

Peak Oil – Bay Drum Company
State Road 574 and Faulkenburg Road
Tampa, Florida
County: Hillsborough
District: Southwest
Site Lead: EPA
Placed on National Priorities List: June 10, 1986
HWC # 021
ERIC ID # 3794

Site Description and History

The Peak Oil and Bay Drum portions of this site occupy adjacent properties on the south side of SR 574 east of Tampa in Township 29S, Range 20E, Section 07 at 27° 58' 14.0417" N, 82° 20' 26.3596" W. Both of these sites were placed on the National Priorities List (NPL) in 1984 and are listed as one Superfund site. Peak Oil conducted operations from 1954 to 1979 as an oil re-refinery. The operation's waste stream was discharged to onsite unlined percolation ponds. The company is no longer in operation.

Bay Drum Co. began operations in the late 1950s to early 1960s as a drum recycling business. Wastewater from the recycling process was discharged into an on-site unlined percolation pond. The recycling business ceased operations in the late 1970s to early 1980s. The site was then used as a depository for used roofing shingles and lesser volumes of construction debris.

Threat

Soil, surface water & ground water in the surficial and Floridan aquifers at the site have been contaminated with various volatile and extractable organic compounds, metals, pesticides and polychlorinated biphenyls (PCBs). Contamination poses a potential threat to both human health and the environment.

The 2004 private well survey confirmed that there are no private wells within the area of groundwater contamination that are used as a source of drinking water. Former facility water supply wells at the sites, suspected to have provided an avenue for migration of groundwater contaminants into the underlying Floridan Aquifer due to insufficient sealing of well casings, have been plugged and abandoned. Recent monitoring confirms that Floridan Aquifer contaminant levels are naturally declining.

Contaminated soils have been excavated, treated, and re-disposed of onsite. Monitoring is ongoing to confirm the effectiveness of the soil remedy. Wetlands monitoring has been suspended in lieu of the sediment removal action projected for 2016.

Response Strategy and Status (December 2016)

In July 1983, the Florida Department of Environmental Regulation (FDER, now DEP) conducted a preliminary assessment at the Peak Oil site and determined that the onsite percolation pond contained approximately 2,000 cubic yards of waste oil sludge. The sludge had a pH of 2 and was contaminated with PCBs, phenolic compounds and heavy metals. An additional 1,700 cubic yards

of soil in contact with the sludge pond was also contaminated. Contaminant migration from the sludge pond had resulted in a plume of contaminated ground water projected to cover an area of approximately 2.2 acres to a depth of 10 feet.

In April 1984, the FDER filed a complaint against Peak Oil and Bay Drum. The responsible parties filed a motion to dismiss the complaint, but the motion was not upheld. In 1987, the EPA conducted an Interim Remedial Measure at the Peak Oil site in which 4,000 cubic yards of acidic PCB contaminated sludges and soils were excavated and incinerated with the resulting “ash pile” temporarily stockpiled on-site pending the final site remedy. In October 1988, the FDER completed a design for recovery and treatment of grossly contaminated groundwater on the Peak Oil portion of the site. Implementation of the groundwater recovery and treatment system was anticipated as part of the Superfund remedial response action.

The EPA signed a Consent Order with the Peak Oil potentially responsible parties (PRPs) to conduct an area-wide groundwater and a site-source Remedial Investigation/Feasibility Study (RI/FS) in February 1989. The EPA conducted the site-source RI/FS for the Bay Drums portion of the site and participated in the area-wide groundwater RI/FS.

In June 1989, the EPA completed removal of 70,000 cubic yards of roofing shingles and other construction and demolition debris from the Bay Drums site to allow sampling of the underlying areas during the RI. The shingles were temporarily placed on County property adjacent to the southern side of the Peak Oil portion of the site. Final disposition of the shingles has not occurred.

The draft Peak Oil and Bay Drum Phase I Site Source RI/FS reports were completed in July and December 1990, respectively. The draft Phase I Area-Wide Hydrogeologic RI/FS was completed in January 1991. Phase II fieldwork was completed in July 1991.

The results of the Peak Oil Source RI indicated that PCBs, metals, volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) were present in on-site soils. VOCs consisted primarily of toluene, ethylbenzene, and xylenes. Lead was the most prevalent inorganic contaminant with lesser concentrations of zinc and chromium. The majority of the PCB contamination was found in the abandoned percolation ponds. Results of the Bay Drum Source RI indicated that the on-site soils were contaminated with a variety of VOCs, SVOCs, pesticides and metals including lead, chromium, zinc, chlordane, and carcinogenic polynuclear aromatic hydrocarbons. PCBs were identified in low concentrations in several soil samples.

The Area-Wide Hydrogeologic RI identified elevated levels of VOCs including chlorinated solvents and benzene, toluene, ethylbenzene and xylenes (BTEX), naphthalene and metals in groundwater at both sites. No PCBs were found in the groundwater.

A public meeting was held in August 1992 to present the proposed plan for source remediation at the two sites. The selected Operable Unit 1 (OU 1) Source remedy at Peak Oil included solidification/stabilization of lead-contaminated soils and the ash pile, in-situ bioremediation of organic-contaminated soils using soil flushing, and construction of a low-permeability cap and slurry wall. Solidification/stabilization of contaminated soils with construction of an overlying

low-permeability cap was selected as the OU 3 Source remedy for the Bay Drum site. The EPA signed the Bay Drum OU 3 ROD in March 1993 and the Peak Oil OU 1 ROD in June 1993. The DEP issued a letter of non-concurrence in November 1993 because the Peak Oil Source ROD did not address final disposition of the off-site shingle pile.

The proposed area-wide groundwater remedy (OU 2) for the Peak Oil and Bay Drum site was presented in a public meeting in February 1993. EPA signed the Peak/Bay OU2 groundwater ROD in August 1993. The selected remedy addresses contaminated groundwater in the surficial and Floridan aquifers at both sites, and was to be performed in conjunction with source control remedies. The primary components of the groundwater remedy included extraction and treatment of contaminated groundwater using air stripping and carbon polishing. Treated water was to be disposed of by a combination of discharge to the publicly owned treatment works and on-site spray irrigation to enhance the soil-flushing component of the source remedy. Plugging and abandonment of onsite Floridan aquifer production wells and installation of new Floridan aquifer monitoring wells was also specified.

The proposed plan for wetlands remediation at the Peak Oil – Bay Drum site was presented at a public meeting in May 1994. EPA signed the Wetland ROD (OU 4) in June 1994. The selected remedy is “No Action with Monitoring” of the surface water and sediments. Monitoring of the wetlands will occur during the period of soil and groundwater remediation to confirm that no further action is necessary to improve the quality of the wetlands.

The Bay Drum PRPs reported in June 1997 that the Bay Drum property was being used as a dumping area for solid waste materials (including fire extinguishers and other debris). In March 1998, the PRPs initiated interim remedial actions including stockpiling, removing, and properly disposing of solid waste materials found on-site and placing a fence around the site.

The Peak Oil PRPs began work on the Remedial Design in 1996, as required by the EPA Remedial Design/Remedial Action Consent Order. During design, additional monitoring wells were installed, groundwater sampling was performed, and soil treatability studies were completed to support completion of the soil design. The EPA issued an Explanation of Significant Differences (ESD) in June 2000, revising the performance criteria that treated soils must meet during remediation by solidification/stabilization. The ESD also eliminated the soil flushing/bioremediation component of the original (OU 1) soil remedy that was to address organic contamination at the site. DEP expressed concern that elimination of the soil-flushing component compromised the ability of the remedy to effectively address organic contamination in soils as originally required by the RODs, and requested that soil cleanup criteria be developed for site-related organic contaminants.

A soil cleanup criterion for naphthalene was incorporated into the soil design prior to implementation of the soil remedy, in response to DEP concerns. EPA approved the final soil design in October 2000 for OU 1 and OU 3. Following a final site inspection in August 2001 to confirm completion of the source remedies at the Peak Oil – Bay Drum sites, EPA approved the Remedial Action Reports in October 2001.

DEP remained concerned that the Peak Oil source remedy may not have effectively addressed all potential sources of chlorinated solvents and TRPHs (total recoverable petroleum hydrocarbons) in some residual untreated soils on-site and along the common Peak/Reeves property boundary. Additional soil sampling for VOCs was conducted and the results, contained in the September 2004 Soil Sampling Report, suggest that untreated potential sources may remain in a limited onsite area. Groundwater monitoring will be used to assess if these areas are continuing to act as a groundwater contaminant source. The need for further action will be evaluated in future five year reviews of site cleanup.

Groundwater monitoring subsequent to the OU 2 groundwater RODs has demonstrated a decline in chlorinated solvent concentrations in the Floridan Aquifer in response to plugging and abandonment of the former on-site production wells. Pilot tests have also been conducted to support re-evaluation of the original groundwater remedy and consideration of in situ technologies including chemical oxidation and bioremediation to address contaminated groundwater in the surficial aquifer. A final Focused Feasibility Study was submitted in June 2004 to identify possible alternatives to address contamination in the surficial and Floridan aquifers. These alternatives included monitored natural attenuation, groundwater recovery and treatment, in-situ enhanced bioremediation, and air sparging.

EPA issued a proposed plan in September 2004, and following the public comment period, the final Amended ROD was signed by EPA in January 2005. The amended groundwater remedy consists of enhanced bioremediation and air sparging to address chlorinated solvent and petroleum hydrocarbon contamination in the surficial aquifer, along with natural attenuation monitoring and a contingent bioremediation remedy for the chlorinated solvent contamination in the Floridan aquifer.

Construction of the surficial aquifer groundwater remedy was completed in August 2005. Startup testing and operation of the air sparging system began December 2005 and included an air monitoring program to demonstrate compliance with State air regulations. Injection of a carbon source in the surficial aquifer to stimulate in situ degradation of chlorinated solvent groundwater contamination by biological activity was also been conducted. Groundwater monitoring is ongoing to track the progress of groundwater cleanup using these two groundwater technologies.

The 2008 quarterly groundwater monitoring results were provided, to EPA and DEP in April 2009, including an evaluation of the progress of groundwater cleanup. Groundwater data indicated that elevated levels of chlorinated solvents remained immediately down-gradient of the bioremediation treatment area, suggesting that the area of effectiveness was limited. The responsible party recommended additional carbon source injections to enhance the bioremediation process. Final design for the enhanced bioremediation injections was submitted to the EPA and DEP and approved in January 2010 and included the protocol that will be followed during injection of additional carbon sources and subsequent monitoring.

The additional carbon source injections to enhance ongoing groundwater bioremediation were conducted in March 2010. A construction completion report and performance monitoring results

was submitted in March 2011, confirming completion of the additional injections and compliance with State Underground Injection Control (UIC) requirements.

Operation of the air sparging system was discontinued in 2011 after monitoring indicated that BTEX concentrations were well below the groundwater cleanup criteria. In 2012, the semi-annual groundwater monitoring protocol was reduced to annual monitoring with a shorter list of sampling parameters based on a review of existing groundwater data.

Historical wetlands monitoring to evaluate the effectiveness of the “no action with monitoring” remedy for the south and central wetlands suggest that site-related contaminant concentrations, particularly for chlordane and some metals, are not declining in sediments as anticipated. Removal of the remaining contaminated sediment in the central wetland has been proposed by the responsible parties. Sediment sampling to delineate remaining sediment contamination was completed in 2011. A draft removal design was submitted to EPA and DEP for review in March 2013. The design specifies removal of approximately 3,600 cubic yards of chlordane and lead contaminated sediments followed by wetland restoration using wetland plants. Responses to EPA and DEP review comments were submitted to the agencies in June 2013. The final wetland removal design was submitted in February 2015. Concurrently, EPA issued an Explanation of Significant Differences (ESD), documenting the Agency’s decision to update the previous “no action with monitoring” wetland remedy to include the proposed sediment removal.

In July 2012, DEP recommended sampling and analysis for 1,4-dioxane in two source City Industries, Inc. area monitoring wells, due to the confirmed presence of degradation products of 1,1,1-trichloroethane (TCA) in groundwater indicating that TCA and the stabilizer 1,4-dioxane may have been released at the site. Sampling and analysis for 1,4-dioxane was conducted in 2 source area monitoring wells during the 2013 annual monitoring groundwater monitoring event and confirmed levels up to 390 µg/L, above the State criteria of 3.2 µg/L. Annual monitoring in 2014 and 2015 has confirmed the presence of 1,4-dioxane in groundwater in onsite and offsite surficial aquifer monitoring wells above the State criterion.

Results from the annual 2014 groundwater monitoring event suggested that the in situ bioremediation groundwater remedy may have reduced groundwater contaminants as far as possible given the persistent low pH conditions in the surficial aquifer. An ESD was issued by EPA in February 2014, documenting the modification to the surficial aquifer groundwater remedy to include air sparging, to address the remaining volatile organic compounds (VOCs) in the onsite surficial aquifer. The responsible parties finalized design of the air sparging system in August 2015. Construction and startup of the system was completed in September 2015.

A Five Year Review (FYR) site meeting was held by EPA in February 2015. FYR report was provided to EPA and DEP in July 2015. The report evaluates the progress and protectiveness of the remedy and identifies any issues which need to be addressed over the next 5 years. DEP provided comments on the draft FYR and recommended adding 1,4-dioxane as a groundwater contaminant of concern along with review of the existing site groundwater remedial goal of 100 µg/L for naphthalene, in light of the current State health based criteria of 14 µg/L and the EPA screening level of 6.1 µg/L.

Schedule

Operation and maintenance (O&M) of the soil treatment units (monoliths) is ongoing. O&M of the air sparging system is ongoing to address the remaining onsite chlorinated solvent plume in the surficial aquifer. Annual groundwater monitoring is performed to confirm the effectiveness of the source remedy and progress of the groundwater remedy.

Implementation of the wetland sediment removal is anticipated in 2017, during the dry season.