

POLYMER LAMINATED SITE VISIT - RESULTS

FILE NUMBER: MTO Highway 62, Tudor Township

ENVIRONMENT: Red Low Potential to reduce acidity of flow water

INSTALL DATE: Summer of 2017

NEAREST COMMUNITY: Bancroft, Ontario

LOCATION: North on Highway 62, in the Tudor Township just south of Bancroft

GPS COORDINATES:	<u>Culvert ID</u>	<u>Longitude</u>	<u>Latitude</u>
1. Centre Millbridge Rd./Stoney Settlement Rd	0062-005217	44.69354659	-77.59030155
2. 20M south of Cooneys Road	0062-005219	44.697644	-77.592966
3. 800M north of Cooneys Road	0062-005221	44.7045059	-77.59676681
4. 1.25KM north of Cooneys Road	0062-005222	44.70843847	-77.59886899
5. 650M south of Cleveland Road	0062-005233	44.70916462	-77.59927752

DESCRIPTION: Five polymer laminated CSP's showing rust stain on the entire inside circumference of the pipes.

DIMENSIONS: 750mm diameter

DATE OF SITE VISIT & INSPECTION: November 17, 2018

WATER TESTER: Ray Wilcock

	<u>Culvert 1</u>	<u>Culvert 2</u>	<u>Culvert 3</u>	<u>Culvert 4</u>	<u>Culvert 5</u>
Hardness:	250 ppm	250 ppm	Under	250 ppm	Under
PH:	7	6	Snow	6	Snow
Chlorides:	587 ppm	363 ppm	No test	5 ppm	No test

RESULTS:

Site visit – of the 5 pipes, I was able to inspect Culverts 1, 2 & 4. I was not able to locate culverts 3 and 5 due to the deep snow. Using a scotch brite pad I was able to remove the stain, on the crest the stain came off easy. In the valley, it took a great deal of rubbing effort, nevertheless the stain was removed. There were no visible delamination, tears or holes in the polymer coating. The water test results in Culvert 1 & 2, showed extremely high chloride results. Both were in standing water, most likely from high road salt levels that will not be flushed or drained away. In Pipe 4, water velocity was fast moving from upstream to downstream, flushing any chlorides through the pipe. Selecting polymer laminated material for this site, was the right choice given the water chemistries.

The stain on the Scotch Brite pads was evaluated in the AK Steel lab. Results are contained in the attached report dated December 17th, 2018.

Thickness measurements were made on the three pipes with a DeFelsko PosiTector 6000 coating thickness gauge. Results were as follows:

<u>Standard</u>	<u>Reading – Average</u>
10 mil	12 -13 mil

PHOTOS:

Culvert 1 - Centre Millbridge Rd./Stoney Settlement Rd.



July 8/2018



Nov 17/2018



Rust Stain



Stain removed easily



Used Scotch Brite Pad

Culvert 2 – 20m South of Cooneys Rd



July 8/2018

November 17/2018



Standing water – high chlorides

stain removed easily

Culvert 3 - 800m North of Cooneys Rd.



July 8/2018 – was not able to find (too much snow)

Culvert 4 - 1250m North of Cooneys Rd.



July 8 / 2018

November 17/2018



Before LHS



After



After



Before RHS



After



After

Culvert 5 - 650m South of Cleveland Rd.



July 8/2018 – was not able to find (too much snow)