

A STUDY IN SERVICE LIFE

Greene County, IL

INTRODUCTION

Throughout NCSPA's long history, numerous corrugated steel pipe (CSP) installations have been the subject of routine critical evaluation to establish accurate, predictable service life guidelines. This study of an aluminized type 2 (ALT2) installation in Greene County, IL, was conducted with a coupon sampling at the 50-year mark to examine soil resistivity, water resistivity and overall condition of the pipe to determine the remaining projected service life.

CONCLUSION

Based on conservative pit penetration extrapolations from the Greene County study, the projected service life of 16 gage ALT2 CSP **will exceed 100 years** in this environment.

SITE AND LABORATORY SUMMARIES

Site Location

Greene County, IL, Site 1: 1 mile northeast of Hillview-Eldred blacktop; 10 paces southwest of residential driveway

Sampling

Three soils from A, B and C position; 1 water sample; 1 ALT2 trepan

Parameters

Soil Resistivity: 1930 ohm.cm; pH 7.0; chlorides 40 ppm; sulfates 68 ppm

Water Resistivity: 550 ohm.cm; pH 6.9; stagnant puddle near inlet

CSP Condition Observations

36" diameter ALT2 in good condition; visually round – no apparent ovality or buckling; almost no red rust at the 6 o'clock position; approximately 5 days since last rainfall

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Aluminized End

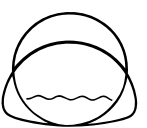


ALT2 Water Side



ALT2 Soil Side





Trepan Evaluation

Coupons were bead blasted to remove loose oxides and images were recorded of the remaining surface (see images on right). Micrometer readings were taken after bead blasting using a ball micrometer (general thickness) and a point micrometer (deepest pit depth).

Starting Thickness: 0.114"
Micrometer Results – Ball: 0.113", 0.114", 0.113" **Point:** 0.096" (0.018" deep)

All site and lab information and testing provided by AK Steel.
(Type 2 Aluminized at this site was produced by what is now AK Steel Corp.)



Aluminized End



ALT2 Water Side



ALT2 Soil Side

