

POLREP 22
Tuscarora Oil Site – FPN 15308
Intersection of Ely and River Roads
Solebury Township, Bucks County, Pennsylvania 18938

Attention:

EPA3 - RRC
G. Heston, EPA
F. Burns, EPA
P. Ryan, USCG-NPFC
S. Sinding, PADEP

- I. **SITUATION** (as of February 12, 2016)
Event – Continuing Assessment – FPN 15308
 - A. The Tuscarora Oil Site (Site) is located in Solebury, Bucks County, Pennsylvania. The Site is the location of a Facility from which large volumes of oil were documented to have spilled, discharged, or burned from tanks and pipelines between approximately 1915 and 1938. The Facility is no longer operating and is mostly dismantled and removed. The area once comprising the facility is now predominantly residential property. Contamination of residential drinking water wells is documented since about 1941. Reports of petroleum-related contamination in residential wells and a surface water body near the Facility resurfaced in the early 1990s. An assessment of the oil discharges and associated odors has been conducted over many years. Involvement by an EPA OSC was initiated in 1993.
 - B. On January 4, 1999, the OSC documented the end of the EPA removal assessment of the Tuscarora Site (POLREP 18 and Final). Among other things, the OSC concluded that oil had not been observed discharging to the navigable water which makes involvement by EPA to address aspects of the Site potentially outside the authority of the EPA. Instead, the PA Department of Environmental Protection (PADEP) was positioned to take the lead on the Site and work with a successor to one of the former operators of the facility to move the Site through characterization. Without an oil discharge to navigable water (or substantial threat thereof), EPA would have limited authority to respond to contamination of ground water by oil originating from the former oil Facility.
 - C. An Oil Project was opened in 2004 (FPN E04322) with an initial ceiling of \$7,000. PADEP had contacted EPA to request assistance regarding continuing petroleum odors at the Site. On September 22, 2004, the OSC visited the Site with PADEP. Oil odor was detected, but no oil discharge was observed. Samples were collected and shipped for analysis by USCG Marine Safety Laboratory (Case 04-165). These actions are summarized in POLREP 19. The results indicate only that a light petroleum was detected in the water. Afterwards, EPA and its contractor initiated a search of deed information to define the facility.

- D. Between May and November 2014, and in response to an observation of oil on the footer drain of the Delaware Canal, EPA, PADEP, and a contractor for Shell coordinated and collected samples of oily material. See POLREP 20. The footer drain discharges to the Delaware River. The oil discharge was different (more substantial sheen) than previous observations by the OSC made on numerous occasions since the early 1990s. On November 11, 2014, the OSC received the analytical results from samples collected from the footer drain. Samples of the sheen atop the water showed low levels of organic contamination consistent with petroleum compounds (e.g., isopropylbenzene, methylcyclohexane, alkanes, alkenes, and TPH). Samples collected from a large amount of biomass also present in the footer drain did not show similar contaminants. The analytical data from the 2014 oil sheen event is similar to the analytical data collected from monitoring wells located west of River Road (e.g., 2005 Report by SAIC for Shell). This information, along with ground water flow direction information, indicates that oil-contaminated ground water located west of River Road is likely discharging into the footer drain and the cause of the odors and intermittent sheen events.
- E. POLREP 20 contains a summary of available background information relating to the history of operations at the Site, extensive characterization and assessment activity between 1993 and 1999, and assessment activity which occurred more recently under FPN 04322. (closed January 2, 2015).
- F. FPN 04322 was closed January 2, 2015 and FPN 15308 was opened for continuing assessment of the oil discharge at the Site. See POLREP 21 for information relating to Initiation of Assessment activity relating to FPN 15308 through March 11, 2015.
- G. Beginning in 2005, a successor (Pennzoil Quaker State (“Shell” for purposes of this Site)) to one of the former operators (National Transit Company) has conducted characterization of certain portions of the former facility. Although petroleum products have been identified in various environmental media, reports submitted to PADEP concluded that concentrations did not exceed Pennsylvania DEP Statewide Health Standards. These reports indicated the potential that ground water containing oil was likely migrating from the area of the former facility to a water body on which oil had been observed and with which oil odors are associated.

II. ACTIONS

- A. On January 22, 2015, the OSC and PADEP met to discuss Site characterization needs and an appropriate pathway for completing assessment activity associated with the Site. On February 2, 2015, PADEP offered Shell the opportunity to assess the Site pursuant to State procedures.

- B. On March 11, 2015, the OSC visited the Site and verified that oil odors and minor amounts of oily material continued to exist at the locations previously identified in the Fall of 2014. However, the amount of oily material on the water was significantly reduced indicating that the Fall 2014 sheening event may be concluded (for unknown reasons). The flow in the footer drain was substantially higher than last Fall (likely due to snow melt and season).
- C. On March 13, 2015, a report was submitted by contractors for Shell relating to the Fall 2014 sheen event. The report summarizes the data from the samples collected by contractors for Shell in September 2014. In short, the results suggested that low levels of petroleum hydrocarbons are present in/on the waters of the footer drain. Fingerprint analysis of water issuing from a seep in the east bank of the canal's towpath near the point where oily sheen and petroleum odors begin suggests that odors likely originate from light end hydrocarbons. The presence of alkenes may suggest processed petroleum or heavily biodegraded gasoline rather than unprocessed crude oil.
- D. On March 16, 2015, the OSC corresponded with Shell. In short, the OSC informed Shell that despite many years of assessment that there may be several questions about the Site which remain to be answered. Generally, how much oil still remains to migrate, how the oil migrates to the footer drain, and what is the remaining threat posed. Shell was informed that the OSC had opened FPN 15308 to continue assessment of the oil discharge.
- E. On March 18, 2015, the OSC received an odor complaint from a resident.
- F. On April 22, 2015, the OSC participated in a conference call with Shell and its contractors. Shell offered to continue its assessment activities relating to the oil discharge in order to address remaining questions posed in March. Shell initiated the process of obtaining access to properties in the area of the discharge.
- G. On July 21, 2015 an odor complaint from a resident was received.
- H. On October 19, 2015, after receiving permission from most property owners, a survey was conducted to identify features (e.g., underground pipes) which may be remnants of the oil facility (or other infrastructure) which may presently facilitate the migration of oil beneath the canal and into the footer drain. The survey focused on the area along the canal/towpath and immediate environs. Two locations with pipes visible at the surface within or at the footer drain are known and others are suspected. Various survey techniques were used including ground penetrating radar, M-scope, electro-magnetic locator, and dowsing rods. The OSC observed the activity.

- I. A report summarizing the findings of the survey to locate underground features in the area of the canal was submitted January 28, 2016. The investigation found three buried linear features under the towpath/footer drain using geophysical and other methods. However, the depth of burial and lack of complete property access negated a full identification of the features. The purpose of the features (pipes) is not known. From north to south it is likely that:
- Feature 1 is located such to orient along the line of Ely Road and is likely associated with the former transmission of oil. The OSC has not observed evidence of oil sheen or odor near Feature 1.
 - Feature 2 is of unknown purpose, is located south of the former pump house location, and is associated with a segment of pipe which presently crosses over the footer drain. The position of Feature 2 is approximately located at the point where historical surface water drainage (as indicated on a USGS map) would have passed under River Road. The OSC has not noted oil sheen near Feature 2 and has noted petroleum odor on only rare occasions in this area.
 - Feature 3 is of unknown purpose. It is near the location of pipe segments found in the footer drain and the point from which most of the oily sheen upon the footer drain begins. The OSC often notes petroleum odor in this area (although most odor issues are further south of this location).
- J. One of the features (Feature 3) is associated with pipe segments visible in the footer drain. This location is also associated with the seep from which a sample indicates the presence of light end hydrocarbons. It is plausible that water conveyed along the route of pipes allows hydrocarbon material to pass from the area of former oil-relating operations, under the canal, and into the footer drain.
- K. On February 11, 2016 the OSC visited the Site to examine conditions. A slight oil odor was observed close the southern limits of the footer drain in the area of the Site. No oily sheen was observed. There was no water in the canal at this time.

III. FUTURE ACTIONS

- A. The OSC will continue to coordinate with PADEP, Local Government entities, and Shell and will continue to do so in order to determine the extent of (and implement the conduct of) additional assessment or other activities required in order to conclude an Assessment of the Tuscarora Oil Site in accordance with the NCP.