COMMONWEALTH of VIRGINIA

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May 15, 2019

Mr. Michael Liberati
Corteva Agriscience
Agriculture Division of DowDuPont
Chestnut Run Plaza 715-236
Wilmington, DE 19805

VIA ELECTRONIC MAIL

Re: 2018/2019 Allied Ready Mix Bank Management Area - Leaf-off Maintenance Inspection
Area of Concern 4, Former DuPont Waynesboro Plant
Waynesboro, Virginia
EPA ID# VAD003114832

Dear Mr. Liberati:

This letter acknowledges the receipt and review of the 2018/2019 Allied Ready Mix Bank Management Area (BMA) - Leaf-off Maintenance Inspection dated March 4, 2019, submitted to the Virginia Department of Environmental Quality, Office of Remediation Programs (Department) by AECOM on behalf of the E.I du Pont de Nemours and Company (DuPont).

The Department has no comments on the memorandum except that following the required repairs, a report or memorandum should be sent to the Department summarizing the repairs undertaken.

If you have any questions, you may contact me at 703-583-3825 or by email at Kurt.Kochan@deq.virginia.gov.

Sincerely,

Kurt W. Kochan
Corrective Action Project Manager
Office of Remediation Programs

cc: DuPont Waynesboro Correspondence File
Cameron Dixon, Josh Collins, AECOM

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Memorandum

To	Michael Liberati, DuPont CRG Nancy Grosso, DuPont CRG	Page 1 of 2
CC	Cameron Dixon, AECOM Kristy Hoffman, AECOM	
Subject	2018/2019 Allied Ready Mix BMA – Leaf-off Maintenance Inspection Former DuPont Waynesboro Site, Area of Concern 4	
From	Andrew Miano, AECOM Joshua Collins, AECOM	
Date	March 4, 2019	

This memorandum summarizes the 2018/2019 Leaf-off Maintenance Inspection (inspection) of the Allied Ready Mix Bank Management Area (BMA) conducted February 5th 2019. The inspection was originally scheduled for the week of December 10, 2018; however, a winter storm and several high flow events prevented safe wading conditions. The inspection constitutes the first post-construction inspection following completion of interim measures construction activities in November 2018. Inspection activities followed the scope described in the Maintenance Plan included as Appendix M of the Basis of Design Report, Phase 1A BMAs, South River AOC 4 (Anchor QEA et al., 2016). The purpose of the post-construction inspection is to identify potential BMA maintenance needs, focusing on vegetative development, bank stability, and the integrity of the installed bank remediation features. Additional attachments to this memorandum include:

- Table 1 – Maintenance inspection log
- Appendix A - Photographic log
- Appendix B - Inspection Record Sheet

Findings

The results of the post-construction inspection documented stable bank conditions throughout the remediated portions of the BMA. Several December high flow events led to extensive loss of planted container stock along the mid-bank elevation, leaving exposed depressions. All other stabilizing features were intact. A brief summary of findings is provided below; complete details of the maintenance inspection are included in Table 1.

Vegetation

- Many areas along the BMA exhibited dislodgment or damage of planted saplings and container stock along the high water line (mid-bank elevation of the constructed slope);
- Live stakes installed at the lower bank remained stable in designed position.
- Established grasses present at the Primary BMA A area provided enhanced stabilization of the erosion control fabric at this location.

Stability

- River bank angles remained unchanged, and maintain a consistent bank angle throughout the BMA as designed (Table 1);

- Localized scour was present in depressions where plants had been dislodged, exposing geocell material;
- There were no “at-risk” trees (e.g. trees that may no longer be stable due to erosion) within the remediated portions of the BMA;
- Although the remediated BMA remained stable there was heavy erosion present in the unremediated downstream area of the second BMA section.

Installed Features

- Rock toe features were intact, with sediment deposition filling in the interstices;
- Erosion control fabric was mostly intact, but was largely exposed throughout due to the recent completion of construction activities;
- Minor tearing of the erosion control fabric was observed where planted saplings had been dislodged;
- Geocell was exposed in several areas associated with plant dislodgment throughout the BMA;
- Rip rap fortified outfall culverts, Steel Run confluence, and bank abutment remained intact and functioning as designed.

The maintenance inspection conducted at the Allied Ready Mix BMA confirmed the integrity of the installed bank stabilization but noted several small areas of erosion associated with torn fabric and exposed geocell. These areas will be repaired and replanted before the spring growing season begins, and will continue to be monitored closely in the future to determine if additional repairs are necessary. Portions of the BMA that were completed in the summer of 2018 (i.e. Primary BMA a) had increased coverage of native vegetation which provided added stability during high flow events. Vegetative community growth will continue to be evaluated during the summer, leaf-on post-construction inspection.

PATH FORWARD

The following maintenance activities are planned for the Allied Ready Mix BMA based on the findings of the inspection:

- Areas of the BMA where planted container stocks were lost will be backfilled with planting substrate and the erosion control blanket will be repaired.
- Replacement plantings (i.e. 4’ dormant live stakes or similar) will then be installed prior to the spring growing season.
- Continue to monitor planted saplings and live stake installations following high flow (e.g. approximately 1,000 cubic feet per second at the USGS gage in Waynesboro) to assess the effectiveness of erosion control fabric repair and replacement plantings.

A corrective action memorandum is under preparation which will outline specific repairs, including engineering specifications and planting quantities/species; it is anticipated that repairs will be made to the BMA before the end of March, 2019.

REFERENCES

Anchor QEA, AECOM, and E.I. du Pont de Nemours and Company. 2016. Basis of Design Report, Phase 1A Bank Management Areas, South River Area of Concern 4. September 2016.

Table 1
Winter 2018/2019 Allied Ready Mix BMA Maintenance Inspection
Former DuPont Waynesboro Site, Area of Concern 4

	Undercutting				Exposed Roots			At Risk Trees			Installed Stabilization Features Intact					Local Scour			
Station (ft)[1]	Approximate Bank Angle (Degrees)	Consistent Grade (Y/N)[2]	Notes	Photo # (Appendix A)	Exposed Roots (L/M/H)[3]	Notes	Photo # (Appendix A)	At Risk Trees Present (Y/N+#)[4]	Notes	Photo # (Appendix A)	Rock Toe/LWD (Y/N)[5]	Geocell (Y/N)[6]	Erosion Control Fabric (Y/N)[6]	Notes	Photo # (Appendix A)	Scour Present (Y/N)[7]	Notes	Photo # (Appendix A)	Overall Change Since Previous Inspection (Y/N)
POM1	20	Y		1	NA	No exposed roots	1,2	N	No woody plants adjacent to edge of water	1,2	NA	NA	NA	No fabric or geocell installed; upstream of remediation	1,2	Y	Some scour associated with foot traffic along bank	1,2	NA
POM2	45	Y		3,4	NA	No exposed roots	3,4	N	No woody plants adjacent to edge of water	3,4	Y(Rock Toe)	Y	Y	Erosion control fabric exposed throughout, geocell exposed where plants dislodged	3,4	Y	Some scour associated with foot traffic along bank; sand deposition above rock toe	3,4	NA
POM3	50	Y		5	NA	No exposed roots	5,6,7	N	No woody plants adjacent to edge of water	5,6,7	Tabl	Y	Y	Erosion control fabric exposed throughout, geocell exposed where plants dislodged	5,6,7,8	Y	Scour localized to dislodged planting depressions; sand deposition above rock toe	5,6,7,8	NA
POM4	50	Y		9	NA	No exposed roots	9,10	N	No woody plants adjacent to edge of water	9,10	Y(Rock Toe)	Y	Y	Erosion control fabric exposed throughout, geocell exposed where plants dislodged	9,10	Y	Scour localized to dislodged planting depressions	9,10	NA
POM5	50	Y		11	NA	No exposed roots	11,12	N	No woody plants adjacent to edge of water	11,12	Y(Rock Toe)	Y	Y	Erosion control fabric exposed throughout, geocell exposed where plants dislodged	11	Y	Scour localized to dislodged planting depressions	11	NA
POM6	50	Y		13	NA	No exposed roots	13	N	No woody plants adjacent to edge of water	13	Y(Rock Toe)	Y	Y	Erosion control fabric exposed throughout, geocell exposed where plants dislodged	13	Y	Scour localized to dislodged planting depressions	13	NA
POM7	50	Y		14	NA	No exposed roots	14	N	No woody plants adjacent to edge of water	14	Y(Rock Toe)	Y	Y	Erosion control fabric exposed throughout, geocell exposed where plants dislodged	14	Y	Scour localized to dislodged planting depressions	14	NA
POM8	40	Y		15,16	NA	No exposed roots	15,16	N	No woody plants adjacent to edge of water	15,16	Y(Rock Toe)	Y	Y	Erosion control fabric exposed throughout, outfall and drainage structure intact	15,16	Y	Scour localized to dislodged planting depressions	15,16	NA
POM9	40	Y		17	NA	No exposed roots	17	N	No woody plants adjacent to edge of water	17	Y(Rock Toe)	Y	Y	Erosion control fabric exposed throughout, geocell exposed where plants dislodged	17	Y	Scour localized to dislodged planting depressions	17	NA
POM10	50	Y		18	NA	No exposed roots	18	N	No woody plants adjacent to edge of water	18	Y(Rock Toe)	Y	Y	Erosion control fabric exposed on lower half of bank; outfall and drainage structure intact	18	N	Sand deposition at toe of bank.	18	NA
POM11	50	Y		19,20	NA	No exposed roots	19,20	N	No woody plants adjacent to edge of water	19,20	Y(Rock Toe)	Y	Y	Erosion control fabric exposed on lower half of bank	19,20	N	Sand deposition at toe of bank.	19,20	NA
POM12	40	Y		21	NA	No exposed roots	21	N	No woody plants adjacent to edge of water	21	Y(Rock Toe)	Y	Y	Erosion control fabric exposed on lower half of bank	21	N	Sand deposition at toe of bank.	21	NA
POM13	30	N	Lower bank; ~20 degrees Upper bank; ~40 degrees	22	NA	No exposed roots	22,23	N	No woody plants adjacent to edge of water	22,23	Y(Rock Toe)	Y	NA	Erosion control fabric exposed on lower half of bank	22,23	Y	Sand deposition at toe of bank.	22,23	NA
POM14	30	N	Lower bank; ~20 degrees Upper bank; ~40 degrees	24	NA	No exposed roots	24	N	No woody plants adjacent to edge of water	24	Y(Rock Toe)	Y	NA	Erosion control fabric exposed on lower half of bank (~50%exposed)	24	Y	Sand deposition at toe of bank.	24	NA
POM15	30	N	Lower bank; ~20 degrees Upper bank; ~40 degrees	25	NA	No exposed roots	25	N	No woody plants adjacent to edge of water	25	Y(Rock Toe)	Y	NA	Erosion control fabric exposed on lower half of bank (~50%exposed)	25	Y	Sand deposition at toe of bank.	25	NA
POM16	30	N	Lower bank; ~20 degrees Upper bank; ~40 degrees	26	NA	No exposed roots	26,27,28	N	No woody plants adjacent to edge of water	26,27,28	Y(Rock Toe)	Y	NA	Erosion control fabric exposed on lower half of bank (~50% exposed)	26,27,28	Y	Sand deposition at toe of bank.	26,27,28	NA
POM17	30	N	Lower bank; ~20 degrees Upper bank; ~40 degrees	29	NA	No exposed roots	29	N	No woody plants adjacent to edge of water	29	Y(Rock Toe)	Y	Y	Erosion control fabric exposed on lower half of bank (~30%exposed)	29	Y	Scour localized to dislodged planting depressions	29	NA
POM18	20	N	Non-remediated upstream section; ~80 degrees Remediated section ; ~40 degrees	30	H	Exposed roots just upstream of remediated bank, at risk tree	30	Y	One large at risk tree just upstream of remediated bank	30	Y(Rock Toe)	NA	NA	Entirely rip rap portion of bank	30	N	No scour present along rock toe, heavy scour upstream in unremediation section	30	NA
POM19	20	Y	Fortified tributary channel	31,32,33	NA	No exposed roots	31,32,33	N	No woody plants adjacent to edge of water	31,32,33	Y(Rock Toe)	NA	NA	Entirely rip rap portion of bank	31,32,33	N	No scour present along rock toe; installed rip-rap at confluence of rockfish run intact	31,32,33	NA
POM20	50	Y		34	NA	No exposed roots	34	N	No woody plants adjacent to edge of water	34	Y(Rock Toe)	Y	Y	Erosion control fabric exposed throughout	34	Y	Scour localized to dislodged planting depressions	34	NA
POM21	50	Y		35	NA	No exposed roots	35	N	No woody plants adjacent to edge of water	35	Y(Rock Toe)	Y	Y	Erosion control fabric exposed throughout	35	Y	Scour localized to dislodged planting depressions	35	NA
POM22	80	Y		36	NA	No exposed roots	36	N	No woody plants adjacent to edge of water	36	Y(Rock Toe)	NA	Y	Erosion control fabric exposed throughout; Rip rap fortified bank abutment intact	36	Y	Heavy erosion present immediately downstream of remediated BMA	36	NA
POM23	90	Y	Bank heavily undercut downstream of remediation	37,38	H	Severe root exposure downstream of remediated bank	37,38	Y	High density of at risk trees downstream of remediated bank	37,38	NA	NA	NA	No fabric or geocell installed; downstream of remediation	37,38	N	heavy erosion present downstream of remediated BMA	37,38	NA

Notes:
1, Inspection station is described as the distance (feet) upstream (-) or downstream (+) from the start of the BMA (00); example, Station 00 + 50' is 50 feet downstream from the start of the BMA
2, A significant deviation from continuous bank slope or break in grade may be used as an indicator of undercutting; consistent bank grade is evaluated as Y (yes) or N (no)
3, The extent to which roots are exposed may provide a relative measure of the magnitude of apparent erosion; extent of exposed roots is evaluated as L (low), M (moderate), H (high), or NA (not applicable- no exposed roots)
4, At-risk trees (i.e., trees that lean towards the river) typically have a greater potential to fall into the river dislodge the bank soil and erosion-control products immediately around and above the tree; presence of at-risk trees is evaluated as Y (yes) or N (no)
5, Installed rock toe and large woody debris (LWD) features are monitored to ensure that they are anchored and determine whether material has sloughed, or been eroded, or moved downstream; these installed features are evaluated as Y (yes, intact), N (no, not intact), or NA (not applicable- no installed features to monitor)
6, Installed geocell and erosion control fabric are monitored to ensure that they are intact and determine whether material is exposed or visible; these installed features are evaluated as Y (yes, intact), N (no, not intact), or NA (not applicable- no installed features to monitor)
7, The presence of local scour is assessed at the toe and center of the bank, per inspection station, as well as approximately 25 feet upstream and downstream of the start and end of the BMA; the presence of scour is evaluated as Y (yes) or N (no)

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APPENDIX A
PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
DuPont	STM-08 (Allied Ready Mix)	60594243

Photo No. 1	Date: 2/05/2019

Direction Photo Taken:

Southeast

Description:

Station PCM1 (non-remediated transect under 2nd Street overpass)

~20 degree bank angle; no at risk trees present; some scour associated with foot traffic along bank.

Photo No. 2	Date: 2/05/2019

Direction Photo Taken:

East

Description:

Station PCM1 (non-remediated transect under 2nd Street overpass)

~20 degree bank angle; no at risk trees present; sand deposition above rock toe; improvised access point located downstream.

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Client Name:	Site Location:	Project No.
DuPont	STM-08 (Allied Ready Mix)	60594243

Photo No.	Date:
3	2/05/2019

Direction Photo Taken:

Southeast

Description:

Station PCM2

~45 degree bank angle; installed rock toe intact; sand deposition above rock toe; live stakes planted on lower bank; saplings planted on upper bank, erosion fabric exposed throughout; improvised access point present.

Photo No.	Date:
4	2/05/2019

Direction Photo Taken:

East

Description:

Station PCM2

~45 degree bank angle; installed rock toe intact; live stakes planted on lower bank; saplings planted on upper bank; erosion control fabric exposed throughout; geocell exposed where plants dislodged; scour localized to dislodged planting depressions

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Client Name:	Site Location:	Project No.
DuPont	STM-08 (Allied Ready Mix)	60594243

Photo No.	Date:
5	2/05/2019

Direction Photo Taken:

Southeast

Description:

Station PCM3

~50 degree bank angle; installed rock toe intact; live stakes planted on lower bank; saplings planted on upper bank, erosion fabric exposed throughout; geocell is exposed, fabric is torn, and scour is present where planted container stock has washed away.

Photo No.	Date:
6	2/05/2019

Direction Photo Taken:

South

Description:

Station PCM3

Sand deposition above rock toe; erosion fabric exposed throughout; geocell is exposed, fabric is torn, and scour is present where planted trees have washed away.

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Client Name:	Site Location:	Project No.
DuPont	STM-08 (Allied Ready Mix)	60594243

Photo No.	Date:
7	2/05/2019

Direction Photo Taken:

East

Description:

Station PCM3

Installed rock toe intact; live stakes planted on lower bank; saplings planted on upper bank, erosion fabric exposed throughout.

Photo No.	Date:
8	2/05/2019

Direction Photo Taken:

Southeast

Description:

Station PCM3

Geocell is exposed, fabric is torn, and scour is present where planted container stock has washed away.

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Client Name:	Site Location:	Project No.
DuPont	STM-08 (Allied Ready Mix)	60594243

Photo No. 9	Date: 2/05/2019

Direction Photo Taken:

Southeast

Description:

Station PCM4

~50 degree bank angle; installed rock toe intact; live stakes planted on lower bank; saplings planted on upper bank, erosion fabric exposed throughout; geocell is exposed, fabric is torn, and scour is present where planted trees have washed away.

Photo No. 10	Date: 2/05/2019

Direction Photo Taken:

South

Description:

Station PCM4

Installed rock toe intact; sand deposition above rock toe; erosion fabric exposed throughout.

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PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
DuPont	STM-08 (Allied Ready Mix)	60594243

Photo No. 11	Date: 2/05/2019

Direction Photo Taken:

Southeast

Description:

Station PCM5

~50 degree bank angle; installed rock toe intact; live stakes planted on lower bank; saplings planted on upper bank, erosion fabric exposed throughout; geocell is exposed, fabric is torn, and scour is present where planted container stock has washed away.

Photo No. 12	Date: 2/05/2019

Direction Photo Taken:

South

Description:

Station PCM5

Installed live stakes upstream of PCM5.

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Client Name:	Site Location:	Project No.
DuPont	STM-08 (Allied Ready Mix)	60594243

Photo No.	Date:
13	2/05/2019

Direction Photo Taken:

Southeast

Description:

Station PCM6

~50 degree bank angle; installed rock toe intact; live stakes planted on lower bank; saplings planted on upper bank, erosion fabric exposed throughout; geocell is exposed, fabric is torn, and scour is present where planted trees have washed away.

Photo No.	Date:
14	2/05/2019

Direction Photo Taken:

Southeast

Description:

Station PCM7

~50 degree bank angle; installed rock toe intact; live stakes planted on lower bank; saplings planted on upper bank, erosion fabric exposed throughout; geocell is exposed, fabric is torn, and scour is present where planted container stock has washed away.

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Client Name:	Site Location:	Project No.
DuPont	STM-08 (Allied Ready Mix)	60594243

Photo No. 15	Date: 2/05/2019

Direction Photo Taken:

Southeast

Description:

Station PCM8

~40 degree bank angle; installed rock toe intact; outfall and drainage structure intact; live stakes planted on lower bank; saplings planted on upper bank, erosion fabric exposed throughout.

Photo No. 16	Date: 2/05/2019

Direction Photo Taken:

Southeast

Description:

Station PCM8

Downstream view of newly constructed bank and installed live stakes.

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Client Name:	Site Location:	Project No.
DuPont	STM-08 (Allied Ready Mix)	60594243

Photo No. 17	Date: 2/05/2019

Direction Photo Taken:

Southeast

Description:

Station PCM9

~40 degree bank angle; installed rock toe intact; live stakes planted on lower bank; saplings planted on upper bank, erosion fabric exposed throughout.

Photo No. 18	Date: 2/05/2019

Direction Photo Taken:

Southeast

Description:

Station PCM10

~50 degree bank angle; outfall and drainage structure intact; live stakes planted on lower bank; saplings planted along bank; erosion fabric exposed throughout; sand deposition at toe of bank.

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Client Name:	Site Location:	Project No.
DuPont	STM-08 (Allied Ready Mix)	60594243

Photo No. 19	Date: 2/05/2019

Direction Photo Taken:

Southeast

Description:

Station PCM11

~50 degree bank angle; installed rock toe intact; grasses establishing at top of bank; erosion fabric exposed from mid-bank towards the rock toe; sand deposition occurring above rock toe.

Photo No. 20	Date: 2/05/2019

Direction Photo Taken:

South

Description:

Station PCM11

Upstream view of newly constructed bank and installed live stakes; mid-bank plantings downstream of the outfall structure were generally intact.

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Client Name:	Site Location:	Project No.
DuPont	STM-08 (Allied Ready Mix)	60594243

Photo No. 21	Date: 2/05/2019

Direction Photo Taken:

Southeast

Description:

Station PCM12

~40 degree bank angle; installed rock toe intact; grasses establishing at top of bank; erosion fabric exposed from mid-bank towards the rock toe; sand deposition occurring above rock toe.

Photo No. 22	Date: 2/05/2019

Direction Photo Taken:

Southeast

Description:

Station PCM13

~30 degree bank angle; installed rock toe intact; grasses establishing at top of bank; erosion fabric exposed from mid-bank towards the rock toe; sand deposition occurring above rock toe.

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Client Name:	Site Location:	Project No.
DuPont	STM-08 (Allied Ready Mix)	60594243

Photo No. 23	Date: 2/05/2019

Direction Photo Taken:

East

Description:

Station PCM13

Downstream view from PCM13 and installed live stakes; downstream mid-bank plantings were generally intact.

Photo No. 24	Date: 2/05/2019

Direction Photo Taken:

Southeast

Description:

Station PCM14

~30 degree bank angle; installed rock toe intact; grasses establishing at top of bank; erosion fabric exposed from mid-bank towards the rock toe (~50% exposed); sand deposition occurring above rock toe.

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Client Name:	Site Location:	Project No.
DuPont	STM-08 (Allied Ready Mix)	60594243

Photo No. 25	Date: 2/05/2019

Direction Photo Taken:

Southeast

Description:

Station PCM15

~30 degree bank angle; installed rock toe intact; grasses establishing at top of bank; erosion fabric exposed from mid-bank towards the rock toe (~50% exposed); sand deposition occurring above rock toe.

Photo No. 26	Date: 2/05/2019

Direction Photo Taken:

Southeast

Description:

Station PCM16

~30 degree bank angle; installed rock toe intact; grasses establishing at top of bank; erosion fabric exposed from mid-bank towards the rock toe (~50% exposed); sand deposition occurring above rock toe.

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Client Name:	Site Location:	Project No.
DuPont	STM-08 (Allied Ready Mix)	60594243

Photo No.	Date:
27	2/05/2019

Direction Photo Taken:

East

Description:

Station PCM16

Downstream view of PCM16 showing the end of the first remediated section.

Photo No.	Date:
28	2/05/2019

Direction Photo Taken:

South

Description:

Station PCM16

Upstream view of PCM16; live stakes and rock toe intact.

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PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
DuPont	STM-08 (Allied Ready Mix)	60594243

Photo No. 29	Date: 2/05/2019

Direction Photo Taken:

Southeast

Description:

Station PCM17

~30 degree bank angle; installed rock toe intact; no exposed roots; no at risk trees; grasses establishing at top of bank; erosion fabric exposed from mid-bank towards the rock toe (~30% exposed); geocell intact and not exposed.

Photo No. 30	Date: 2/05/2019

Direction Photo Taken:

Southeast

Description:

Station PCM18

~40 degree bank angle(non-remediated 80); upstream of remediation exposed roots of large at risk tree are present, evidence of heavy scour around roots; no scour present along rock toe of remediation.

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PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
DuPont	STM-08 (Allied Ready Mix)	60594243

Photo No. 31	Date: 2/05/2019

Direction Photo Taken:

Southeast

Description:

Station PCM19

~20 degree bank angle; rip rap fortified tributary channel; no exposed roots; no at risk trees; no fabric or geocell installed; no live stakes or trees planted.

Photo No. 32	Date: 2/05/2019

Direction Photo Taken:

Southwest

Description:

Station PCM19

View of the confluence of Steel Run and South River; installed rip rap intact.

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Client Name:	Site Location:	Project No.
DuPont	STM-08 (Allied Ready Mix)	60594243

Photo No.	Date:
33	2/05/2019

Direction Photo Taken:
East

Description:

Station PCM19

Downstream view from PCM19; live stakes and rock toe intact; erosion control fabric exposed throughout; sand deposition above rock toe.

Photo No.	Date:
34	2/05/2019

Direction Photo Taken:

Southeast

Description:

Station PCM20

~50 degree bank angle; no exposed roots; no at risk trees; live stakes planted on lower bank above rock toe; saplings planted throughout rest of bank; fabric is torn and scour present where mid bank planted container stock has washed away.

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Client Name:	Site Location:	Project No.
DuPont	STM-08 (Allied Ready Mix)	60594243

Photo No.	Date:
35	2/05/2019

Direction Photo Taken:

Southeast

Description:

Station PCM21

~50 degree bank angle; no exposed roots; no at risk trees; live stakes planted on lower bank above rock toe; saplings planted throughout rest of bank; fabric is torn and scour present where mid bank planted container stock has washed away.

Photo No.	Date:
36	2/05/2019

Direction Photo Taken:

Southeast

Description:

Station PCM22

Downstream view of PCM 21 showing end of BMA; no exposed roots; no at risk trees; live stakes planted on lower bank above rock toe; saplings planted throughout rest of bank; installed rock toe intact.

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Client Name:	Site Location:	Project No.
DuPont	STM-08 (Allied Ready Mix)	60594243

Photo No.	Date:
37	2/05/2019

Direction Photo Taken:

Southeast

Description:

Station PCM22

~50 degree bank angle; no exposed roots; no at risk trees; Rip rap fortified bank abutment intact with heavy erosion present immediately downstream of remediated BMA.

Photo No.	Date:
38	2/05/2019

Direction Photo Taken:

Southeast

Description:

Station PCM23

~90 degree bank angle; heavy erosion present downstream of remediated BMA; severe root exposure and high density of at risk trees due to undercut bank.

Appendix B- Waynesboro Off-Site Cap Areas

Inspection Record Sheet

Maintenance Plan

Location and property owner name: Allied Ready Mix BMA (STM-08)		
Item	Status/ Maintenance Needs	Repairs Needed?
Access Roads	Some washout of gravel access road near fortified tributary channel	1
Trails	Some improvised civilian pathways present near upstream and downstream portions of BMA	1
Drainage Structures	Drainage Structures Intact	1
Outfall Structures	Outfall Structures Intact	1
Rip-Rap Protection	Rip-Rap Intact	1
Cap System Vegetative Cover	Some loss and damage of mid-bank planted saplings due to several high discharge events; Replacement plantings will be installed in the spring of 2019	2
Cap System Geosynthetics	Erosion control fabric exposed throughout; geocell exposed where mid-bank plants dislodged will be repaired prior to replanting in spring 2019	2
Cap System Slope Stability	Slope is generally consistent and stable along BMA; heavy erosion present downstream of secondary remediated BMA.	1
Cap System Subsidence	No cap system subsidence observed	1
Fencing and Gates	Fencing and gates intact	1

* 1. Functioning properly; no repairs needed

2. Repairs needed (describe why, what and where), but not time critical

3. Time critical repair needed (describe what and where)

* * Yes/ No

Comments: Empty holes where planted stock was lost during high flow events will be backfilled with planting substrate and have erosion control fabric repair. Dormant live stakes (4') or similar will be installed to replace lost container stock. Monitor upstream end of BMA for signs of wear from foot traffic.

Inspected by: Andrew Hally and Andrew Miano Date: Feb 05 2019