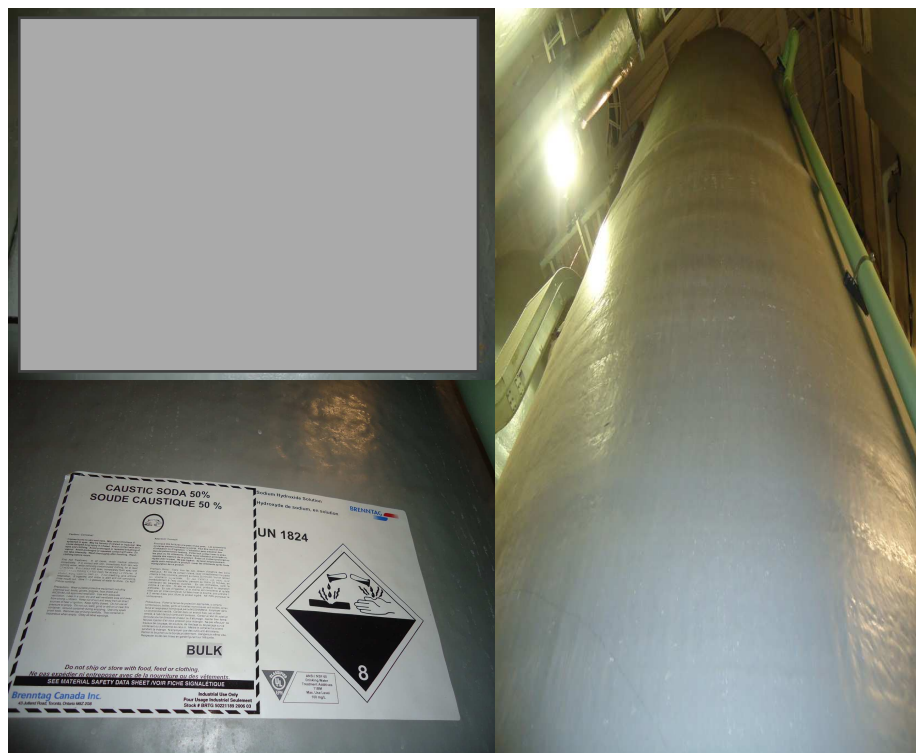


SODIUM HYDROXIDE TANK S320A INSPECTION

City of Winnipeg WTP



Introduction

The City of Winnipeg Water Treatment Plant has commissioned Structural Composite Technologies Ltd. to conduct a maintenance visual inspection of the Sodium Hydroxide Tank # S320A located at the City of Winnipeg – Drinking Water Treatment Plant with a purpose of determining maintenance requirements. The tank is made of fiberglass-reinforced plastic (FRP). Inspection was conducted on April 23, 2014. Inspection was made inside and outside of the tank. The tank is used to store 50% Sodium Hydroxide solution and is equipped with internal liquid heaters so it is important to inspect the internal liner of the tank. The General Observations in this report are divided into two – Internal Surface and External Surface Observations.

General Observations

Tank S320A is installed inside a covered building and is equipped with internal liquid heaters to maintain certain temperatures for the solution contained. It was not in service during the inspection. All accessible areas – inside and outside were inspected. The following were the noted observations:

Internal Surface Observations:

- Liner – majority of the tank liner appears to be in good condition with the exception of some sections (see Internal Surface Photos).
- The areas of concern mention on the previous bullet appear to be needing service – the Nexus® veil used on the liner appears to be drying out instead of having a resin-rich surface. This is possibly a result of a combination of chemical attack and/or excessive heat introduced into the tank.
- No cracks observed on internal joints – nozzle bonds and brackets.

External Surface Observations:

- External surface of the tank appears to be in good condition.
- No cracks or signs of corrosion observed.
- Nozzle flanges appear to be in good condition – no cracks found on the face and stub.
- Body joints and nozzle stub joints appear to be still in good condition.
- No signs of leak observed from the outside.

Recommendations

- ❖ The areas of concern on the tank liner should be repaired as soon as practicable. The tank can be put back to service for now but it is recommended that the liner be serviced within the next 6 – 12 months.
- ❖ Repair recommended is as follows:
 - Grind the sections affected;
 - This will remove the dried out layer;
 - Re-line the surface with 2 plies of 1.5 oz. per square foot chopped strand mat and 2 plies of Nexus® Synthetic Veil using premium vinyl ester resin – Derakane Momentum 411-350;
 - Resin-rich flood coat the repaired liner with Derakane Momentum 411-350 c/w paraffin wax (Air Dry).
 - Post cure tank to attain a barcol hardness of over 35.

Inspection Photos

Internal Surface:









External Surface:





