



HORIZONTAL DIRECTIONAL DRILLING GOOD PRACTICES GUIDELINES COURSE

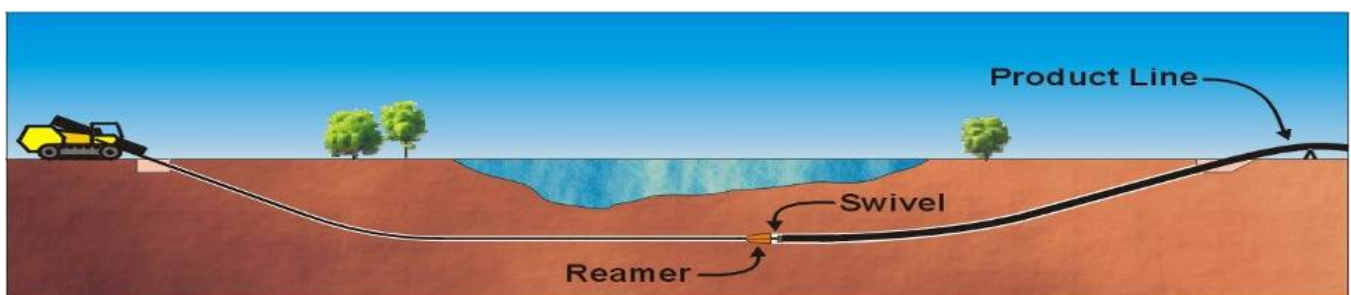
**November 5-6, 2009
York Region Waste Management Centre
York Region, Ontario Canada**

- Apply HDD techniques to construction and rehabilitation projects
- Implement good practices for successful HDD projects
- Evaluate HDD project risks and mitigation strategies
- Understand issues that impact the success of HDD projects
- Earn Continuing Education Units (CEUs) for your participation

Sponsored by:



*The Great Lakes, St.
Lawrence & Atlantic Chapter
(GLSLA) of the
North American Society for
Trenchless Technology*



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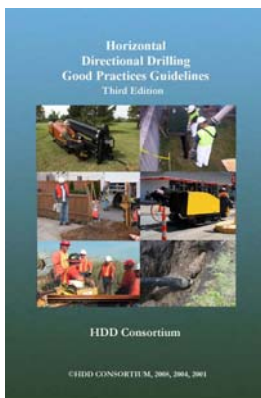
November 5-6, 2009 - York Region Waste Management Centre - 100 Garfield Road, East Gwillimbury

You Need to Know HDD!

Horizontal directional drilling (HDD) has become a workhorse that is used every day on utility construction projects. To be most effective in specifying, managing and inspecting utility construction projects, you need to know the ins and outs of HDD. This course will help you to:

- Become familiar with HDD equipment and techniques
- Decide what projects would benefit from HDD techniques
- Design and specify to fully realize the advantages of HDD
- Supervise and inspect HDD construction
- Apply HDD to your real-world projects

Course Background



Due to the increasing use of horizontal directional drilling (HDD) rigs across North America, the HDD industry released the *HDD Good Practices Guidelines Manual* that provides contractors, engineers and owners with an industry driven document prepared by experts in the field.

This course objective is to provide the contractors, engineers and owners with a set of guidelines that will assist and allow its personnel to have successful HDD installations, by training operators and supervisory personnel.

The guidelines were developed by members of the HDD Consortium: DCCA, DCA, AEM, NUCA and NASTT *Each course participant will receive a complimentary copy.*

Course material is based on the HDD Good Practices Guidelines Manual. © Copyright by HDD Consortium, 2001, 2004, 2008.

What You Will Learn

Guidelines and Training Address All Important Aspects of HDD, from Planning through Construction:

- HDD Applications and Process
- HDD Equipment, Materials, Drilling Fluids
- Design (new Chapter 4 in 3rd ed., 2008)
- Bore Planning
- Safety
- Troubleshooting, Risk Reduction, and Mitigation

Who Should Attend

- Engineering consultants
- Utility engineers and managers
- Government engineers and public works managers
- Contractors
- Others with responsibilities for implementing or managing construction projects using trenchless construction techniques

Expert Course Instructors

Samuel T. Ariaratnam, Ph.D., P.E. is a professor at Arizona State University, and David Bennett, Ph.D., P.E. is principal and owner of Bennett Trenchless Engineers. Both instructors are authors of the *HDD Good Practices Guidelines Manual*.

Take Home Valuable Materials

You will receive comprehensive course handouts and other useful references including the *Horizontal Directional Drilling Good Practices Guidelines*, published by the HDD Consortium in 2008.

Registration Fees

NASTT members: \$650 CAD and non-members: \$750 CAD. Includes attendance to the two-day course AM break, lunch, PM break, course handouts, copy of the *HDD Good Practices Guidelines Manual*, and Continuing Education Unit (CEU) certificate. The non-member fee includes a 1-year membership to NASTT!

For More Information

For registration information contact Frank A. Badinski at ph: 905-955-0959 or e-mail: frank.badinski@york.ca. For course content questions, contact Angela Ghosh at ph: 703-217-1382 or e-mail: aghosh@nastt.org.

COURSE OUTLINE

HDD Good Practices Guidelines Course

November 5-6, 2009 - York Region Waste Management Centre - 100 Garfield Road, East Gwillimbury.

Thursday, November 5, 2009

8:30 am – 5:00 pm

Introduction

- Background and Purpose
- Overview and Scope

HDD Applications and Process

- Project Preparation
- Equipment Set-Up, Pre-Construction Walkover, and Inspection
- Pilot Bore and Tracking
- Reaming/Hole Enlargement
- Cable/Pipe Layout, Fabrication, and Testing
- Pullback
- Connections
- As-Builts/Operator Logs
- Demobilization, Site Cleanup, and Restoration

Equipment and Materials

- Machine Performance, Capabilities, and Application Guidelines
- Drill Pipe
- Drill Bits and Downhole Tools
- Product Pipe
- Cable/Pipe Pulling Devices/Swivels
- Drilling Fluid Delivery, Recovery, and Containment Systems
- Drilling Fluids and Additives
- Bore Tracking Equipment

Design

- Develop Project Performance and Design Criteria (Project Functional Requirements)
- Surface Investigation
- Utility Survey
- Geotechnical Site Investigations
- Permits and Requirements
- Construction Method Selection
- Impacts to Residents, Business, and Traffic
- Constrained Work Areas – Rig Relocation
- Design Analysis and Calculations
- Contact Grouting
- Conductor Casings
- Plans and Specifications
- Safety Plan

Friday, November 6, 2009

8:30 am – 5:00 pm

Bore Planning

- Locates
- Site Walkover & Calibration of Transmitter/Receiver
- Bore Planning Tools
- Selection of Appropriate Equipment and Tooling
- Site Geometry, Topography, and Constraints
- Schedule Constraints (Project Completion, Work Hr)
- Drilling Fluid Support System
- Additional Bore Planning Considerations

Jobsite Safety

- Safety Plan and Checklist
- Responsible Personnel
- Communication
- Hazards
- Verify Utility Locates
- Traffic Control (Pedestrian and Vehicle)
- Safe Practices and Safety Equipment
- Response to Events
- Cross-Bore Issue

Troubleshooting and Mitigation

- Loss of Circulation
- Obstructions
- Hydrolock
- Line and Grade Problems
- Collapse of Bore Hole
- Failure of Drill Pipe or Downhole Tooling
- Collapse or Subsidence of Surface, Adj Utilities, etc
- Heaving or Humping of Surface
- Hydrofracture and Inadvertent Fluid Returns
- Striking Existing Utilities or Damaging Existing Utilities due to Excessive Settlement or Heave
- Product Pipe Failure
- Pipe Stuck in Borehole

Please note: The course agenda is subject to change. A final course agenda will be e-mailed to training participants in advance of the course. *Course material is based on the HDD Good Practices Guidelines Manual. © Copyright by HDD Consortium, 2001, 2004, 2008.*

Continuing Education Units: For every 10 hours of attendance and participation, you will earn one Continuing Education Unit (CEU). CEUs are maintained and issued through NASTT's partnership with Louisiana Tech University.

REGISTRATION FORM

*HDD Good Practices Guidelines Course
November 5-6, 2009 - York Region Waste Management Centre - 100 Garfield Road, East Gwillimbury.*

Name(s)		Title:	
Organization		Department	
Street Address			2009 NASTT Member YES NO
City	State/Province	Zip/Postal Code	
Phone Number	Fax Number	E-Mail Address	

*NASTT members receive discounted pricing! Not sure if you're already a member?
Visit www.nastt.org for a directory of current members or e-mail Angela Ghosh at aghosh@nastt.org.
The non-member registration fee includes membership to NASTT for one full year.*

<p>NASTT MEMBERS _____ @ \$650 CAD = \$ _____</p> <p>*NON-MEMBERS _____ @ \$750 CAD = \$ _____</p> <p style="text-align: right;">TOTAL \$ _____</p> <p>*NON-MEMBER REGISTRATION FEE INLCUDES NASTT MEMBERSHIP FOR ONE FULL YEAR!</p>	<p><u>Interested in exhibiting or sponsoring?</u></p> <p>For booth display and sponsorship info, please call Frank Badinski at 905-955-0959 or e-mail: frank.badinski@york.ca</p>
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Three Easy Ways to Register:

1. Fax this completed registration form to: **Frank A. Badinski**, Regional Municipality of York, Fax: 905-830-6927
2. E-mail to: frank.badinski@york.ca
3. Mail your registration and cheque to:

GLSLA NASTT Course
c/o The Regional Municipality of York
17250 Yonge Street
Newmarket, Ontario L3Y 6Z1 Canada
Attention: **Frank A. Badinski**

Cheques should be made payable to “**Great Lakes Saint Lawrence and Atlantic Chapter, NASTT.**” Personnel may be substituted at any time.