



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 2  
290 Broadway  
New York, NY 10007-1866

MAR - 2 2020

The Chemours Company  
Attn: David E. Epps, Project Manager  
2000 Cannonball Road  
Pompton Lakes, NJ 07442

Re: Pompton Lakes Works Site, Pompton Lakes, New Jersey  
USEPA/NJDEP Review-Revised Draft Onsite Soils Corrective Measures Study

Dear Mr. Epps:

The United States Environmental Protection Agency (USEPA) and the New Jersey Department of Environmental Protection (NJDEP) have conducted a review of the Revised Draft Onsite Corrective Measures Study (Revised CMS) dated April 30, 2019 submitted by The Chemours Company FC, LLC (Chemours). The Revised CMS was intended to address comments previously provided by NJDEP and USEPA in correspondence to Chemours dated May 31, 2017. The NJDEP/USEPA May 31, 2017 correspondence provided comments on the Chemours draft *On-site Corrective Measures Study* dated June 28, 2013 (draft CMS).

Chemours also prepared a response to comments (RTC) document dated August 18, 2017 intended to address the NJDEP/USEPA May 31, 2017 correspondence. In addition, the Chemours' August 18, 2017 RTC correspondence was utilized in their preparation of the Revised CMS.

Chemours RTC dated August 18, 2017 was also related to the following documents that supported the development of the draft and Revised CMS documents:

- Arsenic Natural Background Investigation for Soil prepared by DuPont dated September 4, 2012;
- Draft Alternative Soil Remediation Standard Memo prepared by URS (for DuPont) dated June 20, 2014; and
- Draft Alternate Soil Remediation Standard – DuPont Pompton Lakes Works prepared by URS (for DuPont) dated August 11, 2014.

The USEPA/NJDEP review and response to the Chemours August 18, 2017 RTC was provided in USEPA correspondence dated January 2, 2019, which Chemours used in the preparation of the Revised CMS.

These documents were submitted pursuant to the Resource Conservation and Recovery Act (RCRA) Hazardous and Solid Waste Amendments (HSWA) Permit of 1994, the NJDEP Administrative Consent Order (ACO) executed on September 15, 1988 and the Technical Requirements for Site Remediation at N.J.A.C. 7:26E (Tech Rules).

This NJDEP/USEPA correspondence provides comments on the Revised CMS, and addresses other outstanding technical issues discussed in the aforementioned CMS documents, associated previous comment letters and RTC.

### **Revised CMS USEPA/NJDEP Comments**

1. Page 7, Section 2.0 (Site Background and Physical Setting) –During the USEPA/NJDEP/Chemours meeting in November 2018; the need for providing enough RCRA Facility Investigation (RFI) information on the nature and extent of contamination was expressed by USEPA/NJDEP. Part of the reason for this request is that RFI information has been submitted in numerous technical reports over an extended period of time. Although USEPA’s Corrective Action Plan guidance may allow reference to the RFI, USEPA/NJDEP’s requirement here is to provide a summary of the RFIs. N.J.A.C. 7:26E-1.6(b) and EPA’s RCRA Corrective Action Plan guidance provide information on the type of information being sought that can be conveyed as a summary. Without sufficient RFI information for each Area of Concern such as the contaminants present, concentrations, extent of contamination, etc., the evaluation on the acceptability of the proposals in the CMS is significantly constrained. This information should be summarized and provided in a revised version of Section 2.0.
2. Page 7, Section 2.2 (Site Operational History) – The draft Onsite CMS considered use of the cladding tunnels as part of the proposed corrective action by Chemours. If Chemours intends to utilize the former cladding tunnels as part of its proposed corrective action, information would need to be provided in the alternatives descriptions as to how Chemours intends to use them. In addition, information would need to be provided to support the description of the cladding tunnels as “engineered tunnels”. USEPA/NJDEP would evaluate this information to assess whether use of the cladding tunnels is acceptable.
3. Page 7/top of Page 8, Section 2.3 (Site Land Use) - The existing “deed notice” between DuPont and Chemours for the Site dated April 9, 2015 and filed with the Passaic County Clerk that is referenced by Chemours in this section should be included in the Revised CMS.
4. Page 8/9, Section 2.3.1 (Current Land Use) – As Chemours knows, 299 acres of the Site located in Wanaque is zoned industrial and is within “Preservation Area” as designated under NJ Highlands Water Protection and Planning Act. 289 acres of the Site located in Pompton Lakes is zoned Hybrid Industrial Zone and is within the “Planning Area” as designated under the NJ Highlands Water Protection and Planning Act. Please include this information in this section.

Please note that according to NJ Highlands Water Protection and Planning Act planning personnel, regarding environmental clean-up considerations, the Highlands Act provides an exemption for the remediation of any contaminated site (Exemption #16). That would mean no Highlands rules or

regulations would be applicable. Please provide this information here and in the discussion regarding compliance with ARARs (see comment #34).

5. Page 9, Section 2.3.2 (Anticipated Future Land Use) – 70 acres of land within Wanaque north and west of I-287 has been designated for transfer to New Jersey under a previously negotiated “Natural Resource Damage Settlement for Groundwater Injuries in New Jersey” between the State and DuPont. The Administrative Record and/or the Revised CMS needs to include a copy of the Settlement. USEPA needs to receive a current status of the transfer of the 70-acre parcel including what the State considers to be the appropriate environmental clean-up standards to be met prior to transfer.

6. Page 9/top of Page 10 Section 2.3.2 (Anticipated Future Land Use) - The change in zoning for the 289 acres of the Site in Pompton Lakes from Planned Recreational Community District (PRC) to a Hybrid Industrial District (HI) was finalized (Ordinance No.: 19-13) and signed off by the Mayor and Borough Clerk. It has been utilized by USEPA in its assessment of current and anticipated future land use as well determining appropriate soil remediation standards for that portion of the site in Pompton Lakes.

Per Ordinance No.: 19-13, this change in zoning would prohibit “residential” land uses including residential, day care and schools and allow for the following “Permitted principal uses”:

Light industry;  
Research and development;  
Flex space;  
Storage establishments, including mini-storage warehouses;  
General, business and professional offices;  
Personal and business services;  
Planned commercial development;  
Artist and maker studios;  
Microbreweries and distilleries;  
Commercial recreation and entertainment facilities, including galleries;  
Fitness, health clubs, martial arts, gymnastic and yoga facilities;  
Passive recreation;  
Energy generation facilities; and  
Government uses.

The change in zoning would also allow for the following “Permitted accessory uses”:

Restaurants;

Uses and structures that are customarily subordinate and incidental to a principal permitted use;  
Signs. See § 190-16Q; and

Off-street parking and surface parking, provided that they serve uses expressly permitted in the district. A parking facility accessory to one use may be used for parking accessory to other uses expressly permitted in the HI District.

As defined by local ordinance, the purpose of the HI is *“to provide a unique zone where a mix of compatible industrial and commercial uses could be comprehensively planned for in a common setting.*

*The intent of this zone is to provide flexibility, promote cohesive site and building design, coordinate amenities and shared civic spaces, and protect and preserve environmentally sensitive areas within the district.*” The HI’s allowable land uses are consistent with current and anticipated future land uses that would be subject to clean-up to New Jersey’s Non-Residential Direct Contact Soil Remediation Standards for impacted land within the HI. This is one factor in USEPA’s determination that New Jersey Soil Direct Contact Remediation Standards versus use of Alternative Remediation Standards (ARS) for soil are the most appropriate clean-up values to utilize. This information needs to be incorporated into this Section of the CMS.

7. Page 15, Table 2-2 – USEPA/NJDEP is requiring a more comprehensive summary of the onsite soil data in a revision to the CMS per Comment #1. If Chemours is going to include Table 2-2 in a subsequent revision of the CMS, the mean versus the median should be provided for the individual constituents of concern.

8. Page 21, first full paragraph, first sentence – This sentence is incorrect since Table 2-2 only “summarizes the onsite soils data for each former manufacturing area including the minimum, maximum, and median detected concentrations.” There is no information on Soil Remediation Standards (SRS) for any contaminants of concern (COC). Please include the appropriate SRS values.

9. Page 24, Section 3.1 (Arsenic), paragraph 2 – Note that NJDEP’s approval of the “natural” background value for arsenic indicated that “The use of a background-based site-specific soil remediation standard of 75 milligrams per kilogram (mg/kg) for arsenic is suitable for the Wanaque River Valley portion of the site.” It was not intended to be an approval of a site-wide background value for arsenic. Please include this language in this paragraph and elsewhere in the CMS, where appropriate.

10. Page 24, Section 3.0 (Applicable Soil Remediation Standards) - Section 3 – Text should be added to this section similar to that on page 10 of 14 of Appendix A stating that the most conservative soil value either the SRS (not the ARS) or ecological risk-based remediation goal (ERG) will be used as the appropriate clean up value.

11. Page 24, Section 3.1 (Arsenic), paragraph 3 – Chemours indicates that “USEPA recommended revised estimates of the Site-specific background-based SRS for arsenic based on the removal of outliers identified by the more robust outlier tests.” This is inaccurate. As USEPA’s comment letter of January 2, 2019 (See Section 1 – Alternative Remediation Standards, USEPA RTC to Chemours Comment 3, Upper Case I) stated: “An SRS can be determined based upon a site-specific background data set. **To demonstrate (italics added) the influence of outliers on upper limits used to estimate BTV/SRS, 95% UPLs have been computed using data sets with outliers and without outliers (bold added).** Statistics have been computed separately for SS and SB soil data sets and for the combined SS and SB data set”. Revise the text in this paragraph to delete language that indicates USEPA recommended revised estimates of the Site-specific background SRS for arsenic.

12. Page 25, Section 3.1 (Arsenic), paragraphs 2,3,4/top of Page 26 – In these paragraphs, Chemours presents the following information:

- the Conceptual Site Model (CSM) for the Western Manufacturing Area (WMA) indicates that the source of the arsenic to the background sampling area in the Wanaque River floodplain was not related to Site operations but originated offsite in upgradient source areas (page 25, paragraph 2);

- there is a lack of documented onsite use, storage or disposal of arsenic and consistent with that; arsenic concentration gradients in soil that would be indicative of a historical release or discharge were not identified in the WMA as part of the RI (page 25, paragraph 2); and

- potential off-site sources of arsenic were identified upgradient of the background sampling area including a natural gas line easement that is regularly treated with herbicides that may contain arsenic as well as historic farmland that had the potential to use arsenical pesticides (page 25, paragraph 2).

Based on this information, Chemours suggests that “arsenic may have migrated from surface soil in off-site upgradient source areas through erosion and transport during high flow events in Wanaque River, resulting in downstream deposition within the Wanaque River floodplain”. The aforementioned information was utilized to support Chemours’ position that 75 mg/kg is an appropriate value for an arsenic SRS. However, in the revised CMS, Chemours indicates that “...given the uncertainty identified by USEPA regarding the influence of potential outliers on the estimation of a representative background threshold value (BTV), the 95% upper prediction limit (UPL95) arsenic concentration of 57.12 mg/kg calculated by USEPA will be used as the Site-specific background SRS....”.

In USEPA’s comments (correspondence dated January 2, 2019) on the Chemours RTC for the establishment of a site-specific background value for arsenic in soil, USEPA conveyed that historical information (e.g., aerial photographs, maps, interviews) should be reviewed and documented in the revised CMS that further assesses the prior use of this area of the property and whether it was subject to historically applied pesticides. The 2016 NJDEP guidance should be utilized to assist Chemours in addressing the prospective presence of historically applied pesticides. Although Chemours is now proposing to utilize a value calculated by USEPA (discussed further below), USEPA notes that Chemours did not provide any further historical information as documentation in the revised CMS sufficient to establish a site-specific background value for arsenic in soil.

Additionally, USEPA’s comments dated January 2, 2019 noted that the revised CMS needed to clearly identify in a figure(s) those on-site areas within the Wanaque River Valley for which Chemours has employed a calculated background level for arsenic in soil versus where NJDEP’s established background concentration of 19 mg/kg will be utilized, as well as where Chemours proposes to consider an ARS for arsenic in soil. This information was not provided in the Revised CMS.

Finally, in the revised CMS Chemours indicates that “...given the uncertainty identified by USEPA regarding the influence of potential outliers on the estimation of a representative background threshold value (BTV), the 95% upper prediction limit (UPL95) arsenic concentration of 57.12 mg/kg calculated by USEPA will be used as the Site-specific background SRS....”. Refer to #9 and #11 above for the context of the establishment of the 57.12 mg/kg concentration of arsenic. This was not a USEPA recommendation for a site-specific background value for arsenic.

Based on the aforementioned comments, USEPA has concluded that Chemours has not addressed the use of a site-specific background value for arsenic in a manner that is satisfactory or sufficiently responsive to the USEPA/NJDEP comments provided in the USEPA correspondence dated January 2, 2019. Chemours must: 1) use of the New Jersey Non-Residential Direct Contact Soil Remediation standard for arsenic of 19 mg/kg required as part of the evaluation of the extent of soil remediation necessary at the Site per N.J.A.C 7:26D; or 2) provide the information previously requested regarding calculation of a background level of arsenic in the Wanaque River Valley for USEPA/NJDEP review.

13. Page 26, Section 3.2 (Human Health Soil Remediation Standards), paragraph 1 – USEPA agrees with Chemours’ proposal to utilize New Jersey’s Residential Direct Contact Soil Remediation Standards for human health in the Northern Manufacturing Area (NMA) based on the representation that this parcel is considered a “State of New Jersey Land Transfer”.

14. Page 26, Section 3.2 (Human Health Soil Remediation Standards), paragraph 1 - USEPA agrees with Chemours that the applicable remediation standards for the Eastern Manufacturing Area (EMA) (Redevelopment Area) are the Non-Residential Direct Contact Soil Remediation Standards.

15. Page 26, Section 3.2 (Human Health Soil Remediation Standards), paragraph 2 – Chemours has proposed the use of ARS in the WMA and EMA (outside the proposed Redevelopment Area) consistent with Section 7 and Appendix 4 of the N.J.A.C 7:26D. USEPA has determined that the most appropriate standards to use in the WMA and EMA (outside the proposed Redevelopment Area) are the New Jersey Non-Residential Direct Contact Soil Remediation Standards.

In making this determination, USEPA considered the following:

- Application of the New Jersey Non-Residential Direct Contact Soil Remediation Standards is consistent with RCRA Corrective Action guidance, which calls for the evaluation of applicable or relevant and appropriate requirements in selecting corrective measures for a site. Promulgated standards (in this case the New Jersey Soil Remediation Standards) are used for site contaminants of concern where such standards have been established.

- As presented in its January 2, 2019 correspondence, USEPA made an inquiry to NJDEP about the extent to which NJDEP used ARS in the remediation of its contaminated sites. The feedback received indicated that the use of ARS was limited and did not include sites whose nature and extent of contamination was as extensive as the Pompton Lakes Works site.

- USEPA has the discretion to approve/reject the use of ARS proposed to NJDEP pursuant to N.J.A.C 7.26D-7 for purposes of selection of a corrective measure at a RCRA Corrective Action site;

- N.J.A.C. 7-26D-7.3(b) indicates that one of the bases for the request for an alternative remediation standard may include the following: alternative land use planned for the site. For the purpose of developing a Site-specific ARS for human health, passive recreational land use (such as walking or hiking) was considered for both the WMA and EMA (outside Redevelopment Area). However, the zoning designations in both Wanaque and Pompton Lakes indicate that allowable land use is almost exclusively commercial/industrial. Although passive recreation is listed as a permitted use in the HI zone for that portion of the site in Pompton Lakes, the predominant permitted land uses in the HI zone is, by definition, commercial/industrial.

16. Page 26, Section 3.2 (Human Health Soil Remediation Standards), paragraph 3 – USEPA is requiring the use of the 800 ppm value for lead in soil premised on: a) current and anticipated future land use in Wanaque and Pompton Lakes is commercial/industrial, b) 800 ppm is the promulgated value as New Jersey’s Non-Residential Direct Contact Soil Remediation Standard and c) 800 ppm would be consistent with remedial actions for lead in soils at Region 2 CERCLA and RCRA Corrective Action sites.

17. Page 27, Section 3.2 (Human Health Soil Remediation Standards), Table 3-1 – The table needs to be revised in accordance with the comments in this correspondence and entitled: “Proposed Human Health Remediation Standards”.

18. Page 27, Table 3-1 - For the EMA (Redevelopment Area), arsenic, cadmium, and carbon tetrachloride are listed on Table 2-2 but are not listed here as COCs. For the EMA (Outside the Redevelopment Area), chloroform is present on Table 2-2 with zero detections; this should indicate that it is not a COC. If there is another reason to include this chemical as a COC, please include this information in the report. Check that the information in Tables 2-2, 3-1, and the table on page 3 of 14 of Appendix A agree with each other.

19. Page 27, Section 3.3 (Ecological Soil Remediation Standards), Table 3-2 – The title of the table needs to be revised to “Proposed Ecological Soil Remediation Standards”.

20. Page 27 – 29, Section 3.3 (Ecological Soil Remediation Standards) and Appendix A – Pertinent information presented in Tables C-1 through C-5 of Appendix A are unchanged from the June 28, 2013 CMS submittal. The Food Ingestion Rates (FIR) in Table C-2 appear low, potentially biasing EDDs low, and ultimately, resulting in ERGs higher than they should be. Specifically, FIRs provided in EPA’s Wildlife Exposure Factors (WEF) Handbook for the meadow vole (0.30 – 0.35), red fox (0.069), American robin (0.89), and red-tailed hawk (approximately 0.1) are significantly higher. The justification for using lower than recommended FIRs in calculating ERGs was not provided as requested in the original NJDEP/USEPA comment letter. The FIRs in the CMS should be adjusted to reflect FIRs in EPA’s WEF Handbook. Adjusting the FIRs may ultimately affect the extent of soil excavation required to achieve the desired remedial outcome.

Discussions regarding specific limitations associated with compliance averaging in ecological settings and the applicability of compliance averaging methods to ecological remedial actions are ongoing between USEPA and NJDEP. Therefore, approval of using the UCL<sub>95</sub> evaluation of soil contaminant concentrations and the proposed iterative truncation method cannot be granted until the Agencies reach a technical consensus on the application of compliance averaging to ecological remedial actions. Depending on the outcome of USEPA/NJDEP discussions about the application of compliance averaging to ecological remedial actions, Chemours can provide their detailed proposal for the use of compliance averaging in the Corrective Measures Implementation Work Plan.

21. Page 29, Table 3-3 – Text should be added to state why lead, mercury, and PCBs are the only COCs with Impact to Groundwater Soil Remediation Standards.

22. Page 29, Section 3.4 (Impact to Groundwater Soil Remediation Standards), Table 3-3 – The title of the table needs to be changed to “Proposed Impact to Groundwater Soil Remediation Standards”.

23. Page 29, Section 3.4 (Impact to Groundwater Soil Remediation Standards) – Synthetic Precipitation Leaching Procedure (SPLP) testing was previously used to determine area-specific alternative impact to ground water and soil remediation standards for mercury, lead and PCBs. The site was broken up into 18 areas for this purpose, and the designation of these areas was previously approved. The SPLP alternative impact to ground water standards were presented in a March 22, 2018 report, “Draft Impact to Ground Water Standards Technical Report”. These standards have been previously reviewed and

approved and are presented in the Revised CMS. For areas in which there are no exceedances of the area-specific impact to ground water standards for mercury, lead and PCBs, no further action is required for the impact to ground water pathway for these contaminants. Revise Section 3.4 to reflect this information.

24. Page 30, Section 3.4.1 (Immobile Constituents) -- It is proposed to use the NJDEP impact to ground water immobile chemical option, when applicable, for areas in which contamination of lead and PCBs exceeds the area-specific impact to ground water standard. This option requires a clean zone of at least 2 feet between impacted soil and ground water. This proposal is acceptable. There would be no further action required regarding the impact to ground water pathway for lead and PCBs in areas that meet the requirements of the immobile chemical option.

After reviewing the SPLP results for mercury, it has been determined that all mercury SPLP results yield soil adsorption coefficients (Kd values) of greater than 100 L/kg, which qualifies mercury to also be considered as an immobile chemical for this site. Therefore, for areas in which at least two feet of uncontaminated soil exist between impacted soil (as defined by the area-specific standard) and ground water, no further action would be required for mercury for the impact to ground water pathway.

25. Page 30, Section 3.4.1 (Immobile Constituents) - Area-specific exceedances of lead, PCBs and mercury that exist within two feet of water table will require further evaluation. Since lead, PCBs and mercury have been determined to be immobile chemicals at this site, contamination greater than two feet above the water table will not be of concern with respect to the impact to groundwater pathway. For mercury, lead and PCB contamination within two feet of the water table, ground water monitoring may be used and should be proposed to evaluate any impacts of these contaminants to ground water. If ground water is shown to not be impacted, no further action would be required for these contaminants for the impact to ground water pathway. For further information on this option consult the "Site Soil and Ground Water Analytical Data Evaluation – Metals & Semi-Volatile Organic Compounds Contamination" option in the Impact to Ground Water section of the Remediation Standards webpage: <https://www.nj.gov/dep/srp/guidance/rs/>. If ground water is impacted, and the area has or will have a low permeability cap in place above the contamination, a ground water Classification Exception Area has been approved, and a Remedial Action Permit for soil and ground water is granted, ground water monitoring may be used to demonstrate that additional ground water contamination does not occur. For further information on this option consult the "Capping of Inorganic and Semi-volatile Contaminants for the Impact to Ground Water Pathway" in the Impact to Ground Water Section of the Remediations Standards webpage. If ground water is impacted and the capping option is not to be used, the path forward will need to be further evaluated/discussed.

26. Page 34, Section 3.5.1 (Functional Areas) - It is stated in the Revised CMS that compliance averaging will be used as allowed to compare against the default or area-specific standards for the various exposure pathways. This may be acceptable for the impact to ground water pathway as long as NJDEP's compliance averaging guidance is properly followed. The proposal to utilize compliance averaging to evaluate if cleanup standards are met should be detailed in the Corrective Measures Implementation Work Plan and its use will be subject to review and approval by USEPA/NJDEP.

27. Page 37, Section 4 (Remedial Action Objectives) – Table 4-1 remedial action objectives for human health and ecological receptors should be revised to reflect the comments in this correspondence regarding each of the established land use areas. In conjunction with this, Chemours must address Comment 1 of this letter so that USEPA/NJDEP can adequately assess if the contaminants listed for



each of the areas in Table 4-1 are correct and complete. The following revisions should be made to Table 4-1:

- NMA:  
Human Health RAO - use of New Jersey Residential Direct Contact Soil Remediation Standards for lead, benzo(a)pyrene in soils as well as for arsenic (absent providing further historical information on background levels of arsenic and/or supplementing the previous sampling program to determine an appropriate arsenic in soil background concentration in this area of the site).  
Ecological Receptor RAO – Unchanged other than to reconcile use of compliance averaging to determine attainment of the clean-up value(s).
- WMA:  
Human Health RAO – use of New Jersey Non-Residential Direct Contact Soil Remediation Standards for COCs in soils including arsenic (unless Chemours provides additional information as noted for the NMA to establish a site-specific background for arsenic that would represent an ARS if appropriate in the WMA).  
Ecological Receptor RAO – Unchanged other than to reconcile use of compliance averaging to determine attainment of the clean-up standard.
- EMA (Redevelopment Area):  
Human Health and Ecological RAOs – Unchanged- Non-Residential Direct Contact Soil Remediation Standards
- EMA (outside Redevelopment Area):  
Human Health RAO – use of the New Jersey Non-Residential Direct Contact Soil Remediation Standards including arsenic.  
Ecological RAOs – Unchanged.

28. Page 39, Section 5 (Identification and Screening of Technologies) – Table 5-1 should evaluate the effectiveness and implementability of ex-situ stabilization as part of its assessment of immobilization technologies.

29. Page 40, Section 6.0 (Identification of Corrective Measure Alternatives) – Although Chemours addressed previous USEPA comments about providing a layout of what areas are subject to excavation and off-site disposal and excavation and consolidation for each relevant alternative as well as an estimated volume of waste material; the bases for the calculations of the approximated volumes of waste material subject to excavation and consolidation and excavation and off-site disposal are not provided. Chemours should provide an appendix that shows the calculations for the approximated volumes of excavated and other waste materials for each area, as well as the total estimated volume for this and the other alternatives.

30. Page 40, Section 6.2 (Limited Action) - The description of this alternative should include the use of signage to inform the public that access to the site is prohibited. Although the alternative as the sole corrective measure would not meet the RAOs established for the Site, it should be noted in the description that this alternative could be a component of other alternatives presented/evaluated.

31. Page 41/42, Section 6.3 (Alternative 3 – Excavation, On-Site Consolidation/Capping in Redevelopment Area, and Monitoring for Impact to Groundwater {IGW}) – The title of the alternative needs to include Institutional Controls as well as Cap Maintenance and Monitoring (cap and prospectively groundwater per Comment #25) as components of the proposed corrective action. The description of the alternative needs to be revised to reflect the clean-up values established in this correspondence.

NMA – What is the estimated volume of soil proposed to be consolidated to the EMA (Redevelopment Area)? The discussion regarding excavation/removal of the remains of above-grade historical buildings needs to include the disposition of the remains from the buildings.

WMA/EMA (outside Redevelopment Area) - Exposure to subsurface soil as a future exposure pathway was not considered in the On-Site Soils CMS. Chemours' proposal that only surface soil samples (0-2 ft bgs) will be used to determine the need for remedial activity conflicts with the NJDEP's regulations, which require Soil Remediation Standards to be compared to soil data throughout the entire soil column to address the possibility that deeper soils may be brought to the surface, thereby resulting in potentially unacceptable exposure to site receptors. What is the estimated volume of soil proposed to be consolidated to the EMA (Redevelopment Area)?

EMA (Redevelopment Area) – Although a low-permeability cap is included as a remedial component for this area, a general description of the cap components is required.

Institutional Controls and Monitoring – Signage should be included as part of the institutional controls proposed for this and the other alternatives evaluated. It should be stated that cap monitoring/maintenance and prospectively groundwater monitoring (See Comment #25) programs would be prepared/implemented as part of long-term operation and maintenance at the Site. Details would be provided in an Operation and Maintenance Plan prepared as part of the Corrective Measures Implementation phase.

32. Page 42/43/44, Section 6.4 (Alternative 4 – Excavation, Off-site Disposal, Isolated Capping in EMA and Redevelopment Area, and Monitoring for IGW) - The title of the alternative needs to include Institutional Controls as well as Cap Maintenance/Monitoring as components of the proposed corrective action. The description of the alternative needs to be revised to reflect the clean-up values established in this correspondence.

NMA - What is the estimated volume of soil proposed to be excavated and transported to an off-site disposal facility? The discussion regarding excavation/removal of the remains of above-grade historical buildings needs to include the disposition of the remains from the buildings.

WMA/EMA (outside Redevelopment Area)/EMA (Redevelopment Area) - Exposure to subsurface soil as a future exposure pathway was not considered in the On-Site Soils CMS. Chemours' proposal that only surface soil samples (0-2 ft bgs) will be used to determine the need for remedial activity conflicts with the NJDEP's regulations, which require Soil Remediation Standards to be compared to soil data throughout the entire soil column to address the possibility that deeper soils may be brought to the surface, thereby resulting in potentially unacceptable exposure to site receptors. What is the estimated volume of soil proposed to be excavated and transported off-site for disposal from each area?

EMA (outside Redevelopment Area)/ EMA (Redevelopment Area) - Although a low-permeability cap is included as a remedial component for these areas, a general description of the cap components is required.

Institutional Controls and Monitoring -- Signage should be included as part of the institutional controls proposed for this and the other alternatives evaluated. It should be stated that cap monitoring/maintenance and prospectively groundwater monitoring (See Comment #25) programs would be prepared/implemented as part of long-term operation and maintenance at the Site. Details would be provided in an Operation and Maintenance Plan prepared as part of the Corrective Measures Implementation phase.

33. Page 44/45/46 (Alternative 5 – Excavation, Off-site Disposal, Isolated Capping in Redevelopment Area and Monitoring for IGW) - The title of the alternative needs to include Institutional Controls as well as Cap Maintenance/Monitoring as components of the proposed corrective action. The description of the alternative needs to be revised to reflect the clean-up values established in this correspondence.

NMA - What is the estimated volume of soil proposed to be excavated and transported to an off-site disposal facility? The discussion regarding excavation/removal of the remains of above-grade historical buildings needs to include what the disposition of the remains from the buildings.

WMA/EMA (outside Redevelopment Area)/EMA (Redevelopment Area) - Exposure to subsurface soil as a future exposure pathway was not considered in the On-Site Soils CMS. Chemours' proposal that only surface soil samples (0-2 ft bgs) will be used to determine the need for remedial activity conflicts with the NJDEP's regulations, which require Soil Remediation Standards to be compared to soil data throughout the entire soil column to address the possibility that deeper soils may be brought to the surface, thereby resulting in potentially unacceptable exposure to site receptors. What is the estimated volume of soil proposed to be excavated and transported off-site for disposal from each area? Although a low-permeability cap is included as a remedial component for isolated portions of the EMA (Redevelopment Area), a general description of the cap components is required.

Institutional Controls and Monitoring -- Signage should be included as part of the institutional controls proposed for this and the other alternatives evaluated. It should be stated that a cap monitoring/maintenance program would be prepared/implemented as part of long-term operation and maintenance at the Site. Details would be provided in an Operation and Maintenance Plan prepared as part of the Corrective Measures Implementation phase.

34. Page 47/48 (Evaluation of Corrective Measure Alternatives) – While Table 7-1 provides a summary of the evaluation of corrective measures alternatives, there is not sufficient detail in the “comments” provided as part of Table 7-1 to differentiate how each alternative does/does not attain the specific criteria. Regarding each of the criteria subsequently listed and consistent with USEPA's *RCRA Corrective Action Plan* (Final), OSWER Directive 9902.3-2A dated May 1994; the following items need to be addressed.

Protect Human Health and the Environment – Chemours needs to include a discussion on what types of short-term remedies are appropriate, if any, in order to meet this criterion. For example, the construction of barriers or other controls that would prevent harm arising from direct contact with waste management units until the final corrective measure is constructed.

Attain Media Cleanup Standards Set by the USEPA/NJDEP – Chemours should revise any discussion provided here to reflect whether the alternative evaluated can meet the soil clean-up values established in this correspondence. In addition, an estimate of the time frame necessary for each alternative to meet these standards should be provided.

Control Source of Releases – The alternative should include a discussion on how well the remedial components are anticipated to work given the site-specific conditions and the known track record of the specific technologies.

Comply With Any Applicable Standards for Management of Wastes – Chemours needs to present a list of the applicable and relevant or appropriate requirements and discuss how the alternatives will comply with those requirements.

Long-Term Reliability and Effectiveness – Chemours should provide a discussion regarding the useful life (defined as the length of time the level of effectiveness can be maintained) of each alternative and its component technologies.

Reduction in Toxicity, Mobility or Volume of Waste - Estimates of how much the corrective measures alternatives would reduce the toxicity, mobility or volume of waste should be discussed through a comparison of initial site conditions to the expected post-corrective measure conditions.

Implementability – A discussion on the administrative activities needed to implement each of the corrective measure alternatives (e.g., permits, rights of way, off-site approvals, etc.) and the length of time these activities will take should be provided. The constructibility and time for implementation should be provided.

Cost – Chemours has not provided any cost information in the Revised CMS. Cost estimates for each alternative need to be provided that include costs for: engineering, site preparation, construction, materials, labor, sampling/analysis, waste management/disposal, permitting, health and safety measures, training, operation and maintenance.

In conjunction with the aforementioned comments, Chemours must provide a comparative analysis that sufficiently differentiates the alternatives using the evaluation criteria.

35. Page 49, Section 8.0 (Proposed Corrective Measure Alternative) – The proposed corrective measure alternative (Alternative 4) is not sufficiently differentiated from Alternative 5 in this section. Chemours needs to provide a level of comparative analysis using the evaluation criteria (see comments for Section 7.0 as well) that sufficiently differentiates the proposed alternative from the other alternatives, particularly Alternative 5, such that EPA/NJDEP can make a decision regarding the recommended corrective measure. A rationale for the remedial approach in each of the areas requiring a corrective measure should be provided.

36. Page 49, Section 8.1.1 (Supplemental Sampling) – For paragraph 1, note per previous comments in this correspondence, final excavation limits will be determined based on the clean-up values established in this comment letter. For paragraph 3, hasn't there been sufficient soil sampling to establish whether there is a need for pre-treatment prior to off-site disposal? If so, Chemours should add a section that provides a conceptual approach to any bench- or pilot-scale treatability testing that may be required to meet land disposal restrictions.

37. Page 52, Section 9.0 (Path Forward) – Note that the following information should be added to the Revised CMS. The preparation of the Corrective Measures Implementation Work Plan (CMIWP) is contingent on the approval of the CMS as well as the issuance of a permit modification by USEPA. Prior to initiation of any pre-design activities, Chemours will need to submit a Work Plan that presents the scope of work, details on procedures to be followed and an implementation schedule. In conjunction with approval of the Pre-design work plan including its implementation schedule, USEPA/NJDEP and Chemours will establish a schedule for completion/submittal of the CMIWP.

38. Figure 5 of the Revised CMS accounts for approximately 571.5 of the approximately 588 acres of the Site. Although caveated as approximations by Chemours, this approximately 18- acre discrepancy should be reconciled.

39. Figures 8, 9 and 10 - As shown on the figures, in various areas of concern, Chemours proposes solely capping. Also, as shown on the figures, Chemours proposes limited excavation depths. The ability to evaluate these alternatives is constrained as USEPA/NJDEP need to know the contaminants, concentrations, depths, extent of contamination, etc. that would be left behind in order to evaluate the acceptability of such proposals. This information should be either displayed on the figures or add a section that describes the data findings.

40. Appendix A, page 1 of 14, 3<sup>rd</sup> paragraph, second to last sentence – This sentence states that “There was the assumption that no public access to the EMA (outside Redevelopment Area) will be allowed.” It should be specified in the description of alternatives which areas of the site will include engineering and or institutional controls such as fences, signs, gates, etc. to ensure that potential public access, where appropriate (e.g. EMA outside of the Redevelopment Area is limited to the greatest extent possible).

41. Appendix A, page 3 of 14 – This table of Human Health COCs is missing arsenic. Please add this to the table.

### **Closing**

Pursuant to the Modified Compliance Schedule issued under the RCRA HSWA Permit, Chemours should submit a revised CMS within 60 days of the date of this correspondence. Should Chemours require additional time to submit the revised CMS, a written request should be made to USEPA/NJDEP at least 2 weeks prior to the due date for submittal of the revised CMS.

Should you have any questions in the interim, or if you would like to discuss the comments further, please feel free to contact USEPA’s Project Manager, Perry Katz, at 212-637-4426 or via email at [katz.ira-perry@epa.gov](mailto:katz.ira-perry@epa.gov).

Sincerely,



Kim O’Connell, Chief  
New Jersey Remediation Branch  
Superfund & Emergency Management Division

cc: Anthony Cinque, NJDEP  
Michael Serra, Mayor – Borough of Pompton Lakes  
Mary Ann Orapello, Health Officer – Township of Wayne Health Department  
Norma Eichlin, HDR