



## PIPE USERS GROUP Northern California

MINUTES  
July 18, 2006

### Attendees:

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**Presentation:** *Horizontal Directional Drilling of Ductile Iron Pipe*, by Harry Niles, Senior Regional Manager, from the Ductile Iron Pipe Research Association (DIPRA).

Harry's presentation outline included:

- HDD installation methods using ductile iron pipe
- Benefits of flexible restrained joints
- Pressure and load capabilities of ductile iron pipe in HDD applications
- Minimized disturbance of difficult or restricted construction installations

Presentation handouts included an Installation Guide for Ductile Iron Pipe, and Horizontal Directional Drilling with Ductile Iron Pipe. Below are miscellaneous notes taken from the presentation:

- Utility companies have standards of using ductile iron pipe only, so bringing DIP into HDD applications is a necessity.
- Other benefits of using ductile iron pipe include:
  - Strength for installation and operational loads
  - Flexible restrained joints can draw a tighter radius than plastic (size depending)
  - Hydraulic advantages
  - Installation options (string out and cartridge)
  - Locating pipe (is conductive)
  - No thermal expansion issues
  - No creep

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- Pipe wall impermeable to VOCs
- Proven longevity (some pipes have lasted as long as 150 years)
- Parabolic alignments work best in profile design
- Bore hole diameter should be 1-1/2 times the diameter of the host pipe
- Bentonite slurry is high in chlorides which may deteriorate iron pipe if in high concentrations. Polyethylene encasement helps with this problem and maintains its integrity when pulled into borehole.
- Spirally taping polyethylene has benefits since it reduces amount of air trapped into bag (air can follow spirals to joint as it's being compressed upon entry into the borehole and escapes).
- If maximum joint deflection, will jam iron against iron. Rule of thumb is to only use 80% of allowable joint deflection in design to keep some movement available in case of earthquake, settlement, etc.
- When designing, consider using shared receiving pits to reduce the cost and effort during construction.
- Spray-applied bonding agents is very expensive and not done by pipe manufacturers any longer. Instead, pipe is made then sent to outside plant to apply bonding agent. Poly bagging is recommended instead.
- Field lok type joints do not work for HDD since as the pipe is pulled along the alignment there is up & down movement at the joint which acts as a ball bearing. The restraint of these joints allows them to be pushed together but not pulled apart. For example, as the top of the pipe rotates in, the bottom tries to rotate out but cannot. With repeated movement the pipe is pushed closer together at the joint and soon there is iron upon iron and increased rigidity.
- Push-on joints are recommended unless the project includes manifolds.
- Watch out for pressure washing of CML applied to sewer pipes as the CML may be damaged. Standard specifications are being changed to not allow pressure washing for these applications.
- Pipe is pulled full of air. However, the densities of the mud being displaced and the pipe should be equal for neutral buoyancy and therefore ease of pulling the pipe in the middle of the borehole (versus friction caused by the pipe hitting the top or bottom of the borehole as it's pulled in). In order to achieve equal densities, a plastic pipe may be inserted into the host pipe and filled with water.
- Ductile iron pipe has benefits over plastic pipe. The higher the pressure rating, the thicker the wall of plastic pipe and the smaller the bending radius. Ductile iron pipe has a constant thickness that will result in a greater bending radius as pipe sizes increase. Pulling puts hydrostatic pressure which may result in buckling and/or possible collapsing of plastic pipe.

Unfortunately, there are no installations currently taking place in the Bay Area, although a couple installations are planned in Los Angeles.

For additional information, Ralph Carpenter of the American Cast Iron Pipe Association may prove a valuable resource. See also [apipco.com](http://apipco.com).

As a sidenote to the presentation, Harry mentioned that pipe bursting can be done on undersized ductile iron pipe, except the bells can't be burst so they are pulled along with the bursting head.

A big thank you to Harry Niles for this presentation!

### **General:**

*Field Trip:* The field trip held on June 13 to the Gladding, McBean Clay Pipe Manufacturing Plant was attended by 20 PUG members in Lincoln, CA. Feedback from participants present at

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today's meeting was positive; the fieldtrip was informative, educational, and efficient as they arrived back at their pick-up location earlier than expected. (And reports were that lunch was excellent!)

*NASTT/WESTT Training Course:* Pipe Bursting Good Practices Course is scheduled for August 15. The course will be \$295 for PUG members, and \$395 for non-members. Announcements and registration forms will be sent out within the week. Personal note from the Secretary: I have met many professionals with various levels of experience working within the different disciplines of engineering who have taken this course, and each one has reported that this course is well worth the time and CEUs for the amount of information they took away. I'm excited to take the course myself, and encourage PUG members to take advantage of this opportunity at a \$100+ savings while given right here in the Bay Area. If that's not enough incentive, breakfast and lunch will be served, with tri-tip, chicken, and vegetarian hot sandwiches on the lunch menu. PUG has committed to having 30 members attend, and will pay for this number even if fewer members attend, so SIGN UP TODAY!

*Bylaws Voting on Recent Revisions:* The responses were overwhelming for opening membership to include contractors, vendors and suppliers, with only one vote cast against this change. The Executive Committee has approved these changes per the votes of the members, and a big thank you goes out to all who cast their vote on this important change. Cindy will look into sending out a press release to industry publications on this announcement. Harry Niles of DIPRA mentioned that this will be a great forum for a group known as the AWWA Materials Performance Committee that has in the past recent years disseminated but may be looking for a like forum to share their design, development, and construction experiences in pipeline technology. Harry will provide the information to Cindy to get the word out for open membership opportunities. Anna Chrissanthis will also provide Cindy with contact information for professionals that have given brown bag presentations that would appreciate the opportunity to join this unique group of sharing technology professionals.

*PUG Sharing Technologies 2007 Seminar Call for Papers:* Look for the call for papers that will be published in the July issue of Trenchless Technology Magazine, and get your abstracts in before the October deadline!

### **Executive:**

*Treasury status:* Currently have \$29,000 in the treasury.

*Membership renewals:* Allen will be sending out membership renewals by July 21, 2006. The calendar year membership has been changed to a fiscal year membership.

*Non-profit application status:* Jonathan was not present to report on the status, although it is understood the applications are in and we're waiting for word on their acceptance.

### **Next Meeting:**

August's general meeting is replaced with the **TUESDAY, AUGUST 15** Pipe Bursting Course offered to PUG members and non-members alike. Contact Cara Ingebriksen at Cingebrigtsen@BrwnCald.com for more details.

Our next general meeting will be held **TUESDAY, SEPTEMBER 19, 2006** at the offices of **RMC Water & Environment** located at **2001 N. Main St., Suite 400, Walnut Creek, CA 94596**. The topic will be on **Manhole Rehab #1: General Overview of Methods Available and Associated Applications**, given by Rocky Capehart of the Raven Lining. Please call (925) 627-4151 or e-mail Jennifer Glynn (JGlynn@rmcwater.com) to RSVP.