

Philly Thrive's Knowledge of Refinery Site Contamination October 2020

This document (working draft) contains the key findings that Philly Thrive has made as we've learned about the clean up of the former South Philly Refinery. Outstanding questions, some of which are related to our findings and some of which stand on their own, are noted in **bold** throughout the document.

SHADING KEY FOR TOPICS:

- Lead
- Benzene
- Chemicals produced by refineries that should be sampled
- Air sampling
- Water treatment / groundwater contamination
- Act 2 / Public Involvement Program

Technical Knowledge

- Benzene has been found onsite and beyond the boundaries of the site, in residential areas, at high concentrations. In some areas, concentrations are orders of magnitude higher than state standards. Benzene is a known human carcinogen. **What is being done to correct this situation? In the off site areas, who is responsible?**
- There is a substantial amount of lead located throughout the site. In some places, concentrations are well above state standards. The toxic effects that lead has, particularly on cognitive development in children, are well known.
- In some areas (AOI 1 for example), Methyl Tert-butyl Ether (MTBE) is also present in concentrations that are over 100 times higher than the state-wide health standard.
- Other contaminants found on site include chrysene, naphthalene, mercury, and arsenic. In total, approximately 30 substances are named as being sampled for regularly throughout the site. **Is this all that needs to be sampled for?**
- Each compound found on the site will be cleaned up to a certain standard, which Evergreen will propose and DEP will approve or ask for revision.
 - The only standard that has been set so far is for lead - Evergreen proposed using a standard that is 2.5 times higher than the state health

standard - meaning 2.5 times more lead can be allowed in the ground on this site than a site seeking to meet state standards.

- Our understanding is that Hilco may be considering a lower standard for lead, but nothing formal has been proposed yet.
- We noticed that the remediation investigation had air monitoring done on site to see if vapors were present in refinery buildings or the surrounding air. **When will this investigation of air quality be extended to surrounding areas / neighborhoods?**
- There are two water filtration plants (at Girard Point and Point Breeze) that treat groundwater before returning water to the Schuylkill River. **How effective are these systems during heavy rains and floods?**
- In multiple areas on site, contamination was found right up against the bulkhead (a steel wall where the site borders the river), and Evergreen could not determine where the contamination ended. This suggests that they do not have a way to prove the bulkhead is serving as an effective barrier to prevent contamination from entering the Schuylkill River.
- Parts of the site were inaccessible while the refinery was operating for safety and other reasons. In certain places, that will cause them to have to do additional investigation for contaminants as the decommissioning and demolition of the refinery moves forward.
- Hilco developed a Soil Management Plan - a plan which addresses how contaminated soil will be handled during construction - during bankruptcy proceedings. This plan states Hilco will:
 - Regrade the site so that it is above the 500 year floodplain, and
 - Use less contaminated soil and “impervious barriers” (such as concrete building foundations) as a means of protection against more contaminated soil.
 - **How does a permeable barrier (i.e. one that water can pass through) such as “less contaminated soil” protect people in an area prone to frequent flooding and saturated soil conditions? What options are available that clean and restore the soil in a safer way?**

Process Knowledge

- There was a gap of nearly 12 years between the first public meeting about the current remediation effort, in 2007, and the next attempted meeting, which was in 2019.
- The Act 2 Law of Pennsylvania holds that the public should be involved in the development and review of each of the reports needed to clean up a given site under the Act 2 program, if the city requests it. Philadelphia requested this in 2006.
- In order to make up for the lack of public involvement, the City, the DEP, and Evergreen agreed to hold a series of two public meetings, with an intervening 120 day comment period, so that the public could review and comment on the eight remedial investigation reports (RIRs) that have already been approved by the DEP.
- It should be noted that the above makes no attempt to involve the public in the development of said reports (presumably, to avoid a “redo” scenario for Evergreen and the regulators), but only the review of them after the fact; therefore, this situation still does not comply fully with the law.
- For all other reports and documents yet to come, Evergreen has so far provided a public involvement program that falls short of the vision for public involvement outlined in the law. This involvement may (and, for a site such as the refinery, should) include:
 - A mix of multiple larger informational sessions, and smaller, discussion-based roundtable meetings,
 - Proactive programs that allow for the ready exchange of information between the community and Evergreen, as well as for the parties to consult with each other on a regular basis
 - A community-based advisory panel to ensure that the community and the public at large have a say in remediation decisions.
- The eight reports written and approved so far are all part of the first step in the Act 2 process, which is “site characterization” - or figuring out which contaminants are on the site. Additional steps to come include:

- Three more reports need to be approved by DEP to complete the “site characterization”
 - A risk assessment will examine the impacts that the various contaminants could have on human health, as well as the health of animals / the environment.
 - Part of the risk assessment is a “fate and transport” analysis - how compounds on site break down, and move, over time.
 - The third step is the preparation of a clean up plan, where Evergreen will lay out how they are planning to clean up the site, and which standards they plan to use for which contaminants.
 - The actual boots-on-the-ground cleanup of the site.
 - A final report that shows attainment of standards and follow up actions needed.
- Hilco is not entering Act 2. Instead, they appear to have delegated cleanup under Act 2 to Sunoco / Evergreen, while coordinating with them so that cleanup and redevelopment don't interfere with each other.

Links to useful videos (explanations, etc.)

Benzene:

<https://www.youtube.com/watch?v=4No8LkXnjo0>

https://www.youtube.com/watch?v=_NaJjIblwTk

Arsenic:

<https://www.youtube.com/watch?v=ifavkrnVYsE>

Mercury:

<https://www.youtube.com/watch?v=KqNwAOTquwY>