GLENN SPRINGS HOLDINGS, INC.
A SUDSIDIARY OF OCCIDENTAL PETROLEUM

March 2008

Volume 13, Issue 1

Love Canal Annual News Letter for 2007

Inside this issue:

" On September 30, 2004, the United States Environmental Protection Agency (EPA) deleted the Love Canal Superfund Site from the National Priorities List (NPL). "

Overview

Remedial systems began in October 1978 with the installation of a barrier drain along the east and west sides of the south section of the Canal; the barrier drain was later extended to completely encompass the Canal. The barrier drain, designed to intercept the shallow lateral groundwater flow, consists of a trench 15 to 25 feet deep and 4 feet wide. Installed within the trench is an 8-inch diameter perforated clay tile drain centered in 2 feet of uniformly sized gravel which is overlain to the surface with sand. Lateral trenches filled with sand were excavated perpendicular to the barrier drain in the direction of the canal. The tile drain is graded toward a series of manholes and wet wells (PC-1A/PC-2A North/Central and PC-1/PC-2 South) where the leachate is collected. The leachate is pumped from the wet wells to two underground holding tanks (PC-3A North/Central and PC-3 South) prior to on Site treatment and discharged to the City of Niagara Falls (City) sanitary sewer system.

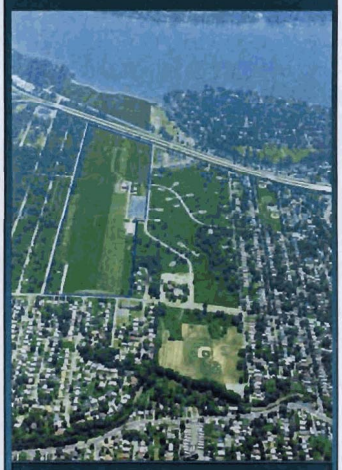
Introduction

The Love Canal 2007 Annual Summary covers those developments and activities that occurred during the calendar year. This is the thirteenth Annual Summary issued by or on behalf of Occidental Chemical Corporation (OCC). The New York State Department of Environmental Conservation (NYSDEC) issued annual Reports prior to the 1995 calendar year.

Responsibility for Site operations and control passed from the NYSDEC to OCC on January 5, 1995; The Site was reclassified by the NYSDEC to Class 4 on January 12, 1995; this classification applies to a Site that has been properly closed and requires continued management.

Effective July 1, 1998, Site operational responsibility for the Love Canal Site was assigned by OCC to its affiliate Glenn Springs Holdings, Inc. (GSHI) .

On September 30, 2004, the United States Environmental Protection Agency (EPA) deleted the Love Canal Superfund Site from the National Priorities List (NPL). The EPA and NYSDEC have determined that all appropriate response actions have been implemented at the Love Canal site and that no further response actions, other than operation, maintenance and monitoring, are required. In addition, EPA and NYSDEC have determined that remedial action taken at the Love Canal site is protective of public health and environment and that the operation, monitoring and maintenance of such remedial action confirm that it continues to be protective of public health and the environment.



Aerial Photo of Area.

Site Activities

- Monitoring

  Hydraulic Monitoring measures the depth of the groundwater.

  Chemical monitoring performed with the NYSDEC monitors chemistry in wells on and off site.

- Groundwater Treatment

  Collection Systems capturing of Site groundwater. Keeps inward gradients to the Site.

  On Site Treatment System, treats groundwater through the use of filters and activated carbon.

- Community Outreach. Involvement with the community and its neighbors.

Community Out Reach

Community Outreach programs have included such activities as beautification of the neighborhood and tours of the facility and donations to community support programs.

Tours of the facility have been given throughout the years to representatives of various environmental agencies (domestic and foreign) and educational groups. The tours included an informational orientation, accompanied with visual aids, followed by a guided tour of the treatment facility and landfill.

In 2007, members of GSHI collected toys through a Toy Fund Drive for children in the community.

Beautification in and around the neighbor-

On Site Treatment

Site Monitoring

" The primary objective for the NYSDEC split sampling program is to verify that the data being collected and reported by GSHI are accurate and representative of groundwater conditions at the site. "

Site monitoring consists of annual chemical groundwater monitoring and quarterly hydraulic monitoring (groundwater elevations).

CHEMICAL MONITORING

The chemical monitoring was performed during the second quarter of 2007. In conjunction with the Long Term Groundwater Monitoring Program (LTGMP) and NYSDEC. Thirty-eight (38) wells were sampled for groundwater monitoring in 2007.

In 2007 NYSDEC selected and performed split sampling, which included five (5) wells.

The objective of the NYSDEC split sampling program is to verify that the data being collected and reported by GSHI are accurate and representative of groundwater conditions at the site. This is achieved through the following tasks:

- observing and verifying that appropriate field sampling methods are employed by GSHI;
- verifying the laboratory analytical results reported by GSHI through independent laboratory analysis of the split samples and data comparison; and
- ensuring sample validity.

HYDRAULIC MONITORING

Water levels were measured quarterly at six nested piezometer strings (1140, 1150, 1160, 1170, 1180, and 1190) through out 2007.

Data collected in 2007 confirms the site capture system is operating as designed. Groundwater flow in the vicinity of the barrier drain was toward the barrier drain. The barrier drain is drawing groundwater from outside the drain and successfully capturing horizontal groundwater flow from the Site.

Monitoring Wells

Wells Active: 153 (132 Overburden and 21 Bedrock)

Wells Inactive: 62 (54 on Site, 8 off Site)

Additional: 9 (Wells located on Site)

TREATMENT SYSTEM

The *treatment* system consists of clarification, bag filtration, and carbon treatment prior to discharge to the City sanitary sewer system under Permit #44 issued by the City of Niagara Falls. The permit is valid through January 6, 2010.

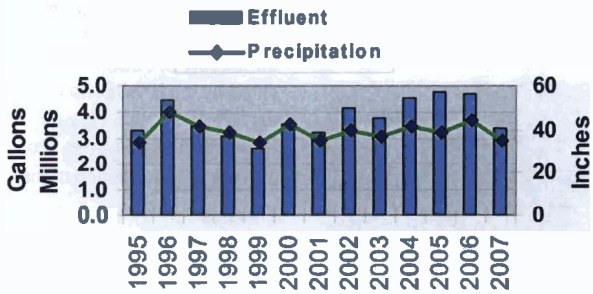
As part of the permit requirements, the City and GSHI personnel complete annual verification and quarterly effluent sampling. The sample results were below permitted limits during all events in 2007.

Treatment Process

The Love Canal treatment system treated and discharged a total of 3,663,300 gallons of leachate in 2007. A total of 3,363,226 gallons of groundwater was collected from the Love Canal collection system. The remaining 300,074 gallons was collected from the adjacent 102nd Street Site.

The leachate collection system continued to function as designed, drawing groundwater toward the underground drain system from both the landfill and the surrounding area beyond the cap prior to treatment and discharge.

Love Canal Effluent (Net) vs. Precipitation



Love Canal Administration Building

Conclusions

The 2007 data indicate that there was no significant change in chemical and hydrological conditions at the Site. The barrier drain is successfully capturing leachate from the Site and preventing off-Site migration of chemicals. The remediation system is functioning as designed.

All required reporting was compiled and submitted to various agencies throughout the year. Reports including the Annual Hazardous Waste Reports to NYSDEC, Annual Operations and Monitoring Report to various agencies and monthly flow reports to the City of Niagara Falls.

The City of Niagara Falls performed semi-annual inspections of the Site's Treatment Facility. An annual verification sampling of the effluent discharge was performed by the City of Niagara Falls. Both the inspections and effluent sampling verification conclude that the Site is being maintained and operated in accordance with the Site's discharge permit, demonstrating protection to the surrounding community and environment.