



June 18, 2020

Submitted Via FedEx

Lindley Campbell, Geologist, Oil Control Program  
Maryland Department of the Environment  
1800 Washington Blvd, Suite 620  
Baltimore, MD 21230

**RE: Bel Air Station, Harford County, Maryland  
MDE Case No. 18-0459HA  
Remedial Investigation/Remedial Action Work Plan  
(Monitoring Well Installation and Groundwater Delineation)**

Ms. Campbell:

On behalf of Colonial Pipeline Company (Colonial) TRC Environmental Corporation (TRC) has prepared this work plan to install additional monitoring wells for groundwater delineation at Colonial's Bel Air Station (Site). As detailed in the most recent Quarterly Monitoring Report (February 2020 – April 2020), laboratory results for the analysis of groundwater samples from the January and April 2020 sampling events indicate concentrations of benzene, naphthalene, and total petroleum hydrocarbon – diesel range organics (TPH-DRO), and TPH – gasoline range organics (TPH-GRO) are above the respective Maryland Department of Environment (MDE) Groundwater Quality Standards (GWQS) in downgradient monitoring well MW-13 and additional delineation is warranted. The purpose of this workplan is to expand the monitoring network downgradient of MW-13 (see **Figure 1**). Each of the monitoring wells installed in accordance with this work plan will be incorporated into the quarterly groundwater monitoring program and be sampled on the same schedule and for the same parameters.

#### **Task 1 – Installation of Previously-Approved Monitoring Well (MW-14)**

In the *Remedial Investigation/Remedial Action Work Plan* dated October 14, 2019 and the clarifying letter dated November 19, 2019, Colonial proposed the installation of three additional monitoring wells, MW-12 through MW-14. The MW-12 and MW-13 locations were selected based on groundwater potentiometric maps that indicated the potential for groundwater flow from the RW-5 area, underneath the electrical substation (where well installation is limited due to high voltage safety concerns), and between downgradient monitoring wells MW-6 and MW-9. The MW-14 location was proposed downgradient of MW-6 based on detections of benzene in the well during the July and October 2019 sampling events. The MDE approved the monitoring well installation in correspondence dated November 22, 2019. As observed by the MDE, MW-12 and MW-13 were installed on December 12 and 13, 2019, respectively. Due to slope and ground conditions, attempts to access and install the proposed MW-14 with the tracked drill rig were unsuccessful due to safety concerns.

The installation of MW-14 was previously approved downgradient of MW-6. However, as discussed below, benzene concentrations in MW-6 have decreased to below the MDE GWQS and were non-detect in the January 2020 and April 2020 sampling events. In conjunction with the safety concerns encountered during the December 2019 well installation event, the most recent groundwater data minimizes the need for a well downgradient from MW-6. In the section below, this work plan proposes

a contingency for a new monitoring well at the formerly proposed MW-14 location based on the results of future monitoring of MW-6.

## **Task 2 – Additional Monitoring Well Installation (MW-14 through MW-18)**

As shown on **Figure 1**, analytical results from the January 2020 and April 2020 quarterly sampling events reported several VOC concentrations exceeding their respective MDE GWQS at MW-12 and MW-13. Details of sample collection and analyses for those results are presented in the June 2020 Quarterly Monitoring Report (February 2020 to April 2020). These results indicate that compounds of concern have migrated under the station's electric substation and downgradient of MW-13. Further groundwater investigation is required to delineate the downgradient dissolved phase groundwater concentrations. This work plan proposes the installation of five additional wells MW-14 through MW-18, as shown on **Figure 1**.

The well locations are based on groundwater flow direction data collected from monthly gauging events and further refined with incorporation of MW-12 and MW-13 into the monitoring well network. The monitoring wells will be constructed with screen section depths to intercept the groundwater table and the contact with fill material and in-situ geologic material (saprolite). Monitoring wells MW-14, MW-15 and MW-16, will be installed during an initial mobilization, and two of the locations, MW-17 and MW-18, are contingency wells to be installed as-needed based on the groundwater sample results and subsequent potentiometric maps.

- MW-14 will be installed in facility driveway downgradient of MW-13.
- MW-15 and MW-16 will be installed downgradient to sidegradient of MW-13 and, in conjunction with MW-14, will provide delineation between MW-13 and the adjacent low-lying area to the east of the driveway.
- Contingency well MW-17 will be installed further down the driveway area from MW-14, if needed, based on subsequent monitoring.
- Based on future sample results for MW-6 and/or potentiometric lines developed with incorporation of MW-14 through MW-16 into the well network, another attempt will be made to install contingency well MW-18 near the initially proposed MW-14 location, downgradient from MW-6, if needed.

Well permits will be obtained from the HCHD, and a Maryland-licensed driller will be used to install the wells. The planned monitoring well construction details envisions 2-inch diameter schedule 40 PVC casing and 20-slot screen wells installed to intercept the groundwater table and the contact with fill material and in-situ geologic material (saprolite). Initially, the driller will attempt to use a tracked Geoprobe rig to access the locations. Limited pre-drilling site work may be completed, by hand, to level proposed well locations and prepare a safe drilling platform. If access is unsuccessful with the tracked rig or overhead electrical wires limit mast height on the rig, alternate well installation methods (e.g. hand auger, tripod, drive point) will be evaluated by the licensed driller consistent with Maryland well regulations.

Prior to installation of monitoring wells, soil cores will be collected and continually logged and field screened with a photo-ionization detector (PID). Consistent with the MDE conditions in its November 22, 2019 approval letter (Task 2), soil samples for laboratory analysis will be collected from the

soil/groundwater interface and from the interval exhibiting the highest PID response. If no PID response is observed or the highest PID response is observed at the soil/groundwater interface, only one soil sample will be collected. All soil samples will be preserved in accordance with EPA Method 5035 and analyzed for volatile organic compounds (VOC) via EPA Method 8260, including naphthalene and fuel oxygenates, and TPH-DRO and TPH-GRO via EPA method 8015.

A monitoring well permit for MW-14 has been previously obtained from the Harford County Health Department (HCHD) and appropriate well permits will be obtained for the remaining proposed wells MW-15 through MW-18.

Drilling-derived soil cuttings will be stockpiled for off-site disposal at Soil Safe of Logan, New Jersey or Triumvirate Environmental of Baltimore, Maryland.

If you have any questions regarding this Work Plan, please contact Stan Carpenter at 856-381-4683 or David Kudla at 610-506-1478.

Sincerely,

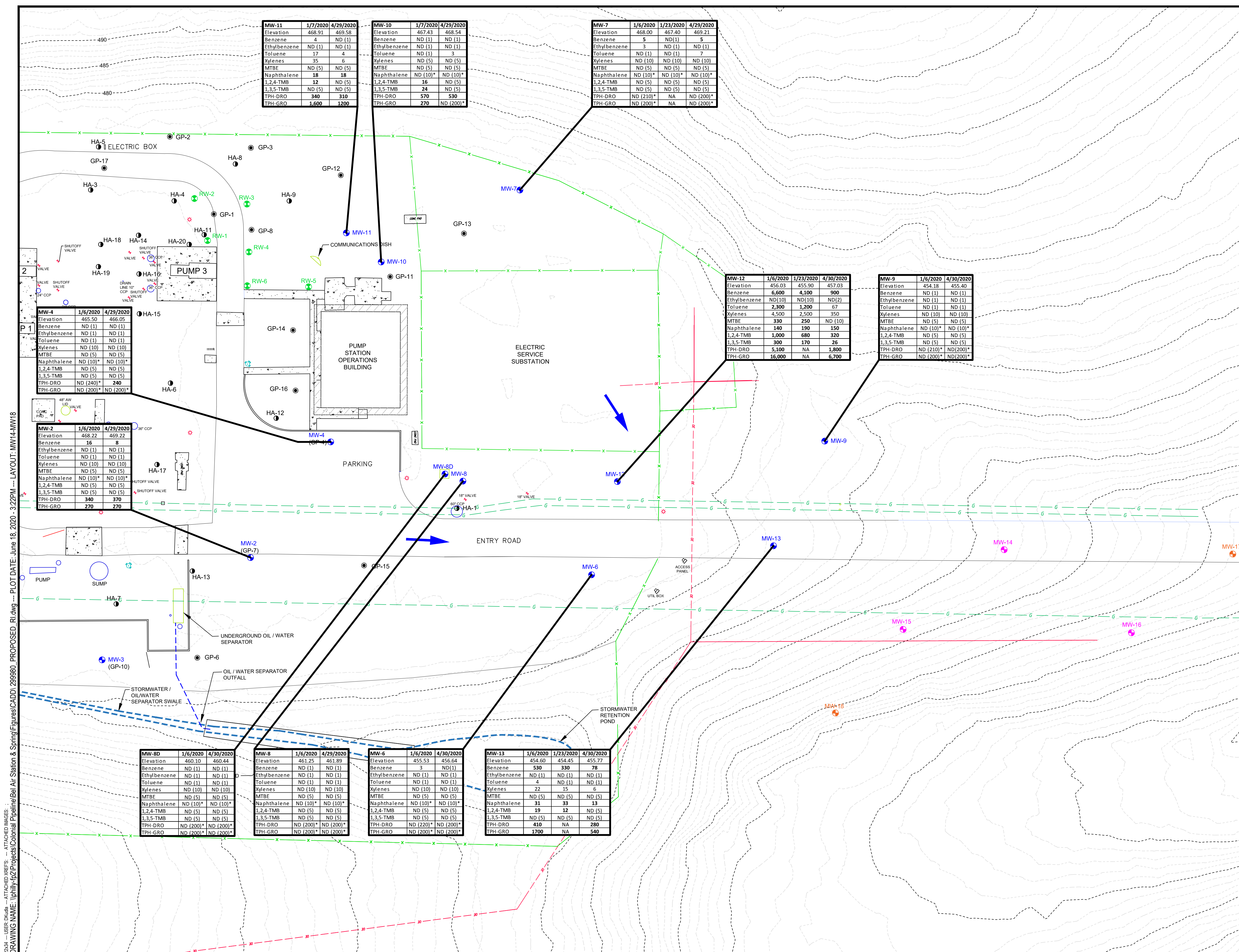
**TRC Environmental Corporation**

David Kudla  
Project Manager

Attachments

cc: S. Bull, Maryland Department of the Environment  
S. Carpenter, Colonial Pipeline Company  
R. Shenk, Colonial Pipeline Company



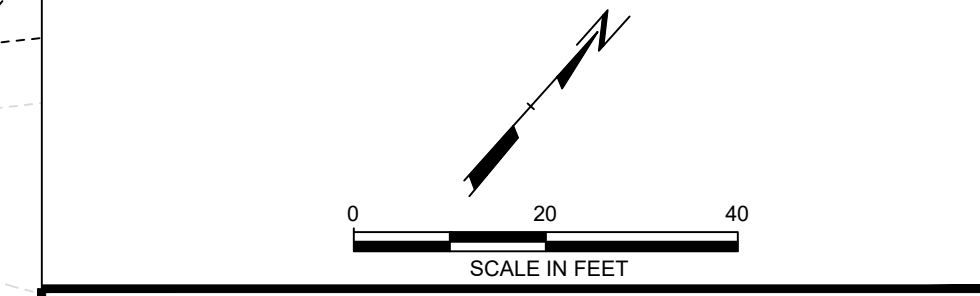


**LEGEND**

- GP-8 GEOPROBE BORING
- MW-5 MONITORING WELL
- RW-2 RECOVERY WELL
- HA-9 HAND AUGER BORING
- MW-14 APPROXIMATE LOCATION OF PROPOSED MONITORING WELL
- MW-17 APPROXIMATE LOCATION OF PROPOSED CONTINGENT MONITORING WELL
- LIGHT POST
- HYDRANT
- FENCE
- OVERHEAD ELECTRIC LINE
- UNDERGROUND GAS LINE
- ➔ INFERRED GROUNDWATER FLOW DIRECTION

- NOTES:**
- LOCATION OF STORMWATER SWALE AND STORMWATER RETENTION POND ARE APPROXIMATE
  - VALVE AND SHUTOFF VALVE LOCATIONS ARE SURVEYED GENERAL POINTS OF REFERENCE FOR PUMP STATION CONTROL POINTS AND PROCESS CONTROL FEATURES
  - BOLD RESULT INDICATES CONCENTRATIONS ABOVE MDE GROUNDWATER QUALITY STANDARDS (GWQS)
  - LLQ - LOWEST LEVEL OF QUANTITATION
  - LLQ REPORTED IN PARENTHESES
  - \* - LLQ ABOVE APPLICABLE CRITERION
  - ND - NOT DETECTED ABOVE LLQ

| Parameter (µg/L)                   | MDE GWQS |
|------------------------------------|----------|
| Benzene                            | 5        |
| Ethylbenzene                       | 700      |
| Toluene                            | 1,000    |
| Xylenes (total)                    | 10,000   |
| Methyl Tert Butyl Ether (MTBE)     | 20       |
| Naphthalene                        | 0.65     |
| 1,2,4-Trimethylbenzene (1,2,4-TMB) | 5.6      |
| 1,3,5-Trimethylbenzene (1,3,5-TMB) | 6        |
| Diesel Range Organics (DRO)        | 47       |
| Gasoline Range Organics (GRO)      | 47       |



PROJECT: COLONIAL PIPELINE COMPANY  
BEL AIR PUMP STATION  
FALLSTON, HARFORD COUNTY, MARYLAND

TITLE: PROPOSED MONITORING WELL LOCATIONS WITH GROUNDWATER RESULTS AT NEARBY WELLS (JANUARY - APRIL)

DRAWN BY: D. KUDLA      PROJ. NO.: 299980.0000.0000

CHECKED BY: D. KUDLA

APPROVED BY: D. CARLSON

DATE: MARCH 2020

**FIGURE 1**

TRC  
1801 Market Street  
Suite 1380  
Philadelphia, PA 19103  
Phone: 215.563.2122

FILE NO.: 299980.0000.03\_QMR.dwg

2024 - USER DRG008 - ATTACHED XREFS - ATTACHED IMAGES  
DRAWING NAME: \\philly-12\Projects\Colonial Pipeline\Bel Air Station & SpingFigures\CADD\299980 - PROPOSED\_RI.dwg --- PLOT DATE: June 18, 2020 - 3:22PM --- LAYOUT: MW14-MW18