

Collaboration for Pipeline Safety

CGV Shallow Transmission Mains
10/21/2015

The logo for WaterSource, featuring a stylized sunburst icon to the left of the word "Source" in a bold, blue, sans-serif font. The word "Water" is partially obscured by the sunburst icon.



Overview

- How shallow transmission mains were identified
- Actions taken
- Findings
- Immediate concerns addressed
- Lesson learned
- Location prioritization for remediation

Shallow Main Identification

- Shallow Transmission Mains identified through an Integrity Initiative in 2014 “Inclination Angles”
- Data analyzed / scrubbed Dec 2014
- Data yielded 165 locations with insufficient cover
- TRIMP Team Engaged
- Field Investigation began December 2014 to validate data and address immediate concerns

Actions Taken

- Quarterly and monthly patrols
- 165 locations prioritized by depth for field investigations.
- 51 locations investigated to address immediate risk
 - 15 locations 0" to 12" of cover (investigated by 2/13/2015)
 - 36 locations 12" to 18" of cover (investigated by 4/29/2015)
- 70 total locations validated in the field to confirm depth data
- Additional markers and signs installed
- Created prioritization model

Prioritization Model

Probability Factors	Consequence Factors
Depth of Cover	% SMYS
Excavation Damage	Class Location
Other Outside force	HCA
Natural Forces	Special Needs Customers
	Potential Customer Loss

Immediate Concern “Scrap Yard”

- 3rd party grading
- 17” of cover
- Leak Survey
- Above ground electrical survey
- Direct Assessment
 - Visual
 - Weld Inspection
 - Mag Particle



Erosion “Wash Out”



Wash Out (6" Cover)



Erosion “Wash Out”



Erosion “Wash Out”



Erosion/Other “Cow Crossing”



Warning Sign



Lessons Learned

- Need to install pipeline markers in areas of potential erosion
- Considerations for erosion (urban development, cow crossing)
- Patrolling procedure reviews

Questions?