

**Sunoco Mariner East II - Pipeline Construction Inadvertent Returns - Waters of the Commonwealth**

| <b>Date</b>                    | <b>DEP HDD # or<br/>DEP Permit<br/>HDD Reference<br/>#</b> | <b>County</b> | <b>Location</b>               | <b>Description</b>   | <b>Status</b>        |
|--------------------------------|--|---------------|-------------------------------|--|----------------------|
| <i><b>Southwest Region</b></i> |  |               |                               |  |                      |
| 5/4/2017                       |  | Westmoreland  | 40.441, -79363                | 150 Gallons; UNT Boatyard Run (CWF) and W-P14; turbid Water ~600 feet in channel   | NOV issued 7/28/2017 |
| 5/12/2017                      |  | Westmoreland  | 40.44213, -79.34305           | 300 gallons, 90'x50' area - Wetland W-045  | NOV issued 7/28/2017 |
| 5/13/2017                      |  | Indiana       | 40 27'10.16", -79 13'30.34"   | 130 gallons bentonite clay; 20 gallons to UNT Blacklick Creek, no deposition; 200'x5'in W J53 and 2'x300' plume in S-J58                                       | NOV issued 7/28/2017 |
| 5/16/2017                      |  | Westmoreland  | 40 26' 17.48", -79 26' 16.11" | 30 gallons 2' x 40' area none to lake  | IR stopped           |
| 5/23/2017                      |  | Westmoreland  | 40 26' 17.48", -79 26' 16.11" | 60 gallons: 30 gal, 20, gal, 10 gal to 3 upland areas (2' x 45', 2' x 30', 2'x 40'   | IR stopped           |
| 5/23/2017                      |  | Westmoreland  | 40.289, -79.668               | 20,000 gallons drilling mud, 1,000 to stream and rest in upland or ephemeral channel; Ephemeral Stream (TSF), L Sewickley Creek S-229, 250' x 2' unknown depth | NOV issued 7/28/2017 |
| 5/23/2017                      |  | Westmoreland  | 40.289, -79.668               | Part of 20,000 gallons above to a 60' x40' farm field, 4-10" deep  | NOV issued 7/28/2017 |
| 5/23/2017                      |  | Westmoreland  | 40.289, -79.668               | Part of 20,000 gallons above to a 100' x 20' farm field, 0.5 -3" deep  | NOV issued 7/28/2017 |
| 5/24/2017                      |  | Westmoreland  | 40.44213, -79.34305           | 525 gallons; 300 Gallons to wetland W-045 75'x100', 225 gallons to Spruce Run S-061 600'x10'   | NOV issued 7/28/2017 |

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|-------------|--|---------------|----------------------------------|---|--|
| 5/25/2017   |  | Westmoreland  | 40.439, -79.437                  | 25 gallons, 1 pint to Loyahanna Lake;<br>Upland 7' x 50', lake 3' diameter circle   | NOV issued 7/28/2017.<br>COA Executed 12/15/2017 |
| 5/26/2017   |  | Allegheny     | 40.223140, -<br>79.893688        | 50 gallons in a 15' x 30' upland area   | IR stopped                                       |
| 5/26/2017   |  | Westmoreland  | 40 26' 21.13", -79 26'<br>3.92"  | 50 Gallons drilling mud to lake, 5 gallons<br>to upland; Loyalhanna Lake S-P27 2<br>locations ~8'x600', 1 upland 2'x25'   | NOV issued 7/28/2017.<br>COA Executed 12/15/2017 |
| 5/28/2017   |  | Westmoreland  | 40 26' 2.44", -79 26'<br>11.72"  | 50 gallons to upland area (25' x 50'), 20<br>gallons to Loyalhanna Lake (5' x25')   | NOV issued 7/28/2017.<br>COA Executed 12/15/2017 |
| 5/31/2017   |  | Westmoreland  | 40 26' 19.19", -79 26'<br>14.20" | 8 Gallons to the Lake; Loyalhanna Lake-<br>no flow path seen leading into the lake or<br>a release point in the water, 20' x 12' area   | NOV issued 7/28/2017.<br>COA Executed 12/15/2017 |
| 5/31/2017   |  | Allegheny     | 40.223, -79.893                  | 2000 gallons total, 1500 gallons into the<br>creek and 500 gallons contained in<br>upland; 2 stream (UNT Sunfish Run-<br>WWF) within S-150 upstream of joining<br>S-149; S-149 under travel lane bridge; 1<br>upland (east of S-150) 50'x20' area;<br>deposits in stream isolated to areas where<br>material was released, turbid water 0.3<br>miles south to Sunnyside Hollow Road | NOV issued 7/28/2017                             |
| 6/1/2017    |  | Westmoreland  | 40.26' 17.48", -79<br>26'16.11"  | 10 gal upland, 4 gallon near lake, <1<br>gallon into lake; upland and lake<br>(multiple locations on the hillside)  | NOV issued 7/28/2017.<br>COA Executed 12/15/2017 |

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|-------------|--|---------------|----------------------------|---|--|
| 6/2/2017    |  | Washington    | 40.231, -79.998            | 200 gallons to upland areas. 1500 gallons of diluted mixture of water and drilling fluid to stream. Turbid water for ~.25 miles.; 3 upland locations. The material from the third location flowed directly into a culvert and into an UNT of Froman Run.      | NOV issued 7/28/2017                             |
| 6/6/2017    |  | Westmoreland  |                            | Pump ran out of fuel that was maintaining an IR, 25 gallons to creek; Small amount made it to the storm drain (<1 pint)   | NOV issued 7/28/2017.<br>COA Executed 12/15/2017 |
| 6/6/2017    |  | Washington    | 40.2352778, -<br>80.103333 | At start of HDD, noticed streambed material beginning to push up through two spring seeps, about 10' apart and at the toe of the bank of the stream at the NW edge. ~ 5 gallons in stream-no bentonite; S129 UNT Little Chartiers Creek (HQ-WWF), 100 sq. ft. | NOV issued 7/28/2017                             |
| 6/6/2017    |  | Westmoreland  | 40.441, -79.363            | Unknown quantity bentonite mixture, drilling over, cleanup started, unsure if fish were impacted-about 350 gallons to stream; UNT Boatyard Run (CWF) S-P20 (350 gal); turbid water and mud deposits for ~800' within the channel                              | NOV issued 7/28/2017                             |
| 6/8/2017    |  | Washington    | 40.23055, -79.99622        | 20 gallons diluted drill water (minor amount made it to creek); Stream S27 (Froman Run)   | NOV issued 7/28/2017                             |
| 6/10/2017   |  | Washington    |                            | 40 gallons to upland  | IR stopped                                       |

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|-------------|--|---------------|-----------------------------------|--|--|
| 6/11/2017   |  | Washington    | 40.23052, -79.99665               | 100 gallons to 125 sq ft upland area   | NOV issued 7/28/2017                             |
| 6/11/2017   |  | Washington    | 40.23055, -79.99622               | 30 gallons of diluted drill mud and water;<br>Stream S27 (Froman Run) about 400' for<br>3'-5' wide   | NOV issued 7/28/2017                             |
| 6/12/2017   |  | Washington    | 40.2298, -79.97295                | 1000-1500 gallons in upland area ~858 sq<br>ft   | Investigation Ongoing.                           |
| 6/23/2017   |  | Washington    |                                   | Bentonite into stream  | NOV issued 7/28/2017                             |
| 6/24/2017   |  | Washington    | 40.235123, -<br>80.102816         | 1000 gallons bentonite; 2 UNTs Little<br>Chartiers Creek. Streams 280 and 129;<br>280 is about 10 feet from original IR and<br>129 IR came up in containment area;<br>~225' stream 280 impacted pump around<br>and cleanup | NOV issued 7/28/2017                             |
| 6/29/2017   |  | Westmoreland  | 40.441, -79.363                   | 410 Gallons Bentonite clay and Water; 60<br>gallons to upland and 350 to waterbody;<br>UNT Boatyard Run for about 1200' 2<br>locations in the stream   | NOV issued 7/28/2017                             |
| 7/16/2017   |  | Westmoreland  | 40°26' 16.22", -79° 26'<br>11.35" | 320 gallons; 20 to Loyalhanna Lake (12'<br>x 30'), 300 to upland   | NOV issued 7/28/2017.<br>COA Executed 12/15/2017 |
| 7/17/2017   |  | Westmoreland  | 40°26' 16.22", -79°26'<br>11.35"  | 800 gallons, 80 into Loyalhanna Lake<br>(12' x 60'), 720 in upland   | NOV issued 7/28/2017.<br>COA Executed 12/15/2017 |
| 7/18/2017   |  | Washington    |                                   | 5000-60000 gallons to upland area 250'<br>west of Monongahela River  | IR Stopped                                       |
| 9/5/2017    |  | Westmoreland  | 40.4172, -79.607                  | 500-700 gallons bentoite clay and water<br>to an UNT to Turtle Creek and Turtle<br>Creek   | NOV issued 9/26/2017                             |

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| 9/22/2017   | PA-IN-0000.0001.WX-16                                      | Westmoreland  | 40°26'42.5", -<br>79°18'03.9" | 2700 gallons to Wetland W-N28, 30'x50'<br>area  | NOV issued 1/25/2018 |
| 9/27/2017   | PA-IN-0022.0001-<br>RD-16                                  | Indiana       | 40°27'03.3", -<br>79°12'38.9" | Unknown quantities to UNT Weirs Run,<br>Weirs Run, and at least 1000' of<br>Blacklick Creek | NOV issued 1/25/2018 |
| 10/3/2017   | PA-CA-<br>0091.0016-RD                                     | Cambria       | 40.414, -78.567               | less than 50 gallons drilling fluid to<br>Wetland M-59                                      | NOV issued 1/25/2018 |
| 10/10/2017  | PA-CA-<br>0091.0016-RD                                     | Cambria       | 40.414, -78.567               | about 250 gallons into existing<br>containment area   | NOV issued 1/25/2018 |
| 10/11/2017  | PA-CA-<br>0091.0016-RD                                     | Cambria       | 40.414, -78.567               | less than 50 gallons drilling fluid to<br>Wetland M-59                                      | NOV issued 1/25/2018 |
| 12/13/2017  | PA-CA-<br>0047.0000-SR                                     | Cambria       | 40.437155, -<br>78.763529     | 2 Gallons into UNT Stewart Run  | NOV issued 1/25/2018 |
| 5/8/2018    | PA-CA-<br>0016.0000-RD                                     | Cambria       | 40.417053, -<br>78.873039     | UNT Hinckston Run, unknown quantity   | NOV issued 5/15/2018 |
| 5/14/2018   | PA-WA1-<br>0127.0000-RR                                    | Washington    | 40.23559, -80.09084           | 4 gallons to S130   | NOV issued 5/25/2018 |
| 5/25/2018   | PA-WA1-<br>0127.0000-RR                                    | Washington    | 40.23565, -80.09093           | 16 ounces to S130   | NOV issued 6/29/2018 |
| 6/19/2018   | PA-WM1-<br>0023.0000-RD                                    | Westmoreland  | 40.24118, -79.74122           | 50 gallons to S-172   | NOV issued 6/19/2018 |
| 6/21/2018   | PA-CA-<br>0023.0000-RD                                     | Cambria       | 40.416, -78.866               | 1,500 gallons to Hinckston Run (S-N39)<br>and Wetland W-N24                                 | NOV issued 6/25/2018 |
| 7/11/2018   | PA-CA-<br>0016.0000-RD                                     | Cambria       | 40.417413, -<br>78.871815     | 3,500 gallons to unidentified wetland   | NOV issued 7/16/2018 |
| 7/16/2018   | PA-WA-<br>0119.0000-RD                                     | Washington    | 40.23546, -80.10322           | 3 ounces to stream S-129  | NOV issued 7/18/2018 |

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| 7/21/2018   | PA-CA-0016.0000-RD   | Cambria       | 40.417413, -78.871815 | unknown quantity to UNT to Hinckston Run                 | NOV issued 7/24/2018 |
| 8/3/2018    | PA-CA-0069.0000-RD   | Cambria       | 40.452829, -78.684689 | 300 to 400 gallons to wetland WL-N18                     | NOV issued 8/13/2018 |
| 8/4/2018    | PA-CA-0069.0000-RD   | Cambria       | 40.452829, -78.684689 | 2,000 gallons to stream S-N34 and wetland WL-N18         | NOV issued 8/13/2018 |
| 8/4/2018    | WA1-0127.0000-RD   | Washington    | 40.236, -80.091       | 1 - 2 gallons to stream S130                             | NOV issued 8/13/2018 |
| 8/25/2018   | PA-CA-0023.0000-RD   | Cambria       | 40.416, -78.866       | 5 - 10 gallons to wetland N24                            | NOV issued 9/5/2018  |
| 9/12/2018   | PA-CA-0016.0000-RD   | Cambria       | 40.417, -78.872       | 11,000 gallons to UNT to Hinckston Run and wetland WL-E2 | NOV issued 9/18/2018 |
| 9/15/2018   | PA-CA-0016.0000-RD   | Cambria       | 40.417, -78.872       | 70 gallons to wetland WL-E2                              | NOV issued 9/18/2018 |
| 9/16/2018   | PA-CA-0069.0000-RD   | Cambria       | 40.45254, -78.684659  | 5 gallons to wetland WL-N18                              | NOV issued 9/18/2018 |
| 2/16/2019   | PA-CA-0047.0000-SR-16                                      | Cambria       | 40.437028, -78.763531 | 10 gallons to S-CC1 (UNT to Stewart Run)                 | NOV issued 2/25/2019 |
| 2/26/2019   | PA-IN-0000.0001-WX-16                                      | Westmoreland  | 40.445, -79.304       | 10 gallons to Stream N44                                 | NOV issued 2/27/2019 |
| 4/16/2019   | PA-CA-0047.0000-SR-16                                      | Cambria       | 40.434742, -78.774013 | 357 gallons to UNT to Stewarts Run                       | NOV issued 4/17/2019 |

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| <b><i>Southcentral Region</i></b> |  |               |                        |  |   |
| 5/6/2017                          | PA-CU-0136.0003-RD   | Cumberland    | 40.228757, -77.132769  | 160,000 gallons.; wetland WL-130 (EV)  | IR stopped. NOV issued 5/17/2017. COA Executed 6/27/2017. |
| 5/10/2017                         |  | Lancaster     | 40.280, -76.195        | wetland J54 and stream J59   | IR stopped. Remediation reported as complete.             |
| 5/13/2017                         | PA-LA-0004.0000-SR   | Lancaster     | 40.280833, -76.210278  | 25 to 30 gallons; west side of wetlands K-32   | IR stopped.   |
| 5/19/2017                         | PA-CU-0136.0002WX  | Cumberland    | 40.228703, -77.141032  | 50 gallons; wetland 32 (ER Call); wetland I32 (initial report); wetland W-I21 (interim report 1); wetland W-I32 (interim report 2) | IR stopped. COA Executed 6/27/2017.                       |
| 5/26/2017                         | PA-CU-0136.0002WX  | Lancaster     | 40.280, -76.195        | 30 to 50 gallons; stream J59   | IR stopped. Remediation reported as complete.             |
| 5/31/2017                         | PA-BR-0075.0000-RD   | Berks         | 40.277, -76.020        | 500 gallons; Pond-B7 (retention pond)  | IR stopped.   |
| 6/3/2017                          | PA-CU-0136.0002WX  | Cumberland    | 40.228603, -77.140614  | ~150 gallons (initial) 450 gallons (total); WL-I32 (initial report)  | IR stopped. COA Executed 6/27/2017.                       |
| 6/9/2017                          | PA-LA-0004.0000-SR   | Lancaster     | 40.281, -76.209        | ~20 gallons; wetland W-K32   | IR stopped.   |
| 6/12/2017                         | PA-LA-0004.0000-SR   | Lancaster     | 40.280787, -76.210161  | ~25 gallons initial on 6/12/2017--a total of 5500 recovered in total.; Wetland W-K32   | IR stopped.   |
| 6/20/2017                         | PA-BR-0075.0000-RD   | Berks         | 40 16' 38", - 76 1'12" | ~20 gallons in culvert, 10-20 gallons in pond B7   | IR stopped.   |
| 6/23/2017                         | PA-LE-0117.0000-WX   | Lebanon       | 40 17' 7", -76 14' 17" | ~300 gallons; Wetland H-13   | IR stopped.   |

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|-------------|--|---------------|---|--|--|
| 6/26/2017   | PA-BL-0126.0000-<br>RD                                     | Blair         | 40.34, -78.269  | 2,000 gallons; stream S-M33 (HQ-CWF)   | IR stopped.  |
| 6/28/2017   | PA-BL-0001.0027-<br>RD                                     | Blair         | 40.409, -78.442   | ~100 gallons; Wetland M-79 (PFO)   | IR stopped. NOV issued<br>10/26/2017   |
| 7/1/2017    | PA-BL-0001.0027-<br>RD                                     | Blair         | 2800 ft east of Mill<br>Road Duncansville.<br>40.409, -78.442 | 50 gal and then 250 gal ; PFO and<br>possible WT trib  | IR stopped.  |
| 7/6/2017    | PA-HU-0078-<br>0000-WX                                     | Huntingdon    | 40.342, -77.852   | ~300 gallons; Stream L28   | IR stopped   |
| 7/11/2017   | PA-CU-<br>0136.0003-RD                                     | Cumberland    | I-81 drill. 40.134352, -<br>77.75766                          | none stated  | IR stopped. COA Executed<br>6/27/2017.   |
| 7/13/2017   |  | Cumberland    | Newville  | none stated; discharge of hydrotest water<br>through an approved outlet, but at the<br>'wrong location'. | Additional information<br>provided by SPLP indicates<br>that discharge of hydrotest<br>water occurred through a<br>BMP in an upland area and<br>that the quality of the water<br>was in compliance with the<br>requirements of the PAG-10. |
| 7/19/2017   |  | Lancaster     | ~1000 FT W of S<br>Peartown Rd.<br>40.28250, -76.15806        | 250 gallons; Wetland A-56  | IR stopped.  |



| Date      | DEP HDD # or DEP Permit HDD Reference # | County  | Location   | Description                      | Status  |
|-----------|---|---------|--|----------------------------------|---|
| 8/17/2017 | PA-YO-0063.0000-RR                      | Dauphin | Susquehanna River Drill. 40° 11' 57" N, 76° 47' 48" W              | 495 gallons; Susquehanna River   | IR was not active at the time of discovery. It is suspected to have occurred on 7/19/2017--when approximately 1,000 gallons of mud was reportedly lost during drilling operations. Low visibility in the river reportedly prevented previous detection of IR. |
| 8/24/2017 | PA-YO-0063.0000-RR                      | Dauphin | Susquehanna River Drill. 40° 11' 57" N, 76° 47' 48" W              | 50 gallons; Susquehanna River    | IR stopped. NOV issued 8/30/2017. Clean-up completed. DEP approved HDD restart on 9/12/2017.  |
| 8/31/2017 | PA-BL-0001.0027-RD                      | Blair   | 40° 24' 33" N, 78° 26' 36" W                                       | 50-75 gallons into Wetland W-M79 | IR stopped. Containment/clean-up in progress. NOV issued 10/26/2017.  |
| 8/31/2017 | PA-LE-0055.0000-RD                      | Lebanon | 40.29063°, - 76.428132°  | 50 gallons to Snitz Creek        | IR stopped. Containment/clean-up completed. DEP approved HDD restart on 9/14/2017. NOV issued 10/27/2017.   |
| 9/5/2017  | PA-BL-0001.0048-RR                      | Blair   | roadshoulder in the vicinity of 2156 Reservoir Road, Hollidaysburg | 20-30 gallons to wetland BB58    | IR stopped. Containment/clean-up in progress. NOV issued 10/26/2017.  |

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| 9/8/2017    | PA-DA-0056.0000-RD   | Dauphin       | 40° 15' 5" N, 76° 40' 6" W                              | 250-300 gallons, impacting wetland C26 | IR stopped.<br>Containment/clean-up in progress. NOV issued 10/26/2017. |
| 9/15/2017   | PA-YO-0063.0000-RR   | Dauphin       | Susquehanna River Drill. 40° 14' 55.7" N, 76° 47' 48" W | 350 gallons to the Susquehanna River   | IR stopped.<br>Containment/clean-up in progress. NOV issued 9/18/2017.  |
| 9/20/2017   | PA-LE-0055.0000-RD   | Lebanon       | 40.29063°, -76.428132°                                  | ~1 gallon to Snitz Creek               | IR stopped.<br>Containment/clean-up in progress. NOV issued 10/27/2017. |
| 9/27/2017   | PA-CU-0062.0000-WX   | Cumberland    | 40° 14' 41" N, 77° 19' 39" W                            | 500 gallons to wetland J35             | IR stopped.<br>Containment/clean-up in progress. NOV issued 10/26/2017. |
| 9/28/2017   | PA-CU-0136.0003-RD   | Cumberland    | I-81 drill. 40.134352, -77.75766                        | ~2.5 gallons to wetland I30            | COA Executed 6/27/2017  |
| 10/10/2017  | PA-HU-0106.0000-RD   | Huntingdon    | 40.321145,-77.789497                                    | 5,000-10,000 to wetland K69            | IR stopped.<br>Containment/clean-up in progress. NOV issued 10/26/2017. |
| 11/10/2017  | PA-DA-0005.0000-RD   | Dauphin       | 40.205643, -76.769297                                   | ~300 gallons to wetland W118           | IR Stopped.<br>Containment/clean-up in progress. NOV issued 11/14/2017. |

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| 11/11/2017  | N/A--not permitted as HDD                                  | Berks         | 40.1886, -75.891           | unquantified release to UNT to Hay Creek (S-Q90)  | IR Stopped. Containment/clean-up in progress. NOV issued 11/16/2017. |
| 11/20/2017  | PA-BL-0001.0094-WX-16                                      | Blair         | 40.441, -78.331            | ~10 gallon release to an UNT to Frankstown Branch Juniata River (S-BB92) and associated wetland (Wetland Q60)   | IR Stopped. Containment/clean-up in progress. NOV issued 11/22/2017. |
| 12/5/2017   | PA-DA-0056.0000-RD   | Dauphin       | 40° 15' 5" N, 76° 40' 6" W | ~200 gallon release into wetland C26 during the punch out of the pilot hole.  | IR stopped. Containment/clean-up in progress.                        |
| 12/20/2017  | PA-LE-0001.0000-SR   | Lebanon       | 40.254, -76.592            | ~50 gallon release in an upland, which ran downslope into wetland A30.  | IR stopped. Containment/clean-up in progress. NOV issued 12/22/2017  |
| 12/20/2017  | PA-HU-0020.0008-WX-16                                      | Huntingdon    | 40.369, -78.066            | 25-30 gallons to an upland area, which ran downslope into Raystown Lake.  | IR stopped. Containment/clean-up in progress. NOV issued 12/22/2017  |
| 12/29/2017  | PA-LE-0001.0000-SR   | Lebanon       | 40.254, -76.592            | ~15 gallon release to wetland A30--within pre-existing containment (see 12/20/2017 event at same location) and 3 gallon release to wetland A30 outside of existing containment. | IR stopped. Containment/clean-up in progress.                        |
| 2/27/2018   | PA-CU-0062.0000-WX   | Cumberland    | 40.2447, -77.3306          | ~100 gallon release to stream S-J41 (UNT to Locust Creek--WWF) and wetland J35  | IR stopped. Containment/clean-up in progress. NOV issued 2/28/2018.  |

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| 3/15/2018   | PA-LE-0055.0000-<br>RD                                     | Lebanon       | 40.2904, -76.4278         | ~50 gallon release to stream S-A17 (Snitz<br>Creek--TSF)                             | IR stopped.<br>Containment/clean-up in<br>progress. NOV issued<br>3/16/2018.       |
| 3/15/2018   | PA-BL-0001.0094-<br>WX-16                                  | Blair         | 40.0000, -78.3247         | ~200 gallon release into wetland L54   | IR stopped.<br>Containment/clean-up in<br>progress. NOV issued<br>3/16/2018.       |
| 3/23/2018   | PA-HU-<br>0106.0000-RD                                     | Huntingdon    | 40.321145, -<br>77.789497 | <1 gallon release into wetland K69<br>(PEM)  | Drilling stopped.<br>Containment/clean-up in<br>progress. NOV issued<br>3/26/2018. |
| 3/29/2018   | PA-PE-0002.0000-<br>RD                                     | Perry         | 40.2928, -77.6498         | < 1 gallon release to wetland L1 (PFO)   | IR stopped.<br>Containment/clean-up in<br>progress. NOV issued<br>3/30/2018.       |
| 4/4/2018    | PA-BL-0001.0094-<br>WX-16                                  | Blair         | 40.4444, -78.3247         | ~10 gallon release to wetland L54  | IR stopped.<br>Containment/clean-up in<br>progress. NOV issued<br>4/6/2018.        |
| 4/9/2018    | PA-BL-0001.0048-<br>RR                                     | Blair         | 40.4122, -78.3722         | 500 gallon discharge to wetland BB58<br>from IR just upslope of wetland<br>boundary. | IR stopped.<br>Containment/clean-up in<br>progress. NOV issued<br>4/10/2018.       |
| 4/20/2018   | PA-LE-0055.0000-<br>RD                                     | Lebanon       | 40.2904, -76.4278         | ~20 gallon release to stream S-A17 (Snitz<br>Creek--TSF)                             | Drilling stopped.<br>Containment/clean-up in<br>progress. NOV issued<br>4/20/2018. |

| <b>Date</b> | <b>DEP HDD # or<br/>DEP Permit<br/>HDD Reference<br/>#</b> | <b>County</b> | <b>Location</b>           | <b>Description</b>                                      | <b>Status</b>  |
|-------------|--|---------------|---------------------------|---|--|
| 6/1/2018    | PA-LE-0055.0000-<br>RD                                     | Lebanon       | 40.2904, -76.4278         | ~2 quart release to stream S-A17 (Snitz<br>Creek--TSF)  | Drilling stopped.<br>Containment/clean-up in<br>progress. NOV issued<br>6/1/2018.  |
| 6/10/2018   | PA-LE-0055.0000-<br>RD                                     | Lebanon       | 40.2904, -76.4278         | 1 cup release to stream S-A17 (Snitz<br>Creek--TSF)     | Drilling stopped.<br>Containment/clean-up in<br>progress. NOV issued<br>6/11/2018. |
| 6/15/2018   | PA-BL-0001.0048-<br>RR                                     | Blair         | 40.4122, -78.3722         | 200-300 gallon release to wetland BB58                  | IR stopped.<br>Containment/clean-up in<br>progress. NOV issued<br>6/15/2018.       |
| 6/27/2018   | PA-LE-0055.0000-<br>RD                                     | Lebanon       | 40.2904, -76.4278         | ~5 gallon release to stream S-A17 (Snitz<br>Creek--TSF) | Drilling stopped.<br>Containment/clean-up in<br>progress. NOV issued<br>6/28/2018. |
| 6/27/2018   | PA-BR-<br>0181.0000-RD                                     | Berks         | 40.290, -75.858           | unquantified release to East Branch<br>Conestoga River  | Drilling stopped.<br>Containment/clean-up in<br>progress. NOV issued<br>6/28/2018. |
| 7/7/2018    | PA-CU-0136-<br>0002-WX                                     | Cumberland    | 40.228834, -<br>77.138988 | ~1 gallon release to wetland I32                        | Drilling stopped.<br>Containment/clean-up in<br>progress. NOV issued<br>7/9/2018   |
| 7/25/2018   | PA-CU-0136-<br>0002-WX                                     | Cumberland    | 40.228678, -<br>77.140557 | ~5 gallon release that ran into wetland<br>I32          | Drilling stopped.<br>Containment/clean-up in<br>progress. NOV issued<br>7/25/2018  |

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|-------------|--|---------------|---------------------|---|--|
| 8/15/2018   | PA-LE-0055.0000-<br>RD                                     | Lebanon       | 40.290, -76.427     | 38 gallons in Snitz Creek (S-A17)                               | IR stopped and contained.<br>NOV issued 8/16/2018.<br>Pipe installation is complete. |
| 9/13/2018   | PA-CU-0136-<br>0002-WX                                     | Cumberland    | 40.2287, -77.1399   | ~7 gallons in Letort Spring Run                                 | IR stopped.<br>Containment/clean-up in<br>progress. NOV issued<br>9/14/2018          |
| 9/18/2018   | PA-BR-<br>0181.0000-RD                                     | Berks         | 40.1665, -75.8577   | 30,000-gallon IR with impacts to wetland<br>BA 10.              | Drilling stopped.<br>Containment/clean-up in<br>progress. NOV issued<br>9/18/2018.   |
| 10/2/2018   | PA-BL-0126.0000-<br>RD                                     | Blair         | 40.43154, -78.26891 | unquantified IRs to spring/Piney Creek<br>and a well pump house | Drilling stopped.<br>Containment/clean-up in<br>progress. NOV issued<br>10/3/2018    |
| 10/6/2018   | PA-BL-0126.0000-<br>RD                                     | Blair         | Woodbury Township   | ~ 150 gallons of drilling fluids to Piney<br>Creek              | Containment/clean-up in<br>progress. NOV issued<br>10/9/2018                         |
| 10/10/2018  | PA-BL-0126.0000-<br>RD                                     | Blair         | Woodbury Township   | ~ 25 gallons of drilling fluids to Piney<br>Creek               | IR stopped and<br>containment/clean-up<br>completed. NOV issued<br>10/11/2018        |
| 10/12/2018  | PA-BL-0126.0000-<br>RD                                     | Blair         | Woodbury Township   | unquantified volume of drilling fluids to<br>Piney Creek        | IR stopped and<br>containment/clean-up<br>completed. NOV issued<br>10/15/2018        |

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|-------------|--|---------------|---------------------------|--|---|
| 10/14/2018  | PA-BL-0126.0000<br>RD                                      | Blair         | Woodbury Township         | unquantified volume of drilling fluids to<br>Piney Creek                   | IR stopped and<br>containment/clean-up<br>completed. NOV issued<br>10/15/2018 |
| 10/17/2018  | PA-BL-0001.0078<br>WX                                      | Blair         | 40.4122, -78.3722         | unquantified release to wetland BB58                                       | IR stopped.<br>Containment/clean-up in<br>progress. NOV issued<br>10/18/2018. |
| 11/1/2018   | PA-BL-0001.0078<br>WX                                      | Blair         | 40.4122, -78.3722         | 20-gallon IR to wetland BB58   | IR stopped.<br>Containment/clean-up<br>completed. NOV issued<br>11/2/2018.    |
| 11/23/2018  | PA-BL-0001.0078<br>WX                                      | Blair         | 40.4122, -78.3722         | 1000-gallon IR in an upland area that ran<br>into wetland BB58             | IR stopped.<br>Containment/clean-up<br>completed. NOV issued<br>11/26/2018.   |
| 11/27/2018  | PA-BL-0001.0078<br>WX                                      | Blair         | 40.4122, -78.3722         | 25-50-gallon IR in an upland area that ran<br>into wetland BB58            | IR stopped.<br>Containment/clean-up in<br>process. NOV issued<br>11/28/2018.  |
| 4/27/2019   | PA-CU-<br>0189.0000-RD-16                                  | Cumberland    | 40.1925, -76.9386         | 20-gallon IR in an upland area that ran<br>into wetland I27 and stream I43 | IR stopped.<br>Containment/clean-up in<br>process. NOV issued<br>4/29/2019    |
| 2/21/2020   | PA-CU-<br>0136.0003-RD-16                                  | Cumberland    | 40.228757, -<br>77.132769 | 1-gallon IR in stream S147   | IR stopped.<br>Containment/clean-up<br>complete. NOV issued 2-24-<br>2020     |

| <b>Date</b>                    | <b>DEP HDD # or<br/>DEP Permit<br/>HDD Reference<br/>#</b> | <b>County</b> | <b>Location</b>  | <b>Description</b>   | <b>Status</b>  |
|--------------------------------|--|---------------|--|--|--|
| 2/27/2020                      | PA-CU-0062-0000-WX-16                                      | Cumberland    | 40° 14' 41" N, 77° 19' 39" W   | 1-gallon IR in stream SJ41   | IR stopped.<br>Containment/clean-up complete. NOV issued 2-28-2020 |
| <b><u>Southeast Region</u></b> |  |               |  |  |  |
| 5/3/2017                       |  | Delaware      | Brookhaven Borough<br>– at edge of Chester Creek Rd. and onto sidewalk – IR went into storm drain and then Chester Creek | 500 gallons of drilling fluid to Chester Creek; lost return of 20,000 gallons of drill fluid. IR identified 5.09 PM.             | NOV issued 5/9/2017  |
| 5/4/2017                       |  | Delaware      | Brookhaven Borough<br>– upland lawn area of vacant lot   | 50 gallons release of drilling fluids into uplands; no fluids reached Chester Creek. IR identified 3.10 PM.                      | IR stopped.  |
| 5/10/2017                      |  | Delaware      | Brookhaven Borough<br>– within Chester Creek   | 75 gallons release of drilling fluids emerging in 3 locations in Creek (25 gallons in each location). IR identified at 12.15 PM. | IR stopped.  |
| 5/17/2017                      |  | Delaware      | Brookhaven Borough<br>– within Chester Creek   | 5 gallons total release of drilling fluids in 2 locations in Chester Creek. IR identified at 1.45 PM.                            | IR stopped.  |
| 5/18/2017                      |  | Delaware      | Brookhaven Borough<br>– within Chester Creek   | 25 gallons release of drilling fluids in 1 location in Chester Creek. IR identified at 12.40 PM.                                 | IR stopped.  |
| 5/19/2017                      |  | Delaware      | Brookhaven Borough<br>– within Chester Creek   | 200 gallons total release of drilling fluids in 2 locations in Chester Creek. IR identified at 12.20 PM.                         | IR stopped.  |



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|-------------|--|---------------|--|---|--|
| 5/27/2017   |  | Delaware      | Brookhaven Borough<br>– within Chester Creek | 25 gallons release of drilling fluids in 1<br>location in Chester Creek             | IR stopped.  |
| 6/17/2017   |  | Chester       | Upper Uwchlan<br>Township, Hickory<br>Park   | 5 gallons of drilling solution into<br>tributary to Marsh Creek                     | IR stopped.  |
| 6/24/2017   |  | Chester       | Upper Uwchlan<br>Township                    | 100 gallons of drilling solution into<br>wetland and stream.                        | IR stopped.  |
| 7/17/2017   |  | Delaware      | Middletown Township                          | 1500 gallons of drilling solution into<br>UNT to Chester Creek                      | NOV issued 7/20/2017.  |
| 8/29/2017   | S3-0290  | Chester       | Upper Uwchlan                                | 50 gallons of drilling solution into<br>wetland and stream.                         | IR Stopped /Under<br>investigation. NOV issued<br>on 9/8/2017.                 |
| 9/2/2017    |  | Delaware      | Middletown Township                          | 50 gallons of drilling solution into UNT<br>of Chester Creek                        | IR Stopped/Under<br>Investigation. NOV issued<br>on 9/12/2017.                 |
| 9/9/2017    |  | Chester       | Upper Uwchlan                                | .5 gallon of drilling solution to Marsh<br>Creek                                    | IR Stopped. Solution lost<br>downstream.                                       |
| 10/25/2017  | S3-0500  | Chester       | East Goshen Township                         | 500 gallons in total, 490 gal to uplands, ~<br>< 10 gal to storm drain street inlet | IR Stopped. Solution<br>Cleaned Up. DEP<br>Inspected. NOV Issued<br>11/3/2017. |

| Date       | DEP HDD # or DEP Permit HDD Reference # | County   | Location                               | Description  | Status  |
|------------|---|----------|--|--|---|
| 10/27/2017 | S3-620; PA-DE-0100.0000-RR-16           | Delaware | Middletown Township                    | 1 gallon of drilling solution to Waters                          | IR stopped, solution cleaned up, DEP inspected, work suspended. NOV Issued 11/3/2017, work suspended pending DEP approval.  |
| 12/15/2017 | S3-620; PA-DE-0100.0000-RR-16           | Delaware | Middletown Township                    | 40 gallons of drilling solution to UNT of Chester Creek          | Mud pump inoperable so solution overwhelmed containment area entering creek; DEP inspected and work suspended pending DEP approval; late initial report; NOV issued 12/21/2017.               |
| 7/14/2018  | S3-620; PA-DE-0100.0000-RR-16           | Delaware | Middletown Township; 39.8944, -75.4319 | 100 gallons of drilling solution into wetland WL-I1 (initial IR) | Drilling stopped, IR cleaned up, wetlands washed, ERT on site to confirm event and sufficient containment area. Initial notification received. NOV issued 7/19/2018, Restart report required. |

| Date      | DEP HDD # or DEP Permit HDD Reference # | County   | Location                               | Description  | Status   |
|-----------|---|----------|--|--|--|
| 7/20/2018 | S3-620; PA-DE-0100.0000-RR-16           | Delaware | Middletown Township; 39.8944, -75.4319 | 80 gallons of drilling solution into wetland WL-I1 of which approx. 30 gallons entered into S-I3; also, at same time, an unknown amount of turbid water was observed being discharged from a stormwater pipe outfall into S-I4 | Drilling stopped, IR cleaned up, wetlands washed, DEP on site to confirm event and sufficient containment areas established. Initial notification received 7/23/2018 along with Restart Report required. NOV issued 7/25/2018. |
| 7/30/2018 | S3-620; PA-DE-0100.0000-RR-16           | Delaware | Middletown Township 39.8944, -75.4319  | Approx. 50 gallons of drilling solution onto uplands parking lot area near Tunbridge Apts, some of the fluid entered the storm drain inlet which then discharged from the stormwater pipe outfall into S-I4                    | Drilling stopped upon IR; containment and clean-up confirmed completed; Restart Report submitted (revised), approval given 7/31/2018; NOV issued 7/31/2018, NOV Response received 8/2/2018.                                    |

| Date      | DEP HDD # or DEP Permit HDD Reference # | County   | Location                                 | Description  | Status  |
|-----------|---|----------|--|--|---|
| 8/5/2018  | S3-620; PA-DE-0100.0000-RR-16           | Delaware | Middletown Township<br>39.8944, -75.4319 | Subsidence occurred in WL-I1   | 21 yards of flowable fill was placed in the hole; drilling stopped until completed; start-up occurred under 8/3/18 approval once DEP confirmed clean-up and IR containment area established NOV issued 8/29/2018 with response date of 9/5/2018 |
| 8/22/2018 | S3-620; PA-DE-0100.0000-RR-16           | Delaware | Middletown Township<br>39.8944, -75.4319 | 2 new IR locations in WL-I1, separate and distinct from the 8/5/18 subsidence, approx. 200 gallons of drilling fluids with 100 gallons entering into S-I1  | Drilling stopped upon IRs; containment and clean-up confirmed completed; NOV issued 8/29/2018 with response date of 9/5/2018  |
| 8/26/2018 | S3-620; PA-DE-0100.0000-RR-16           | Delaware | Middletown Township<br>39.8944, -75.4319 | Approx. 200 gallons of drilling solution into Uplands T.A. very near but outside of the new IR site of 8/22/2018; Tunbridge Apts = T.A., approx. 100 gallons of the 200 expressed entered into the WL-I1, same area impacted by 8/22 event | Drilling stopped upon new IR; containment and clean-up confirmed completed; NOV issued 8/29/2018 with response date of 9/5/2018. Requiring a site-specific restoration plan be submitted for all impacts to the WL-I1 to date.                  |