NEW YORK STATE
DEPARTMENT OF

ENVIRONMENTAL
CONSERVATION

PUBLIC MEETING DATE AND LOCATION:

January 17, 2006, 7:30 pm
Hastings High School Auditorium
Farragut Avenue
Hastings-on-Hudson

Public Comment Period

December 19, 2005 through
February 2, 2006

Send Written Comments to:

George Heitzman
NYSDEC Central Office
625 Broadway, 12th Floor
Albany, NY 12233-7013

Local Document Repositories:

Hastings Public Library
7 Maple Avenue
Hastings-on-Hudson, NY 10533
Mon, Tues, Thurs: 9:30 - 8:30
Wed: 9:30 - 6:30,
Sat: 9:30 - 5:00, Sun 1:00 - 5:00
Phone: (914) 478-3307
http://hastingslibrary.org

Village Clerk
Hastings Municipal Offices
7 Maple Avenue
Hastings on Hudson, NY 10706
Mon - Wed: 8:30 - 4:00
Thurs: 8:30 - 8:00, Fri 8:30 - 12:00
Phone (914) 478-3400

FACT SHEET

Tappan Terminal, Site No. 360015
Railroad Avenue
Hastings-on-Hudson, NY

December 2005

Remedial Actions Proposed for the Tappan Terminal Site

Public Comment Period, Meeting Announced

INTRODUCTION

The New York State Department of Environmental Conservation (NYSDEC), in cooperation with the New York State Department of Health (NYSDOH), is proposing remedial actions to address contamination relating to the Tappan Terminal Inactive Hazardous Waste Disposal Site located on Railroad Avenue in Hastings-on-Hudson, Westchester County, New York. The NYSDEC is sending this public notice to announce the release of the proposed cleanup plan for the site, and to invite you to a public meeting to discuss the plan. The meeting will present the Proposed Remedial Action Plan (PRAP) for remediating the impacts of contamination in soil and groundwater at the site. The NYSDEC will present several alternatives that were evaluated to address this contamination, along with the rationale for recommending the proposed remedy.

HIGHLIGHTS OF THE PROPOSED ACTION

The major elements of the proposed remedy include excavation of grossly contaminated soil, which includes soil that is visibly stained with dye and petroleum; installation of an air sparging and soil vapor extraction system to remove contaminants from soil and groundwater beneath the site; installation of a two-foot soil cover over the site; and creation of an environmental easement to control land use and require long-term management of the site. Land use at the site would be limited to restricted residential, commercial, recreational and industrial uses, as otherwise permitted by local land use regulations. Restricted residential use is a land use category in which there is common ownership or a single owner of the site, such as apartment complexes, townhouse developments, mixed use development, etc., but does not include vegetable gardens or single family housing.

The site would be subject to a site management plan, which would describe the requirements for managing soil that may be excavated during future development activities, would require an evaluation and mitigation of vapor intrusion into buildings that may be developed on the site, and provide for the operation, maintenance and monitoring of the remedy.

Additional Document Repositories:

NYSDEC Region 3
21 South Putt Corners Road
New Paltz, NY 12561
Attn.: Michael Knipfing
Mon-Fri: 8:30-4:45
(845) 256-3154

NYSDEC Central Office
625 Broadway, 12th Floor
Albany, NY 12233-7013
Attention: George Heitzman
Mon-Fri: 8:00-4:00

YOUR OPPORTUNITIES TO COMMENT ON THE PROPOSED PLAN

In addition to any comments received at the public meetings, written comments may be submitted to Mr. George Heitzman at the address shown on this notice. The comment period for the PRAP begins on December 19, 2005 and closes on February 2, 2006.

SITE LOCATION

The Tappan Terminal site is located on approximately 15 acres on the eastern shore of the Hudson River in the Village of Hastings-on-Hudson, Westchester County. As shown on Figure 1, the site is bounded to the east by the Metro North Commuter Railroad, and to the south and west by the Hudson River. To the north, the site is bordered by the former Anaconda Wire and Cable Company, which is also known as the Harbor at Hastings Inactive Hazardous Waste Disposal Site.

The site comprises two properties: the Exxon/Mobil property, which is located adjacent to the Hudson River, and the Uhlich Color Company, which is located along the railroad tracks that define the eastern boundary of the site. The Uhlich property is a former pigment manufacturing facility, and the Exxon/Mobil property was most recently used as a petroleum distribution terminal. The Uhlich Color Company was recently acquired by the Magruder Color Company, and has discontinued operations at the site. A small portion of the southern end of the Exxon/Mobil property is leased to the Pioneer Boat Club for use as a marina. Limited access to the site is from Railroad Avenue at the southeast corner of the property and over the Zinsser Bridge, which has fallen into disrepair and is no longer open to vehicular traffic.

SITE BACKGROUND AND HISTORY

The Tappan Terminal site has a long history of manufacturing and chemical use by several owners and occupants. The landmass of the site itself was also created by disposal of man-made fill into the Hudson River between 1868 and 1970. This fill material typically consisted of sand and gravel mixed with bricks, concrete, stone, timber, ash, slag, shells, and other debris. Between 1897 and 1955 the site was owned by Zinsser & Company and used for the manufacture of dyes, pigments and photographic chemicals. In 1955, the Harshaw Chemical Company purchased the Zinsser Company and continued operations at the site. In 1961, Tappan Tanker Terminal purchased the property and began operating a petroleum distribution facility on the western portion of the site. Beginning in 1964, Paul Uhlich & Company leased, then purchased, the eastern portion of the site for the manufacture of pigments. This operation later became the Uhlich Color Company. In 1975, Mobil Oil Company purchased the western portion of the site and continued petroleum distribution operations.

When Mobil ceased operations on their property in 1985, a number of oil spills and bulk storage violations were discovered. Sampling various media at the site was performed between 1985 and 1989. In 1987, the NYSDEC listed the site as a Class 2 site in the Registry of Inactive Hazardous Waste Disposal Sites in New York. A Class 2 site is a site where hazardous waste presents a significant threat to the public health or the environment and action is required.

During a 1992 repair of a sewer pipe at the site, evidence of a petroleum release on both properties was discovered. Contaminated soil was stockpiled and later sent off site for disposal. The extent of petroleum contamination was investigated between 1992 and 1994. In 1994, an oil remediation plan was approved under

the NYSDEC's Spill Response program and Mobil and Uhlich entered into a Stipulation Agreement to remediate this spill.

In 1996 Mobil entered into a Voluntary Agreement with the DEC to investigate petroleum contamination on the western portion of the site. Because none of the potentially responsible parties agreed to perform a comprehensive investigation of the entire site, the site was referred for a State-funded investigation in 1998. However, after 1998, Mobil conducted some focused investigations and technology pilot studies on contamination located on their portion of the site. The Uhlich Color Company ceased operations at the site in 2002, and most buildings at the site were demolished in early 2003.

In addition to the site operators identified above, several corporate mergers and acquisitions have occurred. The Harshaw Chemical Company was purchased by Kewanee Industries in 1966, which was acquired by the Gulf Oil Corporation in 1977. Gulf Oil Corporation merged with the Chevron Chemical Corporation in 1985. Mobil Oil Corporation merged with Exxon Corporation to form Exxon/Mobil in 1999.

REMEDIAL INVESTIGATION SUMMARY

The most abundant contaminant found at the site is chlorobenzene, which is present in groundwater and subsurface soils. The source of this contamination appears to be the former chlorobenzene storage tank on the Zinsser property. Chlorobenzene was historically used as a solvent in the manufacture of dyes. The highest levels of chlorobenzene in groundwater were found near the suspected source area in the central portion of the site, and along the abandoned sewer line that runs along the approximate Mobil/Uhlich property line (see Figure 2). In these areas, chlorobenzene was found at concentrations up to 11,000 parts per billion (ppb), compared to its groundwater standard of 5 ppb. Benzene and dichlorobenzenes are also present in groundwater in the same areas as the chlorobenzene contamination. These contaminants belong to the class of chemicals known as volatile organic compounds (VOCs).

Another class of chemicals found at the site are semivolatile organic compounds (SVOCs), which are attributed to three sources: contaminants associated with chemical manufacturing at the site, contaminants related to petroleum spills, and contaminants associated with the historic fill used to create the site. Certain SVOCs may be associated with more than one category. Generally, SVOCs have a moderate to low solubility in water, and do not readily evaporate into air.

The SVOCs associated with the historic site fill are polycyclic aromatic hydrocarbons (PAHs), such as pyrenes, chrysene, anthracenes, and fluoranthenes. These PAHs are commonly associated with coal, ash, heavy petroleum oils and products of incomplete combustion. They are also associated with residues of petroleum spills, and with particles of asphalt.

Certain of the SVOCs are ingredients and by-products of dye manufacturing, and were found in soils containing dye-related contaminants. These include chemicals related to the production of aniline and anthraquinone dyes, including, aniline, chlorinated anilines, toluidines and anthraquinones. Several dye-related SVOCs were found in surface soils beneath the pavement of the Uhlich property and within 50 feet of the Uhlich property line on the Mobil property. The highest levels of aniline, chloro- and dichloro-aniline, toluidines and anthraquinones were found beneath the eastern portion of the Uhlich site, where the former Zinsser dye manufacturing operation occurred. These areas generally correspond to areas of visibly discolored soil.

The inorganic contaminants of concern include the metals arsenic, beryllium, copper, mercury, nickel and zinc. These were found throughout the surface and subsurface fill, and are commonly associated with historic fill containing ash and furnace slag.

Polychlorinated Biphenyls (PCBs) were found in low concentrations in two limited areas of site surface soil. The specific PCBs detected were Aroclors 1254 and 1260, which are the primary mixtures found at the neighboring Harbor at Hastings site. PCBs were found to slightly exceed the 1 part per million (ppm) cleanup guideline in 8 surface soil samples, mostly located along the Harbor at Hastings site boundary and the access road that formerly connected the two properties. The highest detected concentration was 5 ppm of combined Aroclors 1254 and 1260 at a location along the Harbor at Hastings property boundary. This is much lower than the levels found at the Harbor at Hastings site.

FEASIBILITY STUDY

A Feasibility Study (FS) was conducted to evaluate a range of cleanup alternatives for soil and groundwater contamination at the site. These alternatives include no action, capping with both a soil cover and an impermeable barrier, limited and widespread excavation of soils located above the water table, and three approaches to remediating groundwater. These include air sparging, the injection of air into groundwater to transfer volatile contaminants from water to the vapor phase, combined with soil vapor extraction (SVE), which pumps vapors from above the water table to remediate contaminated soils and collect vapors as they are stripped from the groundwater. The FS also evaluated pumping groundwater from beneath the site and treating it, as well as injecting chemical oxidants into the groundwater to break down contaminants in the aquifer.

During the FS, Exxon Mobil conducted pilot studies to evaluate the suitability of subsurface conditions for these technologies, and performed a one-year pilot test of the effectiveness of biosparging for site contamination. This technology involves the stimulation of naturally-occurring organisms to accelerate the breakdown of site contaminants. However, because this test did not indicate that site contaminants could be remediated in a reasonable time frame, and because the degradation products of chlorobenzene are also problemmatic, this technology is not proposed as part of the remedy.

PROPOSED REMEDIAL ACTION PLAN

As a result of the Remedial Investigation and Feasibility Study, the NYSDEC and NYSDOH propose the following remedy for the site:

- Installation and operation of an air sparging and soil vapor extraction system in areas of VOC-contaminated soil and groundwater.

- Excavation and off-site disposal of soil that is visibly contaminated with dye or petroleum or is otherwise grossly contaminated.

- Construction of a soil cover to prevent exposure to contaminated soils. The two-foot thick cover would consist of clean soil underlain by an indicator such as orange plastic snow fence to demarcate the cover soil from the subsurface soil. The top six inches of soil would be of sufficient quality to support vegetation. Non-vegetated areas (buildings, roadways, parking lots, etc) would be covered by a paving system or concrete at least 6 inches in thickness.

- Development of a site management plan to:
  - address residually contaminated soils that may be excavated from the site during future redevelopment. The plan would require soil characterization and, where applicable, disposal/reuse in accordance with NYSDEC regulations;
  - evaluate the potential for vapor intrusion for any buildings developed on the site, including provision for mitigation of any impacts identified;
  - identify any use restrictions; and

- provide for the operation and maintenance of the components of the remedy.

- Imposition of an institutional control in the form of an environmental easement that would:
  - require compliance with the approved site management plan;
  - limit the use and development of the property to restricted residential, commercial or industrial uses only;
  - restrict the use of groundwater as a source of potable water, without necessary water quality treatment as determined by NYSDOH; and
  - require the property owner to complete and submit to the NYSDEC an annual certification.

The cost of the proposed remedy for the site is estimated to be $4.23 million, of which $3.02 million is the cost of construction. The remainder is the present worth of the annual monitoring and maintenance cost, which is estimated to be $240,000 for the first five years and $15,000 thereafter.

Repositories: The public is encouraged to review the PRAP, Remedial Investigation (RI) Report, Feasibility Study (FS) Report and other documents relating to the site, which are available for public review at the document repositories listed on the front page of this fact sheet.

On-Line Copy of the PRAP: The complete PRAP may be viewed in Adobe Acrobat format on the NYSDEC's web site:

http://www.dec.state.ny.us/website/der/projects/tappan/index.html

WHAT HAPPENS NEXT?

Page 1 of this fact sheet describes the upcoming public meeting and public comment period on the remedy favored by the NYSDEC and NYSDOH. The NYSDEC may modify the preferred alternative or select another alternative based on new information or public comments. Comments will be summarized and addressed in the responsiveness summary section of the Record of Decision (ROD). The ROD is the NYSDEC's final selection of the remedy for the site. When the ROD is issued, it will be placed in the repositories and a "Notice of ROD Availability" will be mailed to the site's public contact list.

The RI/FS for the Tappan Terminal site was conducted using funds from the New York State Superfund. After the remedy is selected, potentially responsible parties will be contacted to assume responsibility for the remainder of remedial program for the site. If agreements cannot be reached with these parties, the NYSDEC will evaluate the site for further action under the State Superfund. The potentially responsible parties would then be subject to legal actions by the State for recovery of all investigation and remediation costs that the State has incurred.

For More Information: Call or write the following staff about:

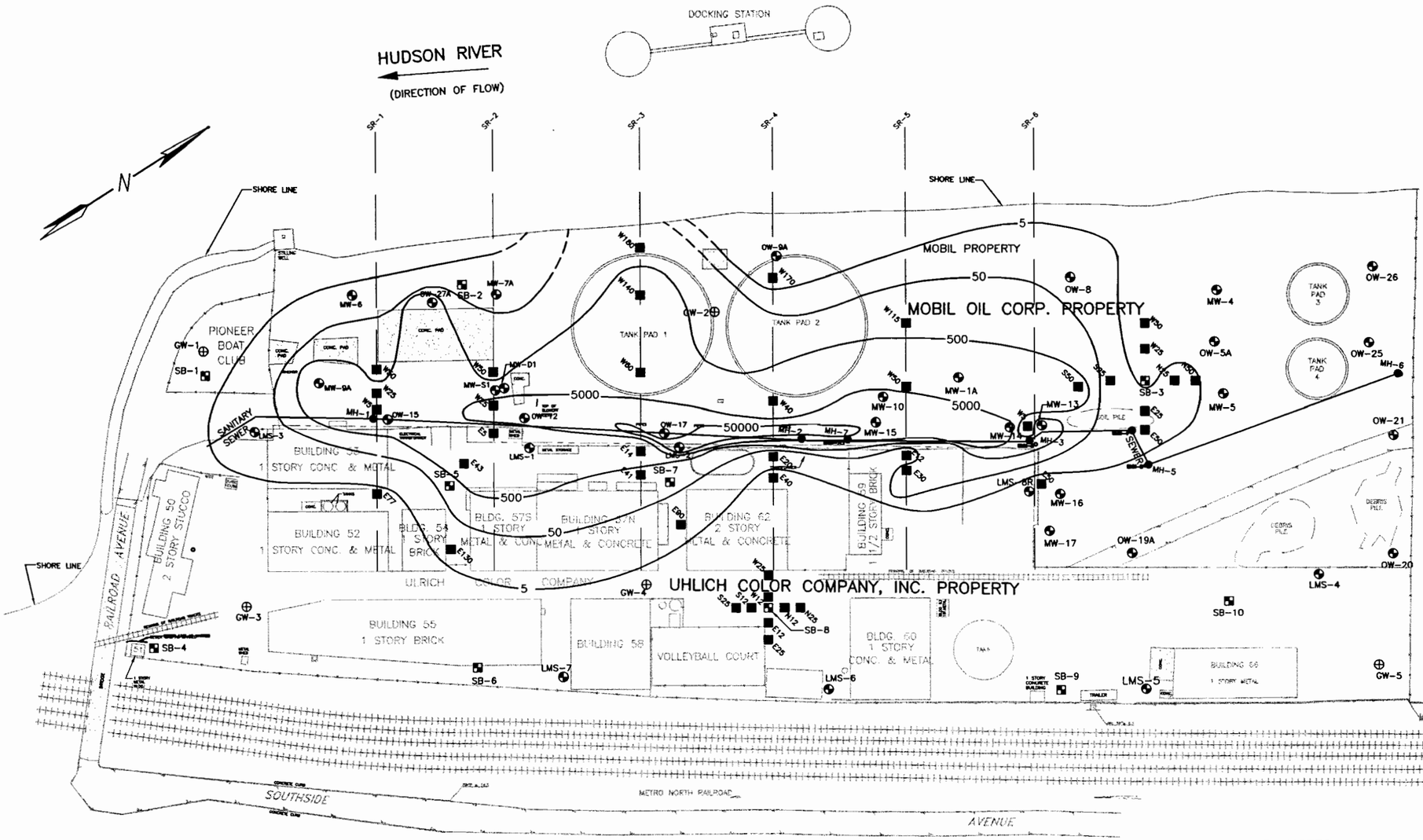
Environmental Concerns:
George Heitzman
NYSDEC
625 Broadway, 12th Floor
Albany, NY 12233-7013
(518) 402-9818

Heath-Related Concerns:
Ian Ushe
NYSDOH
547 River Street, Room 300
Troy, NY 12180
1(800) 458-1158, ext.27890

Citizen Participation:
Michael Knipfing
NYSDEC Region 3
21 South Putt Corners Road
New Paltz, NY 12561
(845) 256-3154

NOTE: In the event of severe weather conditions on January 17, 2006 , the meeting will be re-scheduled to January 18, 2006, at the same time and location.

Figure 1:
Tappan Terminal - Aerial View



LEGEND

- MW, LMS, OW — MONITORING WELL
- SB — SUBSURFACE SOIL BORING
- GW — GROUNDWATER SAMPLE
- W50 — DIRECT PUSH SAMPLE LOCATION
- SR-2 — INVESTIGATION LINE PERPENDICULAR TO SEWER PIPE
- 5 — CHLOROBENZENE CONCENTRATION (ug/l)

SURVEY NOTES:

1. DATE OF FIELD SURVEY: DECEMBER 29, 1998
2. HORIZONTAL DATUM: MAGNETIC NORTH DECEMBER 1998
3. VERTICAL DATUM: NGVD FROM N.G.S. BENCHMARK

0 120
SCALE IN FEET

FILE: 1570-23 (T.McC/5-28-00)
DIR: 1570

TAPPAN TERMINAL SITE
HASTINGS-ON-HUDSON, NEW YORK

Dvirka and Bartilucci
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

CHLOROBENZENE CONCENTRATIONS IN GROUNDWATER

FIGURE 2