

# Fundamentals of Underground Utility Locating Theory and Applications Hands-on Training

**NOTES:**      Please arrive at 7:30 am. This course begins at 8:00 am and ends at 11:15 am.  
There is also an afternoon class at this location on this day. See course listings.

**Course objective:** To teach the basic theory behind electromagnetic locating, understand the different functions and options offered by today’s instruments, and learn how to maximize its use in the field. The course is oriented towards everyday applications.

**Who will benefit from this course?** Water and wastewater operators, technicians, engineers, supervisors, foremen and others involved in locating underground utilities will benefit by learning how locators work, and why they behave in certain ways in real world applications. The course consists of 2.5 hours of classroom presentation plus 30 minutes’ hands-on use of equipment (indoors or outdoors depending on weather).

**Agenda:**

7:30-8:00	Sign-in
8:00-11:15	Why Locate? Background and brief history of locating. Technologies available today Electromagnetic fields Passive and Active signals Passive signals a) Where do they come from? b) Types of passive signal Active Signals a) Methods of application, b) How to verify a good signal is applied, c) Frequencies i) High vs Low ii) Pros/Cons Aerials for locating a signal on a line – receiver response Advanced tools a) Depth estimation, b) Current readings, c) Current direction Locating techniques a) Steps to an accurate locate, b) Locating nonmetallic lines – GPR Locating a Sonde Troubleshooting a locate – distortion <b>Practical</b>
11:15	<b>Dismissal and paperwork</b>

There will be one 15-minute break.

**Instructor:**

**Gus Salles, Eastcom Associates** – 24 years in the locating industry. Spent 16 years at Radiodetection Corp. ('92 to '08) providing sales support and technical training for utility locating equipment, water leak detection, cable fault finding, pipeline inspection. Extensive travel to Latin America in the '90s to develop the utility locating market for Radiodetection.  
3 years at Eastcom Associates, Inc. Responsible for marketing, tech support, and sales to the water and sewer industry in NJ, and CATV throughout Mid-Atlantic and Northeast.  
Electro-Mechanical Engineer from Univ. of Buenos Aires - 1981

**Accreditation:**

3.0 Training Contact Hours for NJ-Licensed Water/Wastewater Operators. TCH Course Number 04-101502-30  
3.0 Hours toward license renewal for NJ Certified Public Works Managers: DLGS-NJWA-87 # (3.0 Technical)

**Date and Location:**

**September 9, 2025 – Egg Harbor City Fire, 631 Philadelphia Avenue, Egg Harbor City (Atlantic County)**

**No more than four attendees per utility or employer.**  
**Please plan to arrive at 7:30 am for sign-in.**

**Registration is required and is available at [www.njwater.org](http://www.njwater.org)**

**The New Jersey Water Association**