



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

**Professionalism  
Responsiveness  
Cost Effectiveness**

## Underwater MEC Services

USA Environmental, Inc. (USAE) is a small business leader in locating, assessing, characterizing, and removing Munitions and Explosives of Concern (MEC) from underwater (UW) environments, which can be significantly more complex than addressing MEC on land. Similar to land-based munitions, clearing tidal and marine environments is important to public safety, environmental protection, and land use. USAE incorporates detailed planning when working in and around sensitive marine habitats and endangered species, oftentimes using remote methods to enhance their protection and the safety of personnel.

USAE's MEC divers are highly experienced at providing UW site investigation and remediation services. Mostly prior U.S. Navy EOD technicians, USAE's MEC divers are familiar with the techniques and safety protocols of locating, assessing, characterizing and removing tidal, beach and UW ordnance.

USAE explores world-wide trends in scientific and technological solutions to continually improve our value to our customers. We employ a wide array of tools such as autonomous UW vehicles, towed DGM and magnetometer arrays, navigation dive tablets, and Remotely Operated Vehicles (ROVs) with multibeam imaging sonar positioning, allowing for real-time observation and video documentation.



**USAE MEC Diver Clears the Site with an UW Detector**

### Client Satisfaction

USAE has more than 16 years of experience performing UW MEC services at CONUS/OCONUS locations, including Hawaii, U.S. territories (Puerto Rico, Guam, and CNMI), completing more than 50 UW projects.

*"Field effort is always ahead of schedule...underwater effort exceeded schedule by 300%...task order under budget overall". NAVFAC Atlantic comments, MEC Removal, Vieques Island, Puerto Rico.*

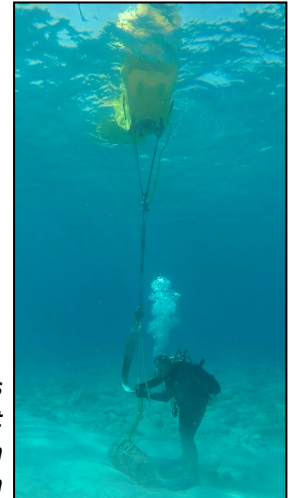
*"USAE team overcame obstacles (many physical!) in executing the current fieldwork,...This follows the Remedial Investigation work where USAE's meticulous care during execution of all three phases of underwater fieldwork gained the Corps greater credibility with our regulatory and resource agency partners." USACE Jacksonville DERP-FUDS Program Manager comments on RI/FS work at Culebra, Puerto Rico.*

### Core Value: "Environmental Responsibility"

*Dedicated to preserving a safe and healthy environment, USAE implements best practices to demonstrate our environmental stewardship.*



**Projectile in the UW Environment**



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

### Underwater MEC Services and Capabilities

- MEC detection, identification, and characterization.
- MEC clearance and removal actions.
- Explosive disposal/detonation w/ post-blast visual survey.
- Planning and protection for marine habitats/endangered species, including coral surveys and habitat assessments.
- Rapid response.
- Ability to safely operate in remote/higher risk locations.
- Towed camera; side scan sonar; magnetometers.
- Electromagnetic (EM) sensors; single/multi-beam bathymetry.

### Shark Marine Technologies, Inc. Dive Tablets

- Uses GPS from the surface or *Doppler Navigation System (DNS)* for UW 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 UW features.
- Captures both still photos and videos.
- Rugged design and good down to 30 meters (100 feet).

### Shark Marine Dive Tablets improves Location Accuracy in the Field





## Underwater Culvert/Structure Inspection

Using Inspection Class ROVs, USAE performs inspection of culverts, dams, and other UW structures.

USAE owns two VideoRay ROVs which allow real-time observation and video recording/documentation of UW environments.



**USAE's Working/Inspection class ROVs**

**Enhance Safety and Reduce Costs of Underwater Field Operations**

### Field Tested

USAE routinely conducts ROV video inspections for the Southwest Florida Water Management District (SWFWMD) at various culverts and water control structures.

- Inspects 50-60 culverts per year; culvert lengths range from 50 ft. to 300 ft. in length.
- Salt and fresh water, tannic/low visibility, in blackout conditions.
- Effectively maneuver and complete visual inspections, with full coverage of culvert and seams between culvert segments.

### Enhanced Safety

- ROV operates in high risk environments without exposure of operators/personnel/divers.
- Unlimited bottom time.

### Capabilities

- Experienced operators effectively inspect culverts, dams, pilings, and other structures in low visibility UW environments.
- Highly mobile system; quick pre-deployment lead time and low cost.
- Real-time video documentation, with high resolution cameras to capture data for assessment and historical records.
- Ability to maneuver/conduct visual inspection at close proximity and can hold position within 4-6 inches.



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

### Core Value: "Proper Application of Technology"

*Committed to exploring world-wide trends in scientific and technological solutions, USAE maintains a high level of skill and seeks to continually improve our value to our customers.*

- Operates from shoreline, small boat, pier, land, etc.
- Small size allows operations in confined spaces.
- Compared to other inspection methods: cost effective, safer, faster, less complex.

### Specifications

- Operational depth range: 1 to 1,000 ft.
- Uses 110V power source.
- Operates in currents of 2 to 3 knots.
- Sonar for navigation in low visibility water bodies with less than 1-ft. visibility.
- High Intensity lights for blackout conditions.

### Data Viewing and Capture

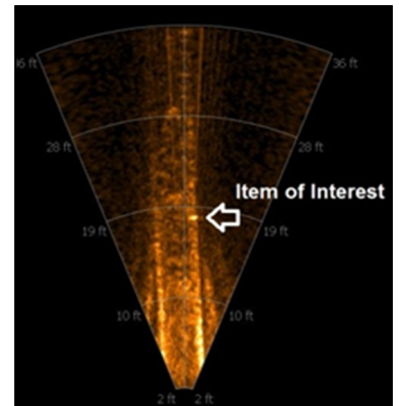
- Identification of obstacles and structural integrity with the ability to inspect at close proximity.
- Additional monitors for others to observe/verify inspection.
- Video/sonar data can be recorded, processed/edited, and provided via multiple delivery methods.

### Optional Accessories

- Blueprint Oculus Sonar-dual frequency multibeam imaging sonar allows for navigation and detection of UW objects in low visibility UW environments.
- Blueprint SeaTrac Ultra-Short Baseline (USBL) positioning system-acoustic positioning system that allows for navigation and location of UW targets.



**USAE's portable, highly mobile ROV system provides flexible, cost effective UW solutions**



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

