

**2942 Charles Street
Fallston, Harford County, Maryland**

December 5, 2018

Groundwater Corrective Action Plan

Colonial Pipeline Company
Bel Air Pump Station
MDE Case No. 18-0459HA

Prepared For:



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ACRONYM LIST

AMSL	Above Mean Sea Level
BGS	Below Ground Surface
CDP	Census-Designated Place
CSM	Conceptual Site Model
DNR	Department of Natural Resources
GAC	Granular Activated Carbon
HA	Hand Auger
IRM	Interim Remedial Measures
L/min	Liters Per Minute
LNAPL	Light Non-Aqueous Phase Liquid
MDE	Maryland Department of Environment
MD GWQS	Maryland Groundwater Quality Standard
MDSPGP	Maryland State Programmatic General Permit
mg/kg	Milligram Per Kilogram
NRCS	Non-Residential Cleanup Standard
NWI	National Wetlands Inventory
OSRO	Oil Spill Response Organization
OWS	Oil/Water Separator
PCW	Petroleum Contact Water
PID	Photoionization Detector
PPM	Part(s) Per Million
RCS	Residential Cleanup Standard
ROO	Report of Observations
ROW	Right of Way
SIR	Site Investigation Report
SIRA	Site Investigation Report Amendment
TPH-DRO	Total Petroleum Hydrocarbons Diesel Range Organics
TPH-GRO	Total Petroleum Hydrocarbons Gasoline Range Organics
TSDF	Treatment, Storage, and Disposal Facility
USACE	United States Army Core of Engineers
USGS	United State Geological Survey
VOC	Volatile Organic Compound
WBWR	West Branch Winters Run
µg/L	Microgram Per Liter

1.0 INTRODUCTION

TRC Environmental Corporation (TRC) has prepared this Corrective Action Plan (CAP) on behalf of Colonial Pipeline Company (Colonial) in accordance with the Maryland Environmental Assessment Technology (MEAT) guidance prepared by the Maryland Department of the Environment (MDE) Oil Control Program (MDE, 2003). The purpose of this CAP is to propose a pilot test for evaluation of a remedial design to address dissolved-phase groundwater concentrations identified during quarterly monitoring events at the Colonial Bel Air Pump Station (Site) during July 2018 and October 2018, respectively. The Site is a pump (or booster) station used to modulate pressure and flow rates on the main interstate pipeline and is located at 2942 Charles Street in Fallston, Maryland (**Figure 1**).

Groundwater concentrations discussed in the CAP are specifically related to conditions associated with a historic gasoline release in an area of the Site now designated as the HA-3 Area. This historic release was discovered during subsurface investigations associated with a separate release of distillate petroleum products reported to the MDE on March 7, 2018 (MDE No. 18-0459HA). The HA-3 Area appears to have been historically protected from hydraulic influence and has remained stable for many years due to Colonial's subsurface stormwater management system and densely compacted soil. Remedial actions completed pursuant to MDE directives after the distillate release, coupled with record precipitation, appears to have disturbed these controls and resulted in hydraulic loading of the previously stable HA-3 Area.

1.1 Background

On March 7, 2018, Colonial personnel discovered light non-aqueous phase liquid phase (LNAPL) in the pipeline system valve observation access wells during a routine site inspection. The main line (Line 03) was shut down thereafter, and upstream and downstream pipeline flow block valves were closed. The MDE and Harford County were contacted, and emergency response actions were initiated. Following the repair and response activities, subsurface investigations were initiated to characterize the extent of petroleum impacts, and interim remedial measures (IRM) were conducted to remove source contamination at the Site. During additional subsurface investigation in the vicinity of the pumping loop, LNAPL was discovered north of the pumping loop (HA-3 Area). LNAPL in the HA-3 Area is attributed to a historic gasoline release and is not associated with the March 7, 2018 release.

2.0 INTERIM REMEDIAL MEASURES AND SUBSURFACE INVESTIGATIONS

To date, several rounds of subsurface investigations and remedial measures have been conducted at the Site to address both the distillate release and the subsequently discovered HA-3 Area. An overview of the results of these investigations and remedial measures is presented in this section. Detailed activities and results are presented in *Subsurface Investigation Report* (TRC, 2018a) submitted to MDE on June 12, 2018 and *Subsurface Investigation Report Amendments I and II* (TRC, 2018b and c), submitted to MDE on July 18, 2018 and October 15, 2018, respectively.

2.1 Initial Response and Interim Remedial Measures

Initial response and IRM activities conducted to address the distillate release included the following:

- LNAPL extraction from the secondary containment pond, facility oil/water separator, valve observation access wells, stormwater yard drains, and isolated LNAPL in remedial excavations.
- Excavation of impacted soil at the yard drains, valve observation access wells, stormwater drainage swale, Line 03, and Line 36 with post excavation soil sampling;
- Sediment sample collection at the on-site surface water retention pond and surface water sample collection at the retention pond outfall and along West Branch Winters Run; and
- Sample were collected and analyzed from one on-site and 10 off-site drinking water supply wells.

Results of the above activities concluded the following:

- The distillate product released was contained by the Colonial engineering controls in the operation area of the Site;
- There was no discharge of petroleum beyond the Site boundaries or to sensitive receptors;
- Soils that were impacted by the distillate product releases have been vertically delineated and remediated to the applicable MDE standards, or targeted for future response measures; and
- Soils in the southwest drainage swale impacted by the release have been remediated to the applicable MDE standards by excavation, with the exception of one (1) sample location. The entire drainage swale, including that location, has been capped with the 60-mil high density polyethylene (HDPE) liner.

Continuation of IRM via excavation of the Line 03, Line 36, and the pipeline loop continued concurrently with the below mentioned subsurface investigations, other remedial measures, and pipeline maintenance work. Results of the ongoing IRM are discussed in the Subsurface Investigation Reports referenced above.

2.2 Subsurface Investigations

Subsurface investigations at the Site have included hand auger borings, direct push GeoProbe borings, temporary well installation, permanent permitted well installation, and soil and groundwater sampling spanning from March 2018 through October 2018. The following subsurface investigation activities have been conducted to date:

2.2.1 March 2018 to April 2018 Subsurface Investigation

Initial subsurface investigation activities included the following:

- Seventeen (17) hand auger soil borings (HA-1 through HA-17) were advanced in and around the confines of the subsurface structures within the pumping station yard and its surroundings.
- Ten (10) direct push GeoProbe borings were advanced and six (6) temporary wells were installed for the collection of soil and groundwater samples to evaluate soil and groundwater conditions;
- Six (6) permanent monitoring well were installed on-site for groundwater monitoring; and
- Groundwater samples were collected from the six (6) on-site permanent monitoring wells.

Results of the March to April 2018 subsurface investigation concluded the following:

- During installation of the hand auger soil borings, soil impacted by weathered gasoline with LNAPL was identified within the pumping station yard and was designated the HA-3 Area;
- The source of impact at the HA-3 Area is attributed to a historical event;
- Temporary well groundwater results indicated low concentrations of dissolved-phase ground water impact at monitoring well MW-2 located downgradient of the distillate product release and no dissolved-phase impact downgradient from the HA-3 Area; and
- Groundwater monitoring results confirmed dissolved-phase groundwater impact is delineated onsite to the MDE Type I groundwater quality standards (GWQS) used for comparison.

2.2.2 July 2018 Subsurface Investigation

On July 11, 2018, the six Site monitoring wells were sampled as part of the quarterly monitoring program. Analytical results of this sampling event reported benzene impact above the MDE Type I GWQS at MW-5 that had not been detected during the April 2018 sampling event. The monitoring and gauging data indicates the dissolved-phase concentrations detected at MW-5 were mobilized from the HA-3 Area. In response, Colonial completed additional soil and groundwater delineation near MW-5 and the HA-3 Area at the end of July 2018, including:

- Three (3) hand auger soil borings (HA-18 through HA-20) were advanced in and around the confines of the subsurface structures within the pumping station yard near the HA-3 Area to assess the potential for residual LNAPL;
- Six (6) direct push GeoProbe borings (GP-11 through GP-16) were advanced and five (5) temporary wells were installed for the collection soil and groundwater samples to evaluate soil and groundwater conditions near and downgradient from MW-5; and downgradient from MW-2 (GP-15); and
- One (1) direct push GeoProbe boring (GP-17) was advanced to further delineate LNAPL extents in preparation for a planned remedial excavation at the HA-3 Area.

The locations of the additional investigation points are shown on **Figure 2**. Results of the July 2018 Subsurface Investigation concluded the following:

- Soil impact is not present in the vicinity of MW-5;
- Groundwater impact around MW-5 has been delineated to the east and south, however, benzene impact is present approximately 50-feet to the north of MW-5 at GP-12; and
- LNAPL from the HA-3 Area investigation has not migrated under the loop road.

Groundwater results from the July 2018 subsurface investigation are included in **Table 2**.

2.3 Interim Remedial Excavation of HA-3 Area

During July and August 2018, remedial activities were completed in the HA-3 Area in an effort to remove the source of groundwater impact detected at MW-5. The following remedial activities were conducted:

- Twelve (12) temporary dewatering and vapor extraction points were installed in the footprint and surrounding the HA-3 Area for health and safety purposes and to enhance structural stability of the excavation sidewalls near the subsurface facility infrastructure;
- A vacuum truck extracted 4,306 gallons of petroleum impacted ground water and 392 gallons of LNAPL from the HA-3 Area over a three (3) week period and transported the liquids for offsite recycling;
- The vacuum truck off-gas was treated with vapor-phase carbon;
- The 410 tons of petroleum-impacted soil excavated from the HA-3 Area were sent for offsite recycling; and
- Post-excavation soil samples were collected from the HA-3 Area excavation sidewalls to assess soil conditions at excavation extents.

The following conclusions are made regarding the results of the HA-3 Area interim remedial excavation:

- The thickness and extent LNAPL in the HA-3 Area has been reduced and is currently only measured at HA-20; and
- Analytical results for six (6) of seven (7) post excavation soil samples along the north, east, and west sidewalls of the excavation indicated additional soil remediation was necessary to attain MDE soil cleanup standards.

Based on the post-excavation soil sample results from the initial HA-3 Area excavation, supplemental excavation of the HA-3 Area was also completed in October 2018. The results of these supplemental efforts will be presented in a yet-to-be submitted *Subsurface Investigation Report Amendment III*, along with additional post-excavation soil sample results and disposal documentation.

2.4 Quarterly Groundwater Monitoring

In response to the distillate release, Colonial has been conducting monthly well gauging of the on-site monitoring wells, quarterly sampling of the on-site monitoring wells, quarterly sampling of the on-site water supply well, and quarterly sampling of the drinking water supply wells of the ten (10) nearby properties. These efforts have also informed the response to, and helped delineate, the historic release in the HA-3 Area. The on-site monitoring wells have been gauged monthly starting in April 2018. Initial, baseline groundwater samples were collected in March 2018 at the adjacent residential drinking water wells and in April 2018 at the on-site monitoring wells. Quarterly sampling of on-site wells and adjacent residential drinking water wells has been conducted in July 2018 and October 2018 and is ongoing as required in the May 15, 2018 *Request for Additional Monitoring and Half-Mile Well Survey* issued by the MDE. Results of the groundwater monitoring activities have concluded the following:

- LNAPL has not been detected in any of the six (6) on-site monitoring wells;
- Target volatile organic compounds (VOCs) concentrations in MW-1, MW-3, MW-4 and MW-6 are below the MDE GWQS used for comparison;

- Benzene, TPH-DRO, and TPH-GRO are present at concentrations above their respective MDE GWQS in MW-2, and concentrations are stable or declining from April through October 2018;
- TPH-DRO concentrations in groundwater from MW-4 continue to be detected above the MDE GWQS, though concentrations are stable from April through October 2018;
- Benzene, ethylbenzene, toluene, TPH-DRO, and TPH-GRO in MW-5 were below MDE GWQS in April 2018 but have subsequently increased to above MDE GWQS. This concentration trend indicates the leading edge of dissolved-phase impact has progressed downgradient from the HA-3 Area;
- It is suspected that the ground disturbance associated with remedial actions completed pursuant to MDE directives, coupled with record precipitation during the spring and summer, resulted in hydraulic loading to the previously stable HA-3 Area.
- All analyzed constituents in MW-6 were below analytical detection limits during the current monitoring period with the exception of benzene, which was detected below the MDE GWQS during October 2018; and
- Petroleum hydrocarbons were not detected in the Bel Air Station supply well or the ten (10) adjacent residential wells.

Groundwater results from the on-site monitoring wells from April 2018, July 2018, and October 2018 are tabulated on **Table 3**. A Groundwater Potentiometric Map for November 2018 is enclosed as **Figure 3**.

3.0 PROPOSED CORRECTIVE ACTION PLAN

Based on the results of Site investigations, IRM, and quarterly groundwater monitoring, further monitoring is warranted for the HA-3 Area. Recent groundwater data indicates the leading edge of dissolved-phase impact has progressed to MW-5.

3.1 Remedial Purpose and Design

The goal of the remedial action pilot test discussed herein is to evaluate the effectiveness and potential for implementation of enhanced fluid recovery (EFR) to remove the dissolved-phase benzene, toluene, ethylbenzene, and xylenes (BTEX) plume located in the vicinity of the HA-3 Area and MW-5.

Groundwater vacuum extraction, or EFR, will be conducted from a recovery well network installed between the HA-3 Area and the vicinity of MW-5. EFR is a dual-phase/multi-phase extraction system, which removes multiple phases of hydrocarbons by extracting LNAPL, contaminated groundwater, and associated vapors from multiple recovery wells. The contaminated groundwater and associated vapors will be extracted using a downhole apparatus (e.g. stinger) via vacuum. Recovered groundwater and LNAPL will be contained in a vacuum truck or temporary aboveground tank for offsite disposal and recovered vapors will be treated by inline 55-gallon granular activated carbon (GAC) drums prior to discharge to the atmosphere.

3.2 Recovery Well and Monitoring Well Installation

3.2.1 Recovery Well Installation

As shown on **Figure 4**, Colonial proposes installing eight (8) recovery wells for groundwater extraction at the following locations:

- Five (5) recovery wells (RW-1 through RW-5) will be installed between the HA-3 Area and MW-5. RW-1 is sited to address residual LNAPL measured at the HA-20 location. RW-2 is located in proximity to residual soil concentrations reported in post-excavation soil samples. RW-3 through RW-5 are positioned in an effort to create a treatment boundary and inhibit the downgradient migration of LNAPL past the loop road;
- Three (3) recovery wells (RW-7 through RW-9) will be installed near MW-5, with two (2) located downgradient, to address the potential for dissolved-phase concentrations in this area. Additionally, MW-5 will also be utilized as a recovery well during extraction events making a total of nine (9) recovery wells.

Minor field adjustments may be required due to subsurface utility concerns and/or clearance.

With the exception of MW-5, all recovery wells will be constructed of 4-inch diameter schedule 40 PVC casing and 20-slot screen. The well screen interval will be selected to intercept the groundwater table with 2-feet of screen above the water table for vapor recovery. Based on MDE's direction to not exceed a depth of 10-feet in the pumping loop yard, RW-1 and RW-2 will be installed to a depth of 10-feet with 7-feet of screen.

The other new recovery wells will be installed to the contact between imported fill material used for the structural foundation of the facility and in-situ geologic material (saprolite). This contact was observed at a depth of approximately 14 feet during the drilling of GP-8/MW-5. This depth has been selected to intercept the sand interval observed from 11 to 14-feet as indicated in the soil boring log for GP-8/MW-5 in the remediation area. The depth to water at MW-5 during the October 2018 gauging event was 8.78-feet below ground surface (BGS), and the screen zone of the approximately 14-foot deep recovery wells will intersect the groundwater. A detailed discussion of regional and site geology/hydrogeology, conceptual site model, soil boring logs, and cross sections are presented in the previously submitted **Subsurface Investigation Reports** referenced in this report.

Each recovery well be fitted with a dedicated recovery assembly consisting of a compression well seal with one pass-through for a semi-permanent stinger assembly, and a second threaded opening that will be used for access with oil/water interface probe. The stingers will be permanently fitted with a cam-lock for easy attachment to vacuum truck hoses. The recovery wells will be finished below grade in vaults installed flush with grade. Construction specifications of the recovery wells are shown on **Figure 5**. Vacuum extraction from MW-5 will be accomplished with a stinger assembly sealed at the top of the well with a Fernco-type flexible fitting.

3.2.2 Monitoring Well Installation

As shown on **Figure 4**, two (2) additional permitted monitoring wells designated MW-7 and MW-8 will also be installed downgradient of MW-5 based on groundwater flow direction data collected from monthly gauging events. The monitoring wells will be constructed of 4-inch diameter schedule 40 PVC casing and 20-slot screen and will be installed to intercept the groundwater table and the contact with fill material and in-situ geologic material (saprolite). The proposed locations are based on the following:

- Monitoring well MW-7 is located to evaluate groundwater concentrations downgradient from MW-5 and GP-12 along the north side of the facility. For health and safety purposes, the well will be off set from the electric substation components.
- MW-8 has been chosen to evaluate concentration trends between MW-5 and MW-6, near the historical (pre-station) topographic valley drainage that was discussed in conceptual site model outlined in the previously submitted **Subsurface Investigation Reports**. In an effort to minimize the potential that the MW-8 borehole could act as a preferential pathway for vertical migration of dissolved-phase impacts to the on-site supply well, the well is positioned downgradient from the supply well.

All monitoring and recovery wells will be permitted and installed by a Maryland-licensed well driller, and permits will be obtained and filed with the Harford County Health Department.

3.3 Enhanced Fluid Recovery Pilot Test

Initial EFR events will be scheduled for twice a week for at least two (2) weeks at RW-1, RW-2, RW-3, RW-4, and RW-6. After the initial two weeks, the recovery efforts will expand to include MW-5/RW-5, RW-7, RW-8, and RW-9. During subsequent EFR events, vacuum will be applied to RW-1, RW-2, RW-3, RW-4, and RW-6 before RW-5, RW-7, RW-8, or RW-9. This progression will minimize the potential that the EFRs will accentuate downgradient migration of dissolved impact. During the first six (6) EFR events, each recovery well will be gauged to measure and record the headspace VOC concentration with a photo-

ionization detector (before and after vacuum application), the water table elevation, and LNAPL thickness. This monitoring frequency will be reduced to bi-weekly thereafter.

Full EFR events will be scheduled for twice a week until the March 2019 quarterly monitoring event, depending on weather and date of implementation, to evaluate effectiveness of the remedial action. Based on the quarterly monitoring results after the initial pilot test period, a CAP will be submitted to the MDE for full remedial system implementation or modification.

3.4 Groundwater Monitoring and Reporting

The two (2) additional monitoring wells to be installed as part of the remedial action pilot test will be included in the monthly gauging and quarterly sampling program currently in place at the Site. Progress of the remedial action will be documented in the quarterly monitoring reports.

4.0 ANTICIPATED SCHEDULE

Depending on availability of subcontractors and weather conditions, the following schedule can be anticipated from approval of corrective action plan to evaluation of the remediation effectiveness.

TASK	FROM DATE OF CAP APPROVAL
Monitoring and Recovery Well Permitting	2 weeks
Monitoring and Recovery Well Installation	3 Weeks
Initial EFR Event	4 Weeks
Full EFR Events	6 Weeks
Groundwater Assessment	Next Quarterly Sampling
Remedy/Pilot Test Evaluation	Next Quarterly Status Report after EFR Events

5.0 REFERENCES

Maryland Department of Environment. 2003. Maryland Environmental Assessment Technology for Underground Storage Tanks. February, revised.

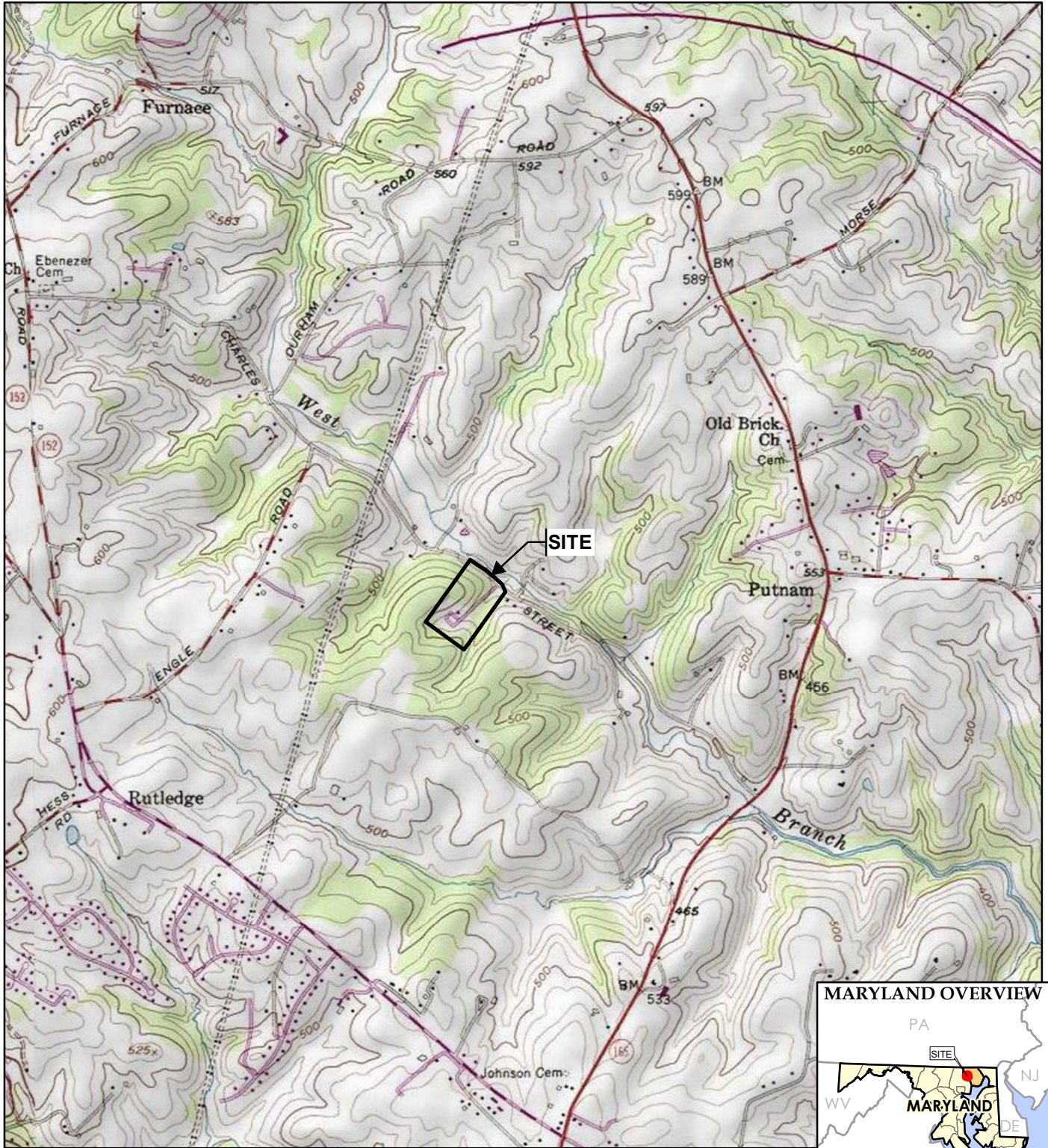
TRC Environmental Corporation (TRC). 2018a. *Subsurface Investigation Report*. June 12.

TRC. 2018b. *Subsurface Investigation Report Amendment*. July 18.

TRC. 2018c. *Subsurface Investigation Report Amendment*. October 15.

FIGURES

Figure 1	Site Location Map
Figure 2	Site Plan
Figure 3	Groundwater Potentiometric Map – November 2018
Figure 4	Proposed Recovery Well and Monitoring Well Locations
Figure 5	Proposed Recovery Well Construction Specifications



BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.



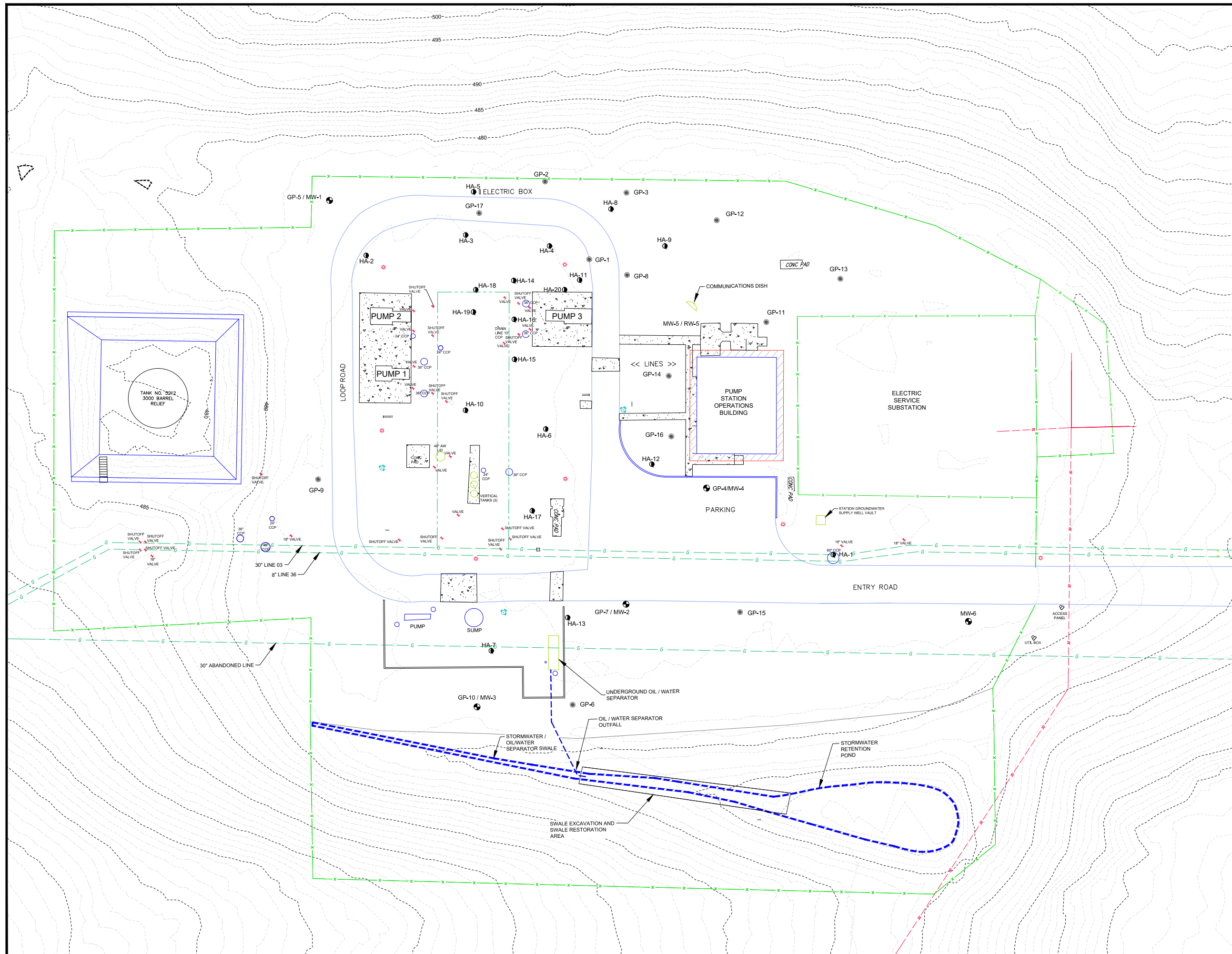
1601 Market Street, Suite 2555
 Philadelphia, PA 19103
 Phone: 215.563.2122

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

TITLE: **SITE LOCATION MAP**

DRAWN BY:	M. LOVELACE
CHECKED BY:	B. HECKER
APPROVED BY:	D. CARLSON
DATE:	MAY 2018
PROJ. NO.:	299980.0000
FILE:	299980-1000-001slm.mxd

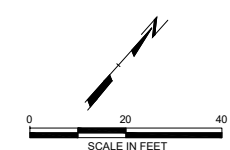
FIGURE 1




LEGEND

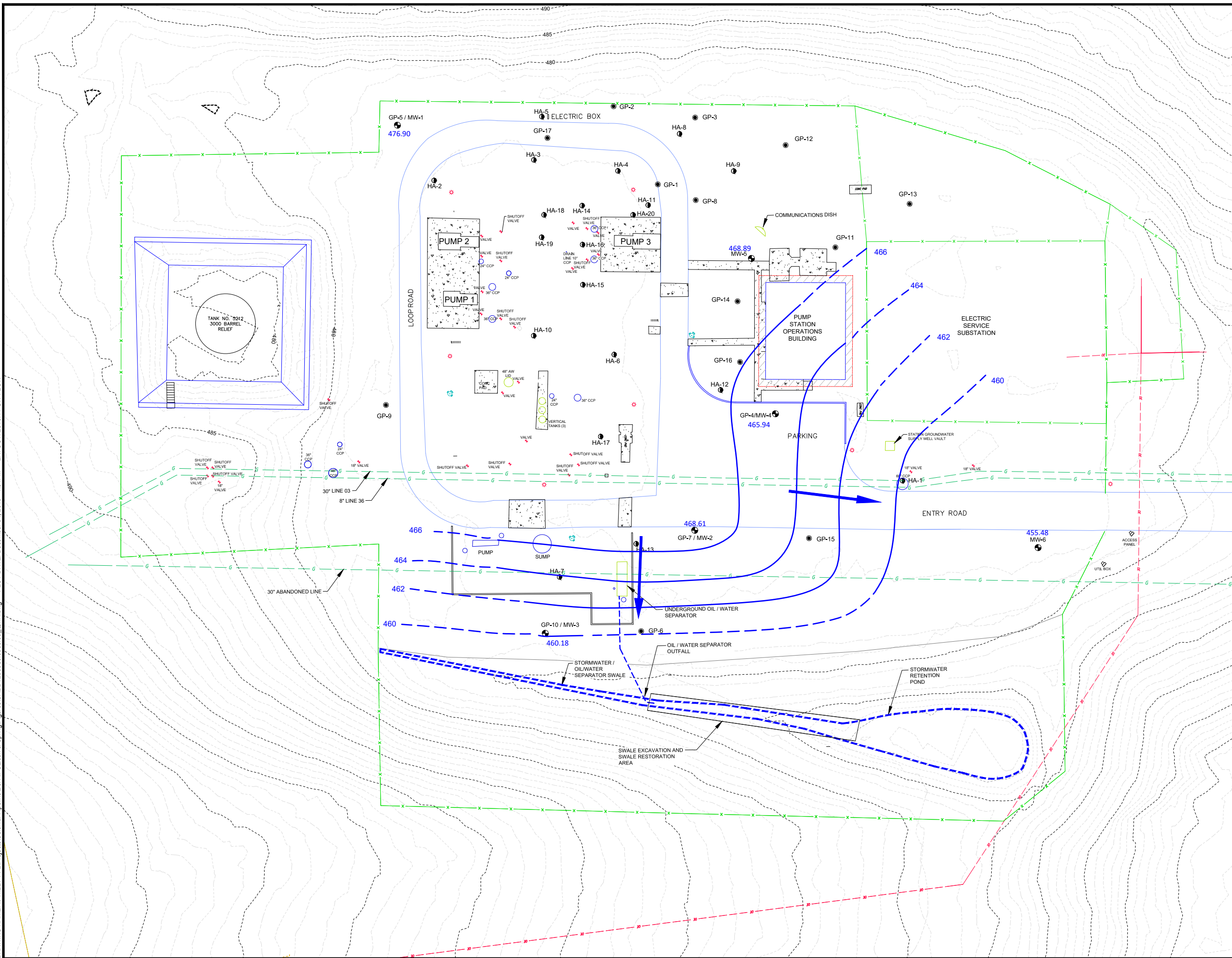
● GP-8	GEOPROBE BORING
● MW-5	MONITORING WELL
● HA-9	HAND AUGER BORING
*	LIGHT POST
⊕	HYDRANT
---	APPROXIMATE LOOP LOCATION
---	FENCE
---	OVERHEAD ELECTRIC LINE
---	UNDERGROUND GAS LINE

- NOTES:**
1. LOCATION OF STORMWATER SWALE AND STORMWATER RETENTION POND ARE APPROXIMATE.
 2. VALVE AND SHUTOFF VALVE LOCATIONS ARE SURVEYED GENERAL POINTS OF REFERENCE FOR PUMP STATION CONTROL POINTS AND PROCESS CONTROL FEATURES.
 3. HAND AUGER (HA) AND GEOPROBE (GP) POINTS WERE ABANDONED AND PLUGGED WITH BENTONITE.



PROJECT:		COLONIAL PIPELINE COMPANY BEL AIR PUMP STATION FALLSTON, HARFORD COUNTY, MARYLAND	
TITLE:		SITE PLAN	
DRAWN BY:	D. KUDLA	PROJ. NO.:	299980.0000.0000
CHECKED BY:	D. CARLSON	FIGURE 2	
APPROVED BY:	D. CARLSON		
DATE:	DECEMBER 2018	FILE NO.:	
		1601 Market Street Suite 2555 Philadelphia, PA 19103 Phone: 215.563.2122	
FILE NO.:		299980.0000.03_RA.dwg	

2024 - USER: Nibald - ATTACHED REFS: - ATTACHED IMAGES: - DRAWING NAME: \\PHILLY-FP2\Projects\Colonial Pipeline\Bel Air Station & Spring\Figures\CADD\299980.0000.03_CMR.dwg --- PLOT DATE: December 04, 2018 - 4:34PM --- LAYOUT: 2018.11.GW.FLOW



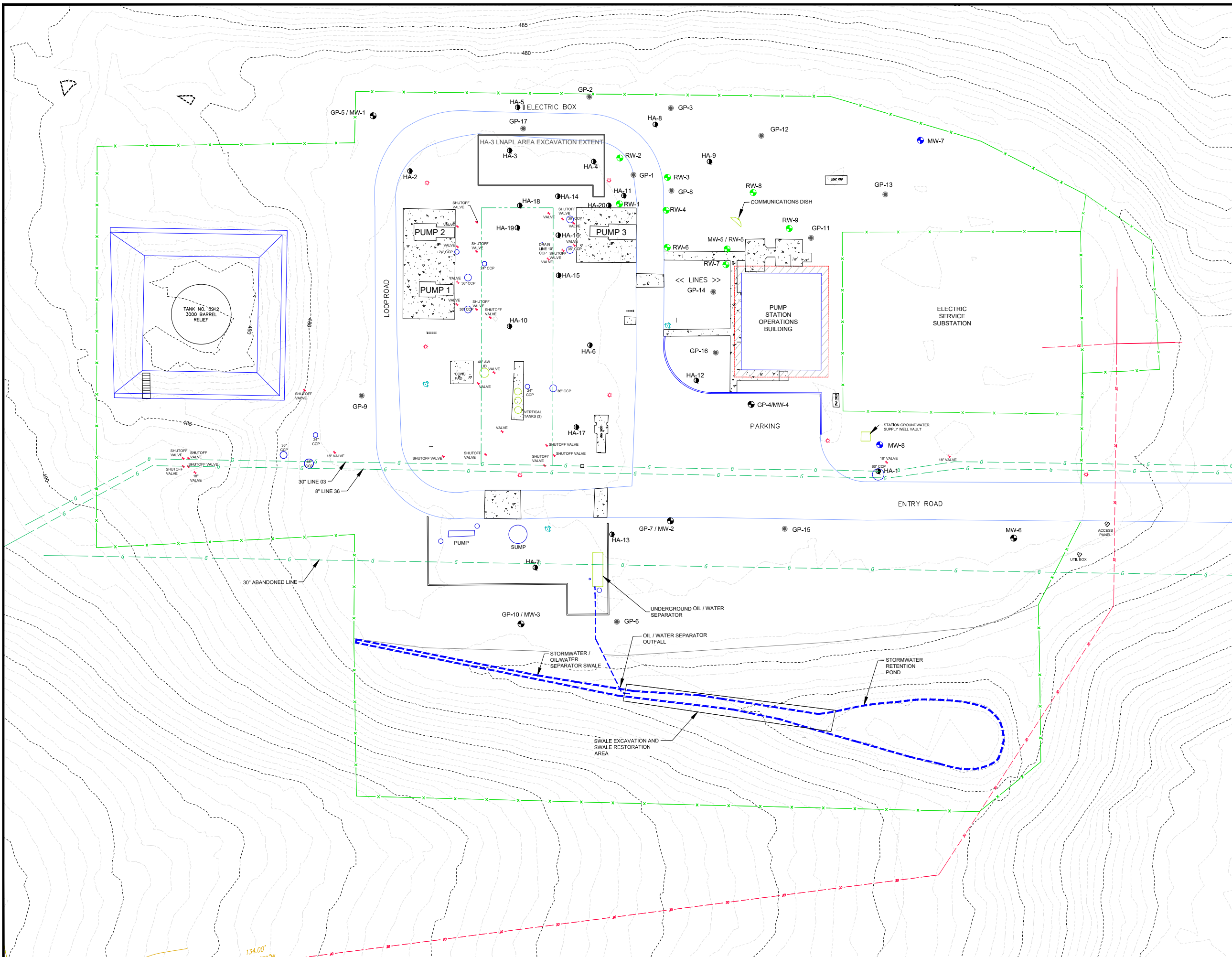
- LEGEND**
- GP-8 GEOPROBE BORING
 - MW-5 MONITORING WELL
 - HA-9 HAND AUGER BORING
 - ★ LIGHT POST
 - ⊕ HYDRANT
 - FENCE
 - OVERHEAD ELECTRIC LINE
 - UNDERGROUND GAS LINE
 - - - GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
 - ← INFERRED GROUNDWATER FLOW DIRECTION

GROUNDWATER ELEVATION SHOWN IN FEET ABOVE MEAN SEA LEVEL (FT AMSL)
 GROUNDWATER RESULTS SHOWN IN MICROGRAMS PER LITER (UG/L)
 RESULT IN BOLD INDICATE EXCEEDANCE OF MARYLAND GROUNDWATER QUALITY STANDARD (GWQS)
 U - COMPOUND DETECTED BELOW PRACTICAL QUANTITATION LIMITS

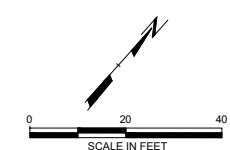
- NOTES:**
1. LOCATION OF STORMWATER SWALE AND STORMWATER RETENTION POND ARE APPROXIMATE.
 2. VALVE AND SHUTOFF VALVE LOCATIONS ARE SURVEYED GENERAL POINTS OF REFERENCE FOR PUMP STATION CONTROL POINTS AND PROCESS CONTROL FEATURES.

PROJECT: COLONIAL PIPELINE COMPANY BEL AIR PUMP STATION FALLSTON, HARFORD COUNTY, MARYLAND	
TITLE: GROUNDWATER POTENTIOMETRIC MAP AND ANALYTICAL RESULTS - NOVEMBER 2018	
DRAWN BY: D. KUDLA	PROJ. NO.: 299980.0000.0000
CHECKED BY: D. CARLSON	FIGURE 3
APPROVED BY: D. CARLSON	
DATE: OCTOBER 2018	
1601 Market Street Suite 2555 Philadelphia, PA 19103 Phone: 215.563.2122	
FILE NO.:	299980.0000.03_CMR.dwg

\\PHILLY-FP2\PROJECTS\COLONIAL PIPELINE\BEL AIR STATION & SPRING\FIGURES\CADD\299980.0000.03_RA.DWG

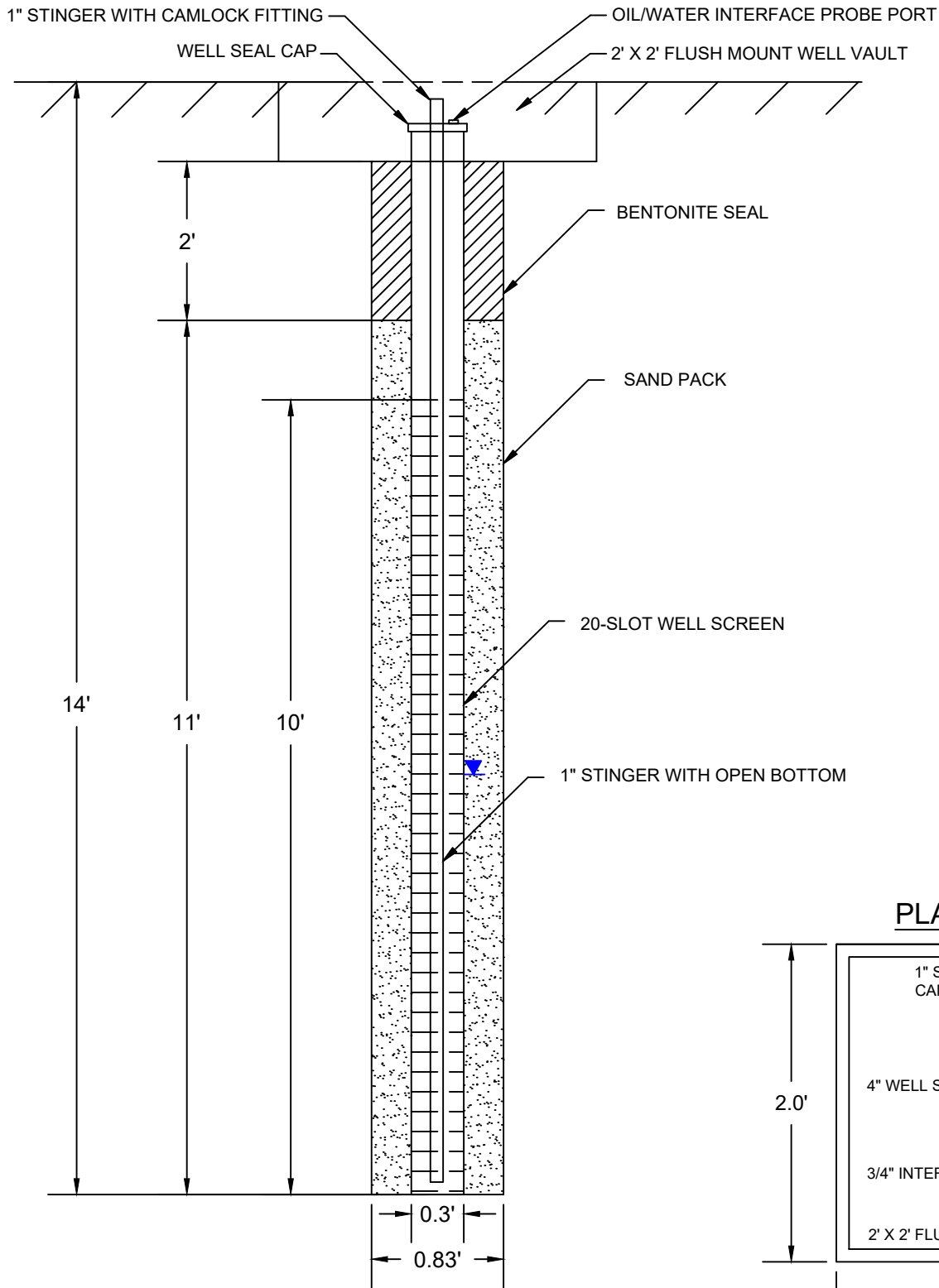


- LEGEND**
- GP-8 GEOPROBE BORING
 - MW-5 MONITORING WELL
 - HA-9 HAND AUGER BORING
 - RW-1 PROPOSED RECOVERY WELL
 - MW-8 PROPOSED MONITORING WELL
 - LIGHT POST
 - HYDRANT
 - APPROXIMATE LOOP LOCATION
 - FENCE
 - OVERHEAD ELECTRIC LINE
 - UNDERGROUND GAS LINE
- NOTES:**
1. LOCATION OF YARD DRAIN EXCAVATION, STORMWATER SWALE, STORMWATER RETENTION POND, HAND AUGER SOIL BORINGS, AND POST EXCAVATION SOIL SAMPLES ARE APPROXIMATE.
 2. VALVE AND SHUTOFF VALVE LOCATIONS ARE SURVEYED GENERAL POINTS OF REFERENCE FOR PUMP STATION CONTROL POINTS AND PROCESS CONTROL FEATURES.
 3. AN ACCESS WELL IS AN OBSERVATION PORT TO SHALLOW SUBSURFACE VALVES AND CONTROL POINTS.
 4. THE EXISTING MONITORING WELL MW-5 WILL BE CONVERTED INTO RECOVERY WELL RW-5.
 5. THE PUMPING LOOP EXCAVATION AREA ADJACENT TO THE HA-3 EXCAVATION LIMITS IS SHOWN ON FIGURE 6 OF THE SIR II (TRC 2018c).

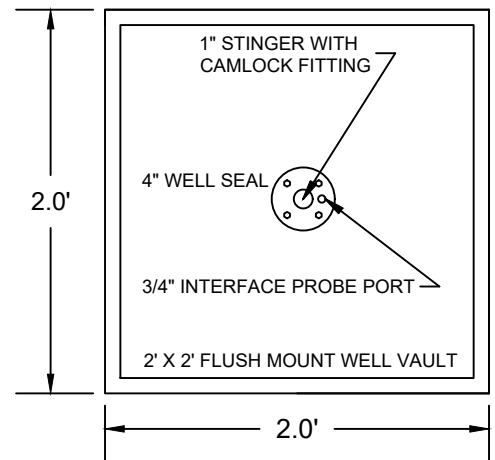


PROJECT:		COLONIAL PIPELINE COMPANY BEL AIR PUMP STATION FALLSTON, HARFORD COUNTY, MARYLAND	
TITLE:		PROPOSED RECOVERY WELL AND MONITORING WELL LOCATIONS	
DRAWN BY:	N. RASHID	PROJ. NO.:	299980.0000.0000
CHECKED BY:	D. CARLSON	FIGURE 4	
APPROVED BY:	D. CARLSON		
DATE:	NOVEMBER 2018		
		1601 Market Street Suite 2555 Philadelphia, PA 19103 Phone: 215.563.2122	
FILE NO.:	299980.0000.03_RA.dwg		

CONSTRUCTION DETAILS (NOT TO SCALE)



PLAN VIEW (1:1)



1601 Market Street
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COLONIAL PIPELINE COMPANY
BEL AIR PUMP STATION
FALLSTON, HARFORD COUNTY, MARYLAND

DRAWN BY:	NR	APPROVED BY:	DC
CHECKED BY:	DK	DATE:	11/2018
FILE NO.:	299980.0000.03_RA.DWG		

PROPOSED RECOVERY WELL
CONSTRUCTION SPECIFICATIONS

FIGURE

PROJ. NO.: 299980.0000.0000

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TABLE 1
Monitoring Well Groundwater Elevations



Colonial Pipeline Company - Bel Air Pump Station
2942 Charles Street, Fallston, Harford, County, Maryland

Gauging Date	Top of Casing Elevation	Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation
MW-1					
4/4/2018	480.73	8.28	--	--	472.45
5/30/2018	480.73	5.79	--	--	474.94
6/28/2018	480.73	5.27	--	--	475.46
7/11/2018	480.73	6.21	--	--	474.52
8/9/2018	480.73	4.54	--	--	476.19
9/4/2018	480.73	4.52	--	--	476.21
10/18/2018	480.73	4.33	--	--	476.40
11/2/2018	480.73	3.83	--	--	476.90
MW-2					
4/4/2018	478.20	12.98	--	--	465.22
5/30/2018	478.20	10.42	--	--	467.78
6/28/2018	478.20	9.98	--	--	468.22
7/11/2018	478.20	10.61	--	--	467.59
8/9/2018	478.20	9.36	--	--	468.84
9/4/2018	478.20	9.54	--	--	468.66
10/18/2018	478.20	9.80	--	--	468.40
11/2/2018	478.20	9.59	--	--	468.61
MW-3					
4/4/2018	476.86	19.17	--	--	457.69
5/30/2018	476.86	17.75	--	--	459.11
6/28/2018	476.86	17.37	--	--	459.49
7/11/2018	476.86	17.67	--	--	459.19
8/9/2018	476.86	16.86	--	--	460.00
9/4/2018	476.86	17.03	--	--	459.83
10/18/2018	476.86	16.60	--	--	460.26
11/2/2018	476.86	16.68	--	--	460.18
MW-4					
4/4/2018	477.15	15.51	--	--	461.64
5/30/2018	477.15	13.52	--	--	463.63
6/28/2018	477.15	12.34	--	--	464.81
7/11/2018	477.15	12.92	--	--	464.23
8/9/2018	477.15	11.68	--	--	465.47
9/4/2018	477.15	12.08	--	--	465.07
10/18/2018	477.15	11.19	--	--	465.96
11/2/2018	477.15	11.21	--	--	465.94
MW-5					
4/4/2018	477.44	14.01	--	--	463.43
5/30/2018	477.44	11.76	--	--	465.68
6/28/2018	477.44	10.67	--	--	466.77
7/11/2018	477.44	11.31	--	--	466.13
8/9/2018	477.44	9.72	--	--	467.72
9/4/2018	477.44	10.30	--	--	467.14
10/18/2018	477.44	8.78	--	--	468.66
11/2/2018	477.44	8.55	--	--	468.89
MW-6					
4/4/2018	480.62	29.04	--	--	451.58
5/30/2018	480.62	27.35	--	--	453.27
6/28/2018	480.62	25.87	--	--	454.75
7/11/2018	480.62	26.46	--	--	454.16
8/9/2018	480.62	NM	--	--	-
9/4/2018	480.62	25.89	--	--	454.73
10/18/2018	480.62	24.93	--	--	455.69
11/2/2018	480.62	25.14	--	--	455.48
Top of casing (TOC) elevation in feet above mean sea level (amsl).					
Depth to water and depth to product in feet below TOC.					
Groundwater elevation in feet amsl.					
NM - Not measured					

TABLE 2
Groundwater Analytical Data Summary
Temporary Monitoring Wells & MW-5 Resample



Colonial Pipeline Company - Bel Air Pump Station
 2942 Charles Street, Fallston, Harford County, Maryland

Sample No.:	GP-11	GP-12	GP-14	GP-15	GP-16
Date Sampled:	7/27/2018	7/27/2018	7/27/2018	7/31/2018	7/27/2018
Lab Sample ID:	18072707-01	18072707-02	18072707-03	18073108-01	18072707-04
Lab:	Caliber	Caliber	Caliber	Caliber	Caliber

Parameter (µg/L)	CAS No.	MD GWQS	25	U	25	U	25	U	25	U
Acetone	67-64-1	550	25	U	25	U	25	U	25	U
Benzene	71-43-2	5	1	U	11		1	U	1	U
Bromodichloromethane	75-27-4	80	5	U	5	U	5	U	5	U
Bromoform	75-25-2	80	5	U	5	U	5	U	5	U
Bromomethane	74-83-9	0.85	5	U	5	U	5	U	5	U
2-Butanone (MEK)	78-93-3	700	25	U	25	U	25	U	25	U
Carbon Disulfide	75-15-0	100	5	U	5	U	5	U	5	U
Carbon tetrachloride	56-23-5	5	5	U	5	U	5	U	5	U
Chlorobenzene	108-90-7	100	5	U	5	U	5	U	5	U
Chloroethane	75-00-3	3.6	5	U	5	U	5	U	5	U
Chloroform	67-66-3	80	5	U	5	U	5	U	5	U
Chloromethane	74-87-3	19	5	U	5	U	5	U	5	U
cis-1,2-Dichloroethene	156-59-2	70	5	U	5	U	5	U	5	U
cis-1,3-Dichloropropene	10061-01-5	0.44	5	U	5	U	5	U	5	U
Cyclohexane	110-82-7	--	5	U	5	U	5	U	5	U
1,2-Dibromo-3-chloropropane	96-12-8	0.2	5	U	5	U	5	U	5	U
Dibromochloromethane	124-48-1	80	5	U	5	U	5	U	5	U
1,2-Dibromoethane	106-93-4	0.05	5	U	5	U	5	U	5	U
1,2-Dichlorobenzene	95-50-1	600	5	U	5	U	5	U	5	U
1,3-Dichlorobenzene	541-73-1	1.8	5	U	5	U	5	U	5	U
1,4-Dichlorobenzene	106-46-7	75	5	U	5	U	5	U	5	U
Dichlorodifluoromethane	75-71-8	--	5	U	5	U	5	U	5	U
1,1-Dichloroethane	75-34-3	90	5	U	5	U	5	U	5	U
1,2-Dichloroethane	107-06-2	5	5	U	5	U	5	U	5	U
1,1-Dichloroethene	75-35-4	7	5	U	5	U	5	U	5	U
1,2-Dichloropropane	78-87-5	5	5	U	5	U	5	U	5	U
1,3-Dichloropropene (total)	542-75-6	--	5	U	5	U	5	U	5	U
Ethylbenzene	100-41-4	700	1	U	1	U	1	U	1	U
2-Hexanone	591-78-6	--	25	U	25	U	25	U	25	U
Isopropyl Ether	108-20-3	--	25	U	25	U	25	U	25	U
Isopropylbenzene	98-82-8	66	5	U	5	U	5	U	5	U
Methyl Acetate	79-20-9	--	5	U	5	U	5	U	5	U
Methyl Tert Butyl Ether (MTBE)	1634-04-4	20	5	U	5	U	5	U	5	U
4-methyl-2-pentanone (MIBK)	108-10-1	630	25	U	25	U	25	U	25	U
Methylcyclohexane	108-87-2	--	5	U	5	U	5	U	5	U
Methylene chloride	75-09-2	5	10	U	15	U	15	U	10	U
Nepthalene	90-20-3	0.65	10	U	10	U	10	U	10	U
Styrene	100-42-5	100	5	U	5	U	5	U	5	U
tert-Amyl Alcohol (TAA)	75-85-4	--	25	U	25	U	25	U	25	U
tert-Amyl Ethyl Ether (TAEE)	919-94-8	--	25	U	25	U	25	U	25	U
tert-Amyl Methyl Ether	994-05-8	--	25	U	25	U	25	U	25	U
tert-Butyl Alcohol	75-65-0	--	25	U	25	U	25	U	25	U
tert-Butyl Ethyl Ether	637-92-3	--	25	U	25	U	25	U	25	U
1,1,2,2-Tetrachloroethane	79-34-5	0.053	5	U	5	U	5	U	5	U
Tetrachloroethene	127-18-4	5	5	U	5	U	5	U	5	U
Toluene	108-88-3	1000	1	U	14		1	U	1	U
trans-1,2-Dichloroethene	156-60-5	100	5	U	5	U	5	U	5	U
trans-1,3-Dichloropropene	10061-02-6	0.44	5	U	5	U	5	U	5	U
Freon 113	76-13-1	--	5	U	5	U	5	U	5	U
1,1,1-Trichloroethane	71-55-6	200	5	U	5	U	5	U	5	U
1,1,2-Trichloroethane	79-00-5	5	5	U	5	U	5	U	5	U
Trichloroethene	79-01-6	5	5	U	5	U	5	U	5	U
Trichlorofluoromethane	75-69-4	--	5	U	5	U	5	U	5	U
1,2,4-Trichlorobenzene	120-82-1	70	5	U	5	U	5	U	5	U
Vinyl Chloride	75-01-4	2	1	U	1	U	1	U	1	U
m,p-Xylene	179601-23-1	--	5	U	9		5	U	5	U
o-Xylene	95-47-6	--	5	U	8		5	U	5	U
Xylenes (total)	1330-20-7	10000	ND		17		ND		ND	

Values are reported in micrograms per liter (µg/L)
 GWQS = MD Groundwater Quality Standard (GWQS) for Type I Aquifers
 Bold indicates concentrations above the MD GWQS
 ND = Not Detected
 U = Compound not detected above PQL
 Values in italics indicate PQL above applicable criterion.

TABLE 3
Groundwater Analytical Data Summary - Monitoring Wells
April 2018 to October 2018
Colonial Pipeline Company - Bel Air Pump Station
2942 Charles Street, Fallston, Harford County, Maryland

Sample No.:	MW-1			MW-2			MW-3			MW-4			MW-5			MW-6				
	4/5/2018 18040603-01 Caliber	7/11/2018 18071207-01 Caliber	10/18/2018 18101903-03 Caliber	4/16/2018 18041603-01 Caliber	7/12/2018 18071207-08 Caliber	Dup-01 7/12/2018 18071207-06 Caliber	10/18/2018 18101903-04 Caliber	4/5/2018 18040603-03 Caliber	7/12/2018 18071207-07 Caliber	10/18/2018 18101903-02 Caliber	4/5/2018 18040603-04 Caliber	7/11/2018 18071207-02 Caliber	10/19/2018 18101903-06 Caliber	4/6/2018 18040603-05 Caliber	7/11/2018 18071207-03 Caliber	10/19/2018 18101903-07 Caliber	Dup-01 10/19/2018 18101903-08 Caliber	4/6/2018 18040603-06 Caliber	7/12/2018 18071207-09 Caliber	10/18/2018 18101903-01 Caliber
Parameter (µg/L)	CAS No.	MD GWQS																		
Acetone	67-64-1	550	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	300	1000 U	1000 U	25 U	25 U	25 U
Benzene	71-43-2	5	1 U	1 U	1 U	59	83	85	66	1 U	1 U	1 U	1 U	1 U	880	11,000	12,000	1 U	1 U	4
Bromodichloromethane	75-27-4	80	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
Bromoform	75-25-2	80	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
Bromomethane	74-83-9	0.85	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
2-Butanone (MEK)	78-93-3	700	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	130 U	1,000 U	1,000 U	25 U	25 U	25 U
Carbon Disulfide	75-15-0	100	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
Carbon tetrachloride	56-23-5	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
Chlorobenzene	108-90-7	100	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
Chloroethane	75-00-3	3.6	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
Chloroform	67-66-3	80	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
Chloromethane	74-87-3	19	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	156-59-2	70	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	10061-01-5	0.44	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
Cyclohexane	110-82-7	--	5 U	5 U	5 U	5 U	12	12	13	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
1,2-Dibromo-3-chloropropane	96-12-8	0.2	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
Dibromochloromethane	124-48-1	80	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
1,2-Dibromoethane	106-93-4	0.05	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
1,2-Dichlorobenzene	95-50-1	600	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
1,3-Dichlorobenzene	541-73-1	1.8	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
1,4-Dichlorobenzene	106-46-7	75	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
Dichlorodifluoromethane	75-71-8	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
1,1-Dichloroethane	75-34-3	90	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
1,2-Dichloroethane	107-06-2	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
1,1-Dichloroethene	75-35-4	7	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
1,2-Dichloropropane	78-87-5	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
1,3-Dichloropropene (total)	542-75-6	--	ND	NA	NA	ND	NA	NA	NA	ND	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA
Ethylbenzene	100-41-4	700	1 U	1 U	1 U	11	5	5	1 U	1 U	1 U	1 U	1 U	1 U	33	920	890	1 U	1 U	1 U
2-Hexanone	591-78-6	--	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	130 U	1,000 U	1,000 U	25 U	25 U	25 U
Isopropyl Ether	108-20-3	--	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	130 U	2,100	1,600	25 U	25 U	25 U
Isopropylbenzene	98-82-8	66	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
Methyl Acetate	79-20-9	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
Methyl Tert Butyl Ether (MTBE)	1634-04-4	20	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
4-methyl-2-pentanone (MIBK)	108-10-1	630	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	130 U	1,000 U	1,000 U	25 U	25 U	25 U
Methylcyclohexane	108-87-2	--	5 U	5 U	5 U	5 U	5	5	10	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
Methylene chloride	75-09-2	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	50 U	400 U	400 U	10 U	10 U	10 U
Naphthalene	90-20-3	0.65	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	50 U	400 U	400 U	10 U	10 U	10 U
Styrene	100-42-5	100	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
tert-Amyl Alcohol (TAA)	75-85-4	--	25 U	25 U	25 U	25 U	210	220	120	25 U	25 U	25 U	25 U	25 U	1,000	7,700	6,000	25 U	25 U	25 U
tert-Amyl Ethyl Ether (TAAE)	919-94-8	--	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	130 U	1,000 U	1,000 U	25 U	25 U	25 U
tert-Amyl Methyl Ether	994-05-8	--	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	130 U	1,000 U	1,000 U	25 U	25 U	25 U
tert-Butyl Alcohol	75-65-0	--	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	130 U	1,000 U	1,000 U	25 U	25 U	25 U
tert-Butyl Ethyl Ether	637-92-3	--	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	130 U	1,000 U	1,000 U	25 U	25 U	25 U
1,1,2,2-Tetrachloroethane	79-34-5	0.053	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
Tetrachloroethene	127-18-4	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
Toluene	108-88-3	1,000	1 U	1 U	1 U	200	26	27	3	1 U	1 U	1 U	1 U	1 U	2,300	18,000	15,000	1 U	1 U	1 U
trans-1,2-Dichloroethene	156-60-5	100	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	10061-02-6	0.44	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
Freon 113	76-13-1	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
1,1,1-Trichloroethane	71-55-6	200	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
1,1,2-Trichloroethane	79-00-5	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
Trichloroethene	79-01-6	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
Trichlorofluoromethane	75-69-4	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	120-82-1	70	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U	200 U	200 U	5 U	5 U	5 U
Vinyl Chloride	75-01-4	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	40 U	40 U	1 U	1 U	1 U
m,p-Xylene	179601-23-1	--	5 U	5 U	5 U	62	21	22	5 U	5 U	5 U	5 U	5 U	5 U	400	3,500	3,200	5 U	5 U	5 U
o-Xylene	95-47-6	--	5 U	5 U	5 U	36	74	77	5 U	5 U	5 U	5 U	5 U	5 U	320	1,700	1,500	5 U	5 U	5 U
Xylenes (total)	1330-20-7	10,000	10 U	10 U	10 U	98	95	99	10 U	10 U	10 U	10 U	10 U	10 U	720	5,200	4,700	ND	--	10 U
Diesel Range Organics (DRO)	68476-30-2	47	210 U	200 U	210 U	NA	500	450	630	200 U	200 U	200 U	220	240	340	200 U	760	8,800	210	200 U
Gasoline Range Organics (GRO)	8006-61-9	47	200 U	200 U	200 U	NA	2,100	2,100	760	200 U	200 U	200 U	200 U	200 U	200 U	12,000	34,000	34,000	200 U	200 U

Values are reported in micrograms per liter (µg/L)
 GWQS = MD Groundwater Quality Standard (GWQS) for Type I Aquifers
Bold indicates concentrations above the MD GWQS
Values in italics indicate LLQ above applicable criterion.
 ND = Not Detected
 NA = Not Analyzed: For MW-2 (041618), only volatile organic compounds were re-sampled to confirm prior benzene detection.
 U = Compound not detected above PQL