



**USA Environmental, Inc.**  
A Small Business • Munitions Response Services

**Professionalism  
Responsiveness  
Cost Effectiveness**

## Underwater MEC Services

USA is a small business leader in locating, assessing, characterizing, and removing MEC from underwater (UW) environments, which can be significantly more complex and expensive than addressing MEC on land. Just as with land-based munitions, clearing underwater beaches and marine environments is important to public safety and land use. USA includes thorough planning for sensitive marine habitats and endangered species while using remote methods to enhance the safety of personnel.

USA has a wide array of tools such as autonomous UW vehicles, towed DGM and magnetometer arrays, *Shark Marine* dive tablets, and *VideoRay* Remotely Operated Vehicles (ROVs) with Smart Tether Navigation/Positioning, allowing for real-time observation and video documentation.



**MEC Diver jetting after clearing the site with an UW detector**

USA's MEC divers are mostly prior U.S. Navy EOD technicians familiar with the techniques and safety protocols of locating, assessing, characterizing and removing both terrestrial ordnance located in the water and UW ordnance.

USA has performed UW MEC services for more than 10 years in CONUS/OCNUS locations, including Hawaii, U.S. territories (Puerto Rico, Guam, and CNMI) and Territorial waters. USA has successfully completed more than 25 underwater projects, covering over 150,000 acres within the continental United States, the Pacific, and the Caribbean.

For example, USA successfully performed a Remedial Investigation/Feasibility Study (RI/FS) at Culebra Island, Puerto Rico, for the U.S. Army, that entailed the investigation of six Munitions Response Sites covering 3,746 acres, of which 678 acres were located underwater. Innovative technologies used to collect UW data included an UW EM61 DGM system deployed in custom float, ROV, and sled configurations.

### Underwater MEC Services and Capabilities

- MEC detection, identification, and characterization using trained MEC dive teams
- MEC clearance and removal actions
- Explosive disposal/detonation with post-blast visual survey
- Consideration, planning, and protection for sensitive/dynamic marine habitats/endangered species, including coral surveys and marine habitat assessments

- Rapid response
- Working/Inspection Class ROV operations
- Experienced corporate team members
- Ability to safely operate in remote/higher risk locations

### Other Underwater Survey and Investigation Systems

- Towed camera
- Side scan sonar
- Magnetometers
- Electromagnetic (EM) sensors
- Single/multi-beam bathymetry



**Projectile Located in the Underwater Environment**



**USA Deploys a Remotely Operated Lift Balloon System on MEC Item as Part of a Removal Action**

### Advanced Technologies

#### **Shark Marine Technologies Inc. Dive Tablets**

- Uses GPS from the surface or *Doppler Navigation System (DNS)* for underwater dead reckoning
- *DiveLog* software provides a user-friendly way for a diver to navigate to and capture a location's associated data, as well as map underwater features
- Captures both still photos and videos
- Rugged design and good down to 30 meters (100 feet)

#### **Shark Marine Dive Tablet Being Used in the Field**





## Underwater Culvert/Structure Inspection

USA expands the use of their Inspection Class ROVs for Underwater MEC Services to include inspection of **culverts, dams, and other underwater structures.**

USA owns two VideoRay ROVs with Smart Tether navigation/positioning systems, which allows both real-time observation and video recording/documentation of underwater environments with accurate Global Positioning System (GPS) positioning.



*Working/Inspection class ROV*

### Inspection Class ROVs for Non-MEC Related Activities

- Effective inspection of culverts, dams, pilings, and other structures in low visibility underwater environments, requiring both equipment and experienced operators
- Highly mobile system contained within 2-3 Pelican cases; quick pre-deployment lead time and low cost
- Not restricted to any bottom time limitation; effectively operates in currents of 2 to 3 knots
- Real-time video documentation, with high resolution cameras to capture data for assessment and historical records
- Access to very shallow waters and the ability to safely maneuver around obstructions
- Operated from truck bed, small boat, pier, land, etc.
- Small size allows operations in confined spaces

### Specifications

- Operational depth range: 1 to 300 ft.
- *Smart Tether* navigation system for accurate underwater GPS location (5-ft accuracy)
- Integrated 900-kHz sonar for low visibility maneuvering
- 110V power source, small generator, or car/boat battery
- Sonar for navigation in low visibility water bodies with less than 1-ft. visibility

*Alligator attempting to take a bite of the cables of the ROV in a Florida river*



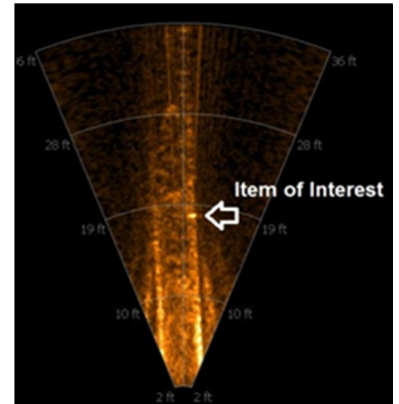
### Applicable Capabilities

- Compared to other inspection methods: cost effective, safer, faster, less complex
- High Intensity lights for blackout conditions
- Ability to maneuver/ conduct visual inspection at close proximity and can hold position within 4-6 inches

### Field Tested

Recently, USA conducted culvert ROV video inspections for the Southwest Florida Water Management District at the Tsala Apopka Canal, Tampa Bypass Canal, and Harney Canal.

- Inspected 2 culverts, estimate 100-ft and 50-ft in length
- Salt and fresh water, tannic/low visibility, in blackout conditions
- Effectively maneuvered and completed visual inspection with full coverage of notional seam



*Visual ROV inspection of sonar target (calcified growth/shell on culvert wall)*



### Enhanced Safety

- Operates in high risk environments without exposure of operators/ personnel/divers
- Unlimited bottom time

### Data Viewing and Capture

- Identification of obstacles and structural integrity with the ability to inspect at close proximity
- Additional monitors for others to observe/verify inspection
- Video/sonar data can be recorded, processed/edited, and provided via multiple delivery methods.



*ROV being sent to inspect the inside of a culvert*