECTION 11	MEC / UXO SUMMARY				
Type:	**Quantity:**	**Live:**	**Practice:**	**Unknown:**	**Location:**
Projectiles					
Grenades					
Rockets					
Bombs					
Mines					
Missiles					
Pyrotechnics					
ICM / Submunitions					

SECTION 12	DEMOLITION OPERATIONS	
Location:	**No. of Items Destroyed:**	**Remarks:**

SECTION 13	DAILY COMMENTS
Transects 32, 33, 34, 35 were completed with the underwater camera at Luis Pena MRS 13. Snorkeling transect 17B completed at Louis Pena, MRS 13. Snorkeling transect 17A partially completed (approx. 50%). Current, swells and waves prevented snorkeling team from completing east end of transect. Two projectiles were seen and videoed on transect 17B at approx. 5ft. Six projectiles were seen on completed section of transect 17A at approx. 5ft. Not all transects that were videoed on 1-12-13 have been reviewed.	

CUSTOMER/REGULATORY INSTRUCTIONS ISSUED:

SECTION 14	SIGNATURE BLOCKS	
Type or Print SUXOS Name:	**Signature:**	**Date:**
SUXOS not assigned. Tech III Randall Jenkins		1-12-13
Type or Print Site Manager's Name:	**Signature**	**Date:**
CC to:		
Government Representative ☐	**Project Manager** ☒	**Customer Representative** ☐
Other – Specify:		

Note: Sections 2 through 13 above may have additional information found in inspection forms, preprinted forms, information sheets, or tabulated data sets (i. e., Sign-In / Sign-out Log, MEC Summary Log, Demolitions Records, QC Inspection Form, Safety Inspection Form). Attach additional information or continuation sheets to this report as needed.


100 yard boundary previously surveyed with UW Camera/ROV
Depth soundings w
along with video co
transe
13
ng the
rkeling
e required
have been
y every 76.22 m (250 ft).

DAILY SITE REPORT

SECTION 1	GENERAL INFORMATION				
Project Name:		**Customer(s) Name:**			**Report No.:**
environmental base line study		**COE Huntsville**			**006**
Contract No.:	**TO No.:**	**Completion Date:**	**Location:**		**Date of Report:**
6W912Dy-04-D-0006	0022		Culebra, P.R.		1-14-13
SUXOS Name:		**Telephone No.:**		**Email Address:**	
SUXOS not assigned/ Tech III, Randall Jenkins					
Site Manager's Name:		**Telephone No.:**		**Email Address:**	
Customer POC Name:		**Telephone No.:**		**Email Address:**	
Roland Belew		256-895-9525		roland.g.belew@usace.army.mil	
Project Web Portal Address:					

SECTION 2	WEATHER			
Temp: High / Low		**Precipitation / Humidity**	**Wind:**	**Work Impact / Remarks:**
84	74	0 70	11 to 16	N/A

SECTION 3	USA ASSIGNED PERSONNEL				
Position:	**No. Assigned:**	**No. Present:**	**Position:**	**No. Assigned:**	**No. Present:**
Site Manager			UXOT II		
SUXOS			UXOT I		
UXOQCS					
UXOSO					
UXOT III	2	2			

SECTION 4	SUBCONTRACTOR ASSIGNED PERSONNEL				
Position:	**No. Assigned:**	**No. Present:**	**Position:**	**No. Assigned:**	**No. Present:**
boat operator	2	2			
Marine Biologist	1	1			

SECTION 5	SUBCONTRACTOR / RENTAL HEAVY EQUIPMENT ONSITE			
Description:	**Quantity:**	**Operational:**	**Owner:**	**Remarks:**
boat	1	1		

SECTION 6	TASK(S) PERFORMED				
Task Performed:	**Acres/Grids:**	**Transects:**	**Re-Acquire:**	**Digs:**	**Other:**
Surface					
Subsurface					
DGM / GIS					
Devegetation					
Demolition					
Survey		6			
Support					

SECTION 7	WORK DETAILS			
Acres/Grids:	**Transects:**	**Re-Acquire:**	**Digs:**	**Remarks:**

SECTION 8	SAFETY DATA		
1) Were safety inspections held?	☒ Y ☐ N	**2)** Was HW found or recovered today?	☐ Y ☒ N
General ☒ Tailgate ☒ Task Specific ☐		Type:	
3) Were there any accidents?	☐ Y ☒ N	**4)** Was a "Competent Person" required?	☐ Y ☒ N
1st Aid ☐ Clinic ☐ Hospital ☐		Type:	
5) Were there any near misses?	☐ Y ☒ N	**6)** Was PPE up or down graded today?	☐ Y ☒ N
Brief Description:		Changed to:	

SECTION 9	QUALITY CONTROL DATA		
1) Were QC inspections held?	☒ Y ☐ N	**2)** Was a QA submittal made today?	☐ Y ☐ N
Site ☒ MEC ☐ DGM ☐ Other ☒		Submitted by:	
3) Were there any failures?	☐ Y ☒ N	**4)** Was a Stop Work or CAR issued?	☐ Y ☒ N
Minor ☐ Major ☐ Critical ☐		Issued by:	
5) Were there any corrections?	☐ Y ☒ N	**6)** Was a Form 948 issued?	☐ Y ☒ N
Brief Description:		Issued for:	

SECTION 10	MPPEH / MDAS		
No. of MPPEH items found.	0	Lbs. of MDAS recovered.	0
No. of MPPEH items consolidated.	0	Lbs. of MDAS placed in a "sealed" container.	0

SECTION 11	MEC / UXO SUMMARY				
Type:	**Quantity:**	**Live:**	**Practice:**	**Unknown:**	**Location:**
Projectiles					
Grenades					
Rockets					
Bombs					
Mines					
Missiles					
Pyrotechnics					
ICM / Submunitions					

SECTION 12	DEMOLITION OPERATIONS	
Location:	**No. of Items Destroyed:**	**Remarks:**

SECTION 13	DAILY COMMENTS
Snorkeling transects 5, 9, 13, 14, 15, 17 were completed in MRS 9. Water depth varied from 1' to a max depth at the east end of transect 14 of 8'. Avaerage water depth was 1' to 5'. No UXO were observed during snorkeling operations. Mark Padover chose areas in MRS 9 to go back to and with the Remote Operated Vehicle a bottom inspection was performed. Video was taken during snorkeling and ROV operations. No UXO were observed during ROV operations.	

CUSTOMER/REGULATORY INSTRUCTIONS ISSUED:

SECTION 14	SIGNATURE BLOCKS	
Type or Print SUXOS Name:	**Signature:**	**Date:**
SUXOS not assigned. Tech III Randall Jenkins		1-14-13
Type or Print Site Manager's Name:	**Signature**	**Date:**

CC to:		
Government Representative ☐	**Project Manager** ☒	**Customer Representative** ☐
Other – Specify:		

Note: Sections 2 through 13 above may have additional information found in inspection forms, preprinted forms, information sheets, or tabulated data sets (i. e., Sign-In / Sign-out Log, MEC Summary Log, Demolitions Records, QC Inspection Form, Safety Inspection Form). Attach additional information or continuation sheets to this report as needed.


19B
19A
18
17
16
15
14
13
12B
12A
11
10
9
1A
1B
2
3
4
5
6
7
8
Depth s
along
This area is too sh
to conduct in
/ DGM transects in MRS 9
documented by video using the
wer/ROV systems or snorkeling
Snorkeling surveys may be required
e shallow areas as shown.
shallow areas of MRS 9 have been
usly documented with
wer/ROV sytems in 2011.
e spaced approximately every 68.6 m (225 ft).

DAILY SITE REPORT

SECTION 1	GENERAL INFORMATION				
Project Name:		**Customer(s) Name:**			**Report No.:**
environmental base line study		**COE Huntsville**			**007**
Contract No.:	**TO No.:**	**Completion Date:**	**Location:**		**Date of Report:**
6W912Dy-04-D-0006	0022		Culebra, P.R.		1-15-13
SUXOS Name:		**Telephone No.:**		**Email Address:**	
SUXOS not assigned/ Tech III, Randall Jenkins					
Site Manager's Name:		**Telephone No.:**		**Email Address:**	
Customer POC Name:		**Telephone No.:**		**Email Address:**	
Roland Belew		256-895-9525		roland.g.belew@usace.army.mil	
Project Web Portal Address:					

SECTION 2	WEATHER			
Temp: High / Low		**Precipitation / Humidity**	**Wind:**	**Work Impact / Remarks:**
81	73	0 70	15 to 20	Sea state prevented snorkeling ops.

SECTION 3	USA ASSIGNED PERSONNEL				
Position:	**No. Assigned:**	**No. Present:**	**Position:**	**No. Assigned:**	**No. Present:**
Site Manager			UXOT II		
SUXOS			UXOT I		
UXOQCS					
UXOSO					
UXOT III	2	2			

SECTION 4	SUBCONTRACTOR ASSIGNED PERSONNEL				
Position:	**No. Assigned:**	**No. Present:**	**Position:**	**No. Assigned:**	**No. Present:**
boat operator	2	2			
Marine Biologist	1	1			
RTK Guard	1	1			

SECTION 5	SUBCONTRACTOR / RENTAL HEAVY EQUIPMENT ONSITE			
Description:	**Quantity:**	**Operational:**	**Owner:**	**Remarks:**
boat	2	2		

SECTION 6	TASK(S) PERFORMED				
Task Performed:	**Acres/Grids:**	**Transects:**	**Re-Acquire:**	**Digs:**	**Other:**
Surface					
Subsurface					
DGM / GIS					
Devegetation					
Demolition					
Survey					
Support					

SECTION 7	WORK DETAILS			
Acres/Grids:	**Transects:**	**Re-Acquire:**	**Digs:**	**Remarks:**

SECTION 8	SAFETY DATA		
1) Were safety inspections held?	☒ Y ☐ N	**2)** Was HW found or recovered today?	☐ Y ☒ N
General ☒ Tailgate ☒ Task Specific ☐		Type:	
3) Were there any accidents?	☐ Y ☒ N	**4)** Was a "Competent Person" required?	☐ Y ☒ N
1st Aid ☐ Clinic ☐ Hospital ☐		Type:	
5) Were there any near misses?	☐ Y ☒ N	**6)** Was PPE up or down graded today?	☐ Y ☒ N
Brief Description:		Changed to:	

SECTION 9	QUALITY CONTROL DATA		
1) Were QC inspections held?	☒ Y ☐ N	**2)** Was a QA submittal made today?	☐ Y ☐ N
Site ☒ MEC ☐ DGM ☐ Other ☒		Submitted by:	
3) Were there any failures?	☐ Y ☒ N	**4)** Was a Stop Work or CAR issued?	☐ Y ☒ N
Minor ☐ Major ☐ Critical ☐		Issued by:	
5) Were there any corrections?	☐ Y ☒ N	**6)** Was a Form 948 issued?	☐ Y ☒ N
Brief Description:		Issued for:	

SECTION 10	MPPEH / MDAS		
No. of MPPEH items found.	0	Lbs. of MDAS recovered.	0
No. of MPPEH items consolidated.	0	Lbs. of MDAS placed in a "sealed" container.	0

SECTION 11	MEC / UXO SUMMARY				
Type:	**Quantity:**	**Live:**	**Practice:**	**Unknown:**	**Location:**
Projectiles					
Grenades					
Rockets					
Bombs					
Mines					
Missiles					
Pyrotechnics					
ICM / Submunitions					

SECTION 12	DEMOLITION OPERATIONS	
Location:	**No. of Items Destroyed:**	**Remarks:**

SECTION 13	DAILY COMMENTS
14 areas (points) around MRS 13 were chosen to go back to and with the Remote Operated Vehicle a bottom inspection was performed. Points # 1, 2, 3, 4, 5, 6, 7, 8, 8, 9, 10, 11, 20, 21, 22. Video was taken during ROV operations. No UXO were observed during ROV operations.	
CUSTOMER/REGULATORY INSTRUCTIONS ISSUED:	

SECTION 14	SIGNATURE BLOCKS	
Type or Print SUXOS Name:	**Signature:**	**Date:**
SUXOS not assigned. Tech III Randall Jenkins		1-15-13
Type or Print Site Manager's Name:	**Signature**	**Date:**

CC to:		
Government Representative ☐	**Project Manager** ☒	**Customer Representative** ☐
Other – Specify:		

Note: Sections 2 through 13 above may have additional information found in inspection forms, preprinted forms, information sheets, or tabulated data sets (i. e., Sign-In / Sign-out Log, MEC Summary Log, Demolitions Records, QC Inspection Form, Safety Inspection Form). Attach additional information or continuation sheets to this report as needed.

USA Environmental, Inc.

DAILY SITE REPORT

SECTION 1	GENERAL INFORMATION				
Project Name:		**Customer(s) Name:**			**Report No.:**
environmental base line study		**COE Huntsville**			**008**
Contract No.:	**TO No.:**	**Completion Date:**	**Location:**		**Date of Report:**
6W912Dy-04-D-0006	0022		Culebra, P.R.		1-16-13
SUXOS Name:		**Telephone No.:**		**Email Address:**	
SUXOS not assigned/ Tech III, Randall Jenkins					
Site Manager's Name:		**Telephone No.:**		**Email Address:**	
Customer POC Name:		**Telephone No.:**		**Email Address:**	
Roland Belew		256-895-9525		roland.g.belew@usace.army.mil	
Project Web Portal Address:					

SECTION 2	WEATHER			
Temp: High / Low		**Precipitation / Humidity**	**Wind:**	**Work Impact / Remarks:**
83	75	0 70	15 to 20	Sea state prevented snorkeling ops.

SECTION 3	USA ASSIGNED PERSONNEL				
Position:	**No. Assigned:**	**No. Present:**	**Position:**	**No. Assigned:**	**No. Present:**
Site Manager			UXOT II		
SUXOS			UXOT I		
UXOQCS					
UXOSO					
UXOT III	2	2			

SECTION 4	SUBCONTRACTOR ASSIGNED PERSONNEL				
Position:	**No. Assigned:**	**No. Present:**	**Position:**	**No. Assigned:**	**No. Present:**
Boat Operators	2	2			
Marine Biologist	1	1			
RTK Guard	1	1			

SECTION 5	SUBCONTRACTOR / RENTAL HEAVY EQUIPMENT ONSITE			
Description:	**Quantity:**	**Operational:**	**Owner:**	**Remarks:**
boat	2	2		

SECTION 6	TASK(S) PERFORMED				
Task Performed:	**Acres/Grids:**	**Transects:**	**Re-Acquire:**	**Digs:**	**Other:**
Surface					
Subsurface					
DGM / GIS					
Devegetation					
Demolition					
Survey					
Support					

SECTION 7	WORK DETAILS			
Acres/Grids:	**Transects:**	**Re-Acquire:**	**Digs:**	**Remarks:**

SECTION 8	SAFETY DATA		
1) Were safety inspections held?	☒ Y ☐ N	**2)** Was HW found or recovered today?	☐ Y ☒ N
General ☒ Tailgate ☒ Task Specific ☐		Type:	
3) Were there any accidents?	☐ Y ☒ N	**4)** Was a "Competent Person" required?	☐ Y ☒ N
1st Aid ☐ Clinic ☐ Hospital ☐		Type:	
5) Were there any near misses?	☐ Y ☒ N	**6)** Was PPE up or down graded today?	☐ Y ☒ N
Brief Description:		Changed to:	

SECTION 9	QUALITY CONTROL DATA		
1) Were QC inspections held?	☒ Y ☐ N	**2)** Was a QA submittal made today?	☐ Y ☐ N
Site ☒ MEC ☐ DGM ☐ Other ☒		Submitted by:	
3) Were there any failures?	☐ Y ☒ N	**4)** Was a Stop Work or CAR issued?	☐ Y ☒ N
Minor ☐ Major ☐ Critical ☐		Issued by:	
5) Were there any corrections?	☐ Y ☒ N	**6)** Was a Form 948 issued?	☐ Y ☒ N
Brief Description:		Issued for:	

SECTION 10	MPPEH / MDAS		
No. of MPPEH items found.	0	Lbs. of MDAS recovered.	0
No. of MPPEH items consolidated.	0	Lbs. of MDAS placed in a "sealed" container.	0

SECTION 11	MEC / UXO SUMMARY				
Type:	**Quantity:**	**Live:**	**Practice:**	**Unknown:**	**Location:**
Projectiles					
Grenades					
Rockets					
Bombs					
Mines					
Missiles					
Pyrotechnics					
ICM / Submunitions					

SECTION 12	DEMOLITION OPERATIONS	
Location:	**No. of Items Destroyed:**	**Remarks:**

SECTION 13	DAILY COMMENTS

8 points around MRS 13 were chosen to go back to and with the Remote Operated Vehicle and a bottom environmental review was performed.
Points # . 12 - Transect 21, 13 - Trans. 24, 13 - Trans. 18, 15 - Trans. 21, 16 - Trans. 23, 17 - Trans. 19, 18 - Trans. 15, 19 - Trans. 13.
Video was taken during ROV operations.
No UXO were observed during environmental review operations.

4 locations were chosen to dive on with the Remote Operated Vehicle to look for suspect UXO items.
Transects: 32, 33 and 35.
Projectiles found: 7
Video was taken during ROV operations.

CUSTOMER/REGULATORY INSTRUCTIONS ISSUED:

SECTION 14	SIGNATURE BLOCKS	
Type or Print SUXOS Name:	**Signature:**	**Date:**
SUXOS not assigned. Tech III Randall Jenkins		1-16-13
Type or Print Site Manager's Name:	**Signature**	**Date:**

CC to:

Government Representative ☐	**Project Manager** ☒	**Customer Representative** ☐

Other – Specify:

Note: Sections 2 through 13 above may have additional information found in inspection forms, preprinted forms, information sheets, or tabulated data sets (i. e., Sign-In / Sign-out Log, MEC Summary Log, Demolitions Records, QC Inspection Form, Safety Inspection Form). Attach additional information or continuation sheets to this report as needed.

DAILY SITE REPORT

SECTION 1	GENERAL INFORMATION				
Project Name:		**Customer(s) Name:**			**Report No.:**
environmental base line study		**COE Huntsville**			**009**
Contract No.:	**TO No.:**	**Completion Date:**	**Location:**		**Date of Report:**
6W912Dy-04-D-0006	0022		Culebra, P.R.		1-17-13
SUXOS Name:		**Telephone No.:**		**Email Address:**	
SUXOS not assigned/ Tech III, Randall Jenkins					
Site Manager's Name:		**Telephone No.:**		**Email Address:**	
Customer POC Name:		**Telephone No.:**		**Email Address:**	
Roland Belew		256-895-9525		roland.g.belew@usace.army.mil	
Project Web Portal Address:					

SECTION 2		WEATHER			
Temp: High / Low		**Precipitation / Humidity**		**Wind:**	**Work Impact / Remarks:**
83	75	0	78	15 to 20	Sea state prevented two underwater camera transects from being rerun.

SECTION 3	USA ASSIGNED PERSONNEL				
Position:	**No. Assigned:**	**No. Present:**	**Position:**	**No. Assigned:**	**No. Present:**
Site Manager			UXOT II		
SUXOS			UXOT I		
UXOQCS					
UXOSO					
UXOT III	2	2			

SECTION 4	SUBCONTRACTOR ASSIGNED PERSONNEL				
Position:	**No. Assigned:**	**No. Present:**	**Position:**	**No. Assigned:**	**No. Present:**
Boat Operators	2	2			
Marine Biologist	1	1			
RTK Guard	1	1			

SECTION 5	SUBCONTRACTOR / RENTAL HEAVY EQUIPMENT ONSITE			
Description:	**Quantity:**	**Operational:**	**Owner:**	**Remarks:**
boat	2	2		

SECTION 6	TASK(S) PERFORMED				
Task Performed:	**Acres/Grids:**	**Transects:**	**Re-Acquire:**	**Digs:**	**Other:**
Surface					
Subsurface					
DGM / GIS					
Devegetation					
Demolition					
Survey					
Support					

SECTION 7	WORK DETAILS			
Acres/Grids:	**Transects:**	**Re-Acquire:**	**Digs:**	**Remarks:**

SECTION 8	SAFETY DATA		
1) Were safety inspections held?	☒ Y ☐ N	**2)** Was HW found or recovered today?	☐ Y ☒ N
General ☒ Tailgate ☒ Task Specific ☐		Type:	
3) Were there any accidents?	☐ Y ☒ N	**4)** Was a "Competent Person" required?	☐ Y ☒ N
1st Aid ☐ Clinic ☐ Hospital ☐		Type:	
5) Were there any near misses?	☐ Y ☒ N	**6)** Was PPE up or down graded today?	☐ Y ☒ N
Brief Description:		Changed to:	

SECTION 9	QUALITY CONTROL DATA		
1) Were QC inspections held?	☒ Y ☐ N	**2)** Was a QA submittal made today?	☐ Y ☐ N
Site ☒ MEC ☐ DGM ☐ Other ☒		Submitted by:	
3) Were there any failures?	☐ Y ☒ N	**4)** Was a Stop Work or CAR issued?	☐ Y ☒ N
Minor ☐ Major ☐ Critical ☐		Issued by:	
5) Were there any corrections?	☐ Y ☒ N	**6)** Was a Form 948 issued?	☐ Y ☒ N
Brief Description:		Issued for:	

SECTION 10	MPPEH / MDAS		
No. of MPPEH items found.	0	Lbs. of MDAS recovered.	0
No. of MPPEH items consolidated.	0	Lbs. of MDAS placed in a "sealed" container.	0

SECTION 11	MEC / UXO SUMMARY				
Type:	**Quantity:**	**Live:**	**Practice:**	**Unknown:**	**Location:**
Projectiles					
Grenades					
Rockets					
Bombs					
Mines					
Missiles					
Pyrotechnics					
ICM / Submunitions					

SECTION 12	DEMOLITION OPERATIONS	
Location:	**No. of Items Destroyed:**	**Remarks:**

SECTION 13	DAILY COMMENTS

Underwater survey completed in MRS 9.
No Ordnance items found in MRS 9.

Transects 10, 8, 7A and 20 were rerun for video clarity at Luis Pena MRS 13.
No Ordnance items found.

ROV operations were cunducted around snorkel transect 17B on north end of Luis Pena MRS 13.
Video was taken during ROV operations.

CUSTOMER/REGULATORY INSTRUCTIONS ISSUED:

SECTION 14	SIGNATURE BLOCKS	
Type or Print SUXOS Name:	**Signature:**	**Date:**
SUXOS not assigned. Tech III Randall Jenkins		1-17-13
Type or Print Site Manager's Name:	**Signature**	**Date:**

CC to:

Government Representative ☐	**Project Manager** ☒	**Customer Representative** ☐

Other – Specify:

Note: Sections 2 through 13 above may have additional information found in inspection forms, preprinted forms, information sheets, or tabulated data sets (i. e., Sign-In / Sign-out Log, MEC Summary Log, Demolitions Records, QC Inspection Form, Safety Inspection Form). Attach additional information or continuation sheets to this report as needed.

DAILY SITE REPORT

SECTION 1	GENERAL INFORMATION				
Project Name:		**Customer(s) Name:**			**Report No.:**
environmental base line study		**COE Huntsville**			**010**
Contract No.:	**TO No.:**	**Completion Date:**	**Location:**		**Date of Report:**
6W912Dy-04-D-0006	0022		Culebra, P.R.		1-18-13
SUXOS Name:		**Telephone No.:**		**Email Address:**	
SUXOS not assigned/ Tech III, Randall Jenkins					
Site Manager's Name:		**Telephone No.:**		**Email Address:**	
Customer POC Name:		**Telephone No.:**		**Email Address:**	
Roland Belew		256-895-9525		roland.g.belew@usace.army.mil	
Project Web Portal Address:					

SECTION 2	WEATHER			
Temp: High / Low		**Precipitation / Humidity**	**Wind:**	**Work Impact / Remarks:**
81	76	0 80	10 to 20	Sea state prevented snorkeling ops.

SECTION 3	USA ASSIGNED PERSONNEL				
Position:	**No. Assigned:**	**No. Present:**	**Position:**	**No. Assigned:**	**No. Present:**
Site Manager			UXOT II		
SUXOS			UXOT I		
UXOQCS					
UXOSO					
UXOT III	2	2			

SECTION 4	SUBCONTRACTOR ASSIGNED PERSONNEL				
Position:	**No. Assigned:**	**No. Present:**	**Position:**	**No. Assigned:**	**No. Present:**
Boat Operators	2	2			
Marine Biologist	1	1			
RTK Guard	1	1			

SECTION 5	SUBCONTRACTOR / RENTAL HEAVY EQUIPMENT ONSITE			
Description:	**Quantity:**	**Operational:**	**Owner:**	**Remarks:**
boat	2	2		

SECTION 6	TASK(S) PERFORMED				
Task Performed:	**Acres/Grids:**	**Transects:**	**Re-Acquire:**	**Digs:**	**Other:**
Surface					
Subsurface					
DGM / GIS					
Devegetation					
Demolition					
Survey		2			
Support					

SECTION 7	WORK DETAILS			
Acres/Grids:	**Transects:**	**Re-Acquire:**	**Digs:**	**Remarks:**

SECTION 8	SAFETY DATA		
1) Were safety inspections held?	☒ Y ☐ N	**2)** Was HW found or recovered today?	☐ Y ☒ N
General ☒ Tailgate ☒ Task Specific ☐		Type:	
3) Were there any accidents?	☐ Y ☒ N	**4)** Was a "Competent Person" required?	☐ Y ☒ N
1st Aid ☐ Clinic ☐ Hospital ☐		Type:	
5) Were there any near misses?	☐ Y ☒ N	**6)** Was PPE up or down graded today?	☐ Y ☒ N
Brief Description:		Changed to:	

SECTION 9	QUALITY CONTROL DATA		
1) Were QC inspections held?	☒ Y ☐ N	**2)** Was a QA submittal made today?	☐ Y ☐ N
Site ☒ MEC ☐ DGM ☐ Other ☒		Submitted by:	
3) Were there any failures?	☐ Y ☒ N	**4)** Was a Stop Work or CAR issued?	☐ Y ☒ N
Minor ☐ Major ☐ Critical ☐		Issued by:	
5) Were there any corrections?	☐ Y ☒ N	**6)** Was a Form 948 issued?	☐ Y ☒ N
Brief Description:		Issued for:	

SECTION 10	MPPEH / MDAS		
No. of MPPEH items found.	0	Lbs. of MDAS recovered.	0
No. of MPPEH items consolidated.	0	Lbs. of MDAS placed in a "sealed" container.	0

SECTION 11	MEC / UXO SUMMARY				
Type:	**Quantity:**	**Live:**	**Practice:**	**Unknown:**	**Location:**
Projectiles					
Grenades					
Rockets					
Bombs					
Mines					
Missiles					
Pyrotechnics					
ICM / Submunitions					

SECTION 12	DEMOLITION OPERATIONS	
Location:	**No. of Items Destroyed:**	**Remarks:**

SECTION 13	DAILY COMMENTS

Completed underwater camera operations on Transect 18 and 19.
Underwater camera survey completed around Luis Pena MRS 13.

Completed Underwater Remote Operated Vehicle operations on Transect 8, east side of Transect 17A and two points east of Transect 17B at Luis Pena MRS 13.
Video and tracklog used during ROV operations.
Points taken on any ordnance items found.
Underwater Remote Operated Vehicle operations completed around Luis Pena MRS 13.

CUSTOMER/REGULATORY INSTRUCTIONS ISSUED:

SECTION 14	SIGNATURE BLOCKS	
Type or Print SUXOS Name:	**Signature:**	**Date:**
SUXOS not assigned. Tech III Randall Jenkins		1-18-13
Type or Print Site Manager's Name:	**Signature**	**Date:**

CC to:		
Government Representative ☐	**Project Manager** ☒	**Customer Representative** ☐
Other – Specify:		

Note: Sections 2 through 13 above may have additional information found in inspection forms, preprinted forms, information sheets, or tabulated data sets (i. e., Sign-In / Sign-out Log, MEC Summary Log, Demolitions Records, QC Inspection Form, Safety Inspection Form). Attach additional information or continuation sheets to this report as needed.

SAFETY MEETING/TRAINING RECORD

Date: 01-07-13 **Time:** 0630 ☑ **AM** ☐ **PM**

Location/Site: CULEBRA, P.R. (ROV)

1. Reason for Meeting/Training: (Check all that apply):			
☐	Daily Safety Meeting/Training	☐	Periodic Safety Meeting/Training
☑	Initial Site Safety Meeting/Training	☐	New Site Procedures
☐	New Task Briefing	☐	New Site Information
☐	Periodic Review of Site Information	☐	Other (Explain):

2. Personnel Attending Meeting/Training:

Name	Signature	Company
Gene Thomas	Gene Thom	Captain
Jeff Lewis	Jeff Lew	USAE
Eric Thomas	Eric Thomas	CMS
Randall Jenkins	Randall Jenkins	USAE

3. Topics Covered (Check all that apply)			
☑	Site Safety Personnel	☑	Decontamination Procedures
☑	Site/Work Area Description	☑	Emergency Response Plan
☑	Site Characterization	☑	Hazard Communication
☑	Biological Hazard(s)	☑	On-Site Emergency
☑	Chemical Hazard(s)	☑	On-Site Injuries/Illnesses
☑	Physical Hazard(s)	☑	Evacuation Procedures
☑	Heat Stress	☐	Rally Point(s)
☐	Cold Stress	☑	Emergency Communication
☑	Site Control	☑	Directions to Medical Facility
☑	Work and Support Zones	☑	Drug and Alcohol Policies
☑	PPE	☑	Medical Monitoring Program
☐	Air monitoring	☐	Specific Task Training
☑	Safe Work Practices	☐	Confined Spaces
☐	Engineering Controls and Equipment	☐	Heavy Equipment
☑	Spill Containment Procedures	☐	Other: (Specify)
☑	Equipment Safety	☐	Other: (Specify)

4. Remarks:

5. Verification:

I certify that the personnel listed above on this record received the Information and/or Training described as indicated. Personnel not attending this meeting/training will receive said information/training prior to commencing their assigned duties.

John W Stoddard 01-07-13 **Date:**

Site Safety Officer - Signature

USA Environmental, Inc.

TAILGATE SAFETY BRIEFING

Date: 01-08-13 Location: CULEBRA, P.R.

Time: 0630 ☑ AM ☐ PM Team #: ROY

1. Reason for Briefing:

☑	Daily Safety Briefing	☐	New Site Procedure
☐	Initial Safety Briefing	☐	New Site Information
☐	New Task Briefing	☐	Review of Site Information
☐	Periodic Safety Meeting	☐	Other (Specify):

2. Personnel Attending:

Name	Signature	Position
Mark Palmer		Biologist
Jeff Lewis		USAE
Eric Thomas		CMS
Gene Thomas		Captain
Kelly Errigon		USACE
Randall Jenkins		USAES

3. Briefing Given By:

Name	Signature	Position
JOHN W STODDART		UXO TECH III/SAFETY

4. Topics: (Check All That Apply)

☑	Site Safety Personnel	☑	Decontamination Procedures
☑	Site/Work Area Description	☑	Emergency Response/Equipment
☑	Physical Hazards	☑	On-Site Injuries/Illnesses
☑	Chemical/Biological Hazards	☑	Reporting Procedures
☑	Heat/Cold Stress	☑	Directions to Medical Facility
☑	Work/Support Zones	☑	Drug and Alcohol Policies
☑	PPE	☑	Medical Monitoring
☑	Safe Work Practices	☑	Evacuation/Egress Procedures
☐	Air Monitoring	☑	Communications
☐	Task Training	☐	Confined Spaces
☑	MEC Precautions	☐	Other:

5. Remarks:

USA Environmental, Inc.

TAILGATE SAFETY BRIEFING

Date: 01-09-13 **Location:** CULEBRA, P.R.

Time: 0630 ☑ AM ☐ PM **Team #:** ROV

1. Reason for Briefing:

☑	Daily Safety Briefing	☐	New Site Procedure
☐	Initial Safety Briefing	☐	New Site Information
☐	New Task Briefing	☐	Review of Site Information
☐	Periodic Safety Meeting	☐	Other (Specify):

2. Personnel Attending:

Name	Signature	Position
Jeff Lewis		USAE
Kelly Enriquez		USACE
Mark Tedder		Biologist
Gene Thomas		Captain
Eric Thomas		CMS
Mario Romero		CMS
Caddell Jenkins		USAE

3. Briefing Given By:

Name	Signature	Position
JOHN W STODDART		UXO TECH III / UXO SO

4. Topics: (Check All That Apply)

☑	Site Safety Personnel	☑	Decontamination Procedures
☑	Site/Work Area Description	☑	Emergency Response/Equipment
☑	Physical Hazards	☑	On-Site Injuries/Illnesses
☑	Chemical/Biological Hazards	☑	Reporting Procedures
☑	Heat/Cold Stress	☑	Directions to Medical Facility
☑	Work/Support Zones	☑	Drug and Alcohol Policies
☑	PPE	☑	Medical Monitoring
☑	Safe Work Practices	☑	Evacuation/Egress Procedures
☐	Air Monitoring	☑	Communications
☐	Task Training	☐	Confined Spaces
☑	MEC Precautions	☑	Other:

5. Remarks:

Matt Tedder USAE

VARIOUS LEVELS OF HEAT INJURY AND MEDICAL RESPONSE PROCEDURES COVERED.

USA Environmental, Inc.

TAILGATE SAFETY BRIEFING

Date: 01-10-13 Location: CULEBRA, P.R.

Time: 0630 ☑ AM ☐ PM Team #: RUN

1. Reason for Briefing:

☑	Daily Safety Briefing	☐	New Site Procedure
☐	Initial Safety Briefing	☐	New Site Information
☐	New Task Briefing	☐	Review of Site Information
☐	Periodic Safety Meeting	☐	Other (Specify):

2. Personnel Attending:

Name	Signature	Position
Gene Thomas		Captain
Eric Thomas		CMS
Randall Jenkins		USAR
Kelly Enriquez		USACE
Mario Romero		CMS
Mark Pabon		Bulgit

3. Briefing Given By:

Name	Signature	Position
JOHN W STODART		UXOT III / UXOSO

4. Topics: (Check All That Apply)

☑	Site Safety Personnel	☑	Decontamination Procedures
☑	Site/Work Area Description	☑	Emergency Response/Equipment
☑	Physical Hazards	☑	On-Site Injuries/Illnesses
☑	Chemical/Biological Hazards	☑	Reporting Procedures
☑	Heat/Cold Stress	☑	Directions to Medical Facility
☑	Work/Support Zones	☑	Drug and Alcohol Policies
☑	PPE	☑	Medical Monitoring
☑	Safe Work Practices	☑	Evacuation/Egress Procedures
☐	Air Monitoring	☑	Communications
☐	Task Training	☐	Confined Spaces
☑	MEC Precautions	☐	Other:

5. Remarks:

USA Environmental, Inc.

TAILGATE SAFETY BRIEFING

Date: 01-11-13 Location: CULEBRA, P.R.

Time: 0630 ☑ AM ☐ PM Team #: ROV

1. Reason for Briefing:

☑	Daily Safety Briefing	☐	New Site Procedure
☐	Initial Safety Briefing	☐	New Site Information
☐	New Task Briefing	☐	Review of Site Information
☐	Periodic Safety Meeting	☐	Other (Specify):

2. Personnel Attending:

Name	Signature	Position
Eric Thomas		CMS
Kelly Enriquez		USACE
Mario Romero		CMS
Mark Palmer		Bright
Gene Thomas		Captain
Randall Jenkins		USACE

3. Briefing Given By:

Name	Signature	Position
JOHN W STODDART		UXOT III/UXOSO

4. Topics: (Check All That Apply)

☐	Site Safety Personnel	☑	Decontamination Procedures
☑	Site/Work Area Description	☑	Emergency Response/Equipment
☑	Physical Hazards	☑	On-Site Injuries/Illnesses
☑	Chemical/Biological Hazards	☑	Reporting Procedures
☑	Heat/Cold Stress	☑	Directions to Medical Facility
☑	Work/Support Zones	☑	Drug and Alcohol Policies
☑	PPE	☑	Medical Monitoring
☑	Safe Work Practices	☑	Evacuation/Egress Procedures
☐	Air Monitoring	☑	Communications
☐	Task Training	☐	Confined Spaces
☑	MEC Precautions	☐	Other:

5. Remarks:

USA Environmental, Inc.

TAILGATE SAFETY BRIEFING

Date: 01-12-13 Location: CULEBRA, P.R.
Time: 0630 ☑ AM ☐ PM Team #: ROV

1. Reason for Briefing:

☑	Daily Safety Briefing	☐	New Site Procedure
☐	Initial Safety Briefing	☐	New Site Information
☐	New Task Briefing	☐	Review of Site Information
☐	Periodic Safety Meeting	☐	Other (Specify):

2. Personnel Attending:

Name	Signature	Position
Mario Romero		CMS
Gene Thomas		CAPTAIN
Eric Thomas		CMS
Randall Jenkins		USAES
Mack Parlow		Diver

3. Briefing Given By:

Name	Signature	Position
JOHN W STODDART		UXOT III/UXOSO

4. Topics: (Check All That Apply)

☑	Site Safety Personnel	☑	Decontamination Procedures
☑	Site/Work Area Description	☑	Emergency Response/Equipment
☑	Physical Hazards	☑	On-Site Injuries/Illnesses
☑	Chemical/Biological Hazards	☑	Reporting Procedures
☑	Heat/Cold Stress	☑	Directions to Medical Facility
☑	Work/Support Zones	☑	Drug and Alcohol Policies
☑	PPE	☑	Medical Monitoring
☑	Safe Work Practices	☑	Evacuation/Egress Procedures
☐	Air Monitoring	☑	Communications
☑	Task Training	☐	Confined Spaces
☑	MEC Precautions	☑	Other:

5. Remarks:

SNORKELING OPERATIONS/SAFETY CONFERED IN ANTICIPATION OF FORTHCOMING EVOLUTIONS

USA Environmental, Inc.

TAILGATE SAFETY BRIEFING

Date: 01-14-13 Location: CULEBRA, P.R.
Time: 0630 ☑ AM ☐ PM Team #: ROV

1. Reason for Briefing:

☑	Daily Safety Briefing	☐	New Site Procedure
☐	Initial Safety Briefing	☐	New Site Information
☐	New Task Briefing	☐	Review of Site Information
☐	Periodic Safety Meeting	☐	Other (Specify):

2. Personnel Attending:

Name	Signature	Position
Mark Parker		Biologist
Eric Thomas		CMS
Gene Thomas	Gene Thom	Captain
Randall Jenkins	Randall Jenkins	USAES
Mario Romero	Mario Romero	C.M.S
Kelly Enriquez		USACE

3. Briefing Given By:

Name	Signature	Position
JOHN STOWART	John Stowart	DIVE TECH/LIXOSO

4. Topics: (Check All That Apply)

☑	Site Safety Personnel	☑	Decontamination Procedures
☑	Site/Work Area Description	☑	Emergency Response/Equipment
☑	Physical Hazards	☑	On-Site Injuries/Illnesses
☑	Chemical/Biological Hazards	☑	Reporting Procedures
☑	Heat/Cold Stress	☑	Directions to Medical Facility
☑	Work/Support Zones	☑	Drug and Alcohol Policies
☑	PPE	☑	Medical Monitoring
☑	Safe Work Practices	☑	Evacuation/Egress Procedures
☐	Air Monitoring	☑	Communications
☐	Task Training	☐	Confined Spaces
☑	MEC Precautions	☐	Other:

5. Remarks:

EMPHASIZED HAZARDS DIRECTLY RELATED TO SNORKELING OPERATIONS/ENVIRONMENT

USA Environmental, Inc.

TAILGATE SAFETY BRIEFING

Date: 1-15-13 **Location:** CULEBRA, P.R.
Time: 0630 ☑ AM ☐ PM **Team #:** ROV

1. Reason for Briefing:

☑	Daily Safety Briefing	☐	New Site Procedure
☐	Initial Safety Briefing	☐	New Site Information
☐	New Task Briefing	☐	Review of Site Information
☐	Periodic Safety Meeting	☐	Other (Specify):

2. Personnel Attending:

Name	Signature	Position
Randall Jenkins	Randall Jenkins	USACE
Mark Patove	Mark Patove	ASI
Kelly Enriquez	Kelly Enriquez	USACE
Gene Thomas	Gene Thomas	Captain
Eric Thomas	Eric Thomas	CMS
Mario Ramos	Mario Ramos	CMS

3. Briefing Given By:

Name	Signature	Position
JOHN STODDART	John W Stoddart	UXO TECH / UXOSO

4. Topics: (Check All That Apply)

☑	Site Safety Personnel	☑	Decontamination Procedures
☑	Site/Work Area Description	☑	Emergency Response/Equipment
☑	Physical Hazards	☑	On-Site Injuries/Illnesses
☑	Chemical/Biological Hazards	☑	Reporting Procedures
☑	Heat/Cold Stress	☑	Directions to Medical Facility
☑	Work/Support Zones	☑	Drug and Alcohol Policies
☑	PPE	☑	Medical Monitoring
☑	Safe Work Practices	☑	Evacuation/Egress Procedures
☐	Air Monitoring	☑	Communications
☐	Task Training	☐	Confined Spaces
☑	MEC Precautions	☐	Other:

5. Remarks:

USA Environmental, Inc.

TAILGATE SAFETY BRIEFING

Date: 01-16-13 Location: CULEBRA, P.R.

Time: 0630 ☑ AM ☐ PM Team #: ROV

1. Reason for Briefing:

☑	Daily Safety Briefing	☐	New Site Procedure
☐	Initial Safety Briefing	☐	New Site Information
☐	New Task Briefing	☐	Review of Site Information
☐	Periodic Safety Meeting	☐	Other (Specify):

2. Personnel Attending:

Name	Signature	Position
Gene Thomas	Gene Thomas	Captain
Kelly Enriquez		USACE
Mike Green		NAVFAC
Eric Thomas		CMS
Mario Romero		CMS
Mark Padavo		AST
Randall Jenkins		USACE

3. Briefing Given By:

Name	Signature	Position

4. Topics: (Check All That Apply)

☑	Site Safety Personnel	☑	Decontamination Procedures
☑	Site/Work Area Description	☑	Emergency Response/Equipment
☑	Physical Hazards	☑	On-Site Injuries/Illnesses
☑	Chemical/Biological Hazards	☑	Reporting Procedures
☑	Heat/Cold Stress	☑	Directions to Medical Facility
☑	Work/Support Zones	☑	Drug and Alcohol Policies
☑	PPE	☐	Medical Monitoring
☑	Safe Work Practices	☑	Evacuation/Egress Procedures
☐	Air Monitoring	☑	Communications
☐	Task Training	☐	Confined Spaces
☑	MEC Precautions	☐	Other:

5. Remarks:

USA Environmental, Inc.

TAILGATE SAFETY BRIEFING

Date: 01-17-13 Location: CULEBRA, P.R.

Time: 0630 ☑ AM ☐ PM Team #: ROV

1. Reason for Briefing:

☑	Daily Safety Briefing	☐	New Site Procedure
☐	Initial Safety Briefing	☐	New Site Information
☐	New Task Briefing	☐	Review of Site Information
☐	Periodic Safety Meeting	☐	Other (Specify):

2. Personnel Attending:

Name	Signature	Position
Randall Jenkins		USAE
Eric Thomas		CMS
Mario Romero		CMS
Mark Ladaver		ASE
Gene Thomas		Captain

3. Briefing Given By:

Name	Signature	Position
JOHN STODART		UXO III/UXOSO

4. Topics: (Check All That Apply)

☑	Site Safety Personnel	☑	Decontamination Procedures
☑	Site/Work Area Description	☑	Emergency Response/Equipment
☑	Physical Hazards	☑	On-Site Injuries/Illnesses
☑	Chemical/Biological Hazards	☑	Reporting Procedures
☑	Heat/Cold Stress	☑	Directions to Medical Facility
☑	Work/Support Zones	☑	Drug and Alcohol Policies
☑	PPE	☑	Medical Monitoring
☑	Safe Work Practices	☑	Evacuation/Egress Procedures
☐	Air Monitoring	☑	Communications
☐	Task Training	☐	Confined Spaces
☑	MEC Precautions	☐	Other:

5. Remarks:

USA Environmental, Inc.

TAILGATE SAFETY BRIEFING

Date: 01-18-13 Location: CULEBRA, P.R.

Time: 0630 ☑ AM ☐ PM Team #: ROV

1. Reason for Briefing:

☑	Daily Safety Briefing	☐	New Site Procedure
☐	Initial Safety Briefing	☐	New Site Information
☐	New Task Briefing	☐	Review of Site Information
☐	Periodic Safety Meeting	☐	Other (Specify):

2. Personnel Attending:

Name	Signature	Position
Mark Palmer		AJF
Eric Thomas		CMS
Marla Romero		CMS
Kelly Enriquez		USACE
Gene Thomas		Captain
Randall Jenkins		USACE

3. Briefing Given By:

Name	Signature	Position
JOHN STEWART		UXO TECH III/UXOSO

4. Topics: (Check All That Apply)

☑	Site Safety Personnel	☑	Decontamination Procedures
☑	Site/Work Area Description	☑	Emergency Response/Equipment
☑	Physical Hazards	☑	On-Site Injuries/Illnesses
☑	Chemical/Biological Hazards	☑	Reporting Procedures
☑	Heat/Cold Stress	☑	Directions to Medical Facility
☑	Work/Support Zones	☑	Drug and Alcohol Policies
☑	PPE	☑	Medical Monitoring
☑	Safe Work Practices	☑	Evacuation/Egress Procedures
☐	Air Monitoring	☑	Communications
☐	Task Training	☐	Confined Spaces
☑	MEC Precautions	☐	Other:

5. Remarks:

USA Environmental, Inc.

SAFETY INSPECTION REPORT

Site / Location: CULEBRA, P.R	Date: 01-07-13
Type of Inspection: ☑ Daily ☐ Weekly ☐ Re-Inspection ☐ Other	
Type of Operation Inspected:	
Equipment Inspected (Specify if Safety or Operational in Nature): SAFETY PERSONAL FLOATATION DEVICES (PFDs)	
Comments: ITEMS PRESENT AND IN GOOD WORKING ORDER, TO INCLUDE CO^2 CARTRIDGES	
Deficiencies Found or Noted: NONE	
Corrective Action: NONE	
Re-Inspection Required: ☐ Yes ☑ No	If Yes, Date of Re-Inspection:

Signatures:

John W. Goddard
Site Safety Officer

SUXOS/Project Manager

*Copy to Supervisor if Deficiencies or Corrective Action were found, noted, or deemed necessary.

USA Environmental, Inc.

SAFETY INSPECTION REPORT

Site / Location: CULEBRA, P.R.	**Date:** 01-07-13
Type of Inspection: ☑ Daily ☑ Weekly ☐ Re-Inspection ☐ Other	
Type of Operation Inspected:	
Equipment Inspected (Specify if Safety or Operational in Nature): SAFETY TRAUMA KIT INVENTORY AND INSPECTION USAE WEEKLY INVENTORY AND DAILY INSPECTION PER TABLE D-10 of WORKPLAN	
Comments: WITH THE EXCEPTION OF THE FOLLOWING NOTE, ALL OTHER ITEMS PRESENT ~~AND~~, IN GOOD MATERIAL CONDITION AND WITHIN PERIODICITY	
Deficiencies Found or Noted: COLD PACKS (2) REQUIRE REPLACEMENT: DAMAGED/ EXPENDED	
Corrective Action: WILL UTILIZE ICE UNTIL PACKS CAN BE REPLACED	
Re-Inspection Required: ☐ Yes ☑ No	**If Yes, Date of Re-Inspection:**

Signatures:

John W Stoddard
Site Safety Officer

SUXOS/Project Manager

***Copy to Supervisor if Deficiencies or Corrective Action were found, noted, or deemed necessary.**

USA Environmental, Inc.

SAFETY INSPECTION REPORT

Site / Location: CULEBRA, P.R.	**Date:** 01-08-13
Type of Inspection: ☑ Daily ☑ Weekly ☐ Re-Inspection ☐ Other	
Type of Operation Inspected:	
Equipment Inspected (Specify if Safety or Operational in Nature): FIRE EXTINGUISHERS (3) SAFETY	
Comments: ALL EXTINGUISHERS IN GOOD MATERIAL CONDITION AND PRESSURIZED TO ACCEPTABLE LEVELS	
Deficiencies Found or Noted: NONE	
Corrective Action: NONE	
Re-Inspection Required: ☐ Yes ☑ No	**If Yes, Date of Re-Inspection:**

Signatures:

John W Stoddard
Site Safety Officer

SUXOS/Project Manager

***Copy to Supervisor if Deficiencies or Corrective Action were found, noted, or deemed necessary.**

USA Environmental, Inc.

SAFETY INSPECTION REPORT

Site / Location: CULEBRA, P.R	Date: 01-09-13
Type of Inspection: ☑ Daily ☐ Weekly ☐ Re-Inspection ☐ Other	
Type of Operation Inspected: MAN OVERBOARD DRILL	
Equipment Inspected (Specify if Safety or Operational in Nature): SAFETY PFDs, BOAT HOOK, THROW LINE, LIFE RING, MARINE BAND RADIOS, BACKBOARD.	
Comments: PERSONNEL IDENTIFICATION, RESPONSE AND RECOVERY ACTIONS SATISFACTORY	
Deficiencies Found or Noted: NONE	
Corrective Action:	
Re-Inspection Required: ☐ Yes ☑ No	If Yes, Date of Re-Inspection:

Signatures:

John W Stoddard
Site Safety Officer

SUXOS/Project Manager

***Copy to Supervisor if Deficiencies or Corrective Action were found, noted, or deemed necessary.**

USA Environmental, Inc.

SAFETY INSPECTION REPORT

Site / Location: CULEBRA, P.R	**Date:** 01-10-13
Type of Inspection: ☑ Daily ☐ Weekly ☐ Re-Inspection ☐ Other	
Type of Operation Inspected: UNDERWATER CAMERA OPERATIONS FROM AN UNDERWAY PLATFORM	
Equipment Inspected (Specify if Safety or Operational in Nature): OPERATIONAL LINE, DAVIT, PULLEY, CAMERA AND WEIGHT SYSTEM	
Comments: PERSONNEL EXECUTED PROPER LIFTING TECHNIQUES, STAYED CLEAR OF BIGHT OF LINE, USED APPROPRIATE P.P.E AND ~~USED~~ COMMUNICATED EFFECTIVELY	
Deficiencies Found or Noted: NONE	
Corrective Action:	
Re-Inspection Required: ☐ Yes ☒ No	**If Yes, Date of Re-Inspection:**

Signatures:

John M. Stoddard
Site Safety Officer

SUXOS/Project Manager

***Copy to Supervisor if Deficiencies or Corrective Action were found, noted, or deemed necessary.**

USA Environmental, Inc.

SAFETY INSPECTION REPORT

Site / Location: CULEBRA, P.R	Date: 01-11-13
Type of Inspection: ☑ Daily ☐ Weekly ☐ Re-Inspection ☐ Other	
Type of Operation Inspected:	
Equipment Inspected (Specify if Safety or Operational in Nature): SAFETY AND OPERATIONAL. INSPECTED TYPE III PFDS AND SNORKELING VESTS WITH CO2/ORAL INFLATION DEVICES FOR MATERIAL CONDITION AND FUNCTION. ENSURED PERSONAL DIVE/SNORKEL EQUIPMENT ADEQUATE FOR ASSIGNED TASKING.	
Comments: ALL EQUIPMENT SATISFACTORY. PERSONAL EQUIPMENT: MASK, SNORKEL, FINS, ENVIRONMENTAL PROTECTION	
Deficiencies Found or Noted: NONE	
Corrective Action: NONE	
Re-Inspection Required: ☐ Yes ☑ No	If Yes, Date of Re-Inspection:

Signatures:

Site Safety Officer
JOHN W STODDART

SUXOS/Project Manager

*Copy to Supervisor if Deficiencies or Corrective Action were found, noted, or deemed necessary.

USA Environmental, Inc.

SAFETY INSPECTION REPORT

Site / Location: CULEBRA, P.R.	**Date:** 01-12-13
Type of Inspection: ☑ Daily ☑ Weekly ☐ Re-Inspection ☐ Other	
Type of Operation Inspected: UNDERWAY FIRE DRILL. ENSURED ALL PERSONNEL WERE FAMILIAR WITH FIRE FIGHTING EQUIPMENT LOCATION, OPERATION AND RESPONSE PROCEDURES/ NOTIFICATIONS.	
Equipment Inspected (Specify if Safety or Operational in Nature):	
Comments: SATISFACTORY DRILL	
Deficiencies Found or Noted: NONE	
Corrective Action:	
Re-Inspection Required: ☐ Yes ☑ No	**If Yes, Date of Re-Inspection:**

Signatures:

John W Stoddart
Site Safety Officer
JOHN W STODDART

SUXOS/Project Manager

***Copy to Supervisor if Deficiencies or Corrective Action were found, noted, or deemed necessary.**

USA Environmental, Inc.

SAFETY INSPECTION REPORT

Site / Location: CULEBRA, PR.	Date: 01-14-13
Type of Inspection: ☑ Daily ☑ Weekly ☐ Re-Inspection ☐ Other	
Type of Operation Inspected:	
Equipment Inspected (Specify if Safety or Operational in Nature): TRAUMA KIT INVENTORY. DAILY INSPECTION AND WEEKLY USAE INVENTORY CONDUCTED.	
Comments: ICE BEING USED IN LIEU OF COLD PACKS. NO OTHER DEFICIENCIES NOTED	
Deficiencies Found or Noted: AS ABOVE	
Corrective Action:	
Re-Inspection Required: ☐ Yes ☑ No	If Yes, Date of Re-Inspection:

Signatures:

John W Stoddart
Site Safety Officer
JOHN W STODDART

SUXOS/Project Manager

***Copy to Supervisor if Deficiencies or Corrective Action were found, noted, or deemed necessary.**

USA Environmental, Inc.

SAFETY INSPECTION REPORT

Site / Location: CULEBRA, P.R.	**Date:** 01-14-13
Type of Inspection: ☑ Daily ☐ Weekly ☐ Re-Inspection ☐ Other	
Type of Operation Inspected: SNORKELING SURVEY OPERATIONS. INSPECTED OPERATIONAL PLANNING, BRIEFINGS AND EXECUTION OF OPERATIONS.	
Equipment Inspected (Specify if Safety or Operational in Nature):	
Comments: SATISFACTORY PERFORMANCE OF ALL FACETS of OPERATION TO INCLUDE AN EMPHASIS ON SAFETY	
Deficiencies Found or Noted: NONE	
Corrective Action:	
Re-Inspection Required: ☐ Yes ☑ No	**If Yes, Date of Re-Inspection:**

Signatures:

John W Stoddart
Site Safety Officer
JOHN W STODDART

SUXOS/Project Manager

***Copy to Supervisor if Deficiencies or Corrective Action were found, noted, or deemed necessary.**

USA Environmental, Inc.

SAFETY INSPECTION REPORT

Site / Location: CULEBRA, P.R.	**Date:** 01-15-13
Type of Inspection: ☐ Daily ☑ Weekly ☐ Re-Inspection ☐ Other	
Type of Operation Inspected:	
Equipment Inspected (Specify if Safety or Operational in Nature): FIRE FIGHTING EQUIPMENT	
Comments: FIRE EXTINGUISHERS (3EA) IN GOOD MATERIAL CONDITION WITH ADEQUATE DISPLAYED PRESSURES	
Deficiencies Found or Noted: NONE	
Corrective Action:	
Re-Inspection Required: ☐ Yes ☐ No	**If Yes, Date of Re-Inspection:**

Signatures:

John W Stoddard
Site Safety Officer
JOHN W STODDARD

SUXOS/Project Manager

***Copy to Supervisor if Deficiencies or Corrective Action were found, noted, or deemed necessary.**

USA Environmental, Inc.

SAFETY INSPECTION REPORT

Site / Location: CULEBRA, P.R	**Date:** 01-15-13
Type of Inspection: ☐ Daily ☑ Weekly ☐ Re-Inspection ☐ Other	
Type of Operation Inspected:	
Equipment Inspected (Specify if Safety or Operational in Nature): FIRE EXTINGUISHERS (3 EA) SAFETY.	
Comments: FIRE EXTINGUISHERS IN GOOD MATERIAL CONDITION, HAVE ADEQUATE PRESSURE AND ARE FIRMLY MOUNTED IN ACCESSIBLE LOCATIONS	
Deficiencies Found or Noted: NONE	
Corrective Action: NONE	
Re-Inspection Required: ☐ Yes ☑ No	**If Yes, Date of Re-Inspection:**

Signatures:

John W Stoddart
Site Safety Officer
JOHN W STODDART

SUXOS/Project Manager

***Copy to Supervisor if Deficiencies or Corrective Action were found, noted, or deemed necessary.**

USA Environmental, Inc.

SAFETY INSPECTION REPORT

Site / Location: CULEBRA, P.R.	**Date:** 01-16-13
Type of Inspection: ☑ Daily ☐ Weekly ☐ Re-Inspection ☐ Other	
Type of Operation Inspected:	
Equipment Inspected (Specify if Safety or Operational in Nature): SAFETY. BOAT SAFETY EQUIPMENT THROW RING, LINES, VHF RADIOS (HAND-HELD & MOUNTED) BOAT HOOK, PFDS, FLARE KIT, HORN, FLARES, FIRE EXTINGUISHERS, ANCHOR/LINES, BEACON	
Comments: ALL EQUIPMENT IN GOOD MATERIAL CONDITION AND FULLY FUNCTIONAL.	
Deficiencies Found or Noted: NONE	
Corrective Action: NONE	
Re-Inspection Required: ☐ Yes ☑ No	**If Yes, Date of Re-Inspection:**

Signatures:

John W Stoddart
Site Safety Officer
JOHN W STODDART

Randall Gerstner
SUXOS/Project Manager

***Copy to Supervisor if Deficiencies or Corrective Action were found, noted, or deemed necessary.**

USA Environmental, Inc.

SAFETY INSPECTION REPORT

Site / Location: CULEBRA, P.R	**Date:** 01-17-13
Type of Inspection: ☑ Daily ☐ Weekly ☐ Re-Inspection ☐ Other	
Type of Operation Inspected: SMALL BOAT OPERATIONS.	
Equipment Inspected (Specify if Safety or Operational in Nature):	
Comments: CAPTAIN AND CREW ADHERED TO ALL SAFETY REQUIREMENTS, MAINTAINED COMMUNICATION THROUGHOUT ALL POTENTIALLY HAZARDOUS EVOLUTIONS TRANSIT, PERSONNEL TRANSFER, MOORING, EQUIP. TRANSFER ETC	
Deficiencies Found or Noted: NONE	
Corrective Action: NONE	
Re-Inspection Required: ☐ Yes ☑ No	**If Yes, Date of Re-Inspection:**

Signatures:

John W Stoddart
Site Safety Officer
JOHN W STODDART

SUXOS/Project Manager

***Copy to Supervisor if Deficiencies or Corrective Action were found, noted, or deemed necessary.**

USA Environmental, Inc.

SAFETY INSPECTION REPORT

Site / Location: CULEBRA, P.R	**Date:** 01-18-13
Type of Inspection: ☑ Daily ☐ Weekly ☐ Re-Inspection ☐ Other	
Type of Operation Inspected: MAN OVERBOARD DRILL SAFETY	
Equipment Inspected (Specify if Safety or Operational in Nature): GPS, LOST DIVER BOUY, BOAT HOOK, PFD'S, BACKBOARD	
Comments: ALL EQUIPMENT SERVICEABLE AND IN GOOD MATERIAL CONDITION. CREW RESPONDED APPROPRIATELY TO INCIDENT RECOVERING VICTIM IN A SAFE AND TIMELY MANNER	
Deficiencies Found or Noted: NONE	
Corrective Action: NONE	
Re-Inspection Required: ☐ Yes ☐ No	**If Yes, Date of Re-Inspection:**

Signatures:

John W Stoddart
Site Safety Officer
JOHN W STODDART

SUXOS/Project Manager

***Copy to Supervisor if Deficiencies or Corrective Action were found, noted, or deemed necessary.**

SNORKELING SUPERVISOR CHECKLIST

DATE: 1-12-13

A. EQUIPMENT INSPECTION COMPLETED	
B. COMMUNICATION VERIFIED	
C. SAFETY VESSEL AND EVACUATION VEHICLE OPERATIONAL AND ON-SITE	

Checks	Snorkeler #1	Snorkeler #2	Snorkeler #3
Fins	✓	✓	
Mask	✓	✓	
Personal Flotation Devices	✓	✓	
Tending lines/harnesses attached and serviceable (as required)			
Reiterate the purpose of the snorkeling operation	✓	✓	
Reiterate the task assignments	✓	✓	
Direct snorkelers to enter the water and commence tasks	✓	✓	

Randall Jenkins
Snorkeling Supervisor Name

Snorkeling Supervisor Signature

PRE SNORKELING BRIEF

****This pre snorkeling brief will be conducted each work day snorkeling operations are planned, and will be completed in concert with the other required project Safety meetings and Tailgate Safety Briefs.**

DATE 1-12-13

SNORKELING SUMMARY

Purpose of the Snorkeling Task: Bottom Survey

Location of Site: Louis Pena P.R.

Safety Vessel in Use Small boat

Special Tools/Equipment GPS/Camera

SITE CONDITIONS

1) Water Temp 77

2) Air Temp 83

3) Wind Speed 10 Direction NE

4) Sunrise 0656 Sunset 1804

5) Surface Conditions/Wave Height 2

6) Low Tide 1607 High Tide 0919

7) Anticipated Current <1 kn Direction S

8) Bottom Type Hard/reef

9) In-Water Visibility 30'

ANTICIPATED SITE HAZARDS

1) Boat Traffic

2) Weather Related Hazards

3) Unexploded Ordnance

4) Sea Life

ASSIGNMENTS

Snorkeling Supervisor Randall Jenkins

Snorkeler #1 John Stoddart

Snorkeler #2 Mark Padover

Snorkeler #3 _____

Safety Observer/Assistant Erik Thomas

SNORKELER READINESS

1) Personnel on medication:

Name None Medication _____

Name _____ Medication _____

2) Any snorkeler have pre-existing medical conditions that the Snorkeling Supervisor should be aware of:

Name None Condition _____

Name _____ Condition _____

COMMUNICATION

1) As required, verify communication equipment is operational, and ensure that local support agencies and facilities are availability to provide medical response support:

Cell Phone ✓

Satellite Phone N/A

VHF ✓

Local Police ✓

Local Ambulance ✓

Local Medical Facility ✓

USCG Air Operations ✓

SAFETY

All snorkelers and support personnel will function as safety observers during all activities, and will maintain the authorization to direct the cessation of site operations if a safety concern is identified.

CASUALTY RESPONSE ASSIGNMENTS

In the event of a casualty, the Snorkeling Supervisor will take charge, assess the situation, and direct required response actions.

Pre-assigned positions consist of the following:

1) Name/Position: Gene Thomas/Erik Thomas
   - Contact local medical response agencies as required
   - Immediately prepare to get underway

2) Name/Position: John Stoddart, Mark Fedorov, Randall Jenkins
   - Provide CPR and/or administering emergency oxygen

Remaining personnel will secure equipment for transit, provide additional First Aid, and provide additional support as directed.

QUESTIONS

If there are no questions, complete all preparations for snorkeling.

DAILY SNORKELING LOG

Date: 1-12-13	Geographic Location: Culebra P.R.		Air Temp (F): 83
Project: Underwater survey Louis Pena MPS13	Snorkeling Platform (Boat or Shore): Boat		Wave Height (ft): 1-3
Snorkeling Supervisor: Randall Jenkins	Purpose: Survey		Water Temp (F): 79
In-Water Visibility: 30'		Tools Used: GPS/camera	Current (knots): <1 kt

Snorkeler (Last Name, First Name)	Snorkeling Time Start	Snorkeling Time Complete	Issues or Problems
Randall Jenkins	1330	1545	None (Personnel), Rough sea state
John Stoddart	1330	1545	None (Personnel), Rough sea state
Mark Padover	1330	1545	None (Personnel), Rough sea state.

Randall Jenkins
Snorkeling Supervisor Name

Snorkeling Supervisor Signature

SNORKELING SUPERVISOR CHECKLIST

DATE: 1-14-13

A. EQUIPMENT INSPECTION COMPLETED	
B. COMMUNICATION VERIFIED	
C. SAFETY VESSEL AND EVACUATION VEHICLE OPERATIONAL AND ON-SITE	

Checks	Snorkeler #1	Snorkeler #2	Snorkeler #3
Fins	✓	✓	
Mask	✓	✓	
Personal Flotation Devices	✓	✓	
Tending lines/harnesses attached and serviceable (as required)	✓	✓	
Reiterate the purpose of the snorkeling operation	✓	✓	
Reiterate the task assignments	✓	✓	
Direct snorkelers to enter the water and commence tasks	✓	✓	

Randall Jenkins
Snorkeling Supervisor Name

Snorkeling Supervisor Signature

PRE SNORKELING BRIEF

****This pre snorkeling brief will be conducted each work day snorkeling operations are planned, and will be completed in concert with the other required project Safety meetings and Tailgate Safety Briefs.**

DATE 1-14-13

SNORKELING SUMMARY

Purpose of the Snorkeling Task: Underwater transect Survey

Location of Site: Culebra P.R. MRS 13

Safety Vessel in Use Small boat

Special Tools/Equipment GPS/camera

SITE CONDITIONS

1) Water Temp 79

2) Air Temp 80

3) Wind Speed 11-16 Kts Direction NE

4) Sunrise 0656 Sunset 1805

5) Surface Conditions/Wave Height 0-1

6) Low Tide 0356 High Tide 1042

7) Anticipated Current < 1 Kt Direction S

8) Bottom Type Sand, grass

9) In-Water Visibility 30

ANTICIPATED SITE HAZARDS

1) Boat Traffic

2) Weather Related Hazards

3) Unexploded Ordnance

4) Sea Life

ASSIGNMENTS

Snorkeling Supervisor Randall Jenkins

Snorkeler #1 John Stoddart

Snorkeler #2 Mark Padover

Snorkeler #3 _____

Safety Observer/Assistant Gene Thomas, Mario Romero

SNORKELER READINESS

1) Personnel on medication:

Name None Medication _____

Name _____ Medication _____

2) Any snorkeler have pre-existing medical conditions that the Snorkeling Supervisor should be aware of:

Name None Condition _____

Name _____ Condition _____

COMMUNICATION

1) As required, verify communication equipment is operational, and ensure that local support agencies and facilities are availability to provide medical response support:

Cell Phone ✓

Satellite Phone N/A

VHF ✓

Local Police ✓

Local Ambulance ✓

Local Medical Facility ✓

USCG Air Operations ✓

SAFETY

All snorkelers and support personnel will function as safety observers during all activities, and will maintain the authorization to direct the cessation of site operations if a safety concern is identified.

CASUALTY RESPONSE ASSIGNMENTS

In the event of a casualty, the Snorkeling Supervisor will take charge, assess the situation, and direct required response actions.

Pre-assigned positions consist of the following:

1) Name/Position: Gene Thomas
   - Contact local medical response agencies as required
   - Immediately prepare to get underway

Mark Padover Mario Romero (CPR).

2) Name/Position: Randell Jenkins, Johnston Idard
   - Provide CPR and/or administering emergency oxygen

Remaining personnel will secure equipment for transit, provide additional First Aid, and provide additional support as directed.

QUESTIONS

If there are no questions, complete all preparations for snorkeling.

USA Environmental, Inc.

DAILY SNORKELING LOG

Date: 1-14-13	Geographic Location: Culebra P.R.		Air Temp (F): 80
Project: Environmental base line study	Snorkeling Platform (Boat or Shore): Boat		Wave Height (ft): 0-1
Snorkeling Supervisor: Randall Jenkins	Purpose: underwater survey		Water Temp (F): 79
In-Water Visibility: 30'		Tools Used: GPS/camera	Current (knots): < 1 Knt

Snorkelar (Last Name, First Name)	Snorkeling Time Start	Snorkeling Time Complete	Issues or Problems
Randall Jenkins	0837	1228	N/A
John Stoddart	0837	1228	N/A
Mark Podover	0837	1228	N/A

Randall Jenkins
Snorkeling Supervisor Name

Randall Jenkins
Snorkeling Supervisor Signature

USA Environmental, Inc.

SITE VISITORS LOG

Project Location: _____ **Month of:** _____

Date	Name	Agency or Company	Purpose of Visit	Safety Briefing	Escort Required	Time In	Time Out	Remarks
1/15	Mike Green	NAVFAC	ROV	✓	no	0630	1730	
1/16	Mike Green	NAVFAC	ROV	✓	no	0630	1730	

JAVIER E. BIDOT ASSOCIATES, PSC
Land Surveyors & Consultants

USA Environmental

Surveying in Support of Munitions Response Services,

Culebra, PR

November 5, 2012

Horizontal and Vertical Control Task

Horizontal and Vertical Control Monuments were established on Soldiers Point (JOSUE-1, JOSUE-2) and Melones Point (PADANG-1, PADANG-2) as part of the Munitions Response Services being performed by USA Environmental on the island of Culebra. Horizontal control is referred to NAD 83(NSRS2011), meters. Vertical control is referred to Puerto Rico Vertical Datum 2002 (PRVD02), tied to *BIDOT* First Order Second Class Benchmark located on the Airport Benjamin Rivera Noriega, Culebra, PR.

GPS Static Sessions was performed on November 1, 2012 and post processed by OPUS and Trimble Business Center. Both reports are included in this report.

Table 1- Trimble Business Center

Point ID	Northing USFT	Easting USFT	Elevation PRVD02
BIDOT	831162.206	1047915.250	11.212
JOSUE 1	821491.460	1054884.865	117.677
JOSUE 2	821439.325	1054990.909	110.961
PADANG 1	827977.101	1045758.193	10.144
PADANG 2	827864.570	1045760.506	5.624

Table 2- OPUS Solutions

Point ID	Northing METERS	Easting METERS	Elevation PRVD02
BIDOT	253338.747	319405.207	3.308
JOSUE 1	250391.064	321529.532	35.796
JOSUE 2	250375.199	321561.802	33.767
PADANG 1	252368.005	318748.033	2.592
PADANG 2	252333.606	318748.402	1.652

Bench Marks Photos – Soldiers Point

Bench Marks Photos – Melones Point

View from JOSUE-2 to JOSUE-1

View from PADANG-2 to PADANG-1

BIDOT, 1, 20100323

NOTE: This form intended for field use. Unsolicited data submitted to NGS must be converted to bluebook format.

NATIONAL GEODETIC SURVEY STATION DESCRIPTION / RECOVERY FORM

4-char ID: 0001 Designation: Bidot

PID: _____ Alias: _____

Country: (USA / PR) State: Puerto Rico County: Culebra

Latitude: N 18 ° 18 ' 42.89 " Longitude: W 65 ° 18 ' 13.8 " Elevation: _____ (meter / ft)

Original Description (check one):	
☐ P	Preliminary (mark has not been set yet)
☑ D	A newly set mark
☐ R	A recovered mark
Established by: (NGS / CGS / Other:)	NGS
Date: 2010/03/23	Chief of Party (initials): JEB

Recovery Description (check one):	
☑ F	Full description of a station *not* in the database
☐ T	Full description of a station *in* the database
☐ M	*Partial* description of a station in the database
Recovered by: (NGS / Other:)	
Date:	Chief of Party (initials): JEB

Monument Stability (check one):	
☐ A	Of the most reliable nature; expected to hold well
☐ B	Will probably hold position and elevation well
☑ C	May hold well, but subject to ground movement
☐ D	Of questionable or unknown reliability

Recovery Condition (check one):	
☑ G	Recovered in good condition
☐ N	Not recovered or not found
☐ P	Poor, disturbed, or mutilated
☐ X	Surface mark known destroyed

Setting Information:	
Marker Type: (Rod / Disk / Other)	
Setting Type: (Bedrock / Concrete / Other: Conc Monument)	
Y / N / ?	Monument contains magnetic material?

Stamping:	Bidot 2010
Agency Inscription: (NGS / CGS / Other:)	NGS
Rod Depth: (m/ft)	Sleeve Depth: (m/ft)
Monument is: (flush / projecting / recessed)	(cm/ft)

Special Type (check all applicable):	
☐ F	Fault monitoring site
☑ T	Tidal Station
☑ --	Control Station: (FBN / CBN / Benchmark)
☐ --	Airport Control Station: (PACS / SACS)
Y / N	Mark is suitable for GPS use?

Transportation (check one):	
☑ C	Car
☐ P	Light truck (pickup, carry-all, etc.)
☐ X	Four-Wheel Drive Vehicle
☐ __	Other (SnowCat, Plane, Boat; describe)
Y / N	Pack Time (hike) to mark? (hh:mm):

See Back of Form to add Text Description

General Station Location: The station is located in North side of Airport B.R.N parking area, North side of runway entrance. On grass.

(Describe general location; include airline distances to three towns or mapped features.)

Ownership: Ports Authority of Puerto Rico

(name, address, phone of landowner)

To Reach Narrative: To reach the station from the intersection of PR-251 and PR-250, go Northwest on PR-251 for 0.15km (0.09 mi) to reach the Culebra Island Airport entrance,turn right and continue Northeast on the airport road for 0.06km(0.04 mi) and mark to the left. Mark is about 4.2km (2.6 mi) Northwest of Punta del Solado,2.3km (1.4 mi) Southeast of Flamenco Beach and 1.0km(0.6 mi) Northwest of Culebra Downtown.

(Leg-by-leg distances and directions from major road intersection to mark)

Monument Description and Measurements: The station is a NGS Vertical Disk stamped --BIDOT 2010-- set in a round concrete monument with 1.2m (4 ft) deep and 0.3m (12 in) diameter. It is 15.7m (51.5 ft) Northeast of a light pole, 13.6m (44.6 ft) North of edge of pavement of parking area and 8.1m (26.6 ft) South of a chain link fence corner.

(Add at least three measurements to permanent, identifiable, nearby objects; and a description of the monument size, shape, height, etc.)

NOTE: - Include a pencil rubbing, sketch, or photographs of mark.

Described by: Carlos M. Lebron Phone:((787)746-5486 e-mail: clebron@jebpr.com

Josue Jimenez

From: opus [opus@ngs.noaa.gov]
Sent: Monday, November 05, 2012 9:27 AM
To: Josue Jimenez
Subject: OPUS solution : BIDOT.12o OP1352121909669

FILE: BIDOT.12o OP1352121909669

NGS OPUS SOLUTION REPORT
==========

All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: http://www.ngs.noaa.gov/OPUS/about.jsp#accuracy

USER: jjimenez@jebpr.com DATE: November 05, 2012
RINEX FILE: bido306r.12o TIME: 13:27:15 UTC

SOFTWARE: page5 1209.04 master51.pl 082112 START: 2012/11/01 17:12:00
EPHEMERIS: igr17124.eph [rapid] STOP: 2012/11/01 22:50:00
NAV FILE: brdc3060.12n OBS USED: 11908 / 13545 : 88%
ANT NAME: TRM_R6 NONE # FIXED AMB: 59 / 66 : 89%
ARP HEIGHT: 2.25 OVERALL RMS: 0.019(m)

REF FRAME:	NAD_83(2011)(EPOCH:2010.0000)		IGS08 (EPOCH:2012.8356)	
X:	2530699.472(m)	0.030(m)	2530698.777(m)	0.030(m)
Y:	-5503107.531(m)	0.018(m)	-5503105.720(m)	0.018(m)
Z:	1991177.337(m)	0.003(m)	1991177.206(m)	0.003(m)
LAT:	18 18 42.90873	0.002(m)	18 18 42.92446	0.002(m)
E LON:	294 41 46.16497	0.035(m)	294 41 46.16923	0.035(m)
W LON:	65 18 13.83503	0.035(m)	65 18 13.83077	0.035(m)
EL HGT:	-38.511(m)	0.005(m)	-40.390(m)	0.005(m)
ORTHO HGT:	3.308(m)	0.009(m)	[H = h-N (N = GEOID12A HGT)]	

	UTM COORDINATES UTM (Zone 20)	STATE PLANE COORDINATES SPC (5200 PRVI)
Northing (Y) [meters]	2026234.403	253338.747
Easting (X) [meters]	256488.505	319405.207
Convergence [degrees]	-0.72420257	0.35340416
Point Scale	1.00033315	0.99999488
Combined Factor	1.00033921	1.00000093

US NATIONAL GRID DESIGNATOR: 20QKF5648826234(NAD 83)

BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DL7810	PRHL BAYAMON CORS ARP	N182248.091	W0660912.812	90126.6
DM7828	CUPR CULEBRA ISLAND, P CORS ARP	N181826.766	W0651657.059	2308.6
DO1740	STVI ST THOMAS CORS ARP	N182024.326	W0645828.013	34959.0

NEAREST NGS PUBLISHED CONTROL POINT

TV0642 CULEBRA WEST BASE 1900 N181843.884 W0651815.361 54.0

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

Josue Jimenez

From: opus [opus@ngs.noaa.gov]
Sent: Monday, November 05, 2012 9:36 AM
To: Josue Jimenez
Subject: OPUS solution : JOSUE-1.12o OP1352122439528

FILE: JOSUE-1.12o OP1352122439528

NGS OPUS SOLUTION REPORT
========================

All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: http://www.ngs.noaa.gov/OPUS/about.jsp#accuracy

USER: jjimenez@jebpr.com DATE: November 05, 2012
RINEX FILE: josu306r.12o TIME: 13:35:59 UTC

SOFTWARE: page5 1209.04 master90.pl 082112 START: 2012/11/01 17:57:00
EPHEMERIS: igr17124.eph [rapid] STOP: 2012/11/01 20:06:30
NAV FILE: brdc3060.12n OBS USED: 5172 / 5345 : 97%
ANT NAME: TRM_R6 NONE # FIXED AMB: 30 / 32 : 94%
ARP HEIGHT: 2.00 OVERALL RMS: 0.015(m)

REF FRAME:	NAD_83(2011)(EPOCH:2010.0000)		IGS08 (EPOCH:2012.8355)	
X:	2533014.107(m)	0.096(m)	2533013.412(m)	0.096(m)
Y:	-5503099.912(m)	0.062(m)	-5503098.100(m)	0.062(m)
Z:	1988376.425(m)	0.018(m)	1988376.294(m)	0.018(m)
LAT:	18 17 6.60650	0.027(m)	18 17 6.62222	0.027(m)
E LON:	294 42 57.87372	0.109(m)	294 42 57.87802	0.109(m)
W LON:	65 17 2.12628	0.109(m)	65 17 2.12198	0.109(m)
EL HGT:	-5.966(m)	0.025(m)	-7.846(m)	0.025(m)
ORTHO HGT:	35.796(m)	0.041(m)	[H = h-N (N = GEOID12A HGT)]	

	UTM COORDINATES UTM (Zone 20)	STATE PLANE COORDINATES SPC (5200 PRVI)
Northing (Y) [meters]	2023246.316	250391.064
Easting (X) [meters]	258557.733	321529.532
Convergence [degrees]	-0.71692218	0.35963661
Point Scale	1.00032074	0.99999435
Combined Factor	1.00032168	0.99999529

US NATIONAL GRID DESIGNATOR: 20QKF5855723246(NAD 83)

BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DO1740	STVI ST THOMAS CORS ARP	N182024.326	W0645828.013	33276.7
DM7828	CUPR CULEBRA ISLAND, P CORS ARP	N181826.766	W0651657.059	2469.1
DL7810	PRHL BAYAMON CORS ARP	N182248.091	W0660912.812	92521.0

NEAREST NGS PUBLISHED CONTROL POINT

TV0668 SOLDADO 2 N181641.135 W0651713.254 852.7

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

Josue Jimenez

From: opus [opus@ngs.noaa.gov]
Sent: Monday, November 05, 2012 3:26 PM
To: Josue Jimenez
Subject: OPUS solution : JOSUE-2.12o OP1352143435716

FILE: JOSUE-2.12o OP1352143435716

NGS OPUS SOLUTION REPORT
========================

All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: http://www.ngs.noaa.gov/OPUS/about.jsp#accuracy

USER: jjimenez@jebpr.com DATE: November 05, 2012
RINEX FILE: josu306r.12o TIME: 19:25:42 UTC

SOFTWARE: page5 1209.04 master53.pl 082112 START: 2012/11/01 17:59:00
EPHEMERIS: igr17124.eph [rapid] STOP: 2012/11/01 20:06:00
NAV FILE: brdc3060.12n OBS USED: 5027 / 5223 : 96%
ANT NAME: TRM_R6 NONE # FIXED AMB: 31 / 33 : 94%
ARP HEIGHT: 2.00 OVERALL RMS: 0.016(m)

REF FRAME:	NAD_83(2011)(EPOCH:2010.0000)		IGS08 (EPOCH:2012.8355)	
X:	2533044.632(m)	0.025(m)	2533043.937(m)	0.025(m)
Y:	-5503089.289(m)	0.031(m)	-5503087.477(m)	0.031(m)
Z:	1988360.532(m)	0.077(m)	1988360.401(m)	0.077(m)
LAT:	18 17 6.08391	0.074(m)	18 17 6.09963	0.074(m)
E LON:	294 42 58.96906	0.028(m)	294 42 58.97336	0.028(m)
W LON:	65 17 1.03094	0.028(m)	65 17 1.02664	0.028(m)
EL HGT:	-7.996(m)	0.042(m)	-9.876(m)	0.042(m)
ORTHO HGT:	33.767(m)	0.071(m)	[H = h-N (N = GEOID12A HGT)]	

	UTM COORDINATES UTM (Zone 20)	STATE PLANE COORDINATES SPC (5200 PRVI)
Northing (Y) [meters]	2023229.842	250375.199
Easting (X) [meters]	258589.710	321561.802
Convergence [degrees]	-0.71682109	0.35973181
Point Scale	1.00032055	0.99999435
Combined Factor	1.00032181	0.99999561

US NATIONAL GRID DESIGNATOR: 20QKF5858923229(NAD 83)

BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DO1740	STVI ST THOMAS CORS ARP	N182024.326	W0645828.013	33248.0
DL7810	PRHL BAYAMON CORS ARP	N182248.091	W0660912.812	92554.8
DI2146	VIKH KINGSHILL CORS ARP	N174258.244	W0644753.254	81286.1

NEAREST NGS PUBLISHED CONTROL POINT

TV0668 SOLDADO 2 N181641.135 W0651713.254 850.8

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

Josue Jimenez

From: opus [opus@ngs.noaa.gov]
Sent: Monday, November 05, 2012 9:39 AM
To: Josue Jimenez
Subject: OPUS solution : PADANG-1.12o OP1352122511280

FILE: PADANG-1.12o OP1352122511280

NGS OPUS SOLUTION REPORT
==========

All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: http://www.ngs.noaa.gov/OPUS/about.jsp#accuracy

USER: jjimenez@jebpr.com DATE: November 05, 2012
RINEX FILE: pada306u.12o TIME: 13:38:51 UTC

SOFTWARE: page5 1209.04 master13.pl 082112 START: 2012/11/01 20:38:00
EPHEMERIS: igr17124.eph [rapid] STOP: 2012/11/01 22:45:00
NAV FILE: brdc3060.12n OBS USED: 2925 / 3680 : 79%
ANT NAME: TRM_R6 NONE # FIXED AMB: 28 / 47 : 60%
ARP HEIGHT: 2.00 OVERALL RMS: 0.020(m)

REF FRAME:	NAD_83(2011)(EPOCH:2010.0000)		IGS08 (EPOCH:2012.8358)	
X:	2530223.560(m)	0.780(m)	2530222.865(m)	0.780(m)
Y:	-5503659.858(m)	0.535(m)	-5503658.047(m)	0.535(m)
Z:	1990259.372(m)	0.204(m)	1990259.241(m)	0.204(m)
LAT:	18 18 11.46719	0.094(m)	18 18 11.48291	0.094(m)
E LON:	294 41 23.58368	0.627(m)	294 41 23.58794	0.627(m)
W LON:	65 18 36.41632	0.627(m)	65 18 36.41206	0.627(m)
EL HGT:	-39.190(m)	0.603(m)	-41.069(m)	0.603(m)
ORTHO HGT:	2.592(m)	1.020(m)	[H = h-N (N = GEOID12A HGT)]	

	UTM COORDINATES (Zone 20)	STATE PLANE COORDINATES (5200 PRVI)
Northing (Y) [meters]	2025275.863	252368.005
Easting (X) [meters]	255812.963	318748.033
Convergence [degrees]	-0.72584185	0.35144155
Point Scale	1.00033722	0.99999468
Combined Factor	1.00034338	1.00000084

US NATIONAL GRID DESIGNATOR: 20QKF5581225275(NAD 83)

BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DM7828	CUPR CULEBRA ISLAND, P CORS ARP	N181826.766	W0651657.059	2955.7
DL7810	PRHL BAYAMON CORS ARP	N182248.091	W0660912.812	89554.6
DL9080	PRLP LAS PIEDRAS CORS ARP	N181141.627	W0655205.750	60232.1

NEAREST NGS PUBLISHED CONTROL POINT

TV0643	TARGET	N181825.813 W0651836.073	443.7

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

Josue Jimenez

From: opus [opus@ngs.noaa.gov]
Sent: Monday, November 05, 2012 3:26 PM
To: Josue Jimenez
Subject: OPUS solution : PADANG-2.12o OP1352143473404

FILE: PADANG-2.12o OP1352143473404

NGS OPUS SOLUTION REPORT
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All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: http://www.ngs.noaa.gov/OPUS/about.jsp#accuracy

USER: jjimenez@jebpr.com DATE: November 05, 2012
RINEX FILE: pada306u.12o TIME: 19:26:10 UTC

SOFTWARE: page5 1209.04 master93.pl 082112 START: 2012/11/01 20:40:00
EPHEMERIS: igr17124.eph [rapid] STOP: 2012/11/01 22:44:00
NAV FILE: brdc3060.12n OBS USED: 4066 / 4567 : 89%
ANT NAME: TRM_R6 NONE # FIXED AMB: 35 / 40 : 88%
ARP HEIGHT: 2.00 OVERALL RMS: 0.014(m)

REF FRAME:	NAD_83(2011)(EPOCH:2010.0000)		IGS08 (EPOCH:2012.8358)	
X:	2530227.846(m)	0.040(m)	2530227.151(m)	0.040(m)
Y:	-5503668.801(m)	0.064(m)	-5503666.990(m)	0.064(m)
Z:	1990226.418(m)	0.007(m)	1990226.287(m)	0.007(m)
LAT:	18 18 10.34829	0.012(m)	18 18 10.36402	0.012(m)
E LON:	294 41 23.58908	0.063(m)	294 41 23.59334	0.063(m)
W LON:	65 18 36.41092	0.063(m)	65 18 36.40666	0.063(m)
EL HGT:	-40.125(m)	0.039(m)	-42.004(m)	0.039(m)
ORTHO HGT:	1.656(m)	0.067(m)	[H = h-N (N = GEOID12A HGT)]	

	UTM COORDINATES UTM (Zone 20)	STATE PLANE COORDINATES SPC (5200 PRVI)
Northing (Y) [meters]	2025241.451	252333.606
Easting (X) [meters]	255812.686	318748.402
Convergence [degrees]	-0.72582947	0.35144202
Point Scale	1.00033722	0.99999468
Combined Factor	1.00034353	1.00000099

US NATIONAL GRID DESIGNATOR: 20QKF5581225241(NAD 83)

BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DO1740	STVI ST THOMAS CORS ARP	N182024.326	W0645828.013	35721.8
DL9080	PRLP LAS PIEDRAS CORS ARP	N181141.627	W0655205.750	60225.0
DM7828	CUPR CULEBRA ISLAND, P CORS ARP	N181826.766	W0651657.059	2961.0

NEAREST NGS PUBLISHED CONTROL POINT

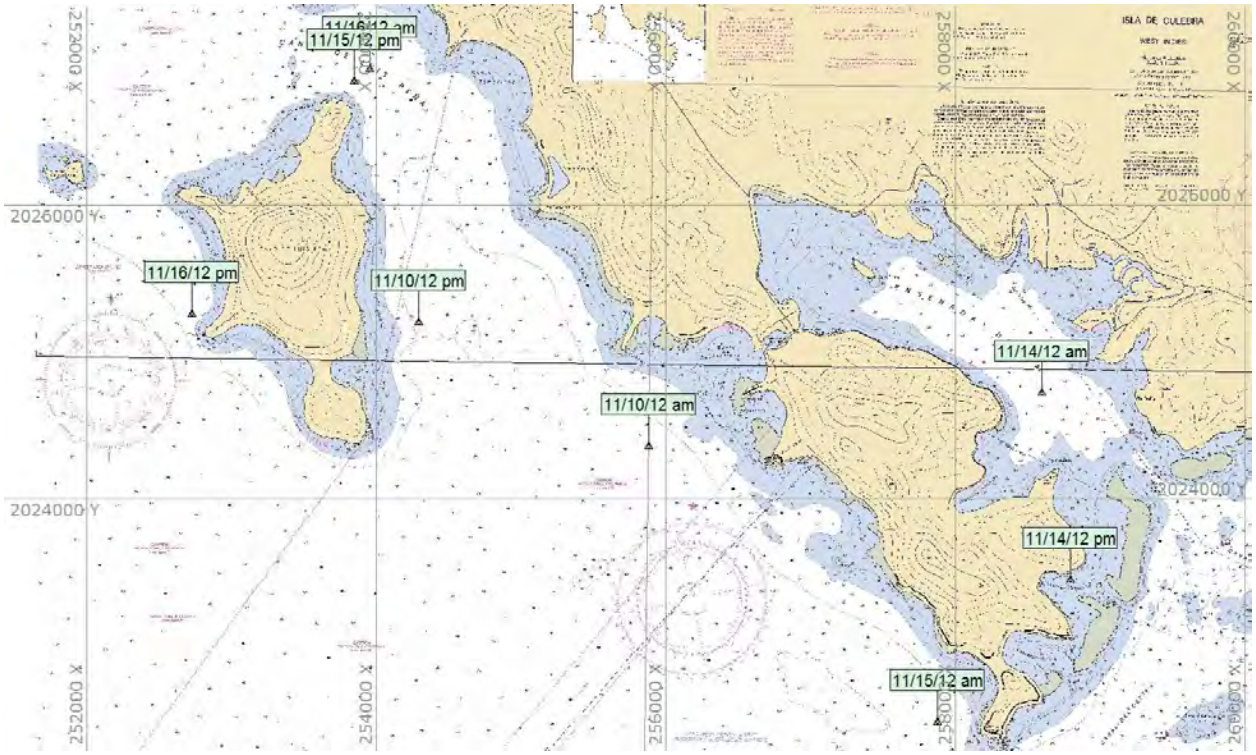
TV0643	TARGET	N181825.813 W0651836.073	478.3

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

Speed of Sound (SOS) SOS profiles of the entire water column was collected twice a day Copies are appended. A sound velocity sensor at the sonar head recorded SOS data in real-time during the multibeam surveys. Profile data was used in post processing.

Speed of Sound Casts

Name	X	Y	WGS84 Lat	WGS84 Lon	Time GMT	Date
11/10/12 am	255879.7	2024365.9	18.2949752 N	65.3093762 W	14:00:52	11/10/2012
11/10/12 pm	254289.6	2025200.7	18.30233181 N	65.32451001 W	20:02:16	11/10/2012
11/14/12 am	258598.7	2024723.7	18.29851543 N	65.28371133 W	16:30:16	11/14/2012
11/14/12 pm	258793.5	2023455.5	18.28708469 N	65.28171981 W	19:10:48	11/14/2012
11/15/12 am	257876.5	2022495	18.27830569 N	65.29027493 W	13:07:15	11/15/2012
11/15/12 pm	253844.3	2026838.5	18.31707123 N	65.32891731 W	18:10:45	11/15/2012
11/16/12 am	253955.3	2026919.4	18.31781491 N	65.32787768 W	12:53:35	11/16/2012
11/16/12 pm	252727.9	2025261.2	18.30269738 N	65.33928218 W	21:40:14	11/16/2012



SOS Locations

Now: 10/11/2012 14:20:49
Battery Level:
1.4V
MiniSVP: S/N
30592
Site info:
CULEBRA
Calibrated: 18/02/2011
Latitude:
18.499996
Mode: P1.0e0
Tare: 10.0887
Pressure units: m

0.003	29.962	1545.207
1.004	29.055	1544.477
2.003	29.049	1544.472
3.011	29.277	1544.472
4.004	29.044	1544.478
5.005	29.038	1544.474
6	29.03	1544.482
7	29.023	1544.482
8.006	29.018	1544.498
9.004	29.01	1544.499
10.001	29.006	1544.496
11.004	29.001	1544.487
12.009	28.993	1544.469
13.006	28.983	1544.463
14.001	28.97	1544.457
15.003	28.958	1544.477
16.01	28.948	1544.476
15.787	28.94	1544.473
14.998	28.937	1544.477
13.997	28.938	1544.474
13	28.941	1544.485
11.992	28.947	1544.453
10.997	28.953	1544.462
9.995	28.959	1544.481
8.997	28.967	1544.5
7.98	28.978	1544.494
6.999	28.987	1544.48
5.997	28.996	1544.487

Now: 10/11/2012 20:02:16
Battery Level:
1.2V
MiniSVP: S/N
30592
Site info:
CULEBRA
Calibrated: 18/02/2011
Latitude:
18.499996
Mode: P1.0e0
Tare: 10.0887
Pressure units: m

0.008	29.903	1544.894
1.006	29.111	1544.566
2.001	29.083	1544.554
3.001	29.287	1544.541
4.003	29.078	1544.549
5.006	29.064	1544.549
6.011	29.055	1544.559
7.007	29.051	1544.565
8.006	29.044	1544.565
9.001	29.037	1544.561
10.012	29.031	1544.57
11.005	29.031	1544.578
12.003	29.026	1544.599
13.004	29.025	1544.62
14.002	29.025	1544.632
15.003	29.02	1544.65
16.019	29.019	1544.672
17.001	29.016	1544.684
18.016	29.014	1544.695
19.019	29.015	1544.712
20.003	29.014	1544.728
19.8	29.015	1544.722
18.989	29.014	1544.711
17.997	29.012	1544.692
16.99	29.01	1544.674
15.999	29.005	1544.66
14.992	29.004	1544.639
13.998	29.001	1544.611

4.996	29	1544.467
3.998	29.002	1544.453
2.997	29.006	1544.454
1.997	29.01	1544.455
0.995	29.017	1544.483
0	29.025	0

12.994	28.998	1544.591
11.993	28.996	1544.575
10.999	28.995	1544.565
10	28.997	1544.562
8.992	28.999	1544.545
7.989	29	1544.532
6.99	29.001	1544.52
5.999	29	1544.502
4.993	29.002	1544.501
3.991	29.005	1544.486

Now: 14/11/2012 16:30:11

Battery Level: 1.3V
MiniSVP: S/N
30592

Site info: CULEBRA
Calibrated: 18/02/2011
Latitude:
18.499996
Mode: P1.0e0
Tare: 10.0828
Pressure units: m

0.008	29.581	1544.272
1.007	28.696	1543.571
2.014	28.697	1543.607
3.001	28.918	1543.674
4.011	28.701	1543.78
5	28.71	1543.813
6.003	28.72	1543.881
7.011	28.741	1543.999
8.003	28.757	1543.953
9.006	28.76	1543.944
10	28.762	1543.949
11.004	28.742	1543.876
12.004	28.715	1543.757
11.797	28.683	1542.7
10.992	28.663	1543.831
9.995	28.664	1543.952
8.993	28.677	1543.963
7.992	28.706	1543.985
6.99	28.729	1543.991
5.998	28.737	1543.878
4.996	28.734	1543.775
3.992	28.72	1543.703
2.989	28.699	1543.63
2	28.678	1543.578
0.997	28.662	1543.549
-0.004	28.652	1543.475

Now: 14/11/2012 19:10:20

Battery Level:
1.3V
MiniSVP: S/N
30592
Site info:
CULEBRA
Calibrated: 18/02/2011
Latitude:
18.499996
Mode: P1.0e0
Tare: 10.0828
Pressure units: m

0.013	28.351	0
1.008	28.734	1543.926
2.003	28.744	1543.952
3.003	28.644	1543.967
2.003	28.744	1543.952
1.008	28.734	1543.926
0.013	28.351	0

Now: 15/11/2012 13:07:39

Battery Level: 1.3V
MiniSVP: S/N
30592

Site info: CULEBRA
Calibrated: 18/02/2011
Latitude:
18.499996
Mode: P1.0e0
Tare: 10.0828
Pressure units: m

0.004	28.346	1544
1.001	28.438	1543
2.003	28.438	1543
3.012	28.416	1543
4.012	28.438	1543
5.012	28.437	1543
6	28.435	1543
7.003	28.434	1543
8.011	28.432	1543
9	28.43	1543
10.001	28.428	1543
11.003	28.425	1543
12.001	28.425	1543
13.002	28.423	1543
14.005	28.422	1543
15.004	28.421	1543
16	28.418	1543
15.795	28.417	1543
14.995	28.417	1543
13.999	28.416	1543
12.993	28.417	1543
11.99	28.418	1543
10.998	28.419	1543
9.997	28.421	1543
8.997	28.424	1543
7.984	28.427	1543
6.993	28.428	1543

Now: 15/11/2012 17:57:28

Battery Level:
1.3V
MiniSVP: S/N
30592
Site info:
CULEBRA
Calibrated: 18/02/2011
Latitude:
18.499996
Mode: P1.0e0
Tare: 10.0379
Pressure units: m

0.011	32.891	0
1.008	29	1543.602
2.004	28.858	1543.552
3.007	29.895	1543.556
4.002	28.886	1543.556
5.003	28.843	1543.578
6.007	28.827	1543.599
7.007	28.815	1543.609
8.006	28.802	1543.62
9.005	28.79	1543.62
10.003	28.782	1543.612
11.006	28.768	1543.443
12.001	28.74	1543.443
13.013	28.709	1543.461
14	28.683	1543.478
15.003	28.659	1543.493
16.006	28.648	1543.515
17	28.649	1543.531
18.002	28.644	1543.549
19.005	28.647	1543.571
18.793	28.644	1543.568
17.999	28.636	1543.556
16.998	28.629	1543.538
15.991	28.621	1543.516
14.995	28.614	1543.496
13.991	28.609	1543.483
12.982	28.609	1543.476

5.991	28.43	1543
4.999	28.429	1543
3.995	28.427	1543
2.986	28.427	1543
1.998	28.428	1543
0.994	28.43	1543
-0.005	28.433	1543

11.993	28.612	1543.485
10.988	28.625	1543.552
9.995	28.642	1543.539
8.996	28.654	1543.527
7.992	28.662	1543.523
6.994	28.665	1543.49
5.992	28.67	1543.551
4.983	28.686	1543.591
3.99	28.702	1543.588
2.999	28.719	1543.58
1.998	28.733	1543.599

Now: 16/11/2012 12:55:00
Battery Level:
1.3V
MiniSVP: S/N
30592
Site info:
CULEBRA
Calibrated: 18/02/2011
Latitude:
18.499996
Mode: P1.0e0
Tare: 10.0828
Pressure units: m

0.006	61.535	1543.868	1543.87
1.003	57.644	1542.985	1542.987
2.005	57.502	1542.999	1543.001
3.014	58.539	1543.018	1543.02
4.014	57.53	1543.022	1543.024
5.014	57.487	1543.021	1543.023
6.002	57.471	1543.026	1543.028
7.005	57.459	1543.052	1543.054
8.013	57.446	1543.044	1543.046
9.002	57.434	1543.06	1543.062
10.003	57.426	1543.065	1543.067
11.005	57.412	1543.101	1543.103
12.003	57.384	1543.116	1543.118
13.004	57.353	1543.117	1543.119

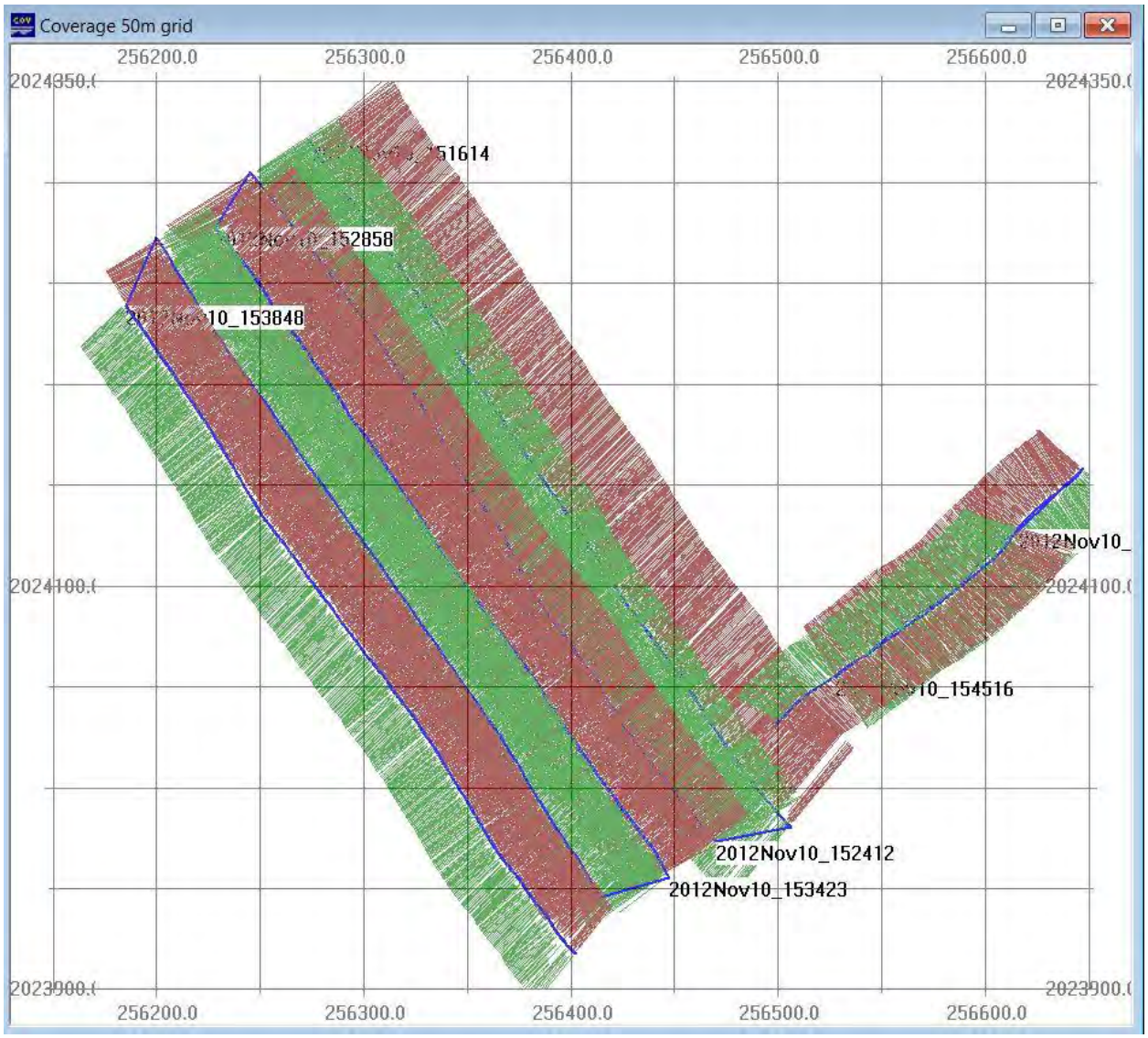
Now: 16/11/2012 21:45:40
Battery Level:
1.4V
MiniSVP: S/N
30592
Site info:
CULEBRA
Calibrated: 18/02/2011
Latitude:
18.499996
Mode: P1.0e0
Tare: 10.0887
Pressure units: m

0.013	28.351	0
1.008	28.734	1543.926
2.003	28.744	1543.952
3.003	28.644	1543.967
4.013	28.744	1543.98
5.009	28.747	1543.98
6.01	28.747	1544.007
7.002	28.749	1544.025
8.011	28.748	1544.043
9.002	28.751	1544.061
10.011	28.753	1544.08
11.007	28.752	1544.094
12.003	28.753	1544.112
13.013	28.753	1544.13

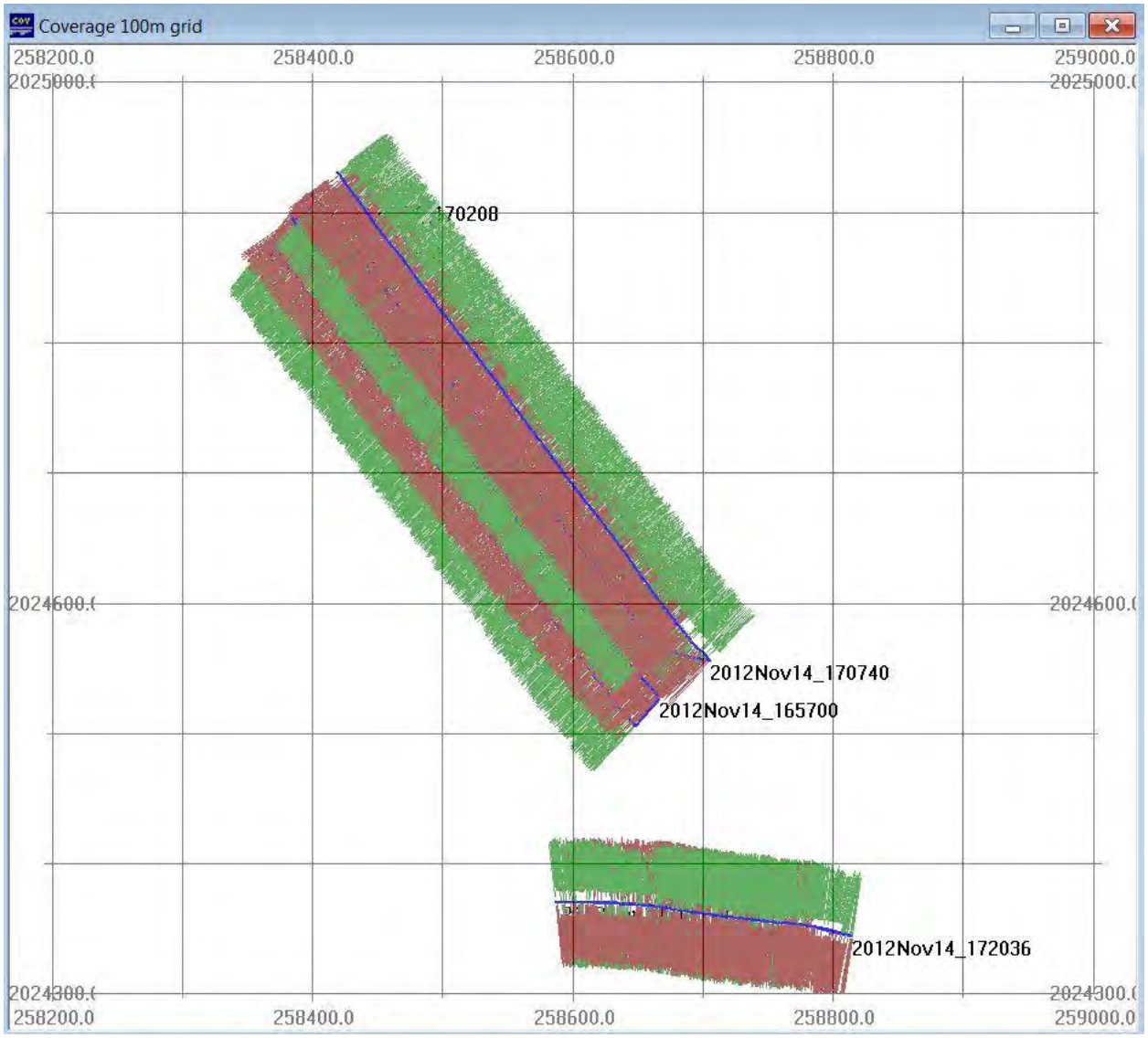
14.007	57.327	1543.134	1543.136
15.006	57.303	1543.146	1543.148
16.002	57.292	1543.161	1543.163
15.797	57.293	1543.159	1543.161
14.997	57.288	1543.15	1543.152
14.001	57.291	1543.132	1543.134
12.995	57.288	1543.115	1543.117
11.992	57.28	1543.098	1543.1
11	57.273	1543.088	1543.09
9.999	57.265	1543.062	1543.064
8.999	57.258	1543.069	1543.071
7.986	57.253	1543.053	1543.055
6.995	57.253	1543.021	1543.023
5.993	57.256	1543.002	1543.004
5.001	57.269	1543.008	1543.01
3.997	57.286	1542.988	1542.99
2.988	57.298	1542.969	1542.971
2	57.306	1542.974	1542.976
0.996	57.309	1542.972	1542.974
-0.003	57.314	1542.951	1542.953

14.004	28.754	1544.149
13.797	28.756	1544.145
12.992	28.757	1544.129
11.997	28.758	1544.11
10.994	28.759	1544.091
9.996	28.76	1544.08
8.998	28.761	1544.059
7.994	28.761	1544.038
6.994	28.762	1544.022
5.993	28.762	1543.987
4.991	28.762	1543.981
3.994	28.763	1543.949
2.988	28.762	1543.939
1.993	28.763	1543.923
0.987	28.763	1543.911
0	28.764	1543.887

Patch Tests An initial patch test was conducted on 11/10 before the start of survey operations. This corrected for sensor offsets and misalignments. This included heading, roll, pitch and latency. A change in the mounting arrangement required a second patch test on 11/14. Additional partial patch data was also collected during survey operations on the 11/15 and 11/16. All patch test data was reviewed and adjustments made as needed before final processing of data.



Patch Test 11/10/2012

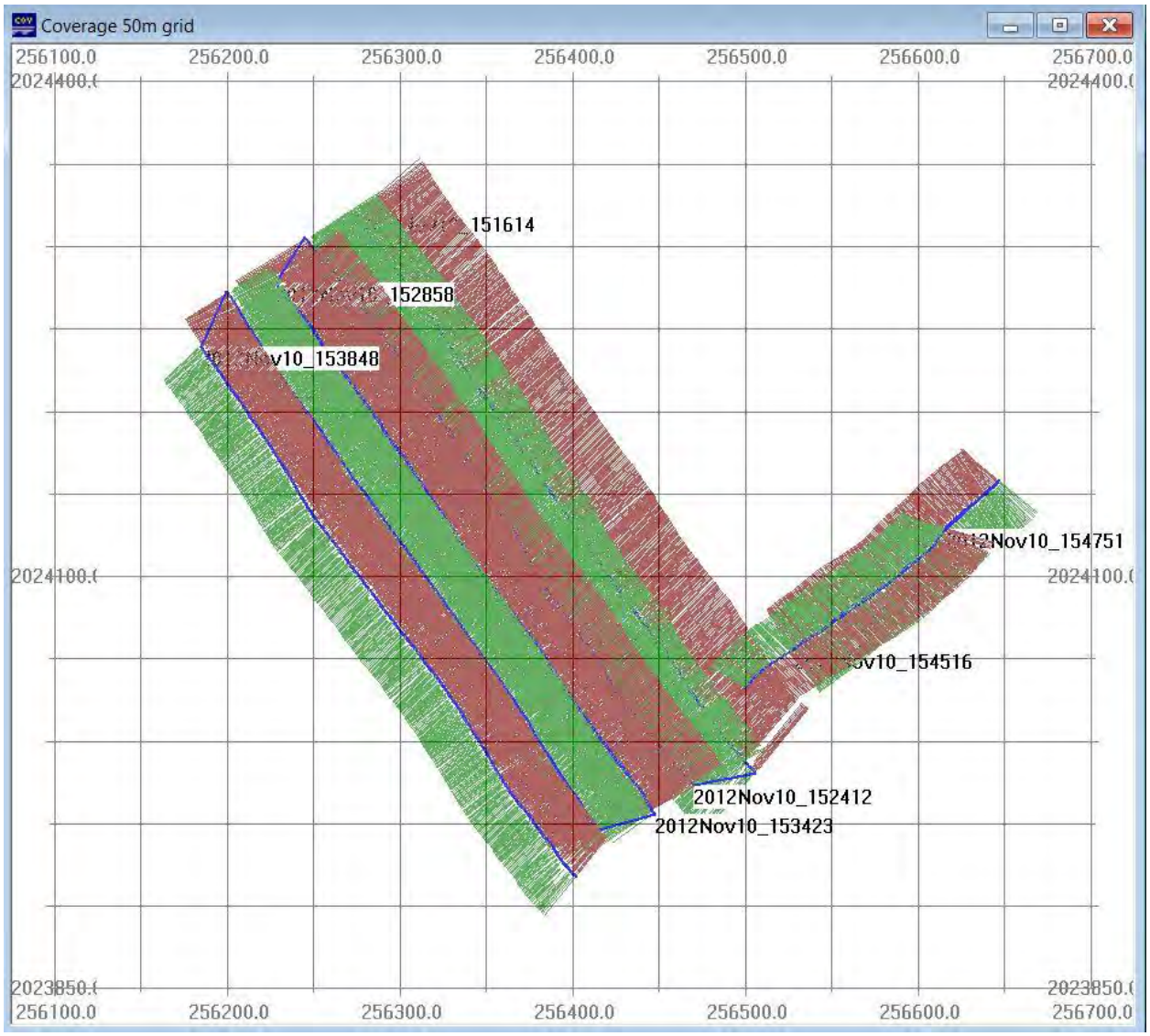


Patch Test 11/14/12

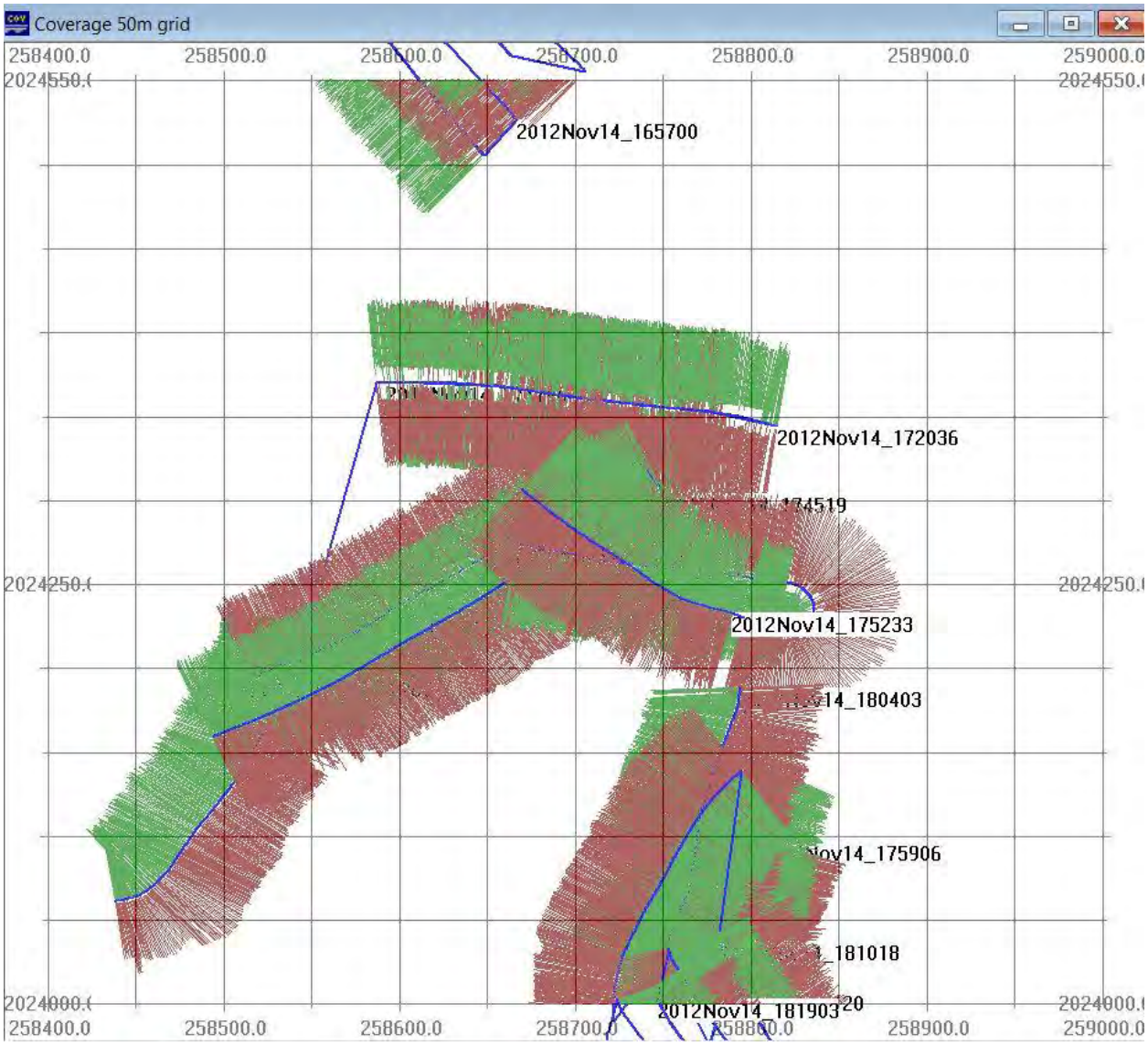
Vessel, Transducer and Waterline Measurements Vessel offsets were measured during mobilization and end of survey to confirm numbers. An initial draft measurement was conducted dock side during mobilization a second measurement was done on the last survey day while tied off to a mooring ball in shallow water. The lead line test is conducted by measuring the water depth with a calibrated lead line and then observing whether the nadir depth measurement by the sonar agrees with the measured depth. While these measurements are rarely exactly the same, both times they were within +/-0.25 meters of each other.

Cross Line Checks A cross line was run each day perpendicular to multiple previously collected survey lines. Below are screen shots of the each day and the survey lines used. These provide a

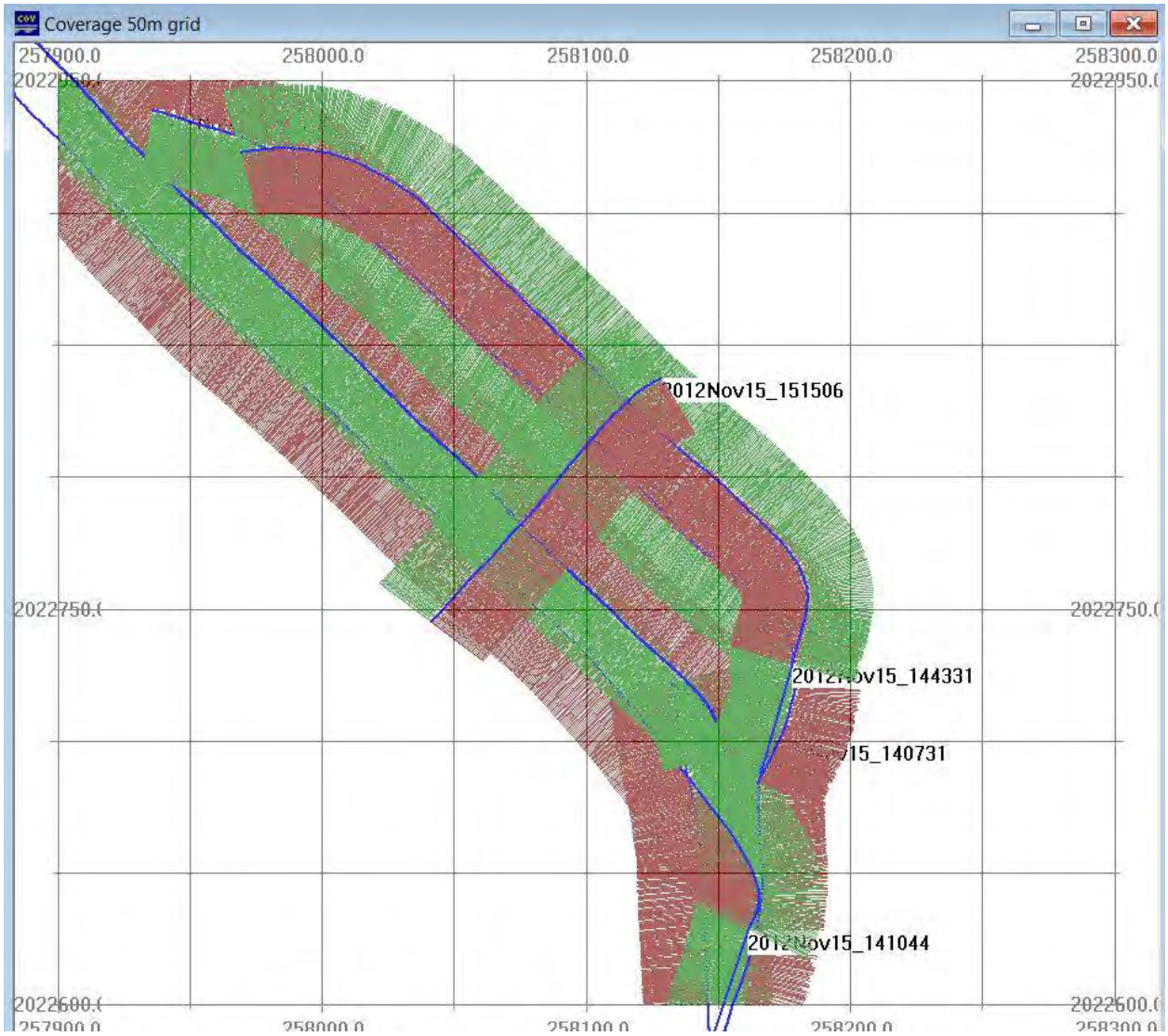
check for errors in tide correction, sound velocity and any other misalignments in the survey system. Spot checks were performed on each of the cross lines and the survey lines they went over. In all cases on all lines values were within +/- .25 meters



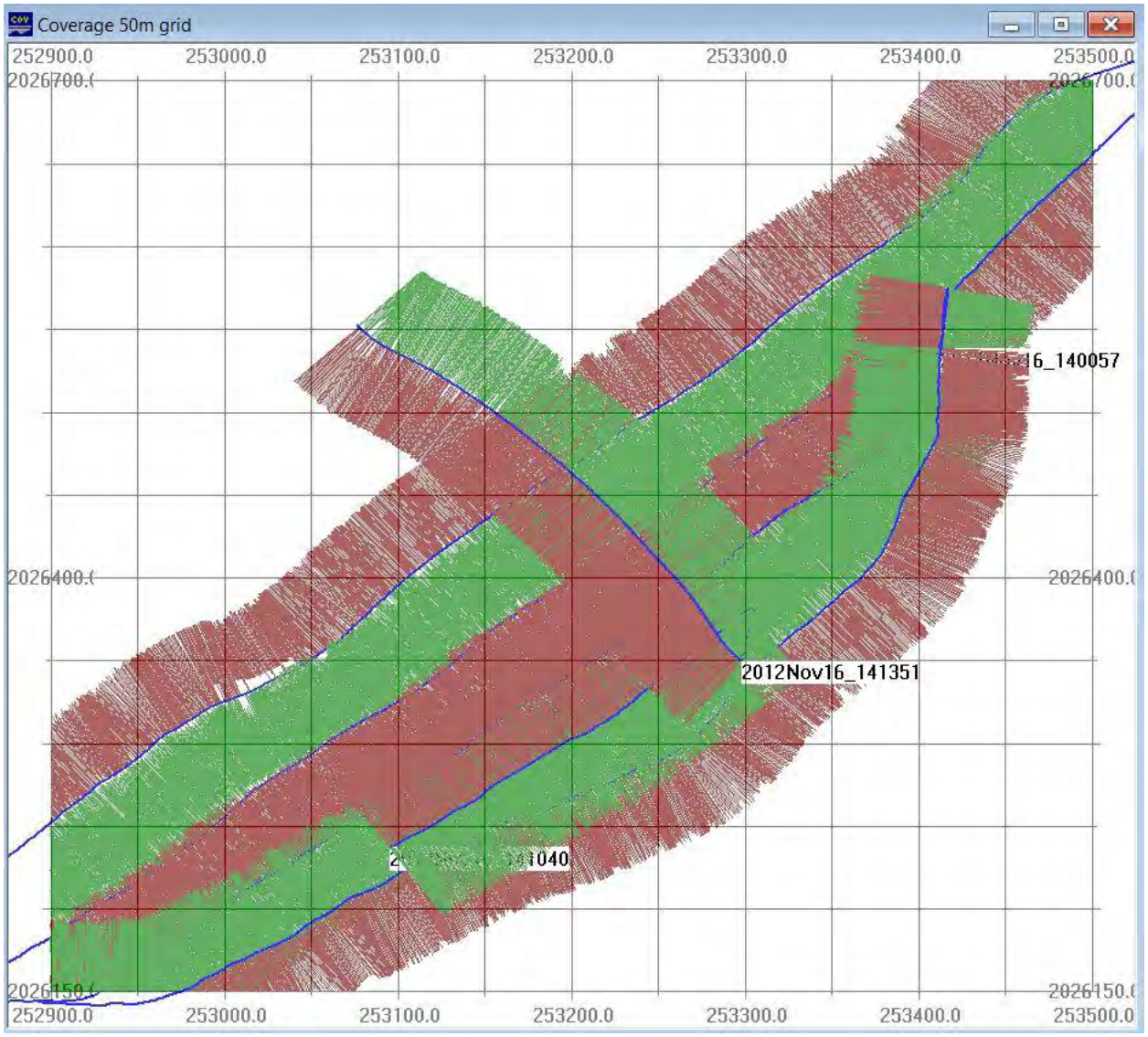
Cross Line Check 11/10/2012



Cross Line Check 11/14/2012



Cross Line Check 11/15/2012



Cross Line Check 11/16/2012

Multibeam Survey Data Files The following is a listing of all MB survey data collected. Each file represents a survey line of a segment of one. The file name includes the date and start time (GMT). SXR files are raw unprocessed data exactly as the sonar head see's it. The SXP files are real time processed including filter values, navigation, speed of sound, heave, pitch and roll.

Name	Date modified	Type	Size
2012Nov10_151614.sxp	11/11/2012 14:40	SXP File	67,033 KB
2012Nov10_151614.sxr	11/10/2012 15:21	SXR File	32,366 KB
2012Nov10_152412.sxp	11/11/2012 14:41	SXP File	52,022 KB
2012Nov10_152412.sxr	11/10/2012 15:27	SXR File	25,911 KB
2012Nov10_152858.sxp	11/11/2012 14:41	SXP File	60,571 KB
2012Nov10_152858.sxr	11/10/2012 15:33	SXR File	30,835 KB
2012Nov10_153423.sxp	11/11/2012 14:42	SXP File	47,966 KB
2012Nov10_153423.sxr	11/10/2012 15:37	SXR File	24,508 KB
2012Nov10_153848.sxp	11/11/2012 14:42	SXP File	59,528 KB
2012Nov10_153848.sxr	11/10/2012 15:43	SXR File	30,975 KB
2012Nov10_154516.sxp	11/11/2012 16:30	SXP File	24,193 KB
2012Nov10_154516.sxr	11/10/2012 15:46	SXR File	11,948 KB
2012Nov10_154751.sxp	11/11/2012 16:30	SXP File	21,625 KB
2012Nov10_154751.sxr	11/10/2012 15:49	SXR File	10,584 KB
2012Nov10_160714.sxp	11/11/2012 17:01	SXP File	21,475 KB
2012Nov10_160714.sxr	11/10/2012 16:08	SXR File	11,579 KB
2012Nov10_162616.sxp	11/11/2012 17:01	SXP File	34,579 KB
2012Nov10_162616.sxr	11/10/2012 16:28	SXR File	18,873 KB
2012Nov10_163016.sxp	11/11/2012 17:01	SXP File	35,505 KB
2012Nov10_163016.sxr	11/10/2012 16:32	SXR File	19,701 KB
2012Nov10_163456.sxp	11/11/2012 17:02	SXP File	51,132 KB
2012Nov10_163456.sxr	11/10/2012 16:38	SXR File	26,137 KB
2012Nov10_164005.sxp	11/11/2012 17:02	SXP File	33,764 KB
2012Nov10_164005.sxr	11/10/2012 16:42	SXR File	17,173 KB
2012Nov10_165221.sxp	11/15/2012 00:57	SXP File	1 KB
2012Nov10_165221.sxr	11/10/2012 17:02	SXR File	76,787 KB
2012Nov10_170515.sxp	11/11/2012 17:05	SXP File	227,565 KB
2012Nov10_170515.sxr	11/10/2012 17:21	SXR File	117,655 KB
2012Nov10_172206.sxp	11/11/2012 17:06	SXP File	62,854 KB

Name	Date modified	Type	Size
2012Nov10_172206.sxr	11/10/2012 17:26	SXR File	31,377 KB
2012Nov10_173007.sxp	11/11/2012 17:07	SXP File	88,840 KB
2012Nov10_173007.sxr	11/10/2012 17:36	SXR File	44,550 KB
2012Nov10_173732.sxp	11/11/2012 17:08	SXP File	144,343 KB
2012Nov10_173732.sxr	11/10/2012 17:47	SXR File	72,638 KB
2012Nov10_174838.sxp	11/11/2012 17:09	SXP File	123,098 KB
2012Nov10_174838.sxr	11/10/2012 17:57	SXR File	63,578 KB
2012Nov10_180135.sxp	11/11/2012 17:10	SXP File	130,896 KB
2012Nov10_180135.sxr	11/10/2012 18:11	SXR File	74,068 KB
2012Nov10_181344.sxp	11/11/2012 17:12	SXP File	201,890 KB
2012Nov10_181344.sxr	11/10/2012 18:29	SXR File	114,719 KB
2012Nov10_183103.sxp	11/11/2012 17:14	SXP File	181,055 KB
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2012Nov10_185008.sxr	11/10/2012 18:57	SXR File	52,182 KB
2012Nov10_185940.sxp	11/11/2012 17:15	SXP File	70,065 KB
2012Nov10_185940.sxr	11/10/2012 19:06	SXR File	47,242 KB
2012Nov10_190648.sxp	11/11/2012 17:16	SXP File	60,743 KB
2012Nov10_190648.sxr	11/10/2012 19:12	SXR File	44,594 KB
2012Nov10_191451.sxp	11/11/2012 17:16	SXP File	38,089 KB
2012Nov10_191451.sxr	11/10/2012 19:18	SXR File	30,310 KB
2012Nov10_192027.sxp	11/11/2012 17:17	SXP File	25,153 KB
2012Nov10_192027.sxr	11/10/2012 19:23	SXR File	22,356 KB
2012Nov10_192653.sxp	11/11/2012 17:18	SXP File	171,187 KB
2012Nov10_192653.sxr	11/10/2012 19:43	SXR File	126,912 KB
2012Nov10_195557.sxp	11/11/2012 16:46	SXP File	14,364 KB
2012Nov10_195557.sxr	11/10/2012 19:57	SXR File	9,518 KB
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2012Nov10_195801.sxr	11/10/2012 19:58	SXR File	5,326 KB

Name	Date modified	Type	Size
2012Nov14_164404.sxp	11/15/2012 00:22	SXP File	59,694 KB
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2012Nov14_165033.sxp	11/15/2012 00:23	SXP File	66,337 KB
2012Nov14_165033.sxr	11/14/2012 16:56	SXR File	40,944 KB
2012Nov14_165700.sxp	11/15/2012 00:23	SXP File	46,710 KB
2012Nov14_165700.sxr	11/14/2012 17:01	SXR File	29,487 KB
2012Nov14_170208.sxp	11/15/2012 00:24	SXP File	50,156 KB
2012Nov14_170208.sxr	11/14/2012 17:06	SXR File	31,201 KB
2012Nov14_170740.sxp	11/15/2012 00:24	SXP File	47,853 KB
2012Nov14_170740.sxr	11/14/2012 17:11	SXR File	30,222 KB
2012Nov14_171746.sxp	11/15/2012 00:24	SXP File	24,311 KB
2012Nov14_171746.sxr	11/14/2012 17:19	SXR File	13,461 KB
2012Nov14_172036.sxp	11/15/2012 00:25	SXP File	24,793 KB
2012Nov14_172036.sxr	11/14/2012 17:22	SXR File	14,148 KB
2012Nov14_173837.sxr	11/14/2012 17:40	SXR File	13,122 KB
2012Nov14_174207.sxr	11/14/2012 17:44	SXR File	17,254 KB
2012Nov14_174519.sxr	11/14/2012 17:47	SXR File	18,021 KB
2012Nov14_175019.sxr	11/14/2012 17:52	SXR File	16,065 KB
2012Nov14_175233.sxp	11/15/2012 00:31	SXP File	5,488 KB
2012Nov14_175233.sxr	11/14/2012 17:53	SXR File	8,485 KB
2012Nov14_175906.sxp	11/15/2012 00:28	SXP File	8,328 KB
2012Nov14_175906.sxr	11/14/2012 18:00	SXR File	9,007 KB
2012Nov14_180120.sxp	11/15/2012 00:27	SXP File	9,895 KB
2012Nov14_180120.sxr	11/14/2012 18:02	SXR File	10,113 KB
2012Nov14_180403.sxr	11/14/2012 18:05	SXR File	13,125 KB
2012Nov14_180703.sxr	11/14/2012 18:08	SXR File	12,017 KB
2012Nov14_181018.sxr	11/14/2012 18:12	SXR File	13,261 KB
2012Nov14_181450.sxr	11/14/2012 18:17	SXR File	21,577 KB
2012Nov14_181903.sxr	11/14/2012 18:23	SXR File	32,900 KB

Name	Date modified	Type	Size
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2012Nov14_182908.sxr	11/14/2012 18:32	SXR File	26,168 KB
2012Nov14_183328.sxr	11/14/2012 18:35	SXR File	16,795 KB
2012Nov14_183620.sxr	11/14/2012 18:38	SXR File	16,426 KB
2012Nov14_184024.sxr	11/14/2012 18:41	SXR File	10,622 KB
2012Nov14_184412.sxr	11/14/2012 18:45	SXR File	9,661 KB
2012Nov14_184648.sxr	11/14/2012 18:48	SXR File	8,743 KB
2012Nov14_185014.sxr	11/14/2012 18:52	SXR File	13,573 KB
2012Nov14_185454.sxr	11/14/2012 18:56	SXR File	14,311 KB
2012Nov14_185858.sxr	11/14/2012 19:00	SXR File	14,562 KB
2012Nov14_190103.sxr	11/14/2012 19:04	SXR File	24,158 KB
2012Nov14_190609.sxr	11/14/2012 19:11	SXR File	37,980 KB
2012Nov15_131424.sxr	11/15/2012 13:16	SXR File	10,871 KB
2012Nov15_131759.sxr	11/15/2012 13:19	SXR File	14,964 KB
2012Nov15_132338.sxr	11/15/2012 13:26	SXR File	18,691 KB
2012Nov15_132930.sxr	11/15/2012 13:31	SXR File	13,655 KB
2012Nov15_133715.sxr	11/15/2012 13:41	SXR File	28,719 KB
2012Nov15_134737.sxr	11/15/2012 13:50	SXR File	23,155 KB
2012Nov15_135319.sxr	11/15/2012 13:57	SXR File	30,901 KB
2012Nov15_135842.sxr	11/15/2012 14:01	SXR File	21,152 KB
2012Nov15_140315.sxr	11/15/2012 14:06	SXR File	26,098 KB
2012Nov15_140731.sxr	11/15/2012 14:08	SXR File	10,419 KB
2012Nov15_141044.sxr	11/15/2012 14:17	SXR File	55,354 KB
2012Nov15_141953.sxr	11/15/2012 14:26	SXR File	52,802 KB
2012Nov15_142804.sxr	11/15/2012 14:33	SXR File	44,935 KB
2012Nov15_143705.sxr	11/15/2012 14:41	SXR File	32,776 KB
2012Nov15_144331.sxr	11/15/2012 14:46	SXR File	24,523 KB
2012Nov15_144906.sxr	11/15/2012 14:52	SXR File	23,485 KB
2012Nov15_150028.sxr	11/15/2012 15:08	SXR File	64,495 KB

Name	Date modified	Type	Size
2012Nov15_151326.sxr	11/15/2012 15:14	SXR File	8,509 KB
2012Nov15_151506.sxr	11/15/2012 15:16	SXR File	8,774 KB
2012Nov15_152154.sxr	11/15/2012 15:27	SXR File	42,254 KB
2012Nov15_153644.sxr	11/15/2012 15:40	SXR File	26,471 KB
2012Nov15_154033.sxr	11/15/2012 15:44	SXR File	29,186 KB
2012Nov15_154510.sxr	11/15/2012 15:48	SXR File	24,288 KB
2012Nov15_154847.sxr	11/15/2012 15:52	SXR File	26,001 KB
2012Nov15_155327.sxr	11/15/2012 15:57	SXR File	30,274 KB
2012Nov15_155811.sxr	11/15/2012 16:01	SXR File	26,066 KB
2012Nov15_160216.sxr	11/15/2012 16:05	SXR File	25,060 KB
2012Nov15_160635.sxr	11/15/2012 16:10	SXR File	29,206 KB
2012Nov15_181001.sxr	11/15/2012 18:13	SXR File	19,821 KB
2012Nov15_181425.sxr	11/15/2012 18:17	SXR File	24,905 KB
2012Nov15_181907.sxr	11/15/2012 18:22	SXR File	27,206 KB
2012Nov15_183121.sxr	11/15/2012 18:36	SXR File	42,871 KB
2012Nov15_190046.sxr	11/15/2012 19:06	SXR File	41,833 KB
2012Nov15_190657.sxr	11/15/2012 19:10	SXR File	27,054 KB
2012Nov15_192230.sxr	11/15/2012 19:26	SXR File	33,044 KB
2012Nov15_192914.sxr	11/15/2012 19:34	SXR File	44,590 KB
2012Nov15_193628.sxr	11/15/2012 19:39	SXR File	26,475 KB
2012Nov15_194347.sxr	11/15/2012 19:58	SXR File	116,579 KB
2012Nov15_200021.sxr	11/15/2012 20:03	SXR File	25,361 KB
2012Nov16_125337.sxr	11/16/2012 13:07	SXR File	100,474 KB
2012Nov16_131225.sxr	11/16/2012 13:27	SXR File	118,206 KB
2012Nov16_132824.sxr	11/16/2012 13:32	SXR File	28,141 KB
2012Nov16_133315.sxr	11/16/2012 13:34	SXR File	10,511 KB
2012Nov16_133527.sxr	11/16/2012 13:48	SXR File	96,894 KB
2012Nov16_135119.sxr	11/16/2012 13:59	SXR File	66,021 KB
2012Nov16_140057.sxr	11/16/2012 14:07	SXR File	50,867 KB

Name	Date modified	Type	Size
2012Nov16_141040.sxr	11/16/2012 14:13	SXR File	18,335 KB
2012Nov16_141351.sxr	11/16/2012 14:16	SXR File	21,403 KB
2012Nov16_150520.sxr	11/16/2012 15:05	SXR File	922 KB
2012Nov16_150539.sxr	11/16/2012 15:05	SXR File	307 KB
2012Nov16_151710.sxr	11/16/2012 15:17	SXR File	4,093 KB
2012Nov16_151711.sxr	11/16/2012 15:42	SXR File	77,148 KB
2012Nov16_151840.sxr	11/16/2012 15:18	SXR File	1 KB
2012Nov16_154257.sxr	11/16/2012 15:53	SXR File	79,164 KB
2012Nov16_155559.sxr	11/16/2012 16:03	SXR File	58,092 KB
2012Nov16_161528.sxr	11/16/2012 16:24	SXR File	69,804 KB
2012Nov16_162913.sxr	11/16/2012 16:35	SXR File	45,969 KB
2012Nov16_163701.sxr	11/16/2012 16:43	SXR File	52,195 KB
2012Nov16_164543.sxr	11/16/2012 16:49	SXR File	31,812 KB
2012Nov16_165101.sxr	11/16/2012 16:59	SXR File	63,508 KB
2012Nov16_170003.sxr	11/16/2012 17:03	SXR File	24,739 KB
2012Nov16_170645.sxr	11/16/2012 17:11	SXR File	34,677 KB
2012Nov16_171601.sxr	11/16/2012 17:20	SXR File	36,184 KB
2012Nov16_173016.sxr	11/16/2012 17:45	SXR File	115,787 KB
2012Nov16_200952.sxr	11/16/2012 20:16	SXR File	53,041 KB
2012Nov16_201925.sxr	11/16/2012 20:29	SXR File	76,058 KB
2012Nov16_203017.sxr	11/16/2012 20:39	SXR File	71,217 KB
2012Nov16_204029.sxr	11/16/2012 20:49	SXR File	70,247 KB
2012Nov16_204940.sxr	11/16/2012 20:51	SXR File	17,214 KB
2012Nov16_205335.sxr	11/16/2012 21:01	SXR File	59,754 KB
2012Nov16_210217.sxr	11/16/2012 21:09	SXR File	56,230 KB
2012Nov16_211054.sxr	11/16/2012 21:17	SXR File	48,840 KB
2012Nov16_211826.sxr	11/16/2012 21:27	SXR File	66,827 KB

Culebra EBS Phase 1A SSS QC

Side Scan Sonar QC Check UTM Zone 20N; NAD83; Meters

	Easting	Northing		Difference (Meters)
Plane Wreck Initial Coordinates	256537.3	2024067.0		
Nov 10 Coords	256537.5	2024067.0		0.20
Nov 14 Coords	256537.7	2024066.4		0.72
Nov 15 Coords	256537.3	2024066.1		0.90
Nov 16 Coords	256537.8	2024066.5		0.71

USA Environmental, Inc.

DAILY QUALITY CONTROL REPORT

Date: 11/09/12 **Contract #:** W912DY-04-D-0006 **Task Order #:** 0022

Site/Location: Culebra, Puerto Rico

Weather: Clear Temperature: 86 Rainfall: None

1. Preparatory Inspection: Hydrographic Survey SSS and MBS

Results: All applicable requirements of table 4-1 of the work plan met.

2. QC Audits Performed

a. Operations: Hydrographic Survey SSS and MBS Equipment Preparation, Calibration, and Operational Testing.

Results: Satisfactory

b. Safety:

Results:

c. Administrative:

Results:

d. Equipment:

Results:

Daily Quality Control Report Con't:

3. QC Performed (Grids)

Number of Grids QC'd: Results: # Pass # Fail

Comments:

4. Follow Up Inspections and Results

Sections: 3.3.2.1 & SOP SRV-006 1 section 2.1 & 2.2

Results: RTK-GPS base station and rover functionality established per project requirements,

5. Instructions Received

Remarks

QC Signature: John W Stoddart **Date: 11/09/12**

Printed Name: John W. Stoddart

USA Environmental, Inc.

DAILY QUALITY CONTROL REPORT

Date: 11/10/12 **Contract #:** W912DY-04-D-0006 **Task Order #:** 0022

Site/Location: Culebra, Puerto Rico

Weather: Clear Temperature: 85 Rainfall: None

1. **Preparatory Inspection:** Hydrographic Survey SSS and MBS

   Results: All applicable requirements of table 4-1 of the work plan met.

2. **QC Audits Performed**
   a. Operations: Hydrographic Survey SSS and MBS

      Results: Satisfactory

   b. Safety:

      Results:

   c. Administrative:

      Results:

   d. Equipment:

      Results:

Daily Quality Control Report Con't:

3. QC Performed (Grids)

Number of Grids QC'd: Results: # Pass # Fail

Comments:

4. Follow Up Inspections and Results

Sections: DFW 3. Hydrographic Survey, Work Plan section 3.3 and SOPs (App K)

Results: Satisfactory

5. Instructions Received

Remarks

QC Signature: John W Stoddart **Date: 11/09/12**

Printed Name: John W. Stoddart

USA Environmental, Inc.

DAILY QUALITY CONTROL REPORT

Date: 11/13/12 **Contract #:** W912DY-04-D-0006 **Task Order #:** 0022

Site/Location: Culebra, Puerto Rico

Weather: Light cloud cover Temperature: 86 Rainfall: Light showers

1. **Preparatory Inspection:** Hydrographic Survey SSS (Base station est. only)

   Results: All applicable requirements of table 4-1 of the work plan met.

2. **QC Audits Performed**
   a. Operations: Hydrographic Survey SSS

      Results: Satisfactory

   b. Safety:

      Results:

   c. Administrative:

      Results:

   d. Equipment: Inspected RTK-DGPS base station establishment and QC check at Soldado Point, MRS 09.

      Results: Satisfactory

Daily Quality Control Report Con't:

3. QC Performed (Grids)

Number of Grids QC'd: Results: # Pass # Fail

Comments:

4. Follow Up Inspections and Results

Sections: DFW 3. Hydrographic Survey, Work Plan section 3.3 and SOPs (App K)

Results: Satisfactory

5. Instructions Received

Remarks

QC Signature: John W Stoddart **Date: 11/13/12**

Printed Name: John W. Stoddart

Daily Quality Control Report Con't:

3. QC Performed (Grids)

Number of Grids QC'd: Results: # Pass # Fail

Comments:

4. Follow Up Inspections and Results

Sections: DFW 3. Hydrographic Survey, Work Plan section 3.3 and SOPs (App K)

Results: Satisfactory

5. Instructions Received

Remarks

QC Signature: John W Stoddart **Date: 11/14/12**

Printed Name: John W. Stoddart

USA Environmental, Inc.

DAILY QUALITY CONTROL REPORT

Date: 11/15/12 **Contract #:** W912DY-04-D-0006 **Task Order #:** 0022

Site/Location: Culebra, Puerto Rico

Weather: Clear Temperature: 86 Rainfall: None

1. **Preparatory Inspection:** Hydrographic Survey SSS and MBS

   Results: All requirements of table 4-1 of the work plan met.

2. **QC Audits Performed**
   a. Operations: Hydrographic Survey SSS and MBS

      Results: Satisfactory

   b. Safety:

      Results:

   c. Administrative:

      Results:

   d. Equipment:

      Results:

Daily Quality Control Report Con't:

3. QC Performed (Grids)

Number of Grids QC'd: Results: # Pass # Fail

Comments:

4. Follow Up Inspections and Results

Sections: DFW 3. Hydrographic Survey, Work Plan section 3.3 and SOPs (App K)

Results: Satisfactory

5. Instructions Received

Remarks

QC Signature: John W Stoddart **Date: 11/15/12**

Printed Name: John W. Stoddart

USA Environmental, Inc.

DAILY QUALITY CONTROL REPORT

Date: 11/16/12 **Contract #:** W912DY-04-D-0006 **Task Order #:** 0022

Site/Location: Culebra, Puerto Rico

Weather: Partly cloudy Temperature: 86 Rainfall: Scattered showers

1. **Preparatory Inspection:** Hydrographic Survey SSS and MBS

   Results: All requirements of table 4-1 of the work plan met.

2. **QC Audits Performed**
   a. Operations: Hydrographic Survey SSS and MBS

      Results: Satisfactory

   b. Safety:

      Results:

   c. Administrative:

      Results:

   d. Equipment:

      Results:

Daily Quality Control Report Con't:

3. QC Performed (Grids)

Number of Grids QC'd: Results: # Pass # Fail

Comments:

4. Follow Up Inspections and Results

Sections: DFW 3. Hydrographic Survey, Work Plan section 3.3 and SOPs (App K)

Results: Satisfactory

5. Instructions Received

Remarks

QC Signature: John W Stoddart **Date: 11/16/12**

Printed Name: John W. Stoddart

PREPARATORY, INITIAL, FOLLOW-UP QC SURVEILLANCE FORM

W912DY-04-D-0006, TO #0022, Culebra Environmental Baseline Survey MRSs 09 and 13

MOBILIZATION AND SITE TRAINING

TEAM INFORMATION		
Team: U.I.T	Location: Culebra, P.R.	Date: 110912
Team Leader: UXOSO/QC John W. Stoddart		
Personnel Present: (USAE) Brian Skubin, (ASI) Bill Rotner, Mike Padover & Jim Nickels, (CMS) Gene Thomas		
Phase of Inspection (Circle): *Preparatory (P)* *Initial (I);* *Follow-Up (F)*		

CHECKLIST

Item	Ref.	Inspection Point	Yes	No	N/A	Comments
1	**WP Sections 2.2.4 & 3.6.3**	Do all personnel meet the requirements and qualifications for the positions assigned or have waivers from the USAESCH?	X			Complete a Personnel Qualifications Form for each employee onsite to verify qualifications and training. Document and report any deficiencies to the SUXOS for resolution and follow-up for compliance
2	**WP Sections 2.2.4 & 3.6.3**	Are all personnel trained and certified as necessary to operate equipment and machinery?	X			Document deficiencies and report to the SUXOS for resolution and follow-up for compliance
3	**WP & APP**	Have all field personnel reviewed the Work Plan and Accident Prevention Plan?	X			Same as above
4	**APP**	Have all personnel signed the Employee Sign-off Forms for the Site Safety and Health Plan, the Certificate of PPE Training and all Activity Hazard Analyses Forms?	X			Same as above

CHECKLIST						
Item	Ref.	Inspection Point	Yes	No	N/A	Comments
5	APP	Are all personnel familiar with the MSDS and know where they are located?	X			Same as above
6	WP Section 2.6 & Project Schedule	Is equipment received on island as needed to support the project schedule?	X			Same as above
7	WP Section 3.1.2	Is all required equipment functional, properly calibrated and in compliance with contract specifications?	X			Same as above
8	WP Section 2.2	Has coordination been conducted with personnel on Culebra, FWS, DNER, PREQB, the U.S. Coast Guard, FAA and USAESCH?	X			Same as above
9	WP Section 5 & Puerto Rico Explosives Law	Has transportation support been coordinated prior to scheduling movement of hazardous cargo in accordance with dangerous cargo regulations?			X	Same as above

FINDINGS	
Item	Comments
8	CONDUCTED ADDITIONAL LIAISON WITH MEDICAL, POLICE AND CONSERVATION DEPT.
	REPRESENTATIVES.
9	NO TRANSPORTATION OF HAZARDOUS CARGO.

Conducted By: John W Stoddart **Reviewed By:** _____

John W. Stoddart UXOSO/QC

PREPARATORY, INITIAL, FOLLOW-UP QC SURVEILLANCE FORM

W912DY-04-D-0006, TO #0022, Culebra Environmental Baseline Survey MRSs 09 and 13

HYDROGRAPHIC SURVEY: SSS

TEAM INFORMATION		
Team: U.I.T.	Location: Culebra, P.R.	Date: 11/09/12
Team Leader: UXOSO/QC John W. Stoddart		
Personnel Present: (USAE) Brian Skubin, (ASI) Bill Rotner, Mike Padover & Jim Nickels, (CMS) Gene Thomas		
Phase of Inspection (Circle): *Preparatory (P)* *Initial (I);* *Follow-Up (F)*		

CHECKLIST						
Item	Ref.	Inspection Point	Yes	No	N/A	Comments
1	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 1.1**	Was the proper towfish towing point installed or configured on the vessel?	X			Document deficiency and report to the SUXOS for resolution and follow-up for compliance
2	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 2.2**	Did team verify, at dockside that each component was working individually and that the survey control software was receiving data from the GPS?	X			Same as above
3	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 2.1**	Was the RTK-DGPS base station established on an established control point (certified by a PR PLS) located near the project site prior to the vessel leaving dock, and were all required position QC checks will be performed prior to conducting survey activities?	X			Same as above
4	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 2.3**	Was a rub test conducted to ensure both transducers were functioning?	X			Same as above

CHECKLIST						
Item	Ref.	Inspection Point	Yes	No	N/A	Comments
5	**WP Section 3.3 .2.2.2 & SOP SRV-006 1 Section 2.4**	Was the towfish deployed to the appropriate altitude prior to running survey lines (altitude above bottom should equal 10% of range)?	X			Same as above
6	**WP Section 3.3 .2.2.2**	Did towfish remain more than 5 vertical feet from coral and sea grass throughout deployment?	X			Same as above
7	**WP Section 3.3 .2.1**	Was tow speed less than or equal to 4 knots per hour for 90% of the survey time?	X			Same as above
8	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 2.6**	Was the sensor towed past (and a pass in the opposite direction) a known object to ensure the target was detected?	X			Same as above
9	**WP Section 3.3 .2.2.2 & SOP SRV-006 1 Section 3.2**	Did data logging begin at the start of each survey line and were periodic checks done to ensure the data was logging?	X			Same as above
10	**WP Section 3.3 .2.3.2**	Was each individual file bottom tracked to ensure accurate results?	X			Same as above
11	**WP Section 3.3 .2.3.2**	Was layback accuracy checked by reviewing the records of an isolated object, comparing its plotted location on overlapping lines acquired in opposite directions?	X			Same as above
12	**WP Section 3.3 .2.3.2**	Were survey results integrated into the GIS along with the multi-beam bathymetric survey results?			X	Same as above

FINDINGS	
Item	Comments
12	PREPARATORY PHASE; NO SURVEY OPERATIONS PERFORMED.

Conducted By: John W Stoddart **Reviewed By:** _____

John W. Stoddart UXOSO/QC

PREPARATORY, INITIAL, FOLLOW-UP QC SURVEILLANCE FORM

W912DY-04-D-0006, TO #0022, Culebra Environmental Baseline Survey MRSs 09 and 13

HYDROGRAPHIC SURVEY: MBS

TEAM INFORMATION		
Team: U.I.T.	Location: Culebra, P.R.	Date: 110912
Team Leader: UXOSO/QC John W. Stoddart		
Personnel Present: (USAE) Brian Skubin, (ASI) Bill Rotner, Mike Padover & Jim Nickels, (CMS) Gene Thomas		
Phase of Inspection (Circle): *Preparatory (P); Initial (I); Follow-Up (F)*		

CHECKLIST						
Item	Ref.	Inspection Point	Yes	No	N/A	Comments
1	**WP Section 3.3 .2.1**	Did team verify, at dockside that each component was working individually and that the survey control software was receiving data from the GPS?	X			Document deficiency and report to the SUXOS for resolution and follow-up for compliance
2	**WP Section 3.3 .2.1 & SOP SRV-013 1 Section 1**	Was the RTK-DGPS base station established on an established control point (certified by a PR PLS) located near the project site prior to the vessel leaving dock, and were all required position QC checks will be performed prior to conducting survey activities?	X			Same as above
3	**WP Section 3.3 .2.1**	Was a comprehensive MBS calibration conducted to calibrate the different components to measure the roll, pitch and yaw?	X			Same as above
4	**WP Section 3.3 .2.2.1**	Was the calibration test done, at a minimum, at the start and finish of a survey, or whenever the sounder was turned off, or conditions in the survey changed?			X	Same as above

CHECKLIST						
Item	Ref.	Inspection Point	Yes	No	N/A	Comments
5	WP Section 3.3 .2.2.1	Was a patch test conducted at the start of the survey or if change in survey was made?			X	Same as above
6	WP Section 3.3 .2.1	Did the daily QC check include cross check lines at the end of the survey?			X	Same as above
7	WP Section 3.3 .2.1	Was tow speed less than or equal to 4 knots per hour for 90% of the survey time?	X			Same as above
8	WP Section 3.3 .2.2.1	During survey operations, were all correction sensor and multi-beam data tagged and logged with the data acquisition system?			X	Same as above
9	WP Section 3.3 .2.2.1	At the start of the survey, was the speed of sound in seawater determined by a sound velocimeter?			X	Same as above
10	WP Section 3.3 .2.2.1	Were sound velocity profile and tide corrections applied as needed during data collection?	X			Same as above
11	WP Section 3.3 .2.2.1	Did data logging begin at the start of each survey line and were periodic checks done to ensure the data was logging?			X	Same as above
12	WP Section 3.3 .2.3.1	Were tide and sound velocity corrections applied to the raw data?	X			Same as above
13	WP Section 3.3 .2.3.1	Was the data checked for outliers in both the multi-beam and positioning data in both profile and swath modes?			X	Same as above
14	WP Section 3.3 .2.3.1	Were these erroneous data points, if any, removed?			X	Same as above
15	WP Section 3.3 .2.3.2	Were survey results integrated into the GIS along with the SSS survey results?			X	Same as above

FINDINGS	
Item	**Comments**
4, 5, 6, 8, 9, 11, 13, 14, 15	ITEMS NOT APPLICABLE. DURING THIS PREPARATORY PHASE OF OPERATIONS MBS CALIBRATION AND TESTING PERFORMED. SURVEY OPERATIONS NOT PERFORMED.

Conducted By: John W Stoddart **Reviewed By:** _____

John W. Stoddart UXOSO/QC

PREPARATORY, INITIAL, FOLLOW-UP QC SURVEILLANCE FORM

W912DY-04-D-0006, TO #0022, Culebra Environmental Baseline Survey MRSs 09 and 13

HYDROGRAPHIC SURVEY: SSS

TEAM INFORMATION		
Team: U.I.T.	Location: Culebra, P.R.	Date: 11/10/12
Team Leader: UXOSO/QC John W. Stoddart		
Personnel Present: (USACE) Kelly ~~Rodriguez~~ RODRIQUEZ, (ASI) Bill Rotner, Mike Padover & Jim Nickels, (CMS) Gene Thomas		
Phase of Inspection (Circle): *Preparatory (P); Initial (I) Follow-Up (F)*		

CHECKLIST						
Item	Ref.	Inspection Point	Yes	No	N/A	Comments
1	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 1.1**	Was the proper towfish towing point installed or configured on the vessel?	X			Document deficiency and report to the SUXOS for resolution and follow-up for compliance
2	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 2.2**	Did team verify, at dockside that each component was working individually and that the survey control software was receiving data from the GPS?	X			Same as above
3	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 2.1**	Was the RTK-DGPS base station established on an established control point (certified by a PR PLS) located near the project site prior to the vessel leaving dock, and were all required position QC checks will be performed prior to conducting survey activities?	X			Same as above
4	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 2.3**	Was a rub test conducted to ensure both transducers were functioning?	X			Same as above

CHECKLIST						
Item	Ref.	Inspection Point	Yes	No	N/A	Comments
5	**WP Section 3.3 .2.2.2 & SOP SRV-006 1 Section 2.4**	Was the towfish deployed to the appropriate altitude prior to running survey lines (altitude above bottom should equal 10% of range)?	X			Same as above
6	**WP Section 3.3 .2.2.2**	Did towfish remain more than 5 vertical feet from coral and sea grass throughout deployment?	X			Same as above
7	**WP Section 3.3 .2.1**	Was tow speed less than or equal to 4 knots per hour for 90% of the survey time?	X			Same as above
8	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 2.6**	Was the sensor towed past (and a pass in the opposite direction) a known object to ensure the target was detected?	X			Same as above
9	**WP Section 3.3 .2.2.2 & SOP SRV-006 1 Section 3.2**	Did data logging begin at the start of each survey line and were periodic checks done to ensure the data was logging?	X			Same as above
10	**WP Section 3.3 .2.3.2**	Was each individual file bottom tracked to ensure accurate results?	X			Same as above
11	**WP Section 3.3 .2.3.2**	Was layback accuracy checked by reviewing the records of an isolated object, comparing its plotted location on overlapping lines acquired in opposite directions?	X			Same as above
12	**WP Section 3.3 .2.3.2**	Were survey results integrated into the GIS along with the multi-beam bathymetric survey results?	X			Same as above

FINDINGS	
Item	Comments

Conducted By: John W Stoddart

John W. Stoddart UXOSO/QC

Reviewed By: _____

PREPARATORY, INITIAL, FOLLOW-UP QC SURVEILLANCE FORM

W912DY-04-D-0006, TO #0022, Culebra Environmental Baseline Survey MRSs 09 and 13

HYDROGRAPHIC SURVEY: MBS

TEAM INFORMATION		
Team: U.I.T.	**Location: Culebra, P.R.**	**Date: 11/10/12**
Team Leader: UXOSO/QC John W. Stoddart		
Personnel Present: (USACE) Kelly Rodriguez, (ASI) Bill Rotner, Mike Padover & Jim Nickels, (CMS) Gene Thomas		
Phase of Inspection (Circle): *Preparatory (P); Initial (I); Follow-Up (F)*		

CHECKLIST						
Item	**Ref.**	**Inspection Point**	**Yes**	**No**	**N/A**	**Comments**
1	**WP Section 3.3 .2.1**	Did team verify, at dockside that each component was working individually and that the survey control software was receiving data from the GPS?	X			Document deficiency and report to the SUXOS for resolution and follow-up for compliance
2	**WP Section 3.3 .2.1 & SOP SRV-013 1 Section 1**	Was the RTK-DGPS base station established on an established control point (certified by a PR PLS) located near the project site prior to the vessel leaving dock, and were all required position QC checks will be performed prior to conducting survey activities?	X			Same as above
3	**WP Section 3.3 .2.1**	Was a comprehensive MBS calibration conducted to calibrate the different components to measure the roll, pitch and yaw?	X			Same as above
4	**WP Section 3.3 .2.2.1**	Was the calibration test done, at a minimum, at the start and finish of a survey, or whenever the sounder was turned off, or conditions in the survey changed?	X			Same as above

CHECKLIST						
Item	**Ref.**	**Inspection Point**	**Yes**	**No**	**N/A**	**Comments**
5	**WP Section 3.3 .2.2.1**	Was a patch test conducted at the start of the survey or if change in survey was made?	X			Same as above
6	**WP Section 3.3 .2.1**	Did the daily QC check include cross check lines at the end of the survey?	X			Same as above
7	**WP Section 3.3 .2.1**	Was tow speed less than or equal to 4 knots per hour for 90% of the survey time?	X			Same as above
8	**WP Section 3.3 .2.2.1**	During survey operations, were all correction sensor and multi-beam data tagged and logged with the data acquisition system?	X			Same as above
9	**WP Section 3.3 .2.2.1**	At the start of the survey, was the speed of sound in seawater determined by a sound velocimeter?	X			Same as above
10	**WP Section 3.3 .2.2.1**	Were sound velocity profile and tide corrections applied as needed during data collection?	X			Same as above
11	**WP Section 3.3 .2.2.1**	Did data logging begin at the start of each survey line and were periodic checks done to ensure the data was logging?	X			Same as above
12	**WP Section 3.3 .2.3.1**	Were tide and sound velocity corrections applied to the raw data?	X			Same as above
13	**WP Section 3.3 .2.3.1**	Was the data checked for outliers in both the multi-beam and positioning data in both profile and swath modes?	X			Same as above
14	**WP Section 3.3 .2.3.1**	Were these erroneous data points, if any, removed?	X			Same as above
15	**WP Section 3.3 .2.3.2**	Were survey results integrated into the GIS along with the SSS survey results?	X			Same as above

FINDINGS	
Item	**Comments**

Conducted By:  **Reviewed By:** _____

John W. Stoddart UXOSO/QC

PREPARATORY, INITIAL, FOLLOW-UP QC SURVEILLANCE FORM

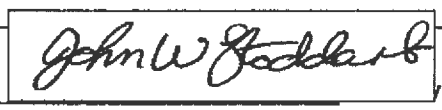
W912DY-04-D-0006, TO #0022, Culebra Environmental Baseline Survey MRSs 09 and 13

HYDROGRAPHIC SURVEY: SSS

TEAM INFORMATION		
Team: U.I.T.	Location: Culebra, P.R.	Date: 11/13/12
Team Leader: UXOSO/QC John W. Stoddart		
Personnel Present: (USACE) Kelly ~~Rodriguez~~ JS ER RQuez, (ASI) Bill Rotner, Mike Padover & Jim Nickels, (CMS) Gene Thomas		
Phase of Inspection (Circle): *Preparatory (P)* *Initial (I);* *Follow-Up (F)*		

CHECKLIST						
Item	Ref.	Inspection Point	Yes	No	N/A	Comments
1	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 1.1**	Was the proper towfish towing point installed or configured on the vessel?			X	Document deficiency and report to the SUXOS for resolution and follow-up for compliance
2	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 2.2**	Did team verify, at dockside that each component was working individually and that the survey control software was receiving data from the GPS?			X	Same as above
3	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 2.1**	Was the RTK-DGPS base station established on an established control point (certified by a PR PLS) located near the project site prior to the vessel leaving dock, and were all required position QC checks will be performed prior to conducting survey activities?	X			Same as above
4	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 2.3**	Was a rub test conducted to ensure both transducers were functioning?			X	Same as above

FINDINGS	
Item	**Comments**
1,2,4,5,6,7,8, 9,10,11,12	Not Applicable. QC report documented for establishment and QC check of Soldado Point (MRS 09) base station only. No side scan sonar operations performed.

Conducted By:  **Reviewed By:** _____

John W. Stoddart UXOSO/QC

PREPARATORY, INITIAL, FOLLOW-UP QC SURVEILLANCE FORM

W912DY-04-D-0006, TO #0022, Culebra Environmental Baseline Survey MRSs 09 and 13

HYDROGRAPHIC SURVEY: SSS

TEAM INFORMATION		
Team: U.I.T.	Location: Culebra, P.R.	Date: 11/14/12
Team Leader: UXOSO/QC John W. Stoddart		
Personnel Present: (USACE) Kelly ~~Rodriguez~~ QS ENRIQUEZ, (USAE) Jeff Lewis, (ASI) Mike Padover & Jim Nickels, (CMS) Gene Thomas		
Phase of Inspection (Circle): *Preparatory (P); Initial (I); Follow-Up (F)*		

CHECKLIST						
Item	Ref.	Inspection Point	Yes	No	N/A	Comments
1	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 1.1**	Was the proper towfish towing point installed or configured on the vessel?	X			Document deficiency and report to the SUXOS for resolution and follow-up for compliance
2	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 2.2**	Did team verify, at dockside that each component was working individually and that the survey control software was receiving data from the GPS?	X			Same as above
3	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 2.1**	Was the RTK-DGPS base station established on an established control point (certified by a PR PLS) located near the project site prior to the vessel leaving dock, and were all required position QC checks will be performed prior to conducting survey activities?	X			Same as above
4	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 2.3**	Was a rub test conducted to ensure both transducers were functioning?	X			Same as above

FINDINGS	
Item	Comments

Conducted By: John W Stoddart Reviewed By: _____

John W. Stoddart UXOSO/QC

PREPARATORY, INITIAL, FOLLOW-UP QC SURVEILLANCE FORM

W912DY-04-D-0006, TO #0022, Culebra Environmental Baseline Survey MRSs 09 and 13

HYDROGRAPHIC SURVEY: MBS

TEAM INFORMATION		
Team: U.I.T.	Location: Culebra, P.R.	Date: 11/14/12
Team Leader: UXOSO/QC John W. Stoddart		
Personnel Present: (USACE) Kelly ~~Rodriguez~~ Enriquez, (USAE) Jeff Lewis, (ASI) Mike Padover & Jim Nickels, (CMS) Gene Thomas		
Phase of Inspection (Circle): *Preparatory (P); Initial (I); Follow-Up* (F)		

CHECKLIST						
Item	Ref.	Inspection Point	Yes	No	N/A	Comments
1	**WP Section 3.3 .2.1**	Did team verify, at dockside that each component was working individually and that the survey control software was receiving data from the GPS?	X			Document deficiency and report to the SUXOS for resolution and follow-up for compliance
2	**WP Section 3.3 .2.1 & SOP SRV-013 1 Section 1**	Was the RTK-DGPS base station established on an established control point (certified by a PR PLS) located near the project site prior to the vessel leaving dock, and were all required position QC checks will be performed prior to conducting survey activities?	X			Same as above
3	**WP Section 3.3 .2.1**	Was a comprehensive MBS calibration conducted to calibrate the different components to measure the roll, pitch and yaw?	X			Same as above
4	**WP Section 3.3 .2.2.1**	Was the calibration test done, at a minimum, at the start and finish of a survey, or whenever the sounder was turned off, or conditions in the survey changed?	X			Same as above

CHECKLIST						
Item	Ref.	Inspection Point	Yes	No	N/A	Comments
5	WP Section 3.3 .2.2.1	Was a patch test conducted at the start of the survey or if change in survey was made?	X			Same as above
6	WP Section 3.3 .2.1	Did the daily QC check include cross check lines at the end of the survey?	X			Same as above
7	WP Section 3.3 .2.1	Was tow speed less than or equal to 4 knots per hour for 90% of the survey time?	X			Same as above
8	WP Section 3.3 .2.2.1	During survey operations, were all correction sensor and multi-beam data tagged and logged with the data acquisition system?	X			Same as above
9	WP Section 3.3 .2.2.1	At the start of the survey, was the speed of sound in seawater determined by a sound velocimeter?	X			Same as above
10	WP Section 3.3 .2.2.1	Were sound velocity profile and tide corrections applied as needed during data collection?	X			Same as above
11	WP Section 3.3 .2.2.1	Did data logging begin at the start of each survey line and were periodic checks done to ensure the data was logging?	X			Same as above
12	WP Section 3.3 .2.3.1	Were tide and sound velocity corrections applied to the raw data?	X			Same as above
13	WP Section 3.3 .2.3.1	Was the data checked for outliers in both the multi-beam and positioning data in both profile and swath modes?	X			Same as above
14	WP Section 3.3 .2.3.1	Were these erroneous data points, if any, removed?	X			Same as above
15	WP Section 3.3 .2.3.2	Were survey results integrated into the GIS along with the SSS survey results?	X			Same as above

FINDINGS	
Item	Comments

Conducted By: John W Stoddart

John W. Stoddart UXOSO/QC

Reviewed By: _____

PREPARATORY, INITIAL, FOLLOW-UP QC SURVEILLANCE FORM

W912DY-04-D-0006, TO #0022, Culebra Environmental Baseline Survey MRSs 09 and 13

HYDROGRAPHIC SURVEY: SSS

TEAM INFORMATION		
Team: U.I.T.	Location: Culebra, P.R.	Date: 11/15/12
Team Leader: UXOSO/QC John W. Stoddart		
Personnel Present: (USACE) Kelly Enriquez, (ASI) Mike Padover & Jim Nickels, (CMS) Gene Thomas		
Phase of Inspection (Circle): *Preparatory (P); Initial (I); Follow-Up (F)*		

CHECKLIST

Item	Ref.	Inspection Point	Yes	No	N/A	Comments
1	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 1.1**	Was the proper towfish towing point installed or configured on the vessel?	X			Document deficiency and report to the SUXOS for resolution and follow-up for compliance
2	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 2.2**	Did team verify, at dockside that each component was working individually and that the survey control software was receiving data from the GPS?	X			Same as above
3	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 2.1**	Was the RTK-DGPS base station established on an established control point (certified by a PR PLS) located near the project site prior to the vessel leaving dock, and were all required position QC checks will be performed prior to conducting survey activities?	X			Same as above
4	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 2.3**	Was a rub test conducted to ensure both transducers were functioning?	X			Same as above

CHECKLIST						
Item	Ref.	Inspection Point	Yes	No	N/A	Comments
5	**WP Section 3.3 .2.2.2 & SOP SRV-006 1 Section 2.4**	Was the towfish deployed to the appropriate altitude prior to running survey lines (altitude above bottom should equal 10% of range)?	X			Same as above
6	**WP Section 3.3 .2.2.2**	Did towfish remain more than 5 vertical feet from coral and sea grass throughout deployment?	X			Same as above
7	**WP Section 3.3 .2.1**	Was tow speed less than or equal to 4 knots per hour for 90% of the survey time?	X			Same as above
8	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 2.6**	Was the sensor towed past (and a pass in the opposite direction) a known object to ensure the target was detected?	X			Same as above
9	**WP Section 3.3 .2.2.2 & SOP SRV-006 1 Section 3.2**	Did data logging begin at the start of each survey line and were periodic checks done to ensure the data was logging?	X			Same as above
10	**WP Section 3.3 .2.3.2**	Was each individual file bottom tracked to ensure accurate results?	X			Same as above
11	**WP Section 3.3 .2.3.2**	Was layback accuracy checked by reviewing the records of an isolated object, comparing its plotted location on overlapping lines acquired in opposite directions?	X			Same as above
12	**WP Section 3.3 .2.3.2**	Were survey results integrated into the GIS along with the multi-beam bathymetric survey results?	X			Same as above

FINDINGS	
Item	Comments

Conducted By: John W Stoddart

John W. Stoddart UXOSO/QC

Reviewed By: _____

PREPARATORY, INITIAL, FOLLOW-UP QC SURVEILLANCE FORM

W912DY-04-D-0006, TO #0022, Culebra Environmental Baseline Survey MRSs 09 and 13

HYDROGRAPHIC SURVEY: MBS

TEAM INFORMATION		
Team: U.I.T.	Location: Culebra, P.R.	Date: 11/15/12
Team Leader: UXOSO/QC John W. Stoddart		
Personnel Present: (USACE) Kelly Enriquez, (ASI) Mike Padover & Jim Nickels, (CMS) Gene Thomas		
Phase of Inspection (Circle): *Preparatory (P); Initial (I); Follow-Up (F)*		

CHECKLIST						
Item	Ref.	Inspection Point	Yes	No	N/A	Comments
1	**WP Section 3.3 .2.1**	Did team verify, at dockside that each component was working individually and that the survey control software was receiving data from the GPS?	X			Document deficiency and report to the SUXOS for resolution and follow-up for compliance
2	**WP Section 3.3 .2.1 & SOP SRV-013 1 Section 1**	Was the RTK-DGPS base station established on an established control point (certified by a PR PLS) located near the project site prior to the vessel leaving dock, and were all required position QC checks will be performed prior to conducting survey activities?	X			Same as above
3	**WP Section 3.3 .2.1**	Was a comprehensive MBS calibration conducted to calibrate the different components to measure the roll, pitch and yaw?	X			Same as above
4	**WP Section 3.3 .2.2.1**	Was the calibration test done, at a minimum, at the start and finish of a survey, or whenever the sounder was turned off, or conditions in the survey changed?	X			Same as above

CHECKLIST						
Item	Ref.	Inspection Point	Yes	No	N/A	Comments
5	WP Section 3.3 .2.2.1	Was a patch test conducted at the start of the survey or if change in survey was made?	X			Same as above
6	WP Section 3.3 .2.1	Did the daily QC check include cross check lines at the end of the survey?	X			Same as above
7	WP Section 3.3 .2.1	Was tow speed less than or equal to 4 knots per hour for 90% of the survey time?	X			Same as above
8	WP Section 3.3 .2.2.1	During survey operations, were all correction sensor and multi-beam data tagged and logged with the data acquisition system?	X			Same as above
9	WP Section 3.3 .2.2.1	At the start of the survey, was the speed of sound in seawater determined by a sound velocimeter?	X			Same as above
10	WP Section 3.3 .2.2.1	Were sound velocity profile and tide corrections applied as needed during data collection?	X			Same as above
11	WP Section 3.3 .2.2.1	Did data logging begin at the start of each survey line and were periodic checks done to ensure the data was logging?	X			Same as above
12	WP Section 3.3 .2.3.1	Were tide and sound velocity corrections applied to the raw data?	X			Same as above
13	WP Section 3.3 .2.3.1	Was the data checked for outliers in both the multi-beam and positioning data in both profile and swath modes?	X			Same as above
14	WP Section 3.3 .2.3.1	Were these erroneous data points, if any, removed?	X			Same as above
15	WP Section 3.3 .2.3.2	Were survey results integrated into the GIS along with the SSS survey results?	X			Same as above

FINDINGS	
Item	Comments

Conducted By: John W Stoddart

John W. Stoddart UXOSO/QC

Reviewed By: _____

PREPARATORY, INITIAL, FOLLOW-UP QC SURVEILLANCE FORM

W912DY-04-D-0006, TO #0022, Culebra Environmental Baseline Survey MRSs 09 and 13

HYDROGRAPHIC SURVEY: SSS

TEAM INFORMATION		
Team: U.I.T.	Location: Culebra, P.R.	Date: 11/16/12
Team Leader: UXOSO/QC John W. Stoddart		
Personnel Present: (ASI) Mike Padover & Jim Nickels, (CMS) Gene Thomas		
Phase of Inspection (Circle): *Preparatory (P); Initial (I); Follow-Up (F)*		

CHECKLIST

Item	Ref.	Inspection Point	Yes	No	N/A	Comments
1	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 1.1**	Was the proper towfish towing point installed or configured on the vessel?	X			Document deficiency and report to the SUXOS for resolution and follow-up for compliance
2	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 2.2**	Did team verify, at dockside that each component was working individually and that the survey control software was receiving data from the GPS?	X			Same as above
3	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 2.1**	Was the RTK-DGPS base station established on an established control point (certified by a PR PLS) located near the project site prior to the vessel leaving dock, and were all required position QC checks will be performed prior to conducting survey activities?	X			Same as above
4	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 2.3**	Was a rub test conducted to ensure both transducers were functioning?	X			Same as above
5	**WP Section 3.3 .2.2.2 & SOP SRV-006**	Was the towfish deployed to the appropriate altitude prior to running survey lines	X			Same as above

CHECKLIST						
Item	Ref.	Inspection Point	Yes	No	N/A	Comments
	1 Section 2.4	(altitude above bottom should equal 10% of range)?				
6	**WP Section 3.3 .2.2.2**	Did towfish remain more than 5 vertical feet from coral and sea grass throughout deployment?	X			Same as above
7	**WP Section 3.3 .2.1**	Was tow speed less than or equal to 4 knots per hour for 90% of the survey time?	X			Same as above
8	**WP Section 3.3 .2.1 & SOP SRV-006 1 Section 2.6**	Was the sensor towed past (and a pass in the opposite direction) a known object to ensure the target was detected?	X			Same as above
9	**WP Section 3.3 .2.2.2 & SOP SRV-006 1 Section 3.2**	Did data logging begin at the start of each survey line and were periodic checks done to ensure the data was logging?	X			Same as above
10	**WP Section 3.3 .2.3.2**	Was each individual file bottom tracked to ensure accurate results?	X			Same as above
11	**WP Section 3.3 .2.3.2**	Was layback accuracy checked by reviewing the records of an isolated object, comparing its plotted location on overlapping lines acquired in opposite directions?	X			Same as above
12	**WP Section 3.3 .2.3.2**	Were survey results integrated into the GIS along with the multi-beam bathymetric survey results?	X			Same as above

FINDINGS	
Item	Comments

Conducted By: John W Stoddart Reviewed By: _____

John W. Stoddart UXOSO/QC

PREPARATORY, INITIAL, FOLLOW-UP QC SURVEILLANCE FORM

W912DY-04-D-0006, TO #0022, Culebra Environmental Baseline Survey MRSs 09 and 13

HYDROGRAPHIC SURVEY: MBS

TEAM INFORMATION		
Team: U.I.T.	Location: Culebra, P.R.	Date: 11/16/12
Team Leader: UXOSO/QC John W. Stoddart		
Personnel Present: (ASI) Mike Padover & Jim Nickels, (CMS) Gene Thomas		
Phase of Inspection (Circle): *Preparatory (P); Initial (I); Follow-Up* (F)		

CHECKLIST						
Item	Ref.	Inspection Point	Yes	No	N/A	Comments
1	**WP Section 3.3 .2.1**	Did team verify, at dockside that each component was working individually and that the survey control software was receiving data from the GPS?	X			Document deficiency and report to the SUXOS for resolution and follow-up for compliance
2	**WP Section 3.3 .2.1 & SOP SRV-013 1 Section 1**	Was the RTK-DGPS base station established on an established control point (certified by a PR PLS) located near the project site prior to the vessel leaving dock, and were all required position QC checks will be performed prior to conducting survey activities?	X			Same as above
3	**WP Section 3.3 .2.1**	Was a comprehensive MBS calibration conducted to calibrate the different components to measure the roll, pitch and yaw?	X			Same as above
4	**WP Section 3.3 .2.2.1**	Was the calibration test done, at a minimum, at the start and finish of a survey, or whenever the sounder was turned off, or conditions in the survey changed?	X			Same as above
5	**WP Section 3.3 .2.2.1**	Was a patch test conducted at the start of the survey or if	X			Same as above

CHECKLIST						
Item	Ref.	Inspection Point	Yes	No	N/A	Comments
		change in survey was made?				
6	**WP Section 3.3 .2.1**	Did the daily QC check include cross check lines at the end of the survey?	X			Same as above
7	**WP Section 3.3 .2.1**	Was tow speed less than or equal to 4 knots per hour for 90% of the survey time?	X			Same as above
8	**WP Section 3.3 .2.2.1**	During survey operations, were all correction sensor and multi-beam data tagged and logged with the data acquisition system?	X			Same as above
9	**WP Section 3.3 .2.2.1**	At the start of the survey, was the speed of sound in seawater determined by a sound velocimeter?	X			Same as above
10	**WP Section 3.3 .2.2.1**	Were sound velocity profile and tide corrections applied as needed during data collection?	X			Same as above
11	**WP Section 3.3 .2.2.1**	Did data logging begin at the start of each survey line and were periodic checks done to ensure the data was logging?	X			Same as above
12	**WP Section 3.3 .2.3.1**	Were tide and sound velocity corrections applied to the raw data?	X			Same as above
13	**WP Section 3.3 .2.3.1**	Was the data checked for outliers in both the multi-beam and positioning data in both profile and swath modes?	X			Same as above
14	**WP Section 3.3 .2.3.1**	Were these erroneous data points, if any, removed?	X			Same as above
15	**WP Section 3.3 .2.3.2**	Were survey results integrated into the GIS along with the SSS survey results?	X			Same as above

FINDINGS	
Item	Comments

Conducted By: John W Stoddart

John W. Stoddart UXOSO/QC

Reviewed By: _____

				GPS Checks		NAD83	PR/VI State Plane			USF					
				Easting	Northing		Easting	Northing	Easting	Northing					
Date	File Name	Team	Base Station	X (ft)	Y (ft)	Check Point	Known X (ft)	Known Y (ft)	Measured X (ft)	Measured Y (ft)	Delta X (ft)	Delta Y (ft)	Offset (ft)	Metric (ft)	Status
1/9/2013	1-09-13qc	ROV	**padang2**	1045760.506	827864.57	**padang1**	1045758.193	827977.101	1045758.19	827977.066	0.003	0.035	0.035	0.328	Pass
1/10/2013	1-10-13qc	ROV	**padang2**	1045760.506	827864.57	**padang1**	1045758.193	827977.101	1045758.229	827977.055	-0.036	0.046	0.058	0.328	Pass
1/11/2013	1-11-13qc	ROV	**josue1**	1054884.865	821491.46	**josue2**	1054990.909	821439.325	1054990.889	821439.28	0.02	0.045	0.049	0.328	Pass
1/11/2013	1-11-13qc	ROV	**padang2**	1045760.506	827864.57	**padang1**	1045758.193	827977.101	1045758.242	827977.123	-0.049	-0.022	0.054	0.328	Pass
1/12/2013	1-12-13qc	ROV	**padang2**	1045760.506	827864.57	**padang1**	1045758.193	827977.101	1045758.259	827977.117	-0.066	-0.016	0.068	0.328	Pass
1/16/2013	1-16-13qc	ROV	**padang2**	1045760.506	827864.57	**padang1**	1045758.193	827977.101	1045758.164	827977.114	0.029	-0.013	0.032	0.328	Pass
1/17/2013	1-17-13qc	ROV	**josue1**	1054884.865	821491.46	**josue2**	1054990.909	821439.325	1054990.913	821439.308	-0.004	0.017	0.017	0.328	Pass
1/17/2013	1-17-13qc	ROV	**padang2**	1045760.506	827864.57	**padang1**	1045758.193	827977.101	1045758.168	827977.113	0.025	-0.012	0.028	0.328	Pass
1/18/2013	1-18-13qc	ROV	**padang2**	1045760.506	827864.57	**padang1**	1045758.193	827977.101	1045758.142	827977.106	0.051	-0.005	0.051	0.328	Pass

MRS 9 and 13 Observation Form

Date: 1/11/13 Time: 14:53

Easting/Longitude: 254002.4 Northing/Latitude: 2025165.7

Coordinate System if not Lat/Lon: UTM - Zone 20 N - Meter

Activity When Seen: (Boating) Snorkeling (Surveying) Transiting

Number of Turtles/Mammals Seen: 1 Approximate Distance: 70 yards

What were the turtles doing: Basking at surface (Surfacing for air) Resting on bottom

Swimming Eating Other:

Health of Turtle: (Alive) Dead Injured Unknown

Approximate Length: 0.7 m Tags or Identifying Marks: none seen

Species Observed: (Green) Hawksbill Loggerhead Leatherback Ridley

Manatee Humpback Finback Sei Sperm Blue

Other Comments: no action taken as turtle took several breaths and submerged heading in opposite direction of boat.

MRS 9 and 13 Observation Form

Date: 1/10/13 Time: 14:15:11

Easting/Longitude: 252474.4 Northing/Latitude: 2026019.8

Coordinate System if not Lat/Lon: UTM-Zone 20 N-meter

Activity When Seen: ~~Boating~~ Snorkeling (Surveying) Transiting

Number of Turtles/Mammals Seen: ___ Approximate Distance: 15' below camera

What were the turtles doing: Basking at surface Surfacing for air Resting on bottom

(Swimming) Eating Other: _____

Health of Turtle: (Alive) Dead Injured Unknown

Approximate Length: 0.8 m Tags or Identifying Marks: _____

Species Observed: Green Hawksbill Loggerhead Leatherback Ridley

Manatee Humpback Finback Sei Sperm Blue

Other Comments: Turtle seen on video - swimming opposite direction.

No action taken as no further surveying in area required.

MRS 9 and 13 Observation Form

Date: 4/10/13 Time: 10:41

Easting/Longitude: 253828.8 Northing/Latitude: 2026530.5

Coordinate System if not Lat/Lon: UTM - Zone 20 - Meters

Activity When Seen: (Boating) Snorkeling (Surveying) Transiting

Number of Turtles/Mammals Seen: 1 Approximate Distance: 60 m

What were the turtles doing: Basking at surface (Surfacing for air) Resting on bottom

Swimming Eating Other:

Health of Turtle: (Alive) Dead Injured Unknown

Approximate Length: .8 m Tags or Identifying Marks: None seen

Species Observed: (Green) Hawksbill Loggerhead Leatherback Ridley

Manatee Humpback Finback Sei Sperm Blue

Other Comments: Turtle seen when turning from Transect 7 to 8. Turtle headed North, vessel headed South. No action taken. No later transects w/in 75m of sighting location.

MRS 9 and 13 Observation Form

Date: 4/17/13 Time: 14:37:53

Easting/Longitude: 253447 Northing/Latitude: 2024623

Coordinate System if not Lat/Lon: Utm-Zone 20 N - Meter

Activity When Seen: (Boating) Snorkeling (Surveying) Transiting

Number of Turtles/Mammals Seen: 1 Approximate Distance: ~~20~~ 10' below camera

What were the turtles doing: Basking at surface Surfacing for air Resting on bottom

(Swimming) Eating Other:

Health of Turtle: (Alive) Dead Injured Unknown

Approximate Length: 0.9 m Tags or Identifying Marks: none seen

Species Observed: (Green) Hawksbill Loggerhead Leatherback Ridley

Manatee Humpback Finback Sei Sperm Blue

Other Comments: Turtle seen in video. Stationary just above bottom. no reaction to camera passing. Action taken - Transect completed and exited area in case turtle was disturbed.