

RCRA Post-Closure Care Permit and Response Action Plan - Summary of Planned Activities

For decades, Union Pacific Railroad (UPRR) has been conducting cleanup activities at the Houston Wood Preserving Site ("Site") under the supervision of the Texas Commission on Environmental Quality (TCEQ). The work at the Site continues to be performed under the authority of a federal RCRA permit, which dictates how investigations and cleanup activities are conducted at the Site. Under the regulatory process, the permit is required to be renewed and updated periodically and UPRR has submitted its permit renewal application along with a Revised Response Action Plan (RAP) as part of the process of the continuing cleanup activities at the Site. UPRR has also established a working relationship with the Texas Commission on Environmental Quality (TCEQ), community members, and elected officials. Through these relationships, UPRR has incorporated input from these entities into the proposed on-going work components, which include:

- *Installation of a Slurry Wall* – In addition to the on-going remediation work completed, the proposed RAP includes installation of an underground physical barrier using a low-permeability, slurry cut-off wall on the north side of the Site along Liberty Road (to approximately 75 feet deep) and on the east side of the Site (to approximately 55 feet deep). In conjunction with the proposed slurry wall, institutional controls and Plume Management Zones (PMZs) to restrict groundwater use are proposed for the on-Site area and the City of Houston Right of Way (ROW) surrounding north and east sides of the Site.
- *Creosote DNAPL Recovery and Management Activities* – Recovery of Dense Non-aqueous Phase Liquid (DNAPL) found in the groundwater units from historical operations has been a key component of the on-going work at the Site, even though the groundwater is not consumed or used in any manner. In the renewal and updated Plan, additional NAPL recovery programs are being proposed using the TCEQ risk-based NAPL management guidance to implement the following techniques:
 - a. Multi-Phase Extraction (MPE) - Although UPRR regularly recovers creosote at and around the Site by pneumatic and other pumping, UPRR proposes to implement an MPE approach in additional areas where recoverable creosote is present through the installation of additional dedicated recovery wells. MPE removes DNAPL and groundwater by applying a vacuum to the recovery well. The MPE approach will utilize a mobile, trailer-mounted system with the flexibility to move to different locations as necessary.
 - b. Continued Creosote Recovery via Pneumatic Pumping - UPRR proposes to continue the creosote recovery actions on UPRR property through a combination of pneumatic pumping and MPE.

As described in the RCRA Permit Application and Compliance Plan, the following activities are also part of the post-closure care:

- Site Inspections:
 - Weekly inspections of the Englewood Intermodal Yard to assess for seeps and removal of DNAPL as necessary from collection sumps.
 - Quarterly inspections and any necessary maintenance of physical barriers (capped areas – vegetated soil cap, asphalt roadway, railroad ballast cap, City of Houston ROW concrete sidewalk, Englewood Intermodal Yard concrete cap).
- Groundwater Monitoring:
 - Semi-annual groundwater sampling of the groundwater monitoring well network.
- Corrective Action Monitoring Reporting
 - Remediation and post-response action activities including site inspections and groundwater monitoring results completed during the reporting period will be submitted to the TCEQ in the annual Corrective Action Monitoring Report.