



EM-Tipped Jet-Probe™ Detects Sediment & Soil Embedded Ferrous and Non-Ferrous Objects

FACT: A new proprietary hybrid system combines Geonics' EM-61 consoles with Aqua Survey-developed electromagnetic sensor tipped jet-probes. This combination allows divers as well as topside and terrestrial technicians to advance an EM probe by utilization of a water-jet at the tip of the probe while at the same time detecting both ferrous and non-ferrous buried metals. The probe can be attached to various length handles (2-40 feet) thus enabling probing at greater depths. Operators are alerted both visually and audibly when metal objects are detected in advance of the probe. This system provides a safe, efficient and cost effective alternative for the probing of sediment or soils for metal objects. Probes can also be operated without water-jetting in unconsolidated sediments.

FACT: A Geonics' EM-61 electromagnetic time domain system is the worldwide standard equipment for detecting buried MEC and other metal targets of interest.

FACT: Underwater jet-probing has been used successfully for decades to investigate sediment characteristics, shipwrecks, pilings and other underwater objects. Aqua Survey has provided underwater probing services since the 1980's.



EM-Tipped Jet-Probe™

Patent in Process

FACT: Aqua Survey has extensive experience utilizing Geonics' equipment underwater to detect MEC, cultural resources, utilities and other metal targets of interest.

FACT: An EM-Tipped Jet-Probe™ will allow investigators to surgically and safely probe areas with:

- **Sensitive Ecology**
- **Buried Utilities**
- **Buried Steel Drums**
- **Cultural Artifacts**
- **Munitions and Explosives of Concern.**

The EM-Tipped Jet-Probe™ alerts the technician that the probe is approaching a target prior to making contact with it and can cost-effectively increase project safety while significantly increasing efficiency.

DESIGN AND CAPABILITIES:

The EM-Tipped Jet-Probe™ has electromagnetic sensor coils encircling its leading end. These coils are connected to the EM-61 console. Through the center of the EM tip a water-port releases a pressurized jet of water. This jet allows the technician to advance the probe. An EM-tip plus water-jetting capabilities coupled with a Geonics' time domain metal detector console allows a field technician to penetrate sediment or soil layers while simultaneously detecting ferrous and non-ferrous objects.

The system can detect the following vertical projectiles in advance of the probe:

- 20-mm at 9 inches (dummy round)**
- 40-mm at 11 inches**
- 80-mm at 14 inches**
- 105-mm at 16 inches**

The EM-Tipped Jet-Probe™ can detect an empty 55-gallon steel drum in advance of the probe:

- Vertical drum at 28 inches**
- Horizontal drum at 23 inches**

Detection ranges are based on the signal to noise ratio being approximately 20 and the system being run at 12 volts. The EM-Tipped Jet-Probe™ can be operated at either 12 or 24 volts.

CONTACT:

Contact Ken Hayes to learn more about how the fusion of EM technology and jet-probing can bring greater safety, science and savings to your project.

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