

# Aqua Foundation Academy

(an entity of Aqua Foundation, registered under Societies Act 1956)



## Training Workshop: Detection & Mapping of Underground Utilities (Subsurface Utility Engineering)

*September 25 - 26, 2014, Hotel Oasis, Deonar, Mumbai, India*

### Introduction:

Having accurate knowledge of subsurface/ underground/ buried utilities (pipes/ cables/ drains etc.) is critical for any infrastructure project. The successful detection and mapping of buried utilities involves the combination of several techniques, the results of which are synthesized down to a single interpreted plot. The techniques and methodologies used will primarily depend upon the required outcome for the survey, the site conditions and the type of pipes or cables being targeted.

Subsurface Utility Engineering (SUE) is an upcoming field dealing with procedure and standards for detection and mapping of underground utilities. The workshop comprehensively covers all the aspects related to conducting a successful underground utility detection and mapping project.

### Who Should Attend?

This 02 day training workshop program will help professionals, engineers and managers from entire spectrum of construction, infrastructure and municipal sector, including but not limited to:

- ☐ Water, electrical, telecom, gas and other utility companies
- ☐ GIS companies
- ☐ Construction/ Infrastructure organizations, MES
- ☐ Trenchless companies
- ☐ Refineries/ factories/ plants
- ☐ Municipalities/ Municipal Corporations
- ☐ Utility repair/ rehabilitation organizations
- ☐ Airport Authorities/ planners/ consultants/ contractors
- ☐ Highway authorities/ planners/ consultants/ contractors
- ☐ Environment consultants/ contractors
- ☐ Fresh engineers planning to pursue career as SUE engineer
- ☐ Engineers/ managers conducting/ supervising utility detection projects

### Benefits:

The program will benefit an individual or organization by reducing risks and costs involved while meeting an existing utility unexpectedly during construction. The program will also help organizations plan towards creating database of existing utilities in their area (refineries/ plants/ factories) for future reference/ expansion plans/ repair & rehabilitation. There is an urgent need for capacity building in the field of SUE, and program will also help participants to pursue career in this field.

### Key Elements:

- Introduction to Subsurface Utility Engineering
- Utility Quality Level Attributes
  - Quality Level D, C, B, A
- Steps and procedures for QL-D data collection
- Survey procedures for collecting QL-C data (including use of total station, DGPS etc.)
- Field Procedure and Approaches for GPR Surveys
  - Antenna selection, frequency v/s depth
  - Various Antenna Configurations in various applications
  - Data acquisition, data handling
- Data Processing of GPR data
  - High pass, low pass filters, Ormsy bandpass filtering, Notch Filters
  - AGC, Move Out Correction, Terrain Correction, Migration, energy envelops
  - Time-depth conversion
- Data interpretation of GPR data
- Field Procedure and Approaches for EPL Surveys
  - Direct Connection Mode, Clamp Mode, Induction Mode
  - Choosing right frequency & locating in difficult cases
- SUE map preparation guidelines, including plan, L-section etc.
- Special session of SUE for HDD and Micro Trenching

### Facilitator:

A geophysicist working in the field of engineering geophysics for last 24 years having M. Tech., MBA and Doctorate qualifications. He pioneered the concept of Subsurface Utility Engineering (SUE) in India, dealing with management of underground utility infrastructure during construction projects, to ensure safety of utilities, personnel and public.

### Venue:

Oasis Banquets, Sion Trombay Road, Near Deonar Traffic Signal, Mumbai

### Fee Structure:

Rs 10,000 per participant, inclusive of training notes, morning & evening tea & Lunch. A discount of 20% for students and 10% discount on group booking of 04 or more participants from a single organization is applicable.

### Registration Process:

Prior registration is must by sending email to [info@aquafoundation.in](mailto:info@aquafoundation.in). Fee to be paid through DD in favour of Aqua Foundation payable at Delhi. It can also be deposited in following account:

**Name of the Bank:** ICICI Bank Ltd; **Address of the Bank:** ICICI Bank, 9 A, Phelps Building, Connaught Place, New Delhi- 110001; **Name of the Account holder:** AQUA FOUNDATION;  
**A/C no :** 000701260885; **IFSC Code:** ICIC0000007

**Contact Details:** Charge de' Affaires, Aqua Foundation, 403-A, Shree Saisagar CHS,  
Plot No: 18, Sector – 2, Sanpada East, Navi Mumbai – 400705, Mobile: +91-9867277884,  
[atuldayal@aquafoundation.in](mailto:atuldayal@aquafoundation.in)