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Abatement by Encasement:
Safeguarding People
while Saving Money®

ENCASEMENT OF LEAD-BASED PAINT ON THE TUGBOAT EDNA G. TWO HARBORS, MN CH-03-4



BEFORE

AFTER

CHALLENGE: Named for the daughter of a former Duluth and Iron Range Railway Co. president, the tugboat Edna G. served for two years in Norfolk, VA during WW1. Then it moved to the Two Harbors, MN area where it served the purpose of guiding freighters and ore carriers into and away from the docks of Agate Bay. The last steam-operated tug on the Great Lakes, she was granted a place on the National Register of Historic Places in 1975. She was retired in 1981, overhauled in 1993-94 at Superior, WI Frazer Shipyards. A fixture in Two Harbors for 107 years, she has been the primary tourist attraction for the area. But this came to an end in 2001 as the condition of the lead-based paint (LBP) resulted in the tug being closed to the public. Because of its importance to the community, a major emphasis was placed on abating this hazard and putting the tug back into service as a museum. But the cost to remove the LBP and re-paint the tug was estimated to be as high as \$100K with the usual concerns as to how this would affect the surfaces of this registered historic site.

SOLUTION: Encasement was chosen, which requires the removal of only the very loose, flaking paint (done under wet conditions so no hazardous dust is created), removal of soluble salts from metal surfaces, application of a surface stabilizing primer (corrosion-inhibited for metal surfaces) to yield a tacky surface for the topcoat to adhere to, and then the application of the topcoat tinted to match the historic color scheme. The entire project was completed by encasement for less than one third of the cost of removing all of the old paint and re-painting.

Diamond Vogel Paints performed the tinting to achieve the desired color matching, while Lakehead Painting did the surface preparation and applied this environmentally-friendly encasement system.

The Edna G. was once again opened to tourists in August, 2003.