

**Report Name:** *Report on Supplemental Phase III Data Investigation and Preliminary Remedial Action Plan, Mill Rock Park, Sewer Pump Station & Rochford Field, Hamden, CT (Volumes I and II)*

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**Prepared for:** Connecticut Department of Environmental Protection (CTDEP) on behalf of the Town of Hamden

### **What Is This Report About?**

This Supplemental Phase II Data Investigation report is about the latest step in the investigation of pollution at the site of Mill Rock Park, Rochford Field, and the sewer pump station on Winchester Avenue. It reports on the field investigation that was done over the past two years. It tells what new, more detailed information was collected, and also recommends a plan to clean the site up. This investigation covered data gaps or areas where more information was needed as a result of previous studies.

### **Why Was This Investigation Done?**

The soil contamination that has been found in the Newhall Street neighborhood is associated with landfills that were located in the area from the late 1800s through the 1950s. A variety of materials (such as household garbage, industrial waste, and soil from other places) were thrown away in dumps. The Town of Hamden bought the site for Rochford Field in 1936 and then the land for Mill Rock Park (including the sewer pump station area) in 1939 from private owners. Historical records show that in the 1920s and 30s the Rochford Field land was probably a swamp that was filled by dumping. When it was privately owned, Mill Rock Park appears also to have been used as both a public and industrial dump site. The Town of Hamden now has the responsibility for determining where the soil and groundwater contamination is located as a result of hazardous materials being dumped in this area. .

Studies have been on-going at Rochford Field and Mill Rock Park since 2000. As each study was conducted new information led to more questions about the contamination. Based on studies completed in 2003, the CTDEP instructed the Town that additional investigation was needed to determine more precisely what the environmental impacts have been from the fill materials that were dumped there. This study reports on this follow-up investigation that was done. It looked more closely at the quality of surface and deeper soils and groundwater. Another purpose of this study was to develop a first recommendation for a plan to remediate or clean up the contamination on these properties.

## **Where Did They Investigate?**

The area studied included Rochford Field, Mill Rock Park (also known as Rochford Field Annex), and the site of a sewer pump station on the corner of Winchester Avenue and Mill Rock Road. The sewer pump station had not been investigated before this study took place. Rochford Field covers 4.84 acres and is bounded by Mill Rock Road, Newhall Street, Newbury Street, and Winchester Avenue. Mill Rock Park is 2.94 acres in size, stretching between Wadsworth Street and Winchester Avenue along Mill Rock Road. The sewer pump station sits on 0.12 acres of land at the northwest corner of Mill Rock Park.

## **How Did They Test The Soil and Water?**

Tests were conducted between October 2004 and February 2005. The field investigation included geophysical surveys, test boring (digging out a long tube-shaped sample of the earth), digging test pits, and drilling of groundwater monitoring wells to monitor the groundwater. The geophysical survey included using ground penetrating radar. The radar helps to gain a better picture of the extent of fill material in the ground and to locate any large metallic objects (like old drums) that might be buried on the site. The test borings, test pits, and groundwater monitoring wells were dug after the geophysical survey. The information collected in the field was followed by testing of soil and groundwater samples.

At Mill Rock Park there were:

- Geophysical survey
- Nineteen test borings
- Three of the test borings were completed as groundwater monitoring wells
- Four surface soil samples

At Rochford Field there were:

- Geophysical survey
- Fourteen test borings
- Eight of the test borings were completed as groundwater monitoring wells
- Eight shallow borings

At the sewer pump station there were:

- Four shallow borings

## **What Contaminants Were Tested For?**

The contaminants tested for in the soil and groundwater samples were:

- Extractable Total Petroleum Hydrocarbons (ETPH) (oil)
- Volatile Organic Compounds (Halogenated VOCs)

- Semi-Volatile Organic Compounds (SVOCs)
- Chlorinated pesticides
- PCBs
- Total Cyanide
- Total and Leachable Metals
- 13 Pollutant Priority Metals
- Landfill Leachate

The samples were tested using methods provided by and approved by the CTDEP and the EPA. One of the important set of standards used to evaluate these samples was Connecticut's Remediation Standard Regulations (RSR's). These provide detailed guidance to determine whether or not remediation (cleanup) of contamination is necessary to protect human health and the environment. An additional test was also done on some of the soil samples, called a Synthetic Precipitation Leaching Procedure (SPLP). The SPLP test shows how metals might move from the soil to the groundwater (such as when it rains). The study compared the levels (concentrations) of each of these contaminants when found in the soil samples to the RSRs. The standards list what concentrations of substances could be harmful to people who come into contact with them.

### **What Did They Find?**

The study found the following on each property:

Mill Rock Park: Laboratory testing of fill samples taken from Mill Rock Park detected SVOCs, ETPH, metals (antimony, arsenic, beryllium, copper, chromium, lead, nickel, mercury, selenium, silver, and zinc), and low levels of VOCs. Pesticides were found in one sample. The levels of SVOCs, ETPH, arsenic, lead, and beryllium exceeded one or more CTDEP RSR standards. However, soil samples taken from below the fill material did not show any contamination above RSR standards. The CTDEP had asked that sand from the playground at the park also be tested. There was no evidence that the playground sand has been contaminated or mixed with the fill materials below.

The test on the groundwater samples from Mill Rock Park also found ETPH and some metals, including arsenic, selenium and zinc. There were also low levels of VOCs (chloroform and xylenes) and some common landfill leachate chemicals including iron, manganese, and sodium. The ETPH measured was in higher concentrations than what is acceptable for groundwater while the arsenic and zinc were measured at levels exceeding acceptable surface water concentrations.

Rochford Field: Laboratory testing of fill samples taken from Rochford Field found SVOCs, ETPH, metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, nickel, mercury, selenium, silver, thallium, and zinc), pesticides, and low levels

of VOCs. Cyanide was found in one sample. PCBs were not found. The SPLP testing found leachable antimony, arsenic, copper, lead, and zinc in some of the samples. The SVOCs, ETPH and metals were measured at levels or concentrations that exceeded the RSRs.

The test on the groundwater samples from Rochford Field also found ETPH and metals (arsenic, copper, lead, nickel, selenium, thallium and zinc). There were also low levels of VOCs and some common landfill leachate chemicals including iron, manganese, and sodium. Concentrations of ETPH, benzene, lead and nickel were higher than acceptable levels for groundwater. Arsenic, copper, lead, nickel, thallium, and zinc were measured at levels higher than is acceptable for surface water. SVOCs and mercury have also been detected in Rochford Field groundwater in higher concentrations than the RSR standards.

Sewer pump station: Chemical testing of fill samples taken from the sewer pump station site detected SVOCs, ETPH, and metals (antimony, arsenic, barium, chromium, lead, mercury, and zinc). Pesticides were found in one sample. The levels of SVOCs were found to exceed the RSRs standards in five of the nine samples taken. Lead exceeded acceptable standards in one sample. The soil samples taken from below the fill material did not show any of the tested substances above allowable levels.

No groundwater samples were taken from the sewer pump station property.

### **What Will Be Done To Clean Up the Properties?**

The report evaluated a variety of possible alternatives to deal with each of the contaminants found. A wide range of actions were considered at first. Some actions were then dropped from in-depth study because 1) they would not be very effective, 2) they could expose residents to more contamination, possibly doing more harm than good, and 3) they could be very costly. The feasible alternatives are outlined below. They will need to be evaluated by CTDEP and will be discussed with the community before any decisions are made.

The actions to clean up or contain the contamination listed below would apply to Mill Rock Park or Rochford Field. The only action recommended for the sewer pump station was the use of deed restrictions (also called Environmental Land Use Restrictions (ELURs)) to limit use of land at the pump station site in the future. Basically, an ELUR would mean that no limited digging could take on the property. The sewer pump station is a small site that is surrounded by barbed wire and a locked gate. The ground is covered by the building and vegetation. The study concluded that because of this, the contamination on the site is already controlled as best as is possible.

Alternatives for Mill Rock Park and Rochford Field were examined in more depth in the study include:

- 1) Dig up and remove all fill material on site that is higher than acceptable standard concentrations. Clean fill would then be brought to the site.
- 2) Excavation of the upper two feet of fill material and covering that with an asphalt cap. An environmental land use restriction (ELUR) would also be put in place.
- 3) Installation of an engineered cap (soil or other materials) to cover the fill. An environmental land use restriction (ELUR) would also be put in place.
- 4) Option 1A, 2A and 3A – off-site disposal of excavated material in a landfill designed to take contaminated waste and/or recycling.
- 5) Option 1B 2B, and 3B – using the Hamden Middle School for disposal of the excavated materials. A protective cap would be placed over the material placed at the middle school.
- 6) In addition, the report recommends that the groundwater be re-classified. The CTDEP classifies or ranks groundwater based on what it is safe to use it for. This guides state decisions about what it will allow the water to be used for in the future. Right now, the groundwater in the Newhall neighborhood is classified as safe for human use including drinking water. The report recommends that CTDEP change that rank so it will be officially designated as not safe for human consumption with treatment.

The report recommends that a combination of these alternatives be considered, based on the plans for future use of the park and field. However, the report also concludes that Alternative 2, along with placing the removed fill at the middle school, is preferred because it provides the best protection of resident's health in the future, would best allow continued use of the park and field for recreation, and would be most cost-effective.