Lockheed Martin Corporation
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May 14, 2018

VIA PRIVATE CARRIER

Mr. James R. Carroll
Program Administrator
Land Restoration Program
Land Management Administration
Maryland Department of the Environment
1800 Washington Boulevard, Suite 625
Baltimore, Maryland 21230

Subject: Transmittal of the Semi-Annual Site Progress Report: November 2017-April 2018
Lockheed Martin Corporation – Middle River Complex
2323 Eastern Boulevard, Middle River, Baltimore County, Maryland
Reference: MDE Case No. ACO-SAR-MDE0746-2015-1-01

Dear Mr. Carroll:

In compliance with the Administrative Consent Order and Settlement Agreement, please find enclosed one hard copy of the above-referenced document. This semi-annual site progress report includes a summary of the major work events and issues noted from November 2017 through April 2018.

Please let me know if you have any questions. My office phone is (301) 548-2209.

Sincerely,

Thomas D. Blackman
Project Lead, Environmental Remediation

cc: (via email without enclosure)
Mark Mank, MDE
Gary Schold, MDE
Christine Kline, Lockheed Martin
Norman Varney, Lockheed Martin
Michael Martin, Tetra Tech
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Randy Huff, LMCPI
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Mike Musheno, LMCPI
Matt Carter, LMCPI
Sari Levin, MDE

Major Events and Issues November 2017 to April 2018

1. Groundwater and Surface Water Monitoring

a. Conducted annual groundwater and surface water monitoring field work in April 2018.

Deliverable	Date Transmitted to MDE	Date Approved by MDE
Groundwater and Surface Water Monitoring		
Technical Memorandum April 2017 Surface Water Sampling Results for Dark Head Cove and Cow Pen Creek	9/20/2017	11/8/2017
Groundwater Monitoring Report March-April 2017	10/30/2017	12/19/2017
2018-2020 Groundwater and Surface Water Monitoring Work Plan	12/18/2017	2/8/2018
2018-2020 Groundwater and Surface Water Monitoring Work Plan Addendum #1	3/13/2018	3/20/2018
Technical Memorandum June 2017 Surface Water Sampling Results for Dark Head Cove and Cow Pen Creek	1/11/2018	2/20/2018
2017 Surface Water Sampling Report	4/17/18	Under MDE Review

2. Groundwater Remedy Operation, Maintenance and Monitoring (OMM)

a. Completed 3-month monitoring event (Dec. 2017) and 6-month monitoring event (March 2018) associated with 3rd round of injections in Block I (injections took place July - Sept. 2017).

3. Groundwater Remedy Blocks E / F

a. Identified data gaps and investigative priorities based on Block E downgradient trichloroethene investigations. Follow-on investigation to be described in upcoming *Data Gaps Investigation Groundwater Remedy Blocks E / F Work Plan* (May 2018).

b. Began preparation of *Groundwater Response Action Plan (RAP) Addendum Number 4 – Block E / F*. This RAP will describe remedial actions intended to address trichloroethene contamination in Blocks E and F groundwater. Completion of RAP Addendum 4 anticipated in June 2018.

Deliverable	Date Transmitted to MDE	Date Approved by MDE
Groundwater Remedy Blocks E / F		
Block E Downgradient Trichloroethene Plume Additional Investigation Report	12/15/2017	2/14/2018

4. Groundwater Investigation Block I

a. Building A and Building A Basement
   i. Began flow testing and additional sump sampling in Block I Building A Basement (per *Groundwater Leachate Management Block I Flow Testing and Additional Sump Sampling Work Plan*). The flow testing and additional sampling will improve understanding of contamination and sump operating conditions in Block I Building A Basement. This will inform the remedy design process for the basement sump system, which is anticipated to occur in late 2018.

b. West of Building A
   i. Completed laboratory analysis and data validation for groundwater samples collected during installation and development of additional Block I wells in Sept. 2017. Results to be documented in April 2018 in *Groundwater Monitoring Well and Vapor Monitoring Point Installation Report: Block I Maintenance Building and Surrounding Areas*.
   ii. Began installation of 2 deep groundwater monitoring wells in April 2018 in area west of Building A (per *Deeper Western Groundwater Investigation Work Plan*).

Deliverable	Date Transmitted to MDE	Date Approved by MDE
Groundwater Investigation Block I		
Block I Building A Basement Monitoring Report	9/27/2017	11/7/2017
Block I Building A and Building A Basement Investigation Report – Summer 2017	1/9/2018	*
Groundwater Leachate Management Block I Flow Testing and Additional Sump Sampling Work Plan	3/1/2018	3/20/2018
Deeper Western Groundwater Investigation Work Plan	2/28/2018	4/6/2018
Groundwater Monitoring Well and Vapor Monitoring Point Installation Report: Block I Maintenance Building and Surrounding Areas	4/26/2018	Under MDE Review

* Submitted for MDE records and information

5. Sediment Remedy

a. Completed second season of sediment remedy construction in Cow Pen Creek and Dark Head Cove in January 2018
   i. *Problem Encountered*: Bladder dam breaches with creek water channeling under the dam from the downstream side were discovered on November 10 and again on November 16, 2017.

Resolution: Notified agencies within 24 hours following each breach; repaired the breaches by placing plastic sheeting and clean residual management layer sand.

ii. *Problem Encountered*: Following bladder dam removal, the sand placed to mitigate the bladder dam breach was initially considered out of compliance with the Section 404 permit due to possible exceedance of post-remediation target elevations.
Resolution: MDE Wetlands and Non-Tidal Wetlands conducted site inspection on February 16, 2018 and agreed that removal of sand was unnecessary.

iii. Completed excavation and restoration activities in Cow Pen Creek, removed bladder dam (on December 26, 2017), and completed upland restoration and demobilization.

iv. Completed application of *in situ* treatment material in Dark Head Cove and completed associated lab analyses. Results are documented in *Season Two In Situ Treatment Completion Report.*

v. Conducted monitoring and maintenance of restoration plantings and weekly inspection of erosion and sediment controls.

vi. Hosted numerous visitors, including MDE Secretary (February 12, 2017) and MDE Wetlands and Non-Tidal Wetlands inspection (February 16, 2017).

Deliverable	Date Transmitted to MDE	Date Approved by MDE
Sediment Remedy		
First revision *Baseline Bioaccumulation Sampling Report*	11/7/2017	EPA comments: 1/24/2018
Second revision *Baseline Bioaccumulation Sampling Report*	2/28/2018	Under EPA review
Long-Term In Situ Bioaccumulation Monitoring Work Plan	11/10/2017	Under EPA review
Monitoring of Dredge Area D2-6 for Sediment Deposition Work Plan: Fall 2017/2018 Sediment Deposition Monitoring	Initial: 10/16/2017 Revised: 12/20/2017	Initial MDE response: 11/29/2017 Final approval: 12/22/2017
Cow Pen Creek Bank Stabilization and Floodplain Reconstruction Monitoring Work Plan	11/22/2017	1/26/2018
Cow Pen Creek Wetland Restoration Monitoring Work Plan	11/22/2017	3/19/2018

Deliverable	Date Transmitted to MDE	Date Approved by MDE
Sediment Remedy		
Second revised *Cow Pen Creek and Dark Head Cove SAV Restoration and Monitoring Work Plan*	12/22/2017	*
Revised *Construction Completion Report: Season One Sediment Remedy for Cow Pen Creek and Dark Head Cove*	1/26/2018	*
2017 Monitoring of Dredge Area D2-6 for Sediment Deposition Report	2/5/2018	*
Fish Rescue Results from Sediment Remediation Project	3/22/2018	*
Season Two In Situ Treatment Completion Report	4/6/2018	Under MDE Review

* Submitted for MDE records and information

6. Soil

a. **Soil Remedy Blocks D, D Panhandle, F, G, H:**

i. No Further Action (NFA) letters and Environmental Covenants signed November 1, 2017. Environmental Covenants recorded with Baltimore Co. on November 22, 2017 and NFA letters recorded on February 2, 2018.

ii. Sent written verification of No Further Action Letters / Environmental Covenants recordation to MDE on 4/5/2018. Received MDE confirmation that NFA Letters / Environmental Covenants have been recorded in MDE official registry on April 6, 2018.

iii. *Soil Management Plan* describing management of soil and groundwater that may be disturbed during excavation activities at the MRC. Plan was prepared, in part, to support notification requirements for Blocks H, G, F, and D and D-panhandle pursuant to Environmental Covenants.

b. **Infrastructure Assessment**

i. Collected and analyzed soil samples to assess for the potential presence of polychlorinated biphenyls (PCBs) in soil near former utility poles and watchman towers in Blocks D, E, G, H, and I.

c. **Block E Storm Drain Monitoring**

i. Completed lab analyses of samples collected from Block E storm drain monitoring. Results were documented in *Block E Storm Drain Monitoring Report: PCB Sediment Sampling of Storm Drain Systems for Outfalls 006 and 008.*

ii. Attempted storm drain cleaning at Block E manhole-9.
Problem Encountered: Cleaning was unsuccessful during first attempt in March 2018 due to equipment problems.
Resolution: Returned for second attempt at cleaning in April 2018. Cleaning was successful.

d. **Soil Remedial Investigation Block E:**

i. Completed Block E soil remedial investigation field work in November 2017 in fulfillment of *Block E Soil Remedial Investigation Work Plan Addendum 3: Fall 2017 Soil and Groundwater Sampling*. Reporting associated with this investigation is anticipated to be complete by July 2018.

ii. Completed pre-RAP design investigation field work in Block E in April 2018 in fulfillment of *Addendum 4 Block E Soil Remedial Investigation Work Plan Remedial Action Alternatives Evaluation Data Collection.*

iii. Held meeting with MDE Land Management and MDE Air and Radiation Management on 4/26/18 to discuss how radiological contamination will be handled in the Block E Remedial Action Plan (RAP).

Deliverable	Date Transmitted to MDE	Date Approved by MDE
Soil		
Block H Soil Remedial Action – No Further Action Letter and Environmental Covenant	9/27/2017	Environmental covenant and NFA letter recordation with Baltimore Co. on 2/20/2018; recorded in MDE registry on 4/6/2018
Block D Soil Remedial Action – No Further Action Letter and Environmental Covenant	9/27/2017	
Block D Panhandle Soil Remedial Action – No Further Action Letter and Environmental Covenant	9/27/2017	
Block F Soil Remedial Action – No Further Action Letter and Environmental Covenant	9/27/2017	
Block G Soil Remedial Action – No Further Action Letter and Environmental Covenant	9/27/2017	
Second revised *Slag Characterization Report*	11/15/2017	12/20/2017
Addendum 4 Block E Soil Remedial Investigation Work Plan Remedial Action Alternatives Evaluation Data Collection	*12/13/2017*	*
Block E Storm Drain Monitoring Report: PCB Sediment Sampling of Storm Drain Systems for Outfalls 006 and 008	*2/13/2018*	*
Soil Management Plan	3/16/2018	Under MDE Review

* Submitted for MDE records and information

7. Vapor

a. Block I Building A and Building A Basement
   i. Conducted Building A semiannual vapor intrusion monitoring in Feb. 2018 (Round 24).
   ii. *Problem Encountered*: Unanticipated shutdown of Building A sub-slab depressurization system (SSDS) for one week in Jan. 2018.
   Resolution: Conducted subsequent air sampling. Results indicated indoor air remained below screening levels. Report will be submitted to MDE in May 2018.

b. LMCPI Maintenance Building
   i. Completed lab analyses related to 1st sub-slab soil vapor monitoring event in LMCPI maintenance building (1st event took place in Oct. 2017). Results to be documented in upcoming *Groundwater Monitoring Well and Vapor Monitoring Point Installation Report: Block I Maintenance Building and Surrounding Areas*.
   ii. Conducted 2nd sub-slab vapor monitoring event in LMCPI Maintenance Building in Feb. 2018. Results remain below screening levels.

c. Continued Buildings A and C SSDS operation, maintenance and sampling.

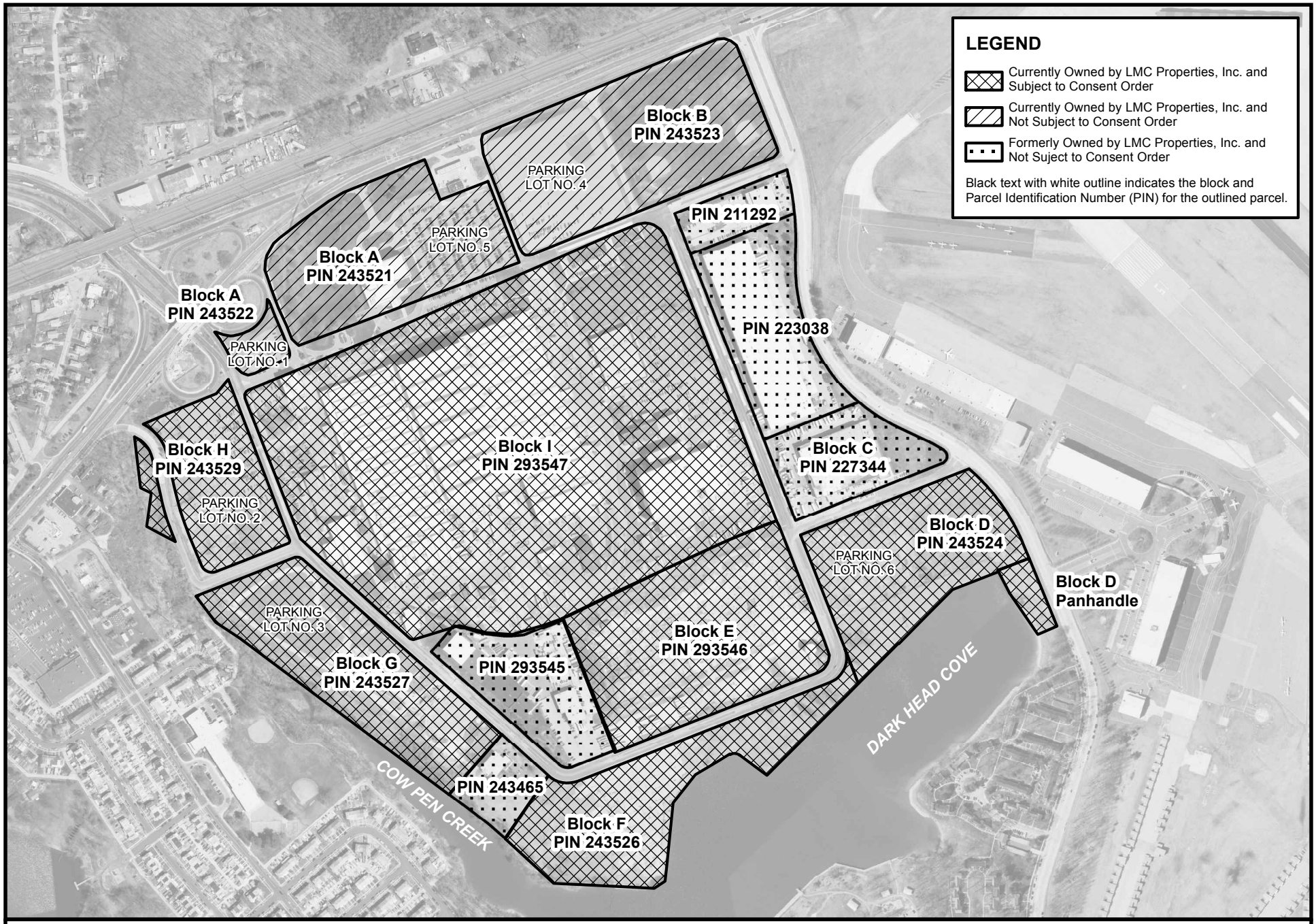
Deliverable	Date Transmitted to MDE	Date Approved by MDE
Vapor		
Vapor Intrusion Investigation and Sub-Slab-Depressurization-System Operation, Round 22, March 2017 Monitoring Report	10/6/2017	11/28/2017
Indoor Air Quality and Sub-Slab Vapor Sampling Work Plan, Rounds 24 through 29, Buildings A, B and C	12/11/2017	2/1/2018
Vapor Intrusion Investigation Round 13 – February 2017 for Tilley Chemical	1/23/2018	*
Vapor Intrusion Investigation and Sub-Slab Depressurization System Operation Round 23 August 2017	3/1/2018	4/12/2018

* Submitted for MDE records and information

Attachments:

- **Exhibit A.** Property Parcels Map (updated based on Environmental Covenants / No Further Action recorded in April 2018)
- **Exhibit B**. Workplans/Reports Representing Completed and Approved Site Investigation Work
- **Exhibit C.** Workplans/Reports Representing Completed and Approved Remedial Action Plans
- **Exhibit D.** Remedial Action Objectives Status Summary

EXHIBIT A - PROPERTY PARCELS MAP



LOCKHEED MARTIN MIDDLE RIVER COMPLEX
EXHIBIT A PROPERTY PARCELS

2014 aerial photograph provided by U.S. Gological Survey.

Map Document: (P:\GIS\Middle_River\MapDocs\MXD\mrc_tax_blocks_bw_may2018.mxd) 05/10/18 -- JEE

EXHIBIT B - WORKPLANS/REPORTS REPRESENTING COMPLETED AND APPROVED SITE INVESTIGATION WORK

EXHIBIT B. Work Plans and Reports Representing Completed and Approved Site Investigation Work
Middle River Complex, Lockheed Martin

Transmittal Date to MDE	Document Date	Report	Approval / Comments
Groundwater			
	5/2005	Groundwater Characterization Work Plan	Completed under VCP
12/15/2005	12/2005	Groundwater Work Plan Addendum	Completed under VCP
	4/2006	Groundwater Use Investigation Report	Completed under VCP
5/9/2006	5/2006	Site Characterization Report	Completed under VCP
12/15/2006	10/2006	Combined Groundwater Characterization Work Plan Addendum for MRC and MSA	Completed under VCP
9/28/2007	9/2007	Off-site Characterization Report	Completed under VCP
8/21/2008	8/2008	Phase II Site Investigation Block I	Completed under VCP
5/29/2009	5/2009	Groundwater Monitoring Report July and August 2008	Completed under VCP
	7/2009	Block I Phase II Site Investigation Report	Completed under VCP
8/26/2009	8/2009	Groundwater Monitoring Work Plan	Completed under VCP
3/8/2010	3/2010	Groundwater Monitoring Report July - August 2009	Completed under VCP
11/5/2010	5/2010	Work Plan Deep Groundwater Investigation	Completed under VCP
6/1/2010	6/2010	Groundwater Monitoring Work Plan	Completed under VCP
	10/2010	Groundwater Monitoring Work Plan Addendum	Completed under VCP
11/5/2010	11/2010	Deep Groundwater Investigation Report	Completed under VCP
6/2/2011	5/2011	2011 Groundwater Monitoring Work Plan	Completed under VCP
8/30/2011	8/2011	Deep Groundwater Investigation Report Addendum	Completed under VCP
8/24/2011	7/2011	Utility Cross-Connection Investigation Work Plan	Completed under VCP
11/1/2011	11/2011	Injection Pilot Test Work Plan	Completed under VCP
11/18/2011	11/2011	Additional Block I Characterization Work Plan	Completed under VCP
12/12/2011	12/2011	Groundwater Use Investigation Report	Completed under VCP
2/28/2012	2/2012	Groundwater Monitoring Report May-June 2010	Completed under VCP
2/29/2012	2/2012	Groundwater Monitoring Report, March - May 2011	Completed under VCP
3/12/2012	3/2012	Supplemental Block I Characterization Report (for 2010 Investigation)	Completed under VCP
3/20/2012	3/2012	Additional Block I Characterization Report (for 2011 Investigation)	Completed under VCP
3/27/2012	3/2012	Partial Stormwater Management Report (30% Submittal) Design of Swale Abandonment and Subsurface Pipeline Replacement, Block G	Completed under VCP

Transmittal Date to MDE	Document Date	Report	Approval / Comments
Groundwater			
3/28/2012	3/2012	Utility Cross-Connection Investigation Report	Completed under VCP
4/16/2012	4/2012	2012 Groundwater Monitoring Work Plan	Completed under VCP
5/25/2012	5/2012	Supplemental Block I Source Investigation Work Plan	Completed under VCP
5/29/2012	5/2012	Geotechnical Investigation Work Plan for Bioremediation Building Foundations	Completed under VCP
8/17/2012	8/2012	Groundwater Response Action Plan	Approved 9/18/2012
9/24/2012	9/2012	Injection Pilot Test Report	Completed under VCP
10/2/2012	10/2012	Joint Federal/State Application for the Alteration of Any Floodplain, Waterway, Tidal or Non-tidal Wetland in Maryland MRC Block G Swale	Completed under VCP
10/15/2012	10/2012	Groundwater Monitoring Report March-April 2012	Completed under VCP
11/8/2012	11/2012	Supplemental Block I Source Investigation Report	Completed under VCP
4/2/2013	4/2013	2013 Groundwater and Surface Water Monitoring Work Plan	Completed under VCP
8/1/2013	8/2013	Supplemental Investigation Block E and Block I 2013 Work Plan	Completed under VCP
9/17/2013	9/2013	Groundwater Use Investigation Report	Completed under VCP
11/20/2013	11/2013	Groundwater Monitoring Report, March-May 2013	Completed under VCP
1/13/2014	1/2014	Block E Underground Storage Tank (UST) Closure Report (with Appendix: Summary Report for Soil and Groundwater Delineation Block E USTs 1 and 2)	Approved 4/23/2014
2/18/2014	2/2014	2014-2015 Groundwater and Surface Water Monitoring Work Plan	Approved 3/24/2014
3/10/2014	3/2014	Addendum to the 2014-2015 Groundwater and Surface Water Monitoring Work Plan	Approved 3/14/2014
3/27/2014	3/2014	Supplemental Investigation Block E and I 2013 Report	Information Only
6/16/2014	6/2014	Underground Storage Tank (UST) 2 TCE Source Remedial Action Design Basis-Report	Approved 8/26/2014
2/26/2014	2/2014	Work Plan for Soil and Groundwater Delineation in the Vicinity of UST #2 at Block E	Approved 3/24/2014
7/25/2014	7/2014	Summary Report for Soil and Groundwater Delineation - Block E UST 2	Information Only
7/24/2014	7/2014	Summary Report PCB Groundwater Delineation - Block E2014 Block E PCB Groundwater Delineation Report	Approved 8/27/2014
10/27/2014	10/2014	Operation and Maintenance Plan for the Groundwater Remediation System	Approved 11/21/2014
12/11/2014	12/2014	Groundwater Monitoring Report for May-June 2014	Approved 2/5/2015
11/30/2015	11/2015	First Injection-Event Completion Report	Approved 1/28/2016
12/10/2015	12/2015	Groundwater Monitoring Report for April-June 2015	Approved 1/26/2016

Transmittal Date to MDE	Document Date	Report	Approval / Comments
Groundwater			
12/23/2015	12/2015	Groundwater and Surface Water Monitoring Work Plan for 2016-2017	Approved 2/18/2016
2/10/2016	2/2016	Groundwater Remediation O&M Manual, Appendix A1 – Block E Tracer Testing Work Plan	Approved 2/16/2016
4/19/2016	4/2016	UST 2 TCE-Source Remedial Action Summary of MPE System Operation	Approved 6/2/2016
8/25/2016	8/2016	Addendum to the 2016-2017 Groundwater and Surface Water Monitoring Work Plan	Approved 9/8/2016
8/25/16	8/2016	2016 Groundwater Use Investigation Report	Information Only
9/21/16	9/2016	Block E Downgradient Trichloroethene Groundwater Investigation Work Plan	Approved 10/18/2016
11/30/2016	11/2016	Groundwater Monitoring Report March-April 2016	Approved 1/23/2017
11/30/2016	11/2016	Second Block G and I Injection Event Completion Report	Approved 2/16/2017
5/26/2017	5/2017	Block I Building A and Building A Basement Investigation Work Plan	Approved 6/12/2017
8/14/2017	8/2017	Groundwater Monitoring Well and Vapor Monitoring Point Installation Work Plan, Block I Maintenance Building and Surrounding Areas	Approved 8/22/2017
9/27/2017	9/2017	Orange Sheen Investigation	Information Only
9/27/2017	9/2017	Block I Building A Monitoring Report	Approved 11/7/2017
10/30/2017	10/2017	Groundwater Monitoring Report March-April 2017	Approved 12/19/2017
12/15/2017	12/2017	Block E Downgradient Trichloroethene Plume Additional Investigation Report	Approved 2/14/2018
12/18/2017	12/2017	2018-2020 Groundwater and Surface Water Monitoring Work Plan	Approved 2/8/2018
1/9/2018	1/2018	Block I Building A and Building A Basement Investigation Report – Summer 2017	Information Only
2/28/2018	2/2018	Deeper Western Groundwater Investigation Work Plan	Approved 4/6/2018
3/1/2018	3/2018	Groundwater Leachate Management Block I Flow Testing and Additional Sump Sampling Work Plan	Approved 3/20/2018
3/13/2018	3/2018	2018-2020 Groundwater and Surface Water Monitoring Work Plan Addendum #1	Approved 3/20/2018
4/26/2018	4/2018	Groundwater Monitoring Well and Vapor Monitoring Point Installation Report: Block I Maintenance Building and Surrounding Areas	Under MDE Review
Surface Water			
7/9/2005	7/2005	Aquatic Risk Assessment	Completed under VCP
11/16/2005	11/2005	Surface Water and Sediment Sampling Work Plan Addendum	Completed under VCP
4/15/2006	4/2006	Surface Water and Sediment Sampling Report	Completed under VCP

Transmittal Date to MDE	Document Date	Report	Approval / Comments
Surface Water			
7/20/2012	7/2012	2012 Surface Water Sampling Work Plan	Completed under VCP
11/15/2012	11/2012	2012 Surface Water Sampling Report	Completed under VCP
4/2/2013	4/2013	2013 Groundwater and Surface Water Monitoring Work Plan	Completed under VCP
1/7/2014	1/2014	2013 Surface Water Sampling Report	Approved 3/13/2014
2/18/2014	2/2014	2014-2015 Groundwater and Surface Water Monitoring Work Plan	Approved 3/24/2014
1/8/2015	1/2015	2014 Surface Water Sampling Report	Approved 2/24/2015
11/18/2015	11/2015	2015 Surface Water Sampling Report	Approved 1/22/2016
1/8/2016	1/2016	Technical Memorandum: Surface Water Sampling Results for Dark Head Cover and Cow Pen Creek, November 2015	Information Only
12/7/2016	12/2016	Technical Memorandum: June 2016 Surface Water Sampling Results for Dark Head Cove and Cow Pen Creek	Approved 2/16/17
4/7/2017	4/2017	2016 Surface Water Sampling Report	Approved 6/7/2017
9/20/2017	9/2017	Technical Memorandum April 2017 Surface Water Sampling Results for Dark Head Cove and Cow Pen Creek	Approved 11/8/2017
1/11/2018	1/2018	Technical Memorandum June 2017 Surface Water Sampling Results for Dark Head Cove and Cow Pen Creek	Approved 2/20/2018
4/17/2018	4/2018	2017 Surface Water Sampling Report	Under MDE Review
Soil			
	4/2004	Radiological Survey Report for Former Building D, Middle River Complex, April 2004	Completed under VCP
	3/2005	Soil Characterization Work Plan	Completed under VCP
	4/2005	Report Phase II Site Investigation of Exterior Areas, Volumes I and II	Completed under VCP
	4/2005	Site-Wide Phase II Investigation	Completed under VCP
	7/2005	Step 1 Terrestrial Risk Assessment	Completed under VCP
	12/2005	Geophysical Survey Work Plan	Completed under VCP
	4/2006	Radiological Survey Report	Completed under VCP
	5/2006	Site Characterization Report	Completed under VCP
5/11/2006	5/2006	Site Characterization Report, Revision 1.0	Completed under VCP
	11/2007	Soil Characterization Work Plan.	Completed under VCP

Transmittal Date to MDE	Document Date	Report	Approval / Comments
Soil			
8/21/2009	8/2008	Phase II Site Investigation Block I	Completed under VCP
	5/2009	Block E Supplemental Soil Characterization Work Plan	Completed under VCP
5/15/2009	5/2009	Soil Sampling and Analysis Plan, Final Delineation Sampling for Blocks B, D, E, F, G, H, and I	Completed under VCP
	10/2010	Pre-Excavation Plan Soil Response Action	Completed under VCP
5/13/2011	10/2010	Block E Supplemental Soil and Storm Drain Sediment Characterization Report	Completed under VCP
6/1/2011	6/2011	Blocks D, F, G, and H 2010 Data Gap Soil Sampling Work Plan	Completed under VCP
6/1/2011	6/2011	Supplemental Block I Characterization Work Plan	Completed under VCP
8/15/2011	8/2011	Block E Data Gap Sampling and Blocks D and G Test Trenches Work Plan	Completed under VCP
8/30/2011	8/2011	Additional Block E Soil Characterization Work Plan	Completed under VCP
10/13/2011	10/2011	Block B Final Delineation Summary Report	Completed under VCP
12/12/2011	12/2011	Block D Data Summary Report	Completed under VCP
12/12/2011	12/2011	Block F Data Summary Report	Completed under VCP
12/12/2011	12/2011	Block H Data Summary Report	Completed under VCP
12/12/2011	12/2011	Block G Data Summary Report	Completed under VCP
12/12/2011	12/2011	Block E Data Summary Report	Completed under VCP
11/18/2011	11/2011	Additional Block I Characterization Work Plan	Completed under VCP
3/20/2012	3/2012	Additional Block I Characterization Report	Completed under VCP
3/12/2012	3/2012	Supplemental Block I Characterization Report	Completed under VCP
3/30/2012	3/2012	Block D Panhandle Sampling Work Plan	Completed under VCP
4/19/2012	4/2012	Additional Tax Block E Soil Characterization Report	Completed under VCP
5/25/2012	5/2012	Supplemental Block I Source Investigation Work Plan	Completed under VCP
6/28/2012	6/2012	Block E and G Pre-Design Soil Sampling Investigation Work Plan	Completed under VCP
8/3/2012	7/2012	Phase I Additional Block E Soil Investigation Work Plan	Completed under VCP
10/4/2012	10/2012	Radiological Work Plan Supplement for Phase I Additional Bock E Soil Investigation	Completed under VCP
10/22/2012	10/2012	Human Health Risk Assessment Tax Block Soils	Completed under VCP
10/22/2012	10/2012	Block D Panhandle Sampling Report	Completed under VCP
11/8/2012	11/2012	Supplemental Block I Source Investigation Report	Completed under VCP

Transmittal Date to MDE	Document Date	Report	Approval / Comments
Soil			
12/5/2012	12/2012	Block E and G Pre-Design Soil Sampling Investigation Report	Completed under VCP
12/27/2012	12/2012	2012 Additional Block E Soil Investigation Report	Completed under VCP
1/15/2013	1/2013	Block F Response Action Plan	Completed under VCP
1/15/2013	1/2013	Human Health Risk Assessment Update for Block E Soils	Completed under VCP
4/2/2013	4/2013	Block G Transformer Investigation Report	Completed under VCP
7/15/2013	7/2013	Supplemental Investigation Block E and Block I 2013 Work Plan	Completed under VCP
9/9/2013	9/2013	Soil Sampling and Analysis Plan Groundwater Remediation System Installation Blocks E, G, and I	Completed under VCP
1/13/2014	1/2014	Block E Underground Storage Tank (UST) Closure Report	Approved 4/23/2014
	1/2014	Summary of July 2013 Blocks E and I Supplemental Investigation Sampling Results	Information Only
2/25/2014	2/2014	Work Plan for Soil and Groundwater Delineation in the Vicinity of UST #2 at Block E	Approved 3/24/14
3/27/2014	3/2014	Supplemental Investigation Block E and I 2013 Report	Information Only
4/14/2014	4/2014	Block E Soil Remedy Design Investigation Work Plan (Revision 1 change pages emailed 6/24/2014)	Approved 7/1/2014
4/23/2014	4/2014	Blocks D, D Panhandle, F, G, and H Design Soil Sampling Investigation Work Plan	Approved 5/5/2014
5/3/2014	5/2014	Human Health Risk Assessment Tax Block Soils Investigation	Approved 5/1/2014
7/8/2014	7/2014	Block E Soil Remedy Design Investigation Work Plan: Additional Soil Delineation in the Southeast Corner of Block E Work Plan Addendum, Revision 2	Approved 7/14/2014
7/25/2014	7/2014	Summary Report for Soil and Groundwater Delineation - Block E UST 2	Information Only
11/5/2014	11/2014	Remedial Action Plan Addendum: Blocks D, D Panhandle, F, G, and H Design Soil Sampling Investigation Report	Approved 1/16/2015
9/30/2015	11/2014	Summary of PCB Soil Sampling at Tilley Chemical Company	Information Only
3/14/2015	3/2015	Block E Design Soil Sampling Investigation Report	Approved 4/8/2015
8/5/2015	8/2015	Block G Soil Remedial Action Plan Addendum 2: Supplemental Underground Storage Tank and Transformer Investigation	Approved 8/20/2015
12/8/2015	12/2015	Block G Soil Remedial Action Plan Addendum 4: Transformer Investigation II	Approved 12/18/2015
1/4/2016	1/2016	Block E Soil Remedial Investigation Work Plan	Approved 2/2/2016
5/2/2016	5/2016	Block F Underground Storage Tank Closure Report	Approved 6/8/2016

Transmittal Date to MDE	Document Date	Report	Approval / Comments
Soil			
5/27/2016	5/2016	Slag Characterization Work Plan	Approved 6/29/2016
6/30/2016	6/2016	Block G Underground Storage Tank Closure Report	11/18/2016
7/7/2016	7/2016	Block E 2016 Storm Drain Assessment Work Plan	Information Only
8/22/2016	8/2016	Block E Soil Remedy Investigation Work Plan Addendum: Radiological Sampling	11/18/2016
10/28/2016	10/2016	Block E Remedial Investigation Work Plan Addendum 2: Winter 2016/2017 Soil Sampling	Approved 12/21/16
12/1/2016	12/2016	Slag Characterization Report	Approved 1/25/2017
2/20/2017	2/2017	Block E Soil Remedial Investigation Addendum Report: Radiological Sediment Sampling of Outfall 006 and 008 Storm Drain Systems	For Information
2/20/2017	2/2017	Block E Soil Remedial Investigation Addendum Report: Radiological Sediment Sampling of Outfall 006 and 008 Storm Drain Systems	For Information
6/30/2017	6/2017	Block E Soil Summary Report: Spring 2016 and Winter 2017 Sampling	Information Only
7/19/2017	7/2017	Technical Memorandum: Preliminary Goals for Industrial and Construction Workers; Block E Soil Remediation	Information Only
7/28/2017	7/2017	Block E Soil Remedial Investigation Addendum Report: Radiological Soil Sampling	Approved 10/9/2017
8/22/2017	8/2017	Infrastructure Assessment: Utility Poles and Former Watchman Towers Sampling Investigation Work Plan	Approved 9/27/2017
8/25/2017	8/2017	Block E Soil Remedial Investigation Work Plan (Addendum 3): Fall 2017	Approved 9/26/2017
10/10/2017	10/2017	Block E 2016 Storm-Drain Assessment Report	Information Only
11/15/2017	11/2017	Revised Slag Characterization Report	Approved 12/20/2017
12/13/2017	12/2017	Addendum 4 Block E Soil Remedial Investigation Work Plan Remedial Action Alternatives Evaluation Data Collection	Information Only
2/13/2018	2/2018	Block E Storm Drain Monitoring Report: PCB Sediment Sampling of Storm Drain Systems for Outfalls 006 and 008	Information Only
Sediment			
6/17/2005	6/2005	Surface Water and Sediment Sampling Report	Completed under VCP
	11/2005	Surface water and Sediment Sampling Work Plan Addendum	Completed under VCP
	10/2009	Sediment Characterization Report for Cow Pen Creek and Dark Head Cove	Completed under VCP

Transmittal Date to MDE	Document Date	Report	Approval / Comments
Sediment			
5/13/2011	10/2010	Block E Supplemental Soil and Storm Drain Sediment Characterization Report	Completed under VCP
5/10/2011	5/2011	Additional Characterization and Sediment Sampling Data Summary Report	Completed under VCP
5/10/2011	5/2011	Additional Sediment Characterization Work Plan	Completed under VCP
5/10/2011	5/2011	Fish Tissue Report	Completed under VCP
5/10/2011	5/2011	Sediment Risk Assessment	Completed under VCP
5/13/2011	5/2011	Interim Remedial Measures Design Report, Block E Storm Drain System	Completed under VCP
5/20/2011	5/2011	Sediment Sampling Work Plan	Completed under VCP
9/19/2012	9/2012	Block E Storm Drain System Interim Remedial Measures Final Site Remediation Report	Completed under VCP
10/8/2012	10/2012	Additional Sediment Characterization Report	Completed under VCP
12/17/2012	12/2012	Feasibility Study for the Remediation of Sediments Adjacent to MRC	Completed under VCP
1/2/2013	1/2013	Report for the Surveying and Mapping of Cow Pen Creek	Completed under VCP
7/25/2013	7/2013	Feasibility Study for Sediment	Approved 12/11/2013
7/3/2013	7/2013	Addendum to the Sediment Remedy Design Investigation Work Plan: Outfall Sediment	Completed under VCP
7/3/2013	7/2013	Sediment Remedy Design Investigation Work Plan	Completed under VCP
4/1/2014	4/2014	Sediment Remedy Design Investigation Report	Approved 9/8/2014
6/16/2014	6/2014	Additional Radiological Analysis Sediment Sampling Work Plan	Approved 5/14/2014
6/17/2014	6/2014	Additional Polychlorinated Biphenyl Sediment Sampling Work Plan	Approved 1/15/2015
8/26/2014	8/2014	Storm Drainage System Sediment Sampling Report	Approved 1/16/2015
9/4/2014	9/2014	Technical Memorandum for Additional Polychlorinated Biphenyl Sediment Sampling	Approved 1/15/2015
3/9/2015	3/2015	Technical Memorandum for Additional Radiological Sediment Sampling	Approved 5/5/2015
2/9/2016	2/2016	Final Remedial Design for Dark Head Cove and Cow Pen Creek	Approved 10/26/2016
3/28/2016	3/2016	Bulkhead and Storm-Drain Assessment, Blocks D and F	Information Only
4/1/2016	4/2016	Storm-Drain Assessment Report Blocks D and F, October 2015	Information Only
4/1/2016	4/2016	Bulkhead Soil-Retention Geotechnical Investigation	Information Only
6/13/2016	6/2016	Outfall 005 Storm-Drain-Plugging Technical Memorandum	Information Only
6/20/2016	6/2016	Baseline Bioaccumulation Work Plan	Approved 8/3/2016
10/4/2016	10/2016	Sediment Remedy Radiological Monitoring Screening Work Plan	Approved 10/13/2016
2/28/2018	2/2018	Baseline Bioaccumulation Sampling Report (Revision 2)	Under EPA Review

Transmittal Date to MDE	Document Date	Report	Approval / Comments
Vapor			
	4/2006	Site Characterization Report	Completed under VCP
11/6/2006	11/2006	Indoor Air Quality Assessment Work Plan for Buildings A, B, C, and VLS	Completed under VCP
9/30/2015	11/2008	Soil Gas Investigation of Tilley Chemical and North American Electric Work Plan	Completed under VCP
9/30/2015	1/2009	Soil Gas Investigation of Tilley Chemical and North American Electric Report	Completed under VCP
9/30/2015	7/2009	Second Phase Soil Gas Investigation of Tilley Chemical and North American Electric Work Plan	Completed under VCP
10/26/2009	10/2009	Second Phase Soil Gas and Sub-Slab Vapor Investigation of Tilley Chemical Facility Work Plan; October 2009	Completed under VCP
9/30/2015	1/2010	Second Phase Soil Gas and Sub-Slab Vapor Investigation of Tilley Chemical Report	Completed under VCP
7/2/2010	7/2010	Vapor Intrusion and Sub-Slab Depressurization System Operation 2009 Summary Report	Completed under VCP
9/30/2015	11/2010	Soil Gas and Sub-Slab Vapor Investigation 2009 and 2010 Summary Report for Tilley Chemical	Completed under VCP
11/2/2010	11/2010	Vapor Intrusion Investigation and Sub-Slab Depressurization System Operation February 2010 Sampling Report	Completed under VCP
12/22/2010	12/2010	Vapor Intrusion Management Plan	Completed under VCP
2/1/2011	2/2011	Vapor Intrusion Investigation and Sub-Slab Depressurization System Operation August 2010 Sampling Report	Completed under VCP
6/1/2011	6/2011	Work Plan Addendum for Indoor Air and Sub-Slab Vapor Sampling, Round 9, June 2010	Completed under VCP
6/2/2011	6/2011	Vapor Intrusion Investigation and Sub-Slab Depressurization-System Operation, February 2011 Monitoring Report	Completed under VCP
6/2/2011	6/2011	Work Plan Addendum, Indoor Air and Sub-slab Vapor Sampling, Round 10, February 2011	Completed under VCP
9/30/2015	2/2012	Vapor Intrusion Monitoring Work Plan, Sampling Rounds 3 and 4, Tilley Chemical Company	Completed under VCP
3/12/2012	3/2012	Supplemental Block I Characterization Report	Completed under VCP
3/20/2012	3/2012	Additional Block I Characterization Report	Completed under VCP
5/30/2012	5/2012	Work Plan Addendum Indoor Air and Sub-Slab Vapor Sampling Round 12, February 2012	Completed under VCP
9/30/2015	5/2012; Rev. 7/2013	Vapor Intrusion Investigation Round 3 February 2012 Report for Tilley Chemical	Completed under VCP

Transmittal Date to MDE	Document Date	Report	Approval / Comments
Vapor			
9/30/2015	6/2012	Vapor-Intrusion Monitoring Work Plan Round 4 at Tilley Chemical Company	Completed under VCP
9/19/2012	9/2012	Vapor Intrusion Investigation and Sub-Slab Depressurization System Operation February 2011 and August 2011 Monitoring Reports	Completed under VCP
10/22/2012	10/2012	Vapor Intrusion Investigation and Sub-Slab Depressurization System Operation February 2012 Monitoring Report	Completed under VCP
11/8/2012	11/2012	Supplemental Block I Source Investigation Report	Completed under VCP
9/30/2015	12/2012; Rev. 7/2013	Vapor Intrusion Monitoring Work Plan Sampling Rounds 5 and 6, Tilley Chemical Company	Completed under VCP
9/30/2015	1/2013; Rev. 7/2013	Vapor Intrusion Investigation Round 4 August 2012 Report for Tilley Chemical	Completed under VCP
3/25/2013	3/2013	Vapor Intrusion Investigation and Sub-Slab Depressurization System Operation August 2012 Monitoring Report	Completed under VCP
9/30/2015	5/2013	Vapor Intrusion Investigation Round 5 (February 2013) Report for Tilley Chemical	Completed under VCP
9/6/2013	9/2013	Vapor Intrusion Investigation and Sub-Slab Depressurization-System Operation February 2013 Monitoring Report	Completed under VCP
9/6/2013	9/2013	Operation and Maintenance Manual Sub-Slab Depressurization System Building C	Completed under VCP
9/6/2013	9/2013	Construction Documentation Sub-Slab Depressurization System Second-Phase Expansion - Building C, MRC	Completed under VCP
9/6/2013	9/2013	Letter Report: Additional Indoor Air and Sub-slab Vapor Monitoring Building A SSD Shutdown	Completed under VCP
9/19/2013	9/2013	Work Addendum Indoor Air and Sub-slab Vapor Sampling Round 15 August 2013	Completed under VCP
11/21/2013	11/2013	Work Plan Addendum Indoor Air and Sub-Slab Vapor Sampling Round 13, August 2012, (for work completed in August 2012)	Completed under VCP
9/30/2015	11/2013	Vapor Intrusion Investigation Round 6 August 2013 Report for Tilley Chemical	Completed under VCP
9/30/2015	1/2014	Vapor-Intrusion Monitoring Work Plan Sampling Round 7 at Tilley Chemical Company	Information Only
2/10/2014	2/2014	Work Plan Addendum Indoor Air and Sub-Slab Vapor Sampling Round 16 February 2014	Approved 2/14/2014
9/30/2015	4/2014	Vapor-Intrusion Monitoring Work Plan Sampling Rounds 8, 9, and 10 at Tilley Chemical Company	Information Only

Transmittal Date to MDE	Document Date	Report	Approval / Comments
Vapor			
5/1/2014	5/2014	Vapor Intrusion Investigation and Sub-Slab-Depressurization-System Operation, August 2013 Monitoring Report	Approved 7/7/2014
6/30/2014	6/2014	Indoor Air Quality and Sub-Slab Vapor Sampling Work Plan Rounds 17 through 19 Building A, B, and C	Approved 7/31/2014
10/15/2014	10/2014	Vapor Intrusion Investigation and Sub-slab-Depressurization-System Operation, February 2014 Monitoring Report	Approved 1/7/2015
9/30/2015	1/2015	Vapor Intrusion Investigation Round 7 - February 2014 Report for Tilley Chemical	Information Only
9/30/2015	9/2015	Vapor Intrusion Investigation Round 8 September 2014 Report for Tilley Chemical	Information Only
3/27/2015	3/2015	Vapor Intrusion Investigation and Sub-slab-Depressurization-System Operation, September 2014 Report	Information Only
10/7/2015	10/2015	Vapor Intrusion Investigation and Sub-Slab-Depressurization-System Operation, February 2015 Monitoring Report	Approved 12/18/2015
12/7/2015	12/2015	Indoor Air Quality and Sub-Slab Vapor Sampling Work Plan Rounds 20 through 23 Buildings A, B and C	Approved 1/8/2016
12/21/2015	12/2015	Basis-of-Design Report Sub-slab Depressurization-System Second-Phase Expansion—Building A	Information Only
1/11/2016	1/2016	Vapor-Intrusion Monitoring Work Plan Sampling Rounds 11-14 Tilley Chemical Company	Information Only
1/13/2016	1/2016	Block I Building A and Building A Basement Vapor Intrusion Investigation Work Plan	Approved 2/23/2016
1/29/2016	1/2016	Vapor Intrusion Investigation Round 9 – February 2015 Report for Tilley Chemical	Information Only
3/10/2016	3/2016	100% Design Sub-Slab Depressurization System Second-Phase Expansion – Building A	Information Only
4/13/2016	4/2016	Vapor Intrusion Investigation and Sub-Slab-Depressurization-System Operation, August 2015 Monitoring Report	Approved 5/23/2016
5/4/2016	5/2016	Block I Vapor Management Plan	Approved 6/13/2016
5/4/2016	5/2016	Work Plan Addendum Block I Building A Basement Vapor-Intrusion Investigation	Approved 5/10/2016
8/25/2016	8/2016	Construction Report Sub-Slab Depressurization System Second-Phase Expansion - Building A	Information Only
10/4/2016	10/2016	Vapor Intrusion Investigation Round 10 – August 2015 Report for Tilley Chemical	Information Only

Transmittal Date to MDE	Document Date	Report	Approval / Comments
Vapor			
10/4/2016	10/2016	Vapor Intrusion Investigation and Sub-Slab-Depressurization-System Operation, February 2016	Approved 11/16/2016
10/4/2016	10/2016	Block I Building A and Building A Basement Vapor-Intrusion Investigation Report	Approved 11/4/2016
10/4/2016	10/2016	Block I Building A Basement Supplemental Vapor-Intrusion Investigation Report	Approved 11/15/2016
4/10/2017	4/2017	Vapor Intrusion Investigation and Sub-Slab Depressurization-System Operation, August 2016 (Round 21) Monitoring Report	Approved 5/19/17
5/22/2017	5/2017	2017 Vapor-Intrusion Management Plan	Approved 6/19/2017
6/1/2017	6/2017	100% Design Sub-Slab Depressurization System Third-Phase Expansion Building A	Information Only
10/6/2017	10/2017	Vapor Intrusion Investigation and Sub-Slab-Depressurization-System Operation, Round 22, March 2017 Monitoring Report	Approved 11/28/2017
12/11/2017	12/2017	Indoor Air Quality and Sub-Slab Vapor Sampling Work Plan, Rounds 24 through 29, Buildings A, B and C	Approved 2/1/2018
1/23/2018	1/2018	Vapor Intrusion Investigation Round 13 – February 2017 for Tilley Chemical	Information Only
3/1/2018	3/2018	Vapor Intrusion Investigation and Sub-Slab Depressurization System Operation Round 23 August 2017	Approved 4/12/2018

EXHIBIT C - WORKPLANS/REPORTS REPRESENTING COMPLETED AND APPROVED REMEDIAL ACTION PLANS

EXHIBIT C. Work Plans and Reports Representing Completed and Approved Remedial Action Plans
Middle River Complex, Lockheed Martin

Transmittal Date to MDE	Document Date	Report	Approval / Comments
Groundwater			
3/22/2012	3/2012	Groundwater Response Action Plan for Middle River Complex	Approved 9/18/2012
9/24/2012	9/2012	Injection Pilot Test Report at Middle River Complex	Completed under VCP
6/16/2014	6/2014	UST 2 TCE Source Remedial Action Design-Basis Report (GW Response Action Addendum 1)	Approved 8/26/2014
9/30/2015	9/2015	Revised Groundwater Response Action Plan Addendum 2: Remedial Action Objectives and Project Implementation Schedule	Approved 10/14/2015
3/30/2017	3/2017	Groundwater Response Action Plan Addendum 3: Remedial Modifications for Block I	Approved 5/11/2017
Soil			
5/10/2010	5/2010	Soil (RAP) Block B at Middle River	Completed under VCP
5/28/2011	5/2011	Interim Remedial Measures Design Report Block E Storm Drain System	Completed under VCP
11/15/2013	11/2013	Block D Soil Remedial Action Plan at MRC	Approved 3/7/2014
11/21/2013	11/2013	Block F Soil Remedial Action Plan at MRC	Approved 12/12/2013
11/21/2013	11/2013	Block H Soil Remedial Action Plan at Middle River Complex	Approved 3/7/2014
12/12/2013	12/2013	Block D Panhandle Soil Remedial Action Plan at MRC	Approved 3/7/2014
1/21/2014	1/2014	Block G Soil Remedial Action Plan at MRC	Approved 3/25/2014
7/28/2014	7/2014	Remedial Action Plan Addendum: Blocks D, D Panhandle, F, G, and H Design Soil Sampling Investigation Report at MRC	Approved 1/16/2015
8/5/2015	8/2015	Block G Soil Remedial Action Plan Addendum 2: Supplemental Underground Storage Tank and Transformer Investigation	Approved 8/20/2015
8/26/2015	8/2015	Block D Soil Remedial Action Plan Addendum 2 for Sheen Observed at the Corner of Block D and Block D Panhandle	Approved 8/28/2015
8/31/2015	8/2015	Block D Soil Remedial Action Plan Addendum 3: Remedial Action Objective and Project Implementation Schedule	Approved 9/16/2015
8/31/2015	8/2015	Block D Panhandle Soil Remedial Action Plan Addendum 2: Remedial Action Objectives and Project Implementation Schedule	Approved 9/16/2015
8/31/2015	8/2015	Block F Soil Remedial Action Plan Addendum 2: Remedial Action Objectives and Project Implementation Schedule	Approved 9/16/2015
8/31/2015	8/2015	Block G Soil Remedial Action Plan Addendum 3: Remedial Action Objectives and Project Implementation Schedule	Approved 9/16/2015

EXHIBIT C. Work Plans and Reports Representing Completed and Approved Remedial Action Plans
Middle River Complex, Lockheed Martin

Transmittal Date to MDE	Document Date	Report	Approval / Comments
Soil			
10/8/2015	10/2015	Revised Block E Soil Remedial Action Objective and Project Implementation Schedule	Approved 10/8/2015
12/8/2015	12/2015	Block G Soil Remedial Action Plan Addendum 4: Transformer Investigation II	Approved 12/18/2015
5/2/2016	4/2016	Construction Completion Report: Block F Soil Remedial Action	Approved 6/8/2016
2/8/2016	3/2016	Construction Completion Report: Block H Soil Remedial Action	Approved 4/18/2016
6/15/2016	6/2016	Construction Completion Report: Block D Soil Remedial Action	Approved 8/10/2016
6/17/2016	5/2016	Construction Completion Report: Block D Panhandle Soil Remedial Action	Approved 8/11/2016
9/28/2016	9/2016	Construction Completion Report: Block G Soil Remedial Action	Approved 11/2/2016
Sediment			
11/21/2012	11/2012	Feasibility Study for the Remediation of Sediments Adjacent to MRC	Approved 12/11/2013
11/4/2014	11/2014	Risk-Based Disposal Approval Application (RBDAA) for the Outfall 005 Sediment Removal Action	Approved 11/17/2014
6/22/2015	6/2015	Construction Completion Report Outfall 005 Sediment Removal Action at MRC	Approved 9/3/2015
8/31/2015	8/2015	Sediment Feasibility Study Addendum 1: Remedial Action Objectives and Project Implementation Schedule	Approved 9/16/2015
6/17/2016	6/2016	Risk-Based Disposal Approval Application for the PCB-Contaminated Sediment Removal in Dark Head Cove	Approved 9/8/2016
6/17/2016	6/2016	Risk-Based Disposal Approval Application for the In Situ Treatment of Dark Head Cove Sediment	Approved 9/8/2016
5/22/2017 (Rev. 1/26/2018)	5/2017	Construction Completion Report: Season One Sediment Remedy for Cow Pen Creek and Dark Head Cove	Approved 9/1/2017
8/28/2017	8/2017	Cow Pen Creek and Dark Head Cove SAV Restoration and Monitoring Work Plan	Approved 8/29/2017
10/16/2017	10/2017	Monitoring of Dredge Area D2-6 for Sediment Deposition Work Plan: Fall 2017/2018 Sediment Deposition Monitoring	Approved 12/22/2017
11/10/2017	11/2017	Long-Term *In Situ* Bioaccumulation Monitoring Work Plan	Under MDE Review
11/22/2017	11/2017	Cow Pen Creek Bank Stabilization and Floodplain Reconstruction Monitoring Work Plan	Approved 1/26/2018
11/22/2017	11/2017	Cow Pen Creek Wetland Restoration Monitoring Work Plan	Approved 3/19/2018
2/5/2018	2/2018	2017 Monitoring of Dredge Area D2-6 for Sediment Deposition Report	Information Only
4/6/2018	4/2018	Season Two In Situ Treatment Completion Report	Under MDE Review

EXHIBIT D - REMEDIAL ACTION OBJECTIVES STATUS SUMMARY

EXHIBIT D. Remedial Action Objectives Status Summary
Middle River Complex
Lockheed Martin

Area of Concern	Contaminated Media	Site Investigation Complete? (Yes/No)	Constituents of Concern	Remedial Action Objectives Currently Met? (Yes/No)	Principal Submittals	NFA Status (open/ closed)	Effective Date
Tax Block A	Groundwater	Yes	None	Yes	Reissued No Further Action Determination (May 2013)	Closed	5/7/2013
	Soil	Yes	None	Yes	Reissued No Further Action Determination (May 2013)	Closed	5/7/2013
Tax Block B	Groundwater	Yes	None	Yes	Certificate of Completion	Closed	8/7/2012
	Soil	Yes	None	Yes	Final Soil Response Action Plan Block B (May 2010) Certificate of Completion	Closed	8/7/2012
Tax Block D	Soil	Yes	PAHs, Arsenic, Chromium(VI)	Yes	Block D Soil Remedial Action Plan (Nov. 2013) Block D **Panhandle** Soil Remedial Action Plan (Nov. 2013) Block D Soil Remedial Action Plan Addendum 3: Remedial Action Objective and Project Implementation Schedule (Aug. 2015) Block D **Panhandle** Soil Remedial Action Plan Addendum 2: Remedial Action Objectives and Project Implementation Schedule (Aug. 2015) Construction Completion Report: Block D **Panhandle** Soil Remedial Action (May 2016) Construction Completion Report: Block D Soil Remedial Action (Jun. 2016) Tax Block D: "No Further Action" letter and Environmental Covenant signed (Nov. 2017), recorded with Baltimore Co. Land Records (Nov. 2017 and Feb. 2018), and filed in MDE's Official Registry Database (April 2018)	Closed	11/1/2017

Area of Concern	Contaminated Media	Site Investigation Complete? (Yes/No)	Constituents of Concern	Remedial Action Objectives Currently Met? (Yes/No)	Principal Submittals	NFA Status (open/ closed)	Effective Date
					Tax Block D **Panhandle**: "No Further Action" letter and Environmental Covenant signed (Nov. 2017), recorded with Baltimore Co. Land Records (Nov. 2017 and Feb. 2018), and filed in MDE's Official Registry Database (April 2018)		
Tax Block E	Soil	No	PCBs, VOCs, PAHs	No	Revised Block E Soil Remedial Action Objectives and Project Implementation Schedule (Oct. 2015)	Open	--
Tax Block F	Soil	Yes	PAHs	Yes	Block F Soil Remedial Action Plan (Jan. 2014) Block F Soil Remedial Action Plan Addendum 2: Remedial Action Objectives and Project Implementation Schedule (Aug. 2015) Construction Completion Report: Block F Soil Remedial Action (Apr. 2016) Tax Block F: "No Further Action" letter and Environmental Covenant signed (Nov. 2017), recorded with Baltimore Co. Land Records (Nov. 2017 and Feb. 2018), and filed in MDE's Official Registry Database (April 2018)	Closed	11/1/2017
Tax Block G	Soil	Yes	PAHs, Arsenic	Yes	Block G Soil Remedial Action Plan (Jan. 2014) Block G Soil Remedial Action Plan Addendum 3: Remedial Action Objectives and Project Implementation Schedule (Aug. 2015) Construction Completion Report: Block G Soil Remedial Action (Sep. 2016) Tax Block G: "No Further Action" letter and Environmental Covenant signed (Nov. 2017), recorded	Closed	11/1/2017

Area of Concern	Contaminated Media	Site Investigation Complete? (Yes/No)	Constituents of Concern	Remedial Action Objectives Currently Met? (Yes/No)	Principal Submittals	NFA Status (open/ closed)	Effective Date
					with Baltimore Co. Land Records (Nov. 2017 and Feb. 2018), and filed in MDE's Official Registry Database (April 2018)		
Tax Block H	Soil	Yes	PAHs	Yes	Block H Soil Remedial Action Plan (Nov. 2013)	Closed	11/1/2017
					Block H Soil Remedial Action Plan Addendum 2: Remedial Action Objective and Project Implementation Schedule (Aug. 2015)		
					Construction Completion Report: Block H Soil Remedial Action (Mar. 2016)		
					Tax Block H: "No Further Action" letter and Environmental Covenant signed (Nov. 2017), recorded with Baltimore Co. Land Records (Nov. 2017 and Feb. 2018), and filed in MDE's Official Registry Database (April 2018)		
Tax Block I	Soil Gas	No	VOCs, SVOCs	No	Vapor Intrusion Management Plan (Sep. 2012)	Open	--
					Vapor Intrusion Management Plan (Jun. 2014)		
					2016 Vapor-Intrusion Management Plan (May 2016)		

Area of Concern	Contaminated Media	Site Investigation Complete? (Yes/No)	Constituents of Concern	Remedial Action Objectives Currently Met? (Yes/No)	Principal Submittals	NFA Status (open/ closed)	Effective Date
Onsite Groundwater		Yes	CVOCs, PCBs	No	Groundwater Response Action Plan (Aug. 2012) UST 2 TCE Source Remedial Action Design-Basis Report (GW Response Action Addendum 1) (Jun 2014) Revised Groundwater Response Action Plan Addendum 2: Remedial Action Objectives and Project Implementation Schedule (Sep. 2015) Groundwater Response Action Plan Addendum 3: Remedial Modifications for Block I (Mar. 2017)	Open	--
Off-Site Sediment		Yes	PCBs, PAHs, Metals	No	Feasibility Study for the Remediation of Sediments Adjacent to MRC (Jul. 2013) Risk-Based Disposal Approval Application (RBDAA) for the Outfall 005 Sediment Removal Action (Nov. 2014) Sediment Feasibility Study Addendum 1: Remedial Action Objectives and Project Implementation Schedule (Aug. 2015) RBDAA for the PCB-Contaminated Sediment Removal in Dark Head Cove (Jun. 2016) RBDAA for the *In Situ* Treatment of Dark Head Cove Sediment (Jun. 2016) *Construction Completion Report: Season One Sediment Remedy for Cow Pen Creek and Dark Head Cove* (Sep. 2017; revised Jan. 2018) *Season Two In Situ Treatment Completion Report* (April 2018)	Open	--