

# Ottati & Goss/Great Lakes Container Corporation Site Kingston

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The Ottati & Goss/Great Lakes Container Corporation site is located on the west side of Route 125 in Kingston, New Hampshire. The Ottati & Goss, Inc. (O&G) portion is approximately one acre in size and the Great Lakes Container Corporation (GLCC) portion comprises approximately six acres.

From the late 1950s through 1981, portions of the site were used for storage and/or reclamation of drums containing solvents and other organic chemicals. Used chemical drums were cleaned with corrosive rinse solutions that were disposed on-site.

In October 1981, the U.S. Environmental Protection Agency (EPA) removed approximately 4,300 drums of unknown chemical waste from the O&G portion of the site. The site was added to the National Priorities List in September 1983.

The potentially responsible parties conducted a voluntary drum and contaminated soil excavation and disposal operation at the GLCC portion of the site during 1984 and 1985. The total volume of contaminated soil, drums, and metal debris removed was approximately 12,800 tons.

The Record of Decision (ROD) for the site was signed by EPA in January 1987 and generally consisted of: (1) excavating approximately 19,000 cubic yards of soil and sediment to be treated on site using incineration and thermal aeration; (2) installation of a groundwater extraction, treatment, and discharge system for treating contaminated groundwater; (3) site grading, demolition/disposal of above-ground and below-ground structures including a building, utilities, and underground storage tanks; (4) construction of a soil cover; and (5) long-term monitoring of the site and Country Pond.

As called for in the ROD, a low temperature thermal aeration (LTTA) process was mobilized in 1988 for the treatment of the soils on the O&G portion of the site, and the cleanup was completed in 1989. In 1993, EPA demolished and removed the GLCC building and several underground storage tanks. The remedial design for cleaning up the soil was completed in December 1997. In the spring of 2000, the U.S. Army Corps of Engineers (ACoE) completed the design specifications for the soil and sediment remediation of the GLCC site and wetlands, respectively. In the fall of 2000, the State took ownership of the GLCC property through eminent domain.

In the fall of 2000, the ACoE assigned a remedial action contractor to perform the remedial action of soils at the GLCC site and the wetland sediment. In August 2001, the

ACoE remedial action contractor began the soil/sediment cleanup on site. The PCB-contaminated sediments in the wetlands were excavated, then backfilled with “clean” manufactured fill. Hummocks and hollows were constructed in the wetland to provide a natural topographic variability. Trees and shrubs were planted in the remediated wetlands with the long-term plan to return the area to a functioning forested wetland. Excavated contaminated sediments were disposed off-site at a permitted landfill facility. The soil/sediments in the uplands were treated by low temperature thermal desorption. The remedial action for soil/sediments was completed in the summer of 2002.

During the summer of 2007, EPA amended the groundwater remedy as defined in the 1987 ROD from active extraction with above ground treatment to in-situ chemical oxidation (ISCO). ISCO involves the injection of an oxidant directly into the groundwater to break down contaminants into non-hazardous by-products such as water, salt, and carbon dioxide. The goal for ISCO was to achieve significant in-situ mass destruction of contaminants, with the intent of eventually achieving drinking water standards in groundwater. Activated persulfate, which is capable of oxidizing all site-related contaminants, was selected as the preferred oxidant for use at the site during the first and second years of application. The oxidant utilized during the third year application was hydrogen peroxide with subsurface delivery accomplished by injecting directly into semi-permanent wells, direct-push rods and screened injection wells. On-site ISCO pilot studies conducted in late 2007 and early 2008 supported the full-scale ISCO design. Typically, ISCO is applied in stages, often annually, to allow for the most effective treatment of contaminants that may be adsorbed in lower permeable soils (e.g., silts and clays). A total of three applications of ISCO have occurred thus far at Ottati & Goss; once each in 2008, 2009, and 2010. Subsequent site-wide groundwater sampling events occurred between each full-scale ISCO application to monitor the effectiveness of each treatment. Data collected to date suggest mixed results on the effectiveness of the three ISCO applications. Site-wide groundwater sampling events will continue along with regular assessments of the effectiveness of the ISCO remedy.

During the full-scale ISCO applications, EPA monitored local surface water conditions for potential impacts. Nearby North and South Brooks were monitored for key physical parameters on 15 minute intervals beginning with the first ISCO injection of each season and continuing beyond the end of each application. An additional meter was also placed upstream of the site to monitor for background conditions. In addition, periodic water samples were collected for laboratory analysis of site-related contaminants and the presence of oxidant and breakdown products. Stream monitoring provided no indications of water quality conditions straying from the normal background readings, evidence that the oxidant did not impact local surface waters.

In 2009, EPA performed fish tissue analysis on species from Country Pond. The results showed that the concentrations of PCBs in fish tissues had decreased by a factor of more than 30 since last sampled in 1987. An updated fish consumption advisory was subsequently put into place and remains current:

Children through age 6 and women of childbearing age:

- For large and smallmouth bass, eat no more than 6 meals/year, but no more than 1 meal in any one month.
- For all other fish species in Country Pond such as yellow perch, eat no more than 1 meal/month.

All other adults and children 7 and above:

- For large and smallmouth bass, eat no more than 6 meals/year.
- For other fish species in Country Pond, up to 21 meals/year can be eaten.

Another component of the remedy is institutional controls, which are administrative and legal controls that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy. In 2011, EPA requested that the Town of Kingston adopt an ordinance to restrict the use of groundwater in the area surrounding the site. The Town of Kingston voted to adopt an ordinance, restricting future use of groundwater in the vicinity of the site, at their March 2012 Town Meeting.

In 2014 EPA subcontracted to have a Remedial Stage Optimization Review (Review) completed for the site. The Review evaluated the following: (1) effectiveness of the current remedy approach, which is long-term monitoring of ISCO, plus institutional controls; (2) the current groundwater monitoring program; (3) potential data gaps; and (4) the consistency of the current remedy with EPA's document titled "*Groundwater Remedy Completion Strategy*." The Review concluded, based on current data, that the remedy approach is effective and recommended that it be continued. The Review made recommendations for streamlining the groundwater monitoring program, did not identify any data gaps, and confirmed the remedy's consistency with current EPA guidance.

Sampling of site wells was performed by a subcontractor to EPA in 2015. A report summarizing the analytical results and data trends was finalized in January 2016 and generally concluded that the trends in groundwater quality are favorable. A site sampling event was also performed in September/October 2018 and the report will be issued in 2019. Annual sampling of down-gradient residential water supply wells was performed from 1993 to 2011; residential well sampling has been performed biennially in odd-numbered years since 2011. To date, there have been no site-related contaminants detected in any of the sampled residential wells above site-established interim clean-up levels or State drinking water quality standards.