

Attachment IP-5a - Minor Realignments: Only Affect One Landowner and No Sensitive Environmental Areas

Begin MP	End MP	Description	Parcel ID	Landowner Approval	New Landowners Affected?	Residences within 50 feet of Construction Work Area?	Within Original Study Corridor?	Description of New Route Land Use/Cover	Existing Land Use/Cover Type	Length of Forested Area Crossed (feet)	Length of Interior Forested Area Crossed (feet)	Cultural Resource/ Federally List Species Affected by Deviation	Environmentally Sensitive Areas Within/Abutting Area of Deviation	Waterbodies Crossed and Width (feet)	Length of Wetlands Crossed by Type (PFO, PSS, PEM) (feet)	Nationwide 12 permit modifications	Alignment Sheet Number	Roanoke Loggerch Impact	Candy Darter Impact	Mussel Impact	RPBB Impact	Plant Impact	Total Change (+/-) in LOD (acres)	MYSO - Known Summer Use Habitat (acres)	MYSO - Known use spring staging/fall swarming habitat (acres)	MYSO - Suitable Unoccupied Summer Habitat (acres)	MYSO - Unknown use spring staging/fall swarming habitat (acres)	MYSO - Unknown Use Summer Habitat (acres)	NLEB known use spring staging/fall swarming habitat (acres)	
2.74	2.75	Adjusted suction and discharge lines at Bradshaw CS.	WV-WE-018	Secured	No	No	Yes	Developed, Open Space; Deciduous Forest	Developed, Open Space; Deciduous Forest	0	53	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-WEWV-H600-03	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (7)	0.72	0.72	0.00	0.00	0.00	0.00	0.00	
12.05	12.05	Added area to MVP-ATWS-1477 for entry from county road.	WV-HA-019	Secured	No	No	Yes	Deciduous Forest; Grassland/Herbaceous; Developed, Open Space	Deciduous Forest; Grassland/Herbaceous	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-HAWV-H600-03	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (7)	0.02	0.00	0.00	0.00	0.00	0.01	0.00	
17.50	17.50	Extended laydown yard MVP-LY-002 based on survey data.	WV-HA-4282	Secured	No	No	No	Deciduous Forest; Grassland/Herbaceous; Developed, Open Space; Pasture/Hay	Deciduous Forest; Grassland/Herbaceous; Developed, Open Space; Pasture/Hay	0	0	None	S-176, W-PFS, W-183, W-192, W-184, S-177 (All Protected)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAS-H600-01 MVP-QDAS-H600-01	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (7)	0.05	0.00	0.00	0.00	0.00	0.00	0.00	
30.04	30.04	Expanded MVP-ATWS-826 to edge of study corridor.	WV-HA-4224	Secured	No	No	Yes	Deciduous Forest; Pasture/Hay; Cultivated Crops	Deciduous Forest; Pasture/Hay; Cultivated Crops	0	0	None	S-UUS (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-HAWV-H600-23	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (7)	0.12	0.00	0.00	0.03	0.00	0.00	0.00	
33.93	33.93	Relocated MLY-05 from MP 34.82 to avoid encroaching on existing foreign utility.	WV-DO-006	Secured	No	No	Yes	Deciduous Forest; Cultivated Crops	Deciduous Forest; Cultivated Crops	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-HAWV-H600-27	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (7)	0.82	0.00	0.00	0.52	0.00	0.00	0.00	
33.93	33.93	Extended access road MVP-DO-044 to reach relocated MLY-05 site. Changed name to MVP-MLV-AR-05 and designation from temporary to permanent.	WV-DO-006	Secured	No	No	Yes	Deciduous Forest; Pasture/Hay; Developed, Open Space	Deciduous Forest; Pasture/Hay; Developed, Open Space	0	0	None	S-K69/S-K70 (Adjacent), W-UUS (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-HAWV-H600-27 PA-HAWV-H600-28 MVP-QDAR-H600-12 MVP-ADAR-H600-12	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (7)	0.82	0.00	0.00	0.52	0.00	0.00	0.00	0.00
33.97	33.97	Adjusted MVP-ATWS-771 to match existing county road ROW.	WV-DO-006	Secured	No	No	No	Deciduous Forest; Developed, Open Space; Pasture/Hay	Deciduous Forest; Developed, Open Space	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAR-H600-12 MVP-ADAR-H600-12	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (7)	0.82	0.00	0.00	0.52	0.00	0.00	0.00	
47.45	47.48	Shifted and reduced MVP-ATWS-476 to avoid existing structure.	WV-LE-052	Secured	No	No	No	Deciduous Forest; Pasture/Hay	Deciduous Forest; Pasture/Hay	159	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-LEWV-H600-10	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effects (2)	No effect (7)	-0.25	0.00	0.00	0.00	0.00	0.62	0.00	
50.85	50.93	Eliminated point of inflection and adjusted MVP-ATWS-805 to match temporary right-of-way.	WV-LE-072	Secured	No	No	Yes	Deciduous Forest	Deciduous Forest	122	297	None	S-KK3a (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-LEWV-H600-14	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effects (2)	No effect (7)	0.11	0.00	0.00	0.00	0.00	0.10	0.00	
51.02	51.02	Added MVP-ATWS-1500 for truck turnaround on access road MVP-LE-069.	WV-LE-072	Secured	No	No	No	Deciduous Forest; Developed, Open Space	NA	0	0	None	S-KK3a (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-LEWV-H600-14 MVP-QDAR-H600-17 MVP-ADAR-H600-17	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effects (2)	No effect (7)	0.11	0.00	0.00	0.00	0.00	0.10	0.00	
52.38	52.40	Added MVP-ATWS-1532 for parallel pipeline crossing.	WV-LE-078	Secured	No	No	No	Deciduous Forest	NA	0	106	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-LEWV-H600-15	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effects (2)	No effect (7)	0.12	0.00	0.00	0.00	0.00	0.12	0.00	
55.12	55.12	Adjusted groundbed MVP-CPGB-06 and associated MVP-ATWS-1439	WV-LE-100	Secured	No	No	No	Deciduous Forest; Developed, Open Space	Deciduous Forest; Developed, Open Space	0	0	None	S-63 (Adjacent/Reduction)	S-63 (20 Ft)	None	Huntington District - reduction of impacts	PA-LEWV-H600-18	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effects (2)	No effect (7)	0.25	0.00	0.00	0.00	0.00	0.14	0.00	
61.80	61.80	Add MVP-ATWS-1531 for turning apron on MVP-LE-077.01 entrance.	WV-LE-133	Secured	No	No	Yes	Developed, Open Space	NA	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAR-H600-21 MVP-ADAR-H600-21	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effects (2)	No effect (7)	-0.05	0.00	0.00	0.00	0.00	0.00	0.00	
65.29	65.29	Added MVP-ATWS-1501 for truck turnaround for MVP-LE-084.	WV-BR-154.001 (AR LE 84)	Secured	WV-BR-154.001 (AR LE 84)	No	No	Deciduous Forest; Developed, Open Space	NA	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAR-H600-22 MVP-ADAR-H600-22	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effects (2)	No effect (7)	0.19	0.00	0.00	0.00	0.00	0.00	0.00	
74.83	74.83	Expanded MVP-ATWS-1459 and added MVP-ATWS-1459A for crossing of Little Kanawha River by access road MVP-BR-103.01.	WV-BR-5856	Secured	No	No	No	Deciduous Forest; Open Space	Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAR-H600-28 MVP-ADAR-H600-28	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing.	No direct effects (2)	No effect (7)	0.25	0.00	0.00	0.00	0.00	0.24	0.00	
74.83	74.83	Added MVP-ATWS-1459B to facilitate crossing of Little Kanawha River by access road MVP-BR-103.01.	WV-BR-5214	Secured	No	Yes	No	Deciduous Forest	Deciduous Forest; Developed, Open Space	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAR-H600-28 MVP-ADAR-H600-28	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effects (2)	No effect (7)	0.17	0.00	0.00	0.00	0.00	0.11	0.00	
77.31	77.31	Adjusted section line to WB interconnect	WV-BR-046.02	Secured	No	No	Yes	Deciduous Forest	Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-WBWW-H601-01	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effects (2)	No effect (7)	0.25	0.00	0.00	0.00	0.00	0.13	0.00	
90.49	90.49	Expanded MVP-ATWS-937 to encompass former access road workspace.	WV-WB-001.32	Secured	No	No	Yes	Deciduous Forest	Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-WBWW-H600-13 MVP-QDAR-H600-37 MVP-ADAR-H600-37	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (4)	-14.64	0.00	0.00	0.00	0.00	-14.64	0.00	
90.70	90.70	Expanded MVP-ATWS-938 to encompass former access road workspace.	WV-WB-001.32	Secured	No	No	Yes	Deciduous Forest	Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-WBWW-H600-14 MVP-QDAR-H600-37 MVP-ADAR-H600-37	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (4)	-14.64	0.00	0.00	0.00	0.00	-14.64	0.00	
98.00	98.00	Added laydown yard MVP-LY-005.	WV-NI-4293	Secured	WV-NI-4293	No	No	Developed, Low Intensity; Developed, Medium Intensity; Developed, Open Space	NA	0	0	None	W-175 (Protected), W-176 (Protected), S-174 (Protected)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAS-H600-03 MVP-ADAS-H600-03	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (4)	2.92	0.00	0.00	0.00	0.00	0.00	0.00	
98.13	98.13	Adjusted MVP-ATWS-485A based on survey data.	WV-WB-028	Secured	No	No	Yes	Deciduous Forest	Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-WBWW-H600-21	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (4)	-0.02	0.00	0.00	0.00	0.00	-0.02	0.00	
102.25	102.25	Added MVP-ATWS-1502 for truck turnaround.	WV-WB-044	Secured	No	No	No	Deciduous Forest	NA	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-WBWW-H600-27	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (14)	0.65	0.00	0.00	0.67	0.00	0.00	0.00	
105.20	105.20	Added MVP-ATWS-1499 to facilitate landowner requested route adjustment.	WV-WB-058	Secured	No	No	Yes	Deciduous Forest	NA	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-WBWW-H600-29 PA-WBWW-H600-30	No Effect - Outside RLP Range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (4)	0.91	0.00	0.00	0.91	0.00	0.00	0.00	
106.90	107.00	Shifted alignment north to avoid environmentally sensitive area.	WV-WB-062.05	Secured	No	No	Yes	Deciduous Forest; Mixed Forest	Deciduous Forest; Mixed Forest	310	218	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-WBWW-H600-32	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (4)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
112.67	112.67	Reduced LOD and adjusted entry to pipeline workspace of MVP-NI-140 based on landowner request.	WV-NI-5321	Secured	No	No	No	Deciduous Forest; Pasture/Hay	Deciduous Forest; Pasture/Hay	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-45 MVP-QDAR-H600-45	No Effect - Outside RLP Range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effects (2)	No effect (11)	-0.46	0.00	0.00	0.04	0.00	-0.32	0.00	
115.47	115.47	Adjusted entrance of MVP-NI-145.01 to match county route right-of-way.	WV-NI-028	Secured	No	No	Yes	Developed, Open Space	Developed, Open Space	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-46 MVP-QDAR-H600-46	No Effect - Outside RLP Range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effects (2)	No effect (11)	in LOD within	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125.59	125.64	Eliminated point of inflection.	WV-NI-070	Secured	No	No	Yes	Deciduous Forest	Deciduous Forest	0	264	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-NIWW-H600-15	No Effect - Outside RLP Range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effects (2)	No effect (11)	0.01	0.00	0.00	0.01	0.00	0.00	0.00	
125.74	126.00	Eliminated seven points of inflection and adjusted MVP-ATWS-235, MVP-ATWS-235A, MVP-ATWS-236, and MVP-ATWS-236A to match temporary right-of-way.	WV-NI-070	Secured	No	No	Yes	Deciduous Forest	Deciduous Forest	985	328	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-NIWW-H600-16	No Effect - Outside RLP Range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effects (2)	No effect (11)	0.01	0.00	0.00	0.01	0.00	0.00	0.00	

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145.22	145.34	Corrected inaccurately depicted LOD between pipeline temporary right-of-way and access road MVP-GB 284.	WV-GR-031.01	Secured	No	No	Yes	Deciduous Forest; Barren Land	Deciduous Forest; Barren Land	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GRWV-H600-12	No Effect - Outside RLP Range	No effect to candy darter - variance occurs within candy darter - variegated darter hybridization range and does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (3)	0.00	0.00	0.00	0.00	0.00	0.09	0.00
146.30	146.62	Eliminated four points of inflection.	WV-GR-033	Secured	No	No	Yes	Deciduous Forest	Deciduous Forest	283	1408	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GRWV-H600-13 PA-GRWV-H600-14	No Effect - Outside RLP Range	No effect to candy darter - variance occurs within candy darter - variegated darter hybridization range and does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (3)	-0.02	0.00	0.00	-0.02	0.00	0.00	
151.59	151.69	Eliminated point of inflection.	WV-GR-056	Secured	No	No	Yes	Deciduous Forest	Deciduous Forest	237	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GRWV-H600-19	No Effect - Outside RLP Range	No effect to candy darter - variance occurs within candy darter - variegated darter hybridization range and does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (3)	0.00	0.00	0.00	-0.01	0.00	0.00	
152.35	152.57	Eliminated three points of inflection.	WV-GR-057	Secured	No	No	Yes	Deciduous Forest	Deciduous Forest	355	387	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GRWV-H600-20	No Effect - Outside RLP Range	No effect to candy darter - variance occurs within candy darter - variegated darter hybridization range and does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (3)	-0.01	0.00	0.00	0.04	0.00	0.00	
153.42	153.42	Increased area of MVP-ATWS-604 to extend to county road right-of-way to allow entrance to workspace.	WV-GR-062.01	Secured	No	No	No	Deciduous Forest; Developed, Open Space	Deciduous Forest; Developed, Open Space	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GRWV-H600-21	No Effect - Outside RLP Range	No effect to candy darter - variance occurs within candy darter - variegated darter hybridization range and does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (3)	0.05	0.00	0.00	0.00	0.00	0.00	
154.40	154.60	Adjusted alignment of suction and discharge lines at Stallworth Compressor Station.	WV-FA-002	Secured	No	No	Yes	Deciduous Forest	Deciduous Forest	0	1056	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GRWV-H600-22	No Effect - Outside RLP Range	No effect to candy darter - variance occurs within candy darter - variegated darter hybridization range and does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effects (2)	No effect (5)	-0.07	0.00	0.00	-0.07	0.00	0.00	
162.03	162.08	Eliminated point of inflection.	WV-SU-014	Secured	No	No	Yes	Deciduous Forest	Deciduous Forest	0	264	None	S-115	S-115 (10 ft)	None	Huntington District - impacts do not change	PA-SUWV-H600-06	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (6)	-0.06	0.00	0.00	0.00	0.00	-0.06	0.00
162.43	162.60	Eliminated point of inflection.	WV-SU-014	Secured	No	No	Yes	Deciduous Forest	Deciduous Forest	0	897	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-SUWV-H600-06	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (6)	-0.06	0.00	0.00	0.00	0.00	-0.06	0.00
162.73	162.85	Eliminated point of inflection.	WV-SU-014	Secured	No	No	Yes	Deciduous Forest	Deciduous Forest	0	634	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-SUWV-H600-06	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (6)	-0.06	0.00	0.00	0.00	0.00	-0.06	0.00
162.89	162.99	Eliminated point of inflection.	WV-SU-014	Secured	No	No	Yes	Deciduous Forest	Deciduous Forest	0	528	None	S-118 (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-SUWV-H600-06	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (6)	-0.06	0.00	0.00	0.00	0.00	-0.06	0.00
163.17	163.30	Eliminated point of inflection.	WV-SU-014	Secured	No	No	Yes	Deciduous Forest	Deciduous Forest	0	686	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-SUWV-H600-07	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (6)	-0.06	0.00	0.00	0.00	0.00	-0.06	0.00
163.93	164.11	Eliminated point of inflection.	WV-SU-014	Secured	No	No	Yes	Deciduous Forest	Deciduous Forest	0	953	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-SUWV-H600-08	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (6)	-0.06	0.00	0.00	0.00	0.00	-0.06	0.00
164.16	164.26	Eliminated point of inflection.	WV-SU-014	Secured	No	No	Yes	Deciduous Forest	Deciduous Forest	339	181	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-SUWV-H600-08	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (6)	-0.06	0.00	0.00	0.00	0.00	-0.06	0.00
165.46	165.46	Adjusted entrance of access road MVP-SU-201 and MVP-ATWS-1179 to match existing county road right-of-way.	WV-SU-4085	Secured	No	No	No	Deciduous Forest	Deciduous Forest	0	0	None	S-17 (Protected)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-70 MVP-QDAR-H600-70	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (6)	-0.01	0.00	0.00	-0.01	0.00	0.00	
169.71	169.71	Extended MVP-ATWS-552 to existing road to allow for entry, but exclude existing fenced in area per landowner request.	WV-SU-036	Secured	No	No	No	Pasture/Hay	Pasture/Hay	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-SUWV-H600-13	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (6)	0.10	0.00	0.00	0.00	0.00	0.00	
171.68	171.68	Adjusted alignment of MVP-SU-207 to accommodate railroad right-of-way.	Railroad ROW	Secured	No	No	Yes	Pasture/Hay, Developed, Low Intensity, Developed, Medium Intensity	Pasture/Hay, Developed, Low Intensity, Developed, Medium Intensity	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-SUWV-H600-16 MVP-ADAR-H600-71 MVP-QDAR-H600-71	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (6)	in LOD within	0.00	0.00	0.00	0.00	0.00	0.00
172.21	172.21	Merged MVP-ATWS-1171 into MVP-ATWS-1170 to accommodate elimination of access road MVP-SU-208.	WV-SU-051	Secured	No	No	Yes	Deciduous Forest	Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-SUWV-H600-17	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (6)	-1.55	0.00	0.00	0.00	0.00	-0.07	0.00
172.67	172.67	Adjusted MVP-ATWS-315A to accommodate eliminated point of inflection.	WV-SU-056	Secured	No	No	Yes	Deciduous Forest	Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-SUWV-H600-17	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (6)	0.06	0.00	0.00	0.00	0.00	0.06	0.00
173.24	173.24	Adjusted MVP-ATWS-317 to accommodate eliminated point of inflection.	WV-SU-056	Secured	No	No	Yes	Pasture/Hay; Deciduous Forest	Pasture/Hay; Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-SUWV-H600-18	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (6)	0.06	0.00	0.00	0.00	0.00	0.06	0.00
173.86	173.95	Eliminated point of inflection.	WV-SU-055	Secured	No	No	Yes	Pasture/Hay; Deciduous Forest	Pasture/Hay; Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-SUWV-H600-18 PA-SUWV-H600-19	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (6)	0.15	0.00	0.00	0.00	0.00	0.02	0.00
174.08	174.08	Expanded MVP-ATWS-319A per landowner agreement to demolish existing structure and avoid structure MVP-STR 339.	WV-SU-055	Secured	No	No	No	Pasture/Hay	Pasture/Hay	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-SUWV-H600-19	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (6)	0.15	0.00	0.00	0.00	0.00	0.02	0.00
174.21	174.21	Adjusted MVP-ATWS-320 and MVP-ATWS-320A to accommodate elimination of points of inflection.	WV-SU-059	Secured	No	No	Yes	Pasture/Hay; Cultivated Crop, Developed, Low Intensity	Pasture/Hay; Cultivated Crop, Developed, Low Intensity	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-SUWV-H600-19	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (6)	-0.07	0.00	0.00	0.00	0.00	0.00	0.00
174.70	174.70	Adjusted MVP-ATWS-321 to accommodate elimination of point of inflection.	WV-MO-004	Secured	No	No	Yes	Deciduous Forest	Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-MOWV-H600-01	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (12)	-0.03	0.00	0.00	0.00	0.00	0.00	
175.41	175.47	Eliminated two points of inflection.	WV-MO-007	Secured	No	No	Yes	Deciduous Forest	Deciduous Forest	0	317	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-MOWV-H600-01 PA-MOWV-H600-02	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (12)	-0.01	0.00	0.00	-0.01	0.00	0.00	
178.90	179.10	Adjustment for bore crossing of environmentally sensitive area.	WV-MO-012.040	Secured	No	No	Yes	Pasture/Hay; Deciduous Forest; Developed, Open Space	Pasture/Hay; Deciduous Forest; Developed, Open Space	0	0	46ME311 (avoidance)	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-MOWV-H600-06	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (12)	0.18	0.00	0.32	0.00	0.00	0.00	0.00

Attachment IP-5a - Minor Realignments: Only Affect One Landowner and No Sensitive Environmental Areas

Begin MP	End MP	Description	Parcel ID	Landowner Approval	New Landowners Affected?	Residences within 50 feet of Construction Work Area?	Within Original Study Corridor?	Description of New Route Land Use/Cover	Existing Land Use/Cover Type	Length of Forested Area Crossed (feet)	Length of Interior Forested Area Crossed (feet)	Cultural Resource/ Federally Listed Species Affected by Deviation	Environmentally Sensitive Areas Within/Abutting Area of Deviation	Waterbodies Crossed and Width (feet)	Length of Wetlands Crossed by Type (PFO, PSS, PEM) (feet)	Nationwide 12 permit modifications	Alignment Sheet Number	Roanoke Logperch Impact	Candy Darter Impact	Mussel Impact	RPBB Impact	Plant Impact	Total Change (+/-) in LOD (acres)	MYSO - Known Summer Use Habitat (acres)	MYSO - Known use spring staging/fall swarming habitat (acres)	MYSO - Suitable Unoccupied Summer Habitat (acres)	MYSO - Unknown use spring staging/fall swarming habitat (acres)	MYSO - Unknown Use Summer Habitat (acres)	NLEB known use spring staging/fall swarming habitat (acres)	
179.23	179.23	Added MVP-ATWS-1513 to facilitate winch hill construction.	WV-MO-012.055	Secured	No	No	No	Evergreen Forest; Deciduous Forest	NA	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-MOWV-H600-06	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (12)	-0.13	0.00	-0.53	0.00	0.00	0.00	0.00	
191.45	191.45	Expanded MVP-ATWS-647 to facilitate hydrostatic testing.	WV-MO-012.285	Secured	No	No	No	Developed, Open Space; Pasture/Hay; Deciduous Forest; Developed, Low Intensity	Developed, Open Space; Pasture/Hay; Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-MOWV-H600-19	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (12)	1.44	0.00	0.00	0.15	0.00	0.00	0.00	
192.00	192.00	Relocated deep well groundbed MVP-CFGB-20 to inside MVP-ATWS-648A	WV-MO-012.290	Secured	No	No	Yes	Developed, Open Space	Pasture/Hay; Developed, Open Space; Developed, Low Intensity	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-MOWV-H600-20	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (12)	0.02	0.00	0.00	0.00	0.00	0.00	0.00	
194.53	194.53	Expanded MVP-ATWS-658 to existing road to allow entry to workspace.	MVP-ATWS-658	Secured	No	No	No	Deciduous Forest; Developed, Open Space	Deciduous Forest; Developed, Open Space	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-MOWV-H600-23	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (12)	0.04	0.00	0.00	0.00	0.00	0.00	0.00	
195.93	195.93	Added MVP-ATWS-1491 to facilitate winch hill construction.	WV-MO-230.01	Secured	No	No	Yes	Deciduous Forest	NA	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-MOWV-H600-24	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (12)	0.78	0.00	0.00	0.00	0.78	0.00	0.00	
196.25	196.25	Added MVP-ATWS-1492 to facilitate Appalachian National Scenic Trail bore.	WV-MO-230.01	Secured	No	No	Yes	Deciduous Forest	NA	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-MOWV-H600-24	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effects (2)	No effect (12)	0.78	0.00	0.00	0.00	0.78	0.00	0.00	
197.18	197.25	Eliminated PI to avoid wetland W-KL14 and reduced TWS to minimize impacts to environmentally sensitive area.	VA-GI-002	Secured	No	No	Yes	Deciduous Forest	Deciduous Forest	0	365	None - 44GS0240 is not eligible	W-KL14 (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GIVA-H600-02	No Effect - Outside RLP Range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effects (2)	No effect (7)	-1.28	0.00	0.00	0.00	-1.27	0.00	0.00	
202.43	202.43	Adjusted edge of MVP-GI-241.01 to match existing state road right-of-way.	VA-GI-018	Secured	No	No	No	Deciduous Forest; Evergreen Forest; Pasture/Hay	Deciduous Forest; Evergreen Forest; Pasture/Hay	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-82 MVP-QDAR-H600-82	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effects (2)	No effect (7)	Change in LOD within	0.00	0.00	0.00	0.00	0.00	0.00	0.00
202.65	202.65	Adjusted LOD of MVP-GI-241.04 to match existing culvert crossing.	VA-GI-5342	Secured	No	No	Yes	Deciduous Forest; Pasture/Hay; Grassland/Herbaceous	Deciduous Forest; Pasture/Hay; Grassland/Herbaceous	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-82 MVP-QDAR-H600-82	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effects (2)	No effect (7)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
218.11	218.11	Adjusted entrance of access road MVP-CR-258.02 to follow existing road.	VA-CR-200.052	Secured	No	No	No	Deciduous Forest	Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-86 MVP-QDAR-H600-86	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (7)	-0.17	0.00	0.00	0.00	-0.17	0.00	0.00	
226.90	226.90	Added MVP-ATWS-1157A to replace MVP-ATWS-1158.	VA-MO-053	Secured	No	No	No	Developed, Open Space; Cultivated Crops; Pasture/Hay	Developed, Open Space; Cultivated Crops; Pasture/Hay	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-MOVA-H600-10	No direct effects on Roanoke Logperch. Slight sediment increase will occur, but no increase in Roanoke Logperch take as impacts in the receiving waters are already accounted for.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effects (2)	No effect (13)	0.18	0.00	0.00	0.00	-1.33	0.00	0.00	
226.40	227.08	Rerouted pipeline alignment based on landowner request.	VA-MO-053	Secured	No	No	No	Deciduous Forest; Evergreen Forest; Pasture/Hay; Cultivated Crop; Developed, Open Space	Deciduous Forest; Evergreen Forest; Cultivated Crops; Pasture/Hay; Developed, Open Space	598	984	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-MOVA-H600-09 PA-MOVA-H600-10	No direct effects on Roanoke Logperch. Slight sediment increase will occur, but no increase in Roanoke Logperch take as impacts in the receiving waters are already accounted for.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effects (2)	No effect (13)	0.18	0.00	0.00	0.00	-1.33	0.00	0.00	
230.68	230.68	Extended access road MVP-MN-274 as part of pipeline adjustment.	VA-MO-074	Secured	No	Yes	No	Pasture/Hay; Developed, Low Intensity	Pasture/Hay; Developed, Low Intensity	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-MOVA-H600-15	No direct effects on Roanoke Logperch. Slight sediment increase will occur, but no increase in Roanoke Logperch take as impacts in the receiving waters are already accounted for.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effects (2)	No effect (13)	0.19	0.00	0.00	0.00	-0.23	0.00	0.00	
257.55	257.55	Added MVP-ATWS-1488 to facilitate removal of structure MVP-STR-480.	VA-FR-017.47	Secured	No	No	Yes	Deciduous Forest	NA	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-12	No direct effect to Roanoke logperch - variance occurs within RLP range but does not occur at stream crossing with suitable RLP habitat. Slight sediment increase will occur within headwaters of Teels and Little Creek but not significant enough to increase take of RLP.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (13)	0.04	0.00	0.00	0.04	0.00	0.00	0.00	
265.00	265.00	Added laydown yard MVP-LY-034 and access road MVP-ANC-006.	VA-FR-5921	Secured	Yes	No	No	Developed, Low Intensity; Developed, Open Space; Pasture/Hay; Developed, Medium Intensity	NA	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAS-H600-07 MVP-QDAS-H600-07	No direct effects on Roanoke Logperch. Acreage proposed to be disturbed is in extreme headwaters of North Fork Little Chestnut Creek watershed (Pigg River drainage). The limited sedimentation impacts potentially occurring within this watershed will have no effect to Roanoke Logperch.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (13)	2.77	0.00	0.00	0.00	0.00	0.00	0.00	
271.26	271.26	Added access road MVP-FR-313.01.	VA-FR-140	Secured	No	No	No	Pasture/Hay; Developed, Open Space	NA	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-27	No direct effects on Roanoke Logperch. Slight sediment increase will occur, but no increase in Roanoke Logperch take as impacts in the receiving waters are already accounted for.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (12)	2.12	0.00	0.00	0.00	0.00	0.00	0.00	
271.26	271.26	Added MVP-ATWS-1485.	VA-FR-140	Secured	No	No	No	Pasture/Hay	NA	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-27	No direct effects on Roanoke Logperch. Slight sediment increase will occur, but no increase in Roanoke Logperch take as impacts in the receiving waters are already accounted for.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (12)	2.12	0.00	0.00	0.00	0.00	0.00	0.00	
271.26	271.26	Added MVP-ATWS-1484.	VA-FR-140	Secured	No	No	No	Pasture/Hay; Developed, Open Space	NA	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-27	No direct effects on Roanoke Logperch. Slight sediment increase will occur, but no increase in Roanoke Logperch take as impacts in the receiving waters are already accounted for.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (12)	2.12	0.00	0.00	0.00	0.00	0.00	0.00	
272.15	272.16	Expanded pipeline temporary right-of-way based on environmental survey of stream S-A41.	VA-FR-143	Secured	No	No	Yes	Pasture/Hay; Mixed Forest	NA	0	0	None	S-A41 (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-28	No direct effects to Roanoke Logperch. Slight increase in acreage within Four Ground Creek watershed (Blackwater River drainage) but no significant sedimentation change. No change to Roanoke Logperch take.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (12)	0.12	0.00	0.00	0.09	0.00	0.00	0.00	

Attachment IP-5a - Minor Realignments: Only Affect One Landowner and No Sensitive Environmental Areas

Begin MP	End MP	Description	Parcel ID	Landowner Approval	New Landowners Affected?	Residences within 50 feet of Construction Work Area?	Within Original Study Corridor?	Description of New Route Land Use/Cover	Existing Land Use/Cover Type	Length of Forested Area Crossed (feet)	Length of Interior Forested Area Crossed (feet)	Cultural Resource/ Federally List Species Affected by Deviation	Environmentally Sensitive Areas Within/Abutting Area of Deviation	Waterbodies Crossed and Width (feet)	Length of Wetlands Crossed by Type (PFO, PSS, PEM) (feet)	Nationwide 12 permit modifications	Alignment Sheet Number	Roanoke Logperch Impact	Candy Darter Impact	Mussel Impact	RPBB Impact	Plant Impact	Total Change (+/-) in LOD (acres)	MYSO - Known Summer Use Habitat (acres)	MYSO - Known use spring staging/fall swarming habitat (acres)	MYSO - Suitable Unoccupied Summer Habitat (acres)	MYSO - Unknown use spring staging/fall swarming habitat (acres)	MYSO - Unknown Use Summer Habitat (acres)	NLER known use spring staging/fall swarming habitat (acres)
274.29	274.30	Expanded pipeline temporary right-of-way based on environmental survey of wetland W-88.	VA-FR-153	Secured	No	No	Yes	Evergreen Forest; Pasture/Hay	NA	0	0	None	W-88 (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-30	No direct effects to Roanoke Logperch. Slight increase in acreage within unnamed tributary to Poplar Camp Creek watershed (Blackwater River drainage), but no significant sedimentation change. No change to Roanoke Logperch take.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (12)	0.13	0.00	0.00	0.00	0.00	0.00	
276.22	276.23	Expanded pipeline temporary right-of-way based on environmental survey of stream S-E14.	VA-FR-161	Secured	No	No	Yes	Pasture/Hay	NA	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-32	No direct effects to Roanoke Logperch. Slight increase in acreage within unnamed tributary Blackwater River drainage, but no significant sedimentation change. No change to Roanoke Logperch take.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (12)	0.17	0.00	0.00	0.00	0.00		
283.56	283.70	Eliminated three points of inflection.	VA-PI-001	Secured	No	No	Yes	Pasture/Hay; Evergreen Forest	Pasture/Hay; Evergreen Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-39 PA-PIVA-H600-01	No direct effects to Roanoke Logperch. Changes to alignment occur within unnamed tributary Jonkin Creek watershed (Pigg River drainage). Changes in inflections occur resulting in an increase in acreage and reduction in acreage resulting in a slight net-positive increase in sedimentation that will not affect take analysis as a result of increased cumulative sedimentation. No change to Roanoke Logperch take.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (9)	-0.18	0.00	0.00	0.00	0.00		
285.38	285.40	Expanded pipeline temporary right-of-way based on environmental survey of streams S-G10 and S-G9.	VA-PI-009	Secured	No	No	Yes	Pasture/Hay	NA	0	0	None	S-G9 (Adjacent), S-G10 (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-PIVA-H600-02	No direct effects to Roanoke Logperch. Slight increase in acreage within Jonkin Creek watershed (Pigg River drainage), but no significant sedimentation change. No change to Roanoke Logperch take.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (8)	0.05	0.00	0.00	0.00	0.00		
286.54	286.54	Adjusted access road MVP-PI-326 based on survey data.	VA-PI-017	Secured	No	No	Yes	Pasture/Hay; Developed, Open Space	Pasture/Hay; Developed, Open Space	0	0	None	S-5T4 (Protected)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-PIVA-H600-03 MVP-ADAR-H600-108 MVP-QDAR-H600-108	No direct effects to Roanoke Logperch. Changes to MVP-PI-326 occur within headwaters of Rocky Creek watershed (Pigg River drainage). Increases and decreases in acreage are proposed at access road resulting in a net-zero change in sedimentation that will not cause an increase in cumulative sedimentation. No change to Roanoke Logperch take.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (9)	-0.18	0.00	0.00	0.00	0.00		
286.54	286.54	Reduced MVP-ATWS-652 based on survey data.	VA-PI-017	Secured	No	No	No	Pasture/Hay	Pasture/Hay	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-PIVA-H600-03 MVP-ADAR-H600-108 MVP-QDAR-H600-108	No direct effects to Roanoke Logperch. Changes to MVP-ATWS-652 occur within headwaters of Rocky Creek watershed (Pigg River drainage). Increases and decreases in acreage are proposed at access road resulting in a net-zero change in sedimentation that will not cause an increase in cumulative sedimentation. No change to Roanoke Logperch take.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (9)	-0.18	0.00	0.00	0.00	0.00		
286.54	286.54	Expanded MVP-ATWS-651 based on survey data.	VA-PI-017	Secured	No	No	No	Pasture/Hay; Developed, Open Space; Deciduous Forest	Pasture/Hay; Developed, Open Space; Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-PIVA-H600-03 MVP-ADAR-H600-108 MVP-QDAR-H600-108	No direct effects to Roanoke Logperch. Changes to MVP-ATWS-651 occur within headwaters of Rocky Creek watershed (Pigg River drainage). Increases and decreases in acreage are proposed at access road resulting in a net-zero change in sedimentation that will not cause an increase in cumulative sedimentation. No change to Roanoke Logperch take.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (9)	-0.18	0.00	0.00	0.00	0.00		
287.20	287.20	Added laydown yard MVP-LY-035.	VA-PI-5870	Secured	Yes	No	No	Deciduous Forest; Developed, Open Space; Pasture/Hay	NA	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAS-H600-07 MVP-QDAS-H600-07	No direct effects to Roanoke Logperch. Taken alone, this will result in a minimal increase in sedimentation to the Pigg River mainstream. However, this increase is offset by the decrease in sedimentation due to HDD alignment at MP 288.5. Furthermore, the amount of additional sedimentation from this increase is not enough to elevate this section of the Pigg River above the 10% increase threshold and warrant take by harassment in the Pigg mainstem, even without the HDD decrease.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (10)	15.63	0.00	0.00	0.00	0.00	15.14	

Attachment IP-5a - Minor Realignment: Only Affect One Landowner and No Sensitive Environmental Areas

Begin MP	End MP	Description	Parcel ID	Landowner Approval	New Landowners Affected?	Residences within 50 feet of Construction Work Area?	Within Original Study Corridor?	Description of New Route Land Use/Cover	Existing Land Use/Cover Type	Length of Forested Area Crossed (feet)	Length of Interior Forested Area Crossed (feet)	Cultural Resource/ Federally List Species Affected by Deviation	Environmentally Sensitive Areas Within/Abutting Area of Deviation	Waterbodies Crossed and Width (feet)	Length of Wetlands Crossed by Type (PFO, PSS, PEM) (feet)	Nationwide 12 permit modifications	Alignment Sheet Number	Roanoke Loggerch Impact	Candy Darter Impact	Mussel Impact	RPBB Impact	Plant Impact	Total Change (+/-) in LOD (acres)	MYSO - Known Summer Use Habitat (acres)	MYSO - Known use spring staging/fall swarming habitat (acres)	MYSO - Suitable Unoccupied Summer Habitat (acres)	MYSO - Unknown use spring staging/fall swarming habitat (acres)	MYSO - Unknown Use Summer Habitat (acres)	NLEB known use spring staging/fall swarming habitat (acres)
287.64	287.64	Expanded pipeline temporary right-of-way to facilitate crossing of state road right-of-way.	VA-PI-023	Secured	No	No	Yes	Developed, Open Space	NA	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-PIVA-H600-04	No direct effects to Roanoke Loggerch or musseles. Variance results in a slight increase in acreage, but no significant sedimentation change. No change to Roanoke Loggerch lake.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (9)	No change in LOD within Parcel	0.00	0.00	0.00	0.00	0.00	0.00
294.69	294.70	Expanded pipeline temporary right-of-way to facilitate crossing of state road right-of-way.	VA-PI-3401	Secured	No	No	Yes	Developed, Open Space	NA	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-PIVA-H600-11	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (9)	No change in LOD within Parcel	0.00	0.00	0.00	0.00	0.00	0.00
295.70	295.71	Expanded pipeline temporary right-of-way based on environmental survey of stream S-1135-W1.	BVP-17	Secured	No	No	Yes	Pasture/Hay	NA	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-PIVA-H600-12	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (10)	0.08	0.00	0.00	0.00	0.00	0.00	0.00
299.06	299.20	Adjusted MVP-ATWS-399A and MVP-ATWS-399 to accommodate route adjustment.	VA-PI-090	Secured	No	No	Yes	Developed, Open Space; Pasture/Hay; Deciduous Forest	Developed, Open Space; Pasture/Hay	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-PIVA-H600-16	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (9)	0.08	0.00	0.00	0.12	0.00	0.00	0.00
299.45	299.45	Reduced MVP-ATWS-505 and expanded MVP-ATWS-505A based on realignment of access road MVP-PI-339	VA-PI-093	Secured	No	Yes	No	Pasture/Hay	Pasture/Hay	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-PIVA-H600-16	No Effect - Outside RLP Range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (1)	No effect (9)	0.03	0.00	0.00	0.00	0.00	0.00	0.00
																							0.72	-0.22	3.56	-2.76	-13.18	0.00	
1	No individuals or populations are known to occur at the variance. Variance is within historic range and has potential habitat for RPBB; however any clearing and revegetation will increase habitat connectivity and quality of foraging habitat, thus benefitting RPI																												
2	No individuals are currently known to occur near variance. Variance is within historic range and has potential habitat for RPBB; however clearing and revegetation are likely to increase habitat connectivity and quality of foraging habitat, thus benefitting RPI																												
3	No individuals of running buffalo clover are known to occur at variance. No individuals or potential habitat for shale barren rockcress occur at variance. No individuals of small whorled pogonia known to occur near variance. No individuals or habitat for Virginia spiraea known to occur at variance. Outside of smooth coneflower known range																												
4	No individuals of running buffalo clover known to occur at variance. Outside of shale barren rockcress known range. Outside small whorled pogonia known range. Outside of Virginia spiraea known range. Outside of smooth coneflower known range																												
5	No individuals or habitat for running buffalo clover occurs at variance. Outside of shale barren rockcress known range. Outside small whorled pogonia known range. No individuals or habitat for Virginia spiraea occurs at variance. Outside of smooth coneflower known range																												
6	Outside of known range for running buffalo clover. Outside of shale barren rockcress known range. Outside small whorled pogonia known range. No individuals or potential habitat for Virginia spiraea known to occur at variance. Outside of smooth coneflower known range																												
7	Outside known ranges of running buffalo clover, shale barren rockcress, small whorled pogonia, Virginia spiraea, smooth coneflower																												
8	Outside running buffalo clover known range. Outside of shale barren rockcress known range. No individuals of small whorled pogonia are known to occur at variance and no habitat for small whorled pogonia occurs at variance. Outside of Virginia spiraea known range. Outside of smooth coneflower known range																												
9	Outside running buffalo clover known range. Outside of shale barren rockcress known range. No individuals of small whorled pogonia are known to occur at variance. Outside of Virginia spiraea known range. Outside of smooth coneflower known range																												
10	Outside running buffalo clover known range. Outside of shale barren rockcress known range. No individuals of small whorled pogonia occur at variance and no potential habitat for small whorled pogonia. Outside of Virginia spiraea known range. Outside of smooth coneflower known range																												
11	Outside running buffalo clover known range. Outside of shale barren rockcress known range. Outside of small whorled pogonia known range. No individuals or potential habitat for Virginia spiraea occurs at variance. Outside of smooth coneflower known range																												
12	Outside running buffalo clover known range. Outside of shale barren rockcress known range. Outside of small whorled pogonia known range. Outside of Virginia spiraea known range. No individuals or habitat for smooth coneflower are known to occur near variance																												
13	Outside running buffalo clover known range. Outside of shale barren rockcress known range. Outside of small whorled pogonia known range. Outside of Virginia spiraea known range. No individuals or habitat for smooth coneflower occurs near variance																												
14	No individuals or habitat for running buffalo clover occurs at variance. Outside of shale barren rockcress known range. Outside small whorled pogonia known range. Outside of Virginia spiraea known range. Outside of smooth coneflower known range																												