



Long-Term Stewardship Assessment Report

Plains Marketing LP

EPA ID #: VAD050990357

Grafton, Virginia 23690

Assessment Date: May 1, 2019

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Introduction: Long-term stewardship (LTS) refers to the activities necessary to ensure that engineering controls (ECs) are maintained and that institutional controls (ICs) continue to be enforced. The purpose of the EPA Region 3 LTS program is to periodically assess the efficacy of the implemented remedies (i.e., ECs and ICs) and to update the community on the status of the RCRA Corrective Action facilities. The assessment is conducted in twofold, which consists of a record review and a field inspection, to ensure that the remedies are implemented and maintained in accordance to the final decision.

Site Background: The Yorktown Refinery, located at 2201 Goodwin Neck Road in Grafton, Virginia (Facility), has been in operation since its construction in 1956. The former refinery could refine up to approximately 60,000 barrels (one barrel equals 42 U.S. gallons) of crude oil per day and was considered a small-capacity refinery. Crude oil was delivered to the marine docking terminal located at the Facility on the York River. Most of the refined product was also shipped from this marine terminal with a smaller portion shipped by rail and tanker truck. The refinery produced petroleum fuels (gasoline, diesel, kerosene, and home heating oil), liquid petroleum gas, butane, the gasoline oxygenate and octane enhancer methyl/ethyl-tertiary-butyl-ether (“MTBE/ETBE”), petroleum coke, sulfur, and fuel gas.

The main process area of the refinery was located near the center of the refinery property. Most of the Solid Waste Management Units (SWMUs) are located to the east of the refinery process area. Aboveground Storage Tanks (AST), located south and east of the process area, were used to store crude oil, catalyst, and refined product. No underground storage tanks are known to have been used at the Facility.

On November 4, 1991, EPA and the former facility owner British Petroleum (BP) entered into Administrative Order on Consent docket number RCRA-III-046-CA (Order) to conduct a site-wide environmental investigation to determine sources and extent of any contamination and to conduct interim measures, as necessary, at the Facility. Environmental investigations at the Facility have been

completed in accordance with RCRA corrective action requirements specified in the Order and the Virginia AST Program.

Current Site Status: On March 31, 2004 EPA issued the Final Decision and Response to Comments (FDRTC). The final remedy for the Facility emphasized source removal and source control through excavation, consolidation and capping with groundwater monitoring. For waste residuals and contaminated soil in the unsaturated zone at SWMUs and AOC 1, materials exceeding risk-based levels have been excavated to the extent practicable and placed in the Corrective Action Management Unit, where they were consolidated and compacted, capped under an engineered barrier, and monitored for the long-term.

Institutional controls have been established to prevent current and future potential exposure to contamination, as well as any activities that would impair the integrity of the remedy. ICs include groundwater and land use restrictions. Construction of the final remedy was completed in August 2013. Plains Marketing L.P. (Plans) currently owns and operates the Facility as a transportation and storage facility for crude oil, natural gas and liquified natural gas.

Long-term Stewardship Site Visit: On May 1, 2019, EPA and VDEQ conducted a long-term stewardship site visit with Plains Marketing and their consultant to discuss and assess the status of the implemented remedies at the Facility.

The attendees were:

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John Hopkins	EPA Region 3	hopkins.john@epa.gov
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Institutional Controls (ICs) Status:

Administrative Order on Consent: The AOC is the method for implementing institutional controls required as a condition of the Statement of Basis and Final Decision. The following ICs apply to the facility, shown on Figure 1:

Groundwater Use Restriction: Use of groundwater as a potable source is prohibited until Media Cleanup Requirements for unrestricted use of groundwater are met. Currently, the Facility does not use groundwater for any purpose other than long-term monitoring required by EPA.

Land Use Restriction: All residential use of the property in perpetuity is prohibited. There were no residential structures or uses of the site at the time of the visit. Plains is currently in compliance with the land use restrictions.

Groundwater Monitoring: Shallow groundwater is encountered approximately 4 to 6 feet below ground surface and generally flows north, northeast and southeast towards the surface water bodies (York River, Back Creek) that surround the facility. Groundwater at the facility is monitored via three networks, each with its own objective. Constituents of concern (COCs) are screened against media cleanup requirements (MCR) listed in Tables 2a and 2b of the Statement of Basis and FDRTC. The list of groundwater COCs includes eight metals, six volatile organic compounds (VOCs) and one semi-volatile organic compound (SVOC).

The current Corrective Action Management Unit (CAMU) monitoring network includes ten shallow monitoring wells sampled semi-annually to demonstrate that no new impacts to groundwater are originating from CAMUs East and West. The CAMU areas are monitored using detection monitoring wells that surround the units. If significant groundwater impacts are detected via this network, additional groundwater monitoring from deeper paired wells will be required. The latest Annual Site-Wide Groundwater Monitoring report in 2018 suggests that there are no new impacts to groundwater from CAMU East or West.

The current facility perimeter monitoring network includes twelve wells sampled annually. The objective of this well network is to demonstrate that groundwater concentrations of facility-related COCs at the facility boundary are at or below EPA screening levels and, therefore, contaminated groundwater is contained on-site. At one well, B20R, arsenic is intermittently detected slightly above the MCR of 10 ug/L. All other COCs. The latest 2018 groundwater report suggests that facility-related COCs in groundwater are contained onsite.

Five areas (AOC-1/Coker Area, Combo Unit Area, 600 Tank Series Area, Tank 26 Area, and Former 5/7 SWMU Area) are monitored to confirm that Monitored Natural Attenuation (MNA) processes continue to reduce Facility-related constituent concentrations in groundwater at the Facility. In addition to COCs, wells in this network are analyzed for 3 additional SVOCs and MNA geochemical parameters such as alkalinity, manganese, dissolved iron, sulfate and nitrate. To evaluate groundwater trends at the five MNA areas, a Mann-Kendall test was performed using historical groundwater data, with the most recent data in 2018. The test classifies COC concentration trends as either increasing, probably increasing, stable, probably decreasing, decreasing or no trend. Of the seventy (70) Mann-Kendall constituent analysis, four (4) showed an increasing trend; lead in CMI05, benzene in I28, and arsenic and benzene in LD608. Most constituent analyses showed a stable trend.

Engineering Controls (ECs) Status:

CAMU East, CAMU West and SWMU 5/7: The CAMU includes a hybrid cap with hydraulic performance equivalent to a RCRA Subtitle C hazardous waste landfill cap. Disturbance of the caps on SWMUs and the CAMU is prohibited. Historical aerial imaging available on Google Earth does not show evidence of recent changes or disturbances. There were no plants with possible penetrating

roots or ponding observed during the site visit. The capped areas appear to be in good condition with normal vegetation growth (see Pictures #1-4)

Reporting Requirements/Compliance: Plains Marketing LP submits CMI Assessment Reports on an annual basis, the latest of which was received May 2019, and is currently meeting requirements of the AOC.

Mapping: The EPA facility website map is accurate and includes the 600-acre property. A downloadable geospatial PDF map is available on EPA’s corrective action facility webpage under the “Reports, Documents and Photographs” section, found [here](#).

Conclusions and Recommendations No institutional or engineering control deficiencies were identified. EPA has determined that the remedy institutional and engineering controls have been fully implemented.

Attachments:

Figure 1: Aerial Map of Plains Marketing L.P., Yorktown

Picture 1: Top of CAMU West facing South

Picture 2: Top of CAMU West facing North

Picture 3: Top of CAMU West facing East towards CAMU East

Picture 4: Top of CAMU West facing Southeast towards SWMU 5/7

Picture 5: Monitoring Well I-28

Picture 6: Monitoring Well I-19B

Picture 1: Top of CAMU West facing South



Picture 2: Top of CAMU West facing North



Picture 3: Top of CAMU West facing East towards CAMU East



Picture 4: Top of CAMU West facing Southeast towards SWMU 5/7



Picture 5: Monitoring Well I-28



Picture 6: Monitoring Well I-19B

