



Update on Investigation and Cleanup Activities

Little Traverse Bay CKD Release Site
Petoskey, Michigan

January 2009

Public meeting

EPA in cooperation with Michigan Department of Environmental Quality will hold a meeting to update you on activities at the site:

Thursday, Jan. 29, 2009
7 p.m.

North Central Michigan College
Library Conference Rooms 1 & 2
1515 Howard St.
Petoskey

For more information

You may review site documents and other site information at:

Petoskey Public Library
Reference Desk
500 E. Mitchell
Petoskey

Web sites:

www.epa.gov/region5/sites/littletraverse

<http://epaosc.net/BayHarborCKD>

Contact EPA

For questions, comments or for special accommodations at the meeting contact:

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Region 5 address:

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U.S. Environmental Protection Agency will hold a public meeting Jan. 29 to update the community about ongoing cleanup activities at the Little Traverse Bay CKD Release site. At the meeting (*see adjacent box for details*), EPA will discuss a draft document outlining the investigation and cleanup options. The document is referred to as a “remedial investigation/feasibility study.” It deals with the East Park portion of the site. A remedial investigation is a study of the nature and extent of contamination at a cleanup site, while the feasibility study proposes cleanup options. EPA’s acceptance of the two studies will be contingent upon the completion of additional ground-water sampling for mercury expected to be completed by early fall 2009. Ground water is a term for underground supplies of fresh water. In 2004 EPA was requested to provide assistance to state and local authorities when elevated pH levels were found in liquid seeping into Lake Michigan from piles of cement kiln dust or CKD buried under the site. A former cement processing plant once operated on the shore of Little Traverse Bay.

EPA will also provide an update on the cleanup and containment activities completed at the Bay Harbor portion of the site. CMS Land Co. and CMS Capital LLC, the parties legally responsible for the pollution, have completed a number of projects to deal with the CKD seepage or “leachate” working its way into the bay. Under a legal agreement, CMS pays for the environmental work at the site under EPA oversight. The Little Traverse Bay CKD Release site has been divided into two parts - the development area (the Bay Harbor Resort) and East Park (an area donated by Bay Harbor Development to Resort Township for the creation of a park). Although work in both areas is proceeding, the East Park location has been accelerated in order to return the park to public use as soon as possible.

Trench work

Over the past year a lot of work has been done to enhance the trench system built in 2005-2006 to collect and remove the leachate. In late 2007 EPA directed CMS to fix some of the leachate collection systems because at some locations high pH levels were still being found. At one of the locations, referred to as the east end of seep 1, some leachate containing high pH levels was getting under the trench and escaping into Lake Michigan. (*See site diagram on Page 2.*) To fix this, a barrier wall was installed to stop the leachate and redirect it into the trench. This project was completed in November 2008.

Another location where high pH leachate was still being released was in an area referred to as Pine Court. Because of the nature of the seepage in this area, pipes were getting clogged. As a result, CMS proposed to conduct a pilot study involving the installation of a well in the CKD pile to collect the leachate. This approach is called targeted leachate collection. CMS completed the installation of the targeted leachate collection well in May 2008 and has been evaluating its effectiveness since. So far, this technique has proven workable and if this continues more wells will be installed at Pine Court. A third problem location is called the West CKD area. At this spot, there was

some CKD material between the trench and the lake triggering high pH levels. To fix this, the CKD material is being dug up and will be taken off-site for disposal in an approved landfill. This work is expected to be completed in the next few months.

East Park

Removal activities that have been completed at the East Park location include:

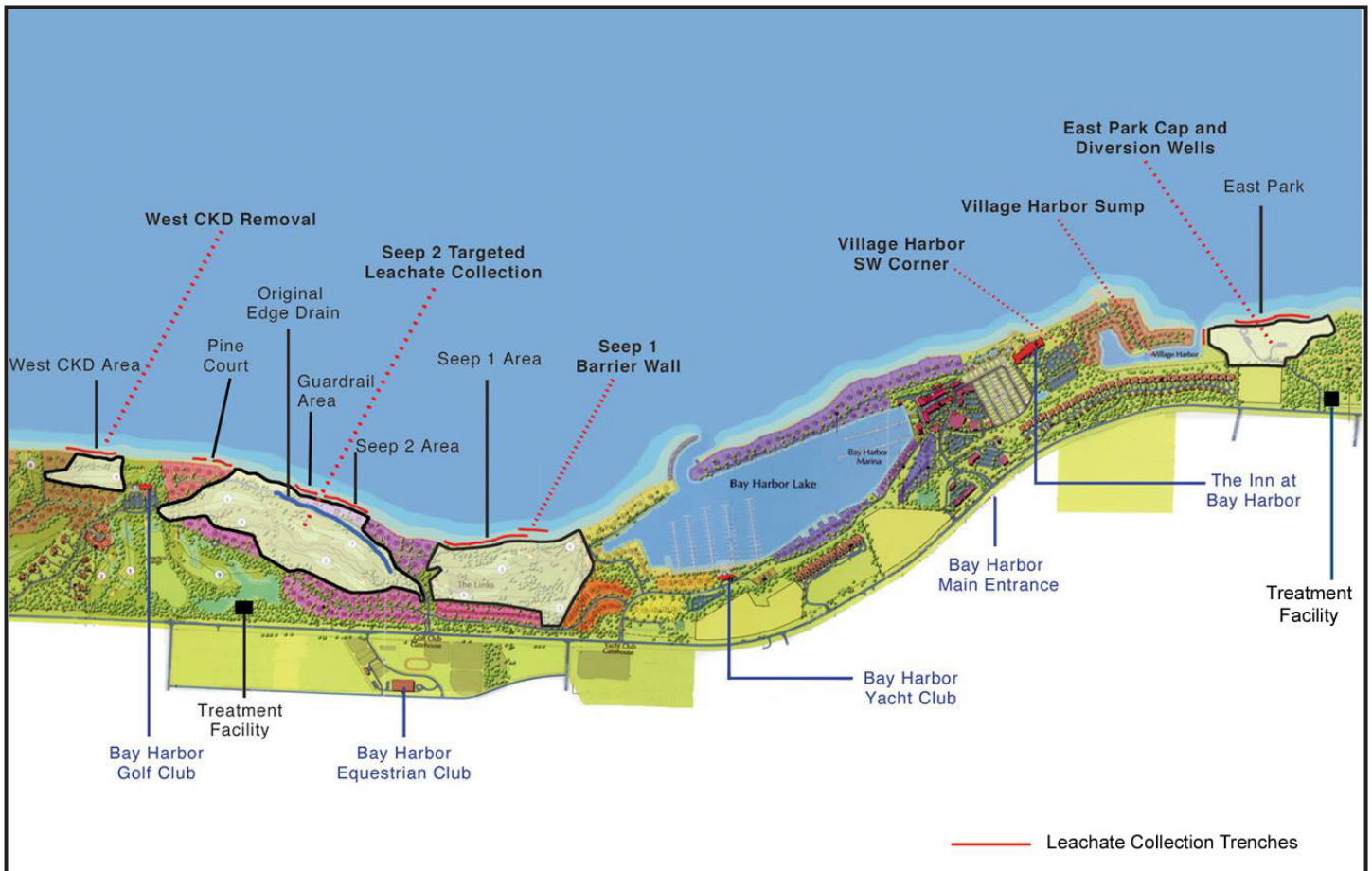
- The installation of two leachate collection trenches.
- Excavation of CKD material in the eastern area of East Park and consolidation of this material on the western part of the park.
- Installation of a nonpenetrating clay and special “geomembrane” cap over all areas of East Park where CKD material remains.
- Construction of a water treatment building for future use at the site.

- Installation of five ground-water diversion wells to keep the underground water supplies from coming in contact with the CKD and generating contaminated leachate.

New infrastructure, storm drains and a new road were also installed at the park. Ongoing activities at the park include collection, pH adjustment in the on-site treatment building, and off-site disposal of leachate from the existing collection trenches.

Other cleanup activities being considered for the East Park site include “natural attenuation” (essentially allowing the leachate to be diluted in the ground water), targeted leachate collection, ground-water treatment (injecting carbon dioxide into the ground water to neutralize it), treatment of collected leachate at an on-site treatment plant followed by discharge into Lake Michigan, and institutional controls to restrict digging or site usage.

Site Diagram



Village Harbor

In 2006 EPA and CMS identified two areas within the Village Harbor channel at the Bay Harbor Resort with elevated pH in the surface water. These areas were identified as the southwest corner area and the sump area (*See site diagram on Page 2.*) CMS under EPA oversight has been investigating these areas and in the fall of 2008 began removal activities at the southwest corner. This involved excavation and disposal of sediment (mud) followed by installation of a clay cap. The southwest corner removal activities were completed by CMS in October 2008. CMS began the sump area removal in November 2008. The sump area removal work involves placement of a sand cover, followed by using a clay cap to cover the sediment in the bottom of the Village Harbor channel sump area. Completion of the removal activity in the sump area has been suspended until this spring due to winter weather.

Investigations

In order to determine how to clean up the site and where to place the trenches and systems being used, CMS has done a lot of sampling and investigation. To date, 314 soil borings and 340 ground-water monitoring wells have been installed, and a total of 1,300 soil, ground water and surface water samples have been taken. A ground-water computer model was also created to determine the flow rate of the contaminants in the underground water supplies. In addition, EPA is working with Michigan Department of Environmental Quality to establish a cleanup level for mercury at the site, and CMS is working on methods to reduce and deal with mercury levels.

Site history

The Little Traverse Bay CKD Release site is located along a five-mile stretch of the Little Traverse Bay shoreline of Lake Michigan, in an area previously used for limestone mining and cement manufacturing operations from about 1870 through 1980. Cement kiln dust is a byproduct of the cement manufacturing process and is a fine, dry alkaline substance that may contain metals at levels not found in the area's native soil. Surface or ground-water contact with CKD can produce runoff, referred to as leachate, with elevated levels of pH and dissolved metals. CKD material was dumped on the site in large stockpiles. The Bay Harbor Resort was built on top of the former industrial site. In 2004, reddish-brown seeps were observed along the Little Traverse Bay shoreline, prompting MDEQ to investigate. Elevated pH levels were found in leachate coming from piles of CKD at the site. At that time, the Little Traverse Bay Bands of the Odawa Indians requested the assistance of EPA.

In 2005, CMS signed a legal agreement with EPA to investigate and clean up the contamination. In the legal agreement, CMS agreed to a number of tasks including providing site security and restricting access to areas containing the high pH levels, studying the pollution and constructing a system to collect the contaminated seepage, and preventing new leachate releases. CMS also had to ensure adequate financial resources were available to complete these activities.

In 2005 and 2006 CMS installed seven trenches to collect leachate along the Lake Michigan shoreline. (*See the diagram on Page 2 for the locations of the trenches.*) The collected leachate was then pumped to treatment facilities on-site where the leachate is neutralized and trucked off-site for disposal. The trenches at a few of the locations have since needed more work, which is now being completed.

For more information

For more information about the ongoing work at the site, you may contact:

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