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January 20, 2015

**BY EMAIL AND REGULAR U.S. MAIL**

Susan Hedman
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Randy C. Huffman
Cabinet Secretary
West Virginia Department of Environmental Protection
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Charleston, WV 25304

Shawn M. Garvin
Regional Administrator
United States Environmental Protection Agency
Region III
1650 Arch Street
Mail Code: 3RA00
Philadelphia, PA 19103-2029

Re: *In the Matter of: E.I. du Pont de Nemours and Company*
(Docket Nos. SDWA-03-2009-0127 DS – SDWA-05-2009-0001)

Dear Ms. Hedman, Mr. Garvin and Mr. Huffman:

We first wrote to US EPA and WVDEP in March of 2001 – over 13 years ago – to alert your Agencies to the imminent and substantial threat to human health and the environment posed by the contamination of human drinking water supplies with perfluorooctanoic acid ("PFOA" a/k/a "C-8") released from E. I. du Pont de Nemours and Company's ("DuPont's) Washington Works Plant in Wood County, West Virginia (the "DuPont Plant"). (*See* Ex. A.) In that original letter, we alerted your Agencies to the fact that PFOA was poisoning drinking water supplies in the vicinity of the DuPont Plant at levels exceeding a 1 part per billion (1 ppb) exposure guideline that DuPont had adopted for PFOA in community water more than a decade earlier, and asked your

Agencies to take immediate action to address and abate that health threat under applicable state and federal laws, including the Clean Water Act ("CWA"), the Safe Drinking Water Act ("SDWA"), the Toxic Substances Control Act ("TSCA"), and the Resource Conservation and Recovery Act ("RCRA"). (*See id.*) Soon thereafter, US EPA launched a "priority review" of PFOA under TSCA and began the process to establish federal safety limits for PFOA in drinking water, beginning with the release of a draft PFOA risk assessment in 2003. WVDEP, on the other hand, has still not even begun the process of trying to establish or set any regulatory safety levels for PFOA, choosing, instead, to defer to whatever US EPA ultimately decides. In the meantime, given the lack of any enforceable federal or state regulatory safety limits for PFOA in drinking water, US EPA was left with having to address this serious health threat by negotiating "Consent Orders" with DuPont through which US EPA could incorporate only such terms as to which DuPont ultimately would "consent."

The first such US EPA Consent Order was entered in 2002, soon after US EPA received our original letter. Rather than require clean water whenever DuPont's own 1 ppb drinking water exposure level was exceeded (which 1 ppb level had been created by DuPont's own scientists, had been followed internally by DuPont for more than a decade, and was still being followed internally by DuPont at that time), DuPont would only "consent" to providing clean water through this new Consent Order, if the level of PFOA exceeded a significantly higher 14 ppb level that DuPont's outside consultants had generated.

Just two months later, in May 2002, DuPont succeeded in forcing US EPA to raise that 14 ppb level to 150 ppb, based on the terms of a separate, privately-negotiated deal between DuPont and WVDEP under which WVDEP allowed DuPont to collaborate with WVDEP and its consultant to create a new, higher trigger level for clean water. DuPont then held that 150 ppb number out to the public for the next several years as the appropriate, government-endorsed safety number for PFOA in drinking water, even though, internally, DuPont's own scientists still supported a 1 ppb exposure guideline for PFOA in community drinking water supplies.

DuPont only "consented" to a new Consent Order with US EPA on these issues in 2006, after significant additional health risk information had been released on PFOA, including a final report from US EPA's own Science Advisory Board, where the majority of the Board recommended that PFOA be classified as a "likely" human carcinogen. Upon review of this new data, US EPA's scientists had determined that the 150 ppb trigger picked by DuPont and WVDEP was "not protective of human health and must be replaced by a lower threshold value of 0.20 ppb." (Ex. B. at 1.) DuPont informed US EPA at the time that it agreed, based on this new data, that "it is prudent to minimize, where possible, exposure to biopersistent materials such as PFOA," and that a new, lower clean water trigger number should be adopted "to help promote reductions of PFOA in blood levels through alternate drinking supplies." (Ex. C at 3-4.) According to DuPont, a "median serum/drinking water ratio for PFOA was calculated to be 105, i.e.,

for every 1 ppb of PFOA in drinking water ingested by community residents; 105 ppb of PFOA will be present in serum." (*Id.* at 9.) At the 150 ppb trigger level then in effect, DuPont noted that "a serum level of approximately 15 ppm [15,000 ppb] can be predicted," which "exceeds the current occupational exposures" where adverse health effects were being reported in the new data. (*Id.* at 11.) According to DuPont, reducing the clean water trigger from 150 ppb to 0.5 ppb - not 0.20 ppb – would be sufficient, as it "would result in approximately 50 ppb of PFOA in serum," which DuPont argued was "within the range found in the general population" where no such adverse health effects were purportedly being found at the time. (*Id.*) Thus, in light of DuPont's refusal to agree to a safe drinking water trigger level any lower than 0.5 ppb at that time, the new US EPA/DuPont Consent Order in 2006 lowered the PFOA clean drinking water threshold from 150 ppb to 0.5 ppb PFOA. US EPA was not able to obtain DuPont's "consent" to lower the threshold for safe water any further until 2009, after US EPA released its first "provisional health advisory" ("PHA") for short-term, temporary exposure to C-8 in drinking water of 0.4 ppb. At that point, DuPont finally agreed to lower the clean water trigger in its Consent Order with US EPA - but only from 0.5 ppb to 0.4 ppb.

US EPA made clear in its 2009 Consent Order with DuPont that the 0.4 ppb C-8 trigger level for clean water was a "temporary value that will be re-evaluated when EPA determines a reference dose under TSCA or establishes a drinking water standard for C-8, whichever comes first." (2009 Consent Order, at ¶ 46.) US EPA also made clear that it reserved "the right to modify the [0.4 ppb C-8 clean water trigger] identified in this Order if information previously unknown to EPA is received and EPA determines that this previously unknown information, together with any other relevant information, indicates that [such trigger level] may not be protective of human health." (*Id.* at ¶ 47.)

Since entry of the current Consent Order in March of 2009, extensive additional information has been released in the scientific and peer-reviewed literature confirming that the 0.4 ppb trigger level for clean water is not protective of human health for long-term exposures and should be revised. For example, in December 2009, US EPA released its Long-Chain Perfluorinated Chemicals (PFCs) Action Plan, identifying C-8 as "raising serious health and environmental concerns," which could justify significant "risk reduction measures to protect human health and the environment." Then, in 2011-2012, an independent C-8 Science Panel – jointly selected and fully-funded by DuPont – confirmed probable links between exposure to PFOA in drinking water as low as 0.05 ppb and six serious human diseases: 1) kidney cancer; 2) testicular cancer; 3) ulcerative colitis; 4) thyroid disease; 5) pregnancy-induced hypertension/preeclampsia; and 6) hypercholesterolemia. Each of those links was based on the independent Science Panel's review of data (including PFOA blood tests, blood chemistries, and medical records reviews/verifications) from approximately 70,000 people actually exposed to PFOA in drinking water in the vicinity of the DuPont Plant, along with all other available data, including peer-reviewed studies from all over the world and DuPont's own worker data. Each of the Science Panel's findings ultimately was

confirmed in published, peer-reviewed papers. US EPA was encouraged through public comments and formal peer reviewers to consider and incorporate all such important new data (along with additional, significant new toxicological data, including new data on mammary gland impacts and from studies in mice), in the context of finalizing US EPA's "Health Effects Document for Perfluorooctanoic Acid," which was released in draft form to the public in 2014 but, as of today's date, still has not been finalized.

Although US EPA still has not released a guideline for long-term, chronic exposure to PFOA in drinking water or finalized its PFOA health effects document, European regulators have moved forward. Just this month, the European Chemicals Agency (ECHA) publicly released a report from Germany and Norway recommending significant new restrictions on PFOA in light of the more current health effects data, specifically including the findings of the C8 Science Panel linking very low level PFOA exposure in drinking water (as low as 0.05 ppb) with 6 diseases, including two forms of cancer. (*See* http://echa.europa.eu/documents/10162/e9cddec6-3164-473d-b590-8f9caa50e7 .) Particularly significant in this new European report are new risk calculations revealing that levels of PFOA in the blood of people exposed to PFOA at the levels allowed under the existing 2009 Consent Order (PFOA drinking water levels as high as 0.5 ppb) would far exceed the blood risk levels derived using the latest health effects data. This is because significant adverse health effects (including cancer) were found to be linked to PFOA exposures in humans as low as 0.05 ppb in drinking water – some *ten times lower* than the current level allowed under the 2009 Consent Order. (*See also* Post, G.B., *et al.*, "Perfluorooctanoic acid (PFOA), an emerging drinking water contaminant: A critical review of recent literature," 116 *Environ. Res.* 93-117 (July 2012).)

Although neither the European report nor US EPA's work to set a safety level for long-term chronic exposure to PFOA in drinking water has been completed, US EPA retains both the right and responsibility to modify the 2009 Consent Order in light of new health data on PFOA to make sure that human health is protected. US EPA should consider the new PFOA health effects data and European safety calculations noted above to evaluate whether there is a current or imminent and substantial threat or endangerment to human health that mandates steps be taken to modify the 2009 Consent Order to require DuPont to provide for alternate/clean drinking water for any human drinking water supply in the vicinity of the DuPont Washington Works Plant where PFOA has been detected at levels below the current 0.4 ppb trigger level established in that Consent Order. In New Jersey, for example, state regulators already are evaluating the safety of drinking water supplies by comparing PFOA water levels to a 0.04 ppb "health-based drinking water guidance level" developed specifically for the purpose of assessing long-term, chronic exposures to PFOA in human drinking water supplies. (*See, e.g.,* Ex. D.)

As both US EPA and WVDEP are aware, there are at least two public drinking water supplies in the vicinity of the DuPont Plant in West Virginia where sampling for

PFOA revealed levels of PFOA in the treated water above the 0.05 ppb level of exposure considered in the C8 Science Panel studies: 1) the City of Parkersburg, West Virginia (most recent rounds of CCL3 sampling data submitted to US EPA and now posted on US EPA's website revealed PFOA as high as 0.0631 ppb after treatment on 3/25/14); and 2) the City of Vienna, West Virginia (reports submitted by DuPont to US EPA and posted in US EPA' public dockets confirm 0.056 ppb PFOA after treatment on last-known PFOA sampling date of 5/10/07). (*See* Ex. E). DuPont successfully used US EPA's and WVDEP's continuing failure to adopt any final long-term, chronic exposure limits for PFOA in drinking water to thwart all efforts by impacted Parkersburg residents to require DuPont to provide clean water through the court system. (*See, e.g.,* 9/30/08 Memorandum Opinion and Order in *Rhodes, et al., v. E.I. du Pont de Nemours and Co.,* Civil Action No. 6:06-cv-00530 (S.D. W. Va.) at 1 (West Virginia federal court denied Parkersburg residents' attempts to bring community/class-wide claims against DuPont for clean water through the judicial system, noting that, although the "plaintiffs have presented compelling evidence that exposure to C-8 may be harmful to human health, and the evidence certainly justifies the concerns expressed by the plaintiffs in this case," the Court could not certify those claims to proceed through the Court system at that time: "The fact that a public health risk may exist is more than enough to raise concern in the community and call government agencies to action, but it does not show the common individual injuries needed to certify a class action" for relief through the judicial system.).)

Thus, despite DuPont's acknowledgment to US EPA by at least 2006 that "it is prudent to minimize, where possible, exposure to biopersistent materials such as PFOA" and purported desire "to help promote reductions in PFOA in blood levels through alternate drinking supplies," (Ex. C at 3-4), DuPont aggressively fought and ultimately succeeded in preventing Parkersburg residents from obtaining clean water through the court system, even though DuPont knew that failure to remove PFOA from that water would allow PFOA to steadily build up and accumulate in the blood of the residents drinking that water at a ratio of approximately 105 ppb PFOA in blood for every 1 ppb PFOA in their drinking water. US EPA and WVDEP, likewise, have not required any action to date to abate these on-going exposures in either Parkersburg or Vienna, despite knowledge of the on-going contamination (and associated accumulation and build- up of PFOA in residents' blood) for almost a decade.

US EPA should re-assess its position with respect to these on-going PFOA exposures in light of existing health data. US EPA also should consider whether any steps need to be taken to insure that the appropriate parties remain bound under its existing Consent Orders and Memoranda of Understanding with DuPont on PFOA issues, in light of DuPont's recently announced intentions to soon "spin-off" and/or jettison certain operations and liabilities of DuPont relating to PFOA to a new entity to be known as "Chemours," (*see* Ex. F).

Very truly yours,

Robert A. Bilott

RAB:mdm
Ecls: Exs. A-F
cc: Elizabeth Doyle, USEPA (w/encls.)(by regular U.S. mail)

# EXHIBIT A

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EXHIBIT
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Re: Request For Immediate Governmental Action/Regulation Relating To DuPont's C-8 Releases In Wood County, West Virginia And Notice Of Intent To Sue Under The Federal Clean Water Act, Toxic Substances Control Act, And Resource Conservation And Recovery Act - NOTE: For Inclusion In USEPA Docket No. OPPTS-50639A

Ladies and Gentlemen:

Our law firm represents Wilbur Earl Tennant and Sandra K. Tennant (Route 3, Box 17, Washington, WV 26181, (304) 863-8787), James David Tennant and Della Marie Tennant (Route 3, Box 372, Parkersburg, WV 26101, (304) 863-5428), and Erwin Jackson Tennant (Route 3, Box 17A, Washington, WV 26181, (304) 863-6977) (collectively, the "Tennants") in connection with a lawsuit that is currently pending against E.I. duPont de Nemours & Co., Inc. ("DuPont") in Federal Court in Parkersburg, West Virginia, styled *Tennant v. E.I. duPont de Nemours & Co., Inc.*, Civil Action No. 6:99-0488 (S.D. W.Va.). The Tennants have sued DuPont in connection with the release of various pollutants and contaminants from DuPont's Dry Run Landfill in Wood County, West Virginia. (See Exhibit 133.) The Tennants believe that

such releases have resulted in and continue to result in personal injury and property damage to the Tennants, including the death of several hundred head of the Tennants' cattle and serious health problems for the Tennants.

During the course of the litigation, we have confirmed that the chemicals and pollutants released into the environment by DuPont at its Dry Run Landfill and other nearby DuPont-owned facilities may pose an imminent and substantial threat to health or the environment. More specifically, information currently available to the Tennants confirms that DuPont has been releasing and continues to release into the air, land, and water, including human drinking water supplies, an essentially unregulated, confirmed animal carcinogen known as ammonium perfluorooctanoate (a/k/a C-8/FC-143/APFO/PFOA) (CAS No. 3825-26-1) (hereinafter "C-8").[1] Hundreds of head of cattle, along with numerous deer, fish, frogs, and other animals, have died in the area affected by the C-8 releases, and area residents exposed to the C-8 releases have been suffering ill health effects that are believed to be associated with C-8 exposure. For example, one of our clients, Wilbur Earl Tennant, has been in and out of the hospital repeatedly over the last few years suffering from respiratory problems, chemical burns, and other health problems after exposure to materials from the Dry Run Landfill.

For the reasons discussed in more detail below, the Tennants hereby request that each of your agencies intervene in the Tennants' pending lawsuit and order the immediate investigation, assessment, containment, removal, and remediation of DuPont's C-8 releases into the environment from the Dry Run Landfill, including an order that DuPont immediately cease and desist all C-8 releases and that appropriate medical care/testing/evaluation be provided to the Tennants. The Tennants also request that DuPont's permit to operate the Dry Run Landfill be immediately revoked and that all operations at that landfill be suspended until adequate scientific demonstrations are made to prove that the C-8 releases have been abated and will not recur.

In addition, the Tennants specifically request that USEPA exercise its authority under TSCA to order DuPont to immediately cease all manufacturing activities involving C-8 until DuPont can prove through appropriate scientific testing and research that its usage of C-8 does not pose an unreasonable risk of injury to health or the environment. In the meantime, the Tennants request that your agencies take those steps necessary to begin regulating C-8 releases into the environment. In that regard, the Tennants request that, at a minimum, USEPA include C-8 among the chemicals that it proposed in October of 2000 to regulate under TSCA on the grounds that the chemicals "may be hazardous to human health and the environment." (See Exhibit 123.) The Tennants believe that the information recently obtained from DuPont regarding C-8's potential threat to human health, (see e.g., Exhibits 71, 125, and 126), warrants regulation of C-8 at least as aggressively as the related perflourinated chemicals manufactured by 3M.

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[1] Currently available information also indicates unusual levels of iodide/iodine, along with Triton in Dry Run Creek. (See Exhibit 91.)

This letter also constitutes notice on behalf of the Tennants and a class of other individuals similarly situated of their intent to bring citizen suit claims against DuPont in connection with DuPont's C-8 releases into air, land, and water from DuPont's Washington Works facility in Wood County, West Virginia under the Federal Clean Water Act ("CWA"), Toxic Substances Control Act ("TSCA"), and Resource Conservation and Recovery Act ("RCRA").[2] The factual and legal basis of such citizen suit claims is explained in detail below.

Additional documentation in support of the basic facts summarized below is available at our offices in Cincinnati, including a chronologically-organized database of the over 110,000 pages of documents produced to date by DuPont on this topic.

## I. DuPont Has Used C-8 Primarily At Its Washington Works Plant In Wood County, West Virginia.

C-8 is a perfluorinated detergent/surfactant manufactured in the United States by 3M Company that DuPont uses in connection with its manufacture of Teflon®-related products. (See Exhibits 1 and 118.)[3] DuPont has used C-8 as a reaction aid in its production of polytetrafluoroethylene (PTFE) and tetrafluoroethylene (TFE) co-polymers at its Washington Works facility outside Parkersburg, West Virginia since the early 1950s. (See Exhibit 118.) Wastes from the Washington Works' C-8 processes are either vented to the air following incineration, dumped into the Ohio River, sent to DuPont's Chambers Works facility in Deepwater, New Jersey for treatment and discharge, or disposed of at landfills. (See id.) The polymer product manufactured at the Washington Works is either sold directly to DuPont's customers (in the United States and abroad) or transferred to DuPont's Spruance Plant in Richmond, Virginia for use in the production of Teflon® and PTFE-coated fibers or transferred to DuPont's Parlin Plant in Parlin, New Jersey for use in the production of Teflon® finishes, some of which is then used in consumer cookware. (See id.) C-8 may remain in some of the products sold from DuPont's Washington Works, Spruance Plant, and Parlin Plant. (See id.) Some of DuPont's Teflon® materials have been used in medical implants that are inserted directly into the human body. (See Exhibit 132.)

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2 Please note that, although the Tennants already have filed claims against DuPont under the CWA and RCRA, these pending claims relate only to releases from DuPont's Dry Run Landfill. This letter provides notice of the Tennants' intention to also bring separate claims against DuPont under the CWA, TSCA, and RCRA with respect to releases from DuPont's nearby Washington Works plant in Wood County, West Virginia, on behalf of themselves and a class of others similarly situated.

3 ®DuPont's registered trademark.

## II. DuPont Has Known That Excessive Exposure To C-8 Causes Adverse Effects.

DuPont has worked closely with 3M since at least the 1970s to investigate the toxic and carcinogenic effects of C-8 on animal and human health. (See id. and Exhibits 2, 24, and 49.) Through such company-sponsored studies, DuPont acquired knowledge by at least the early 1980s that C-8 was toxic and carcinogenic to animals, whether through inhalation, direct skin contact, or ingestion. (See Exhibits 12, 49, and 71.) Around the same time, DuPont also became aware that C-8 is biopersistent/bioaccumulative in animals and humans. (See Exhibits 30, 49 and 71.)[4]

In response to the mounting toxicity data on C-8, and because C-8 was essentially an unregulated chemical that, according to USEPA, had simply "sail[ed] under the agency regulatory radar screen" for decades, (see Exhibit 114), DuPont established in the 1980s its own internal standards for what it considered to be acceptable C-8 exposure levels for humans. For exposure to C-8 via air emissions/inhalation routes, DuPont determined that an "acceptable exposure limit" (AEL) for humans is 0.01 $mg/m^3$ (skin), with an acceptable "community exposure guideline" (CEG) for airborne emissions of 0.0003 $mg/m^3$. (See Exhibits 2-4, and 9.) For human exposure to C-8 through contaminated water, DuPont established a CEG of 1 ppb. (See id.) DuPont also began routine monitoring of the levels of C-8 in the blood of its own employees, including employees at Washington Works, as early as 1981, (see Exhibit 118), and began looking for alternatives to C-8. By 1993, DuPont believed it may have found a viable, less toxic alternative to C-8, (see Exhibit 42), but decided to keep using C-8 anyway.

Later in 1993, a study conducted by the University of Minnesota linked C-8 exposure with increased prostate cancer among human males. (See Exhibits 47 and 51.) By 1996, DuPont also had been informed that new tests were linking C-8 to DNA damage. (See Exhibit 60.) In response, DuPont, 3M, and others commissioned studies to further assess the potential effects of C-8 on humans through tests on monkeys. (See Exhibits 77, 84, 93, and 105.) By November of 1998, DuPont knew that one of the monkeys in the study receiving a 30 mg/kg dose of C-8 was suffering severe health effects. (See Exhibit 90.) By February of 1999, DuPont knew that one of the monkeys involved in the C-8 testing receiving the lowest dose of C-8 (3 mg/kg) had suffered such severe health effects that it had to be sacrificed. (See Exhibit 94.) By May of 1999, DuPont knew that a second monkey in the study had also suffered such severe health effects that it had to be sacrificed. (See Exhibits 103, 105, 107, 108 and 125.) The preliminary monkey study results also confirmed adverse liver effects among all of the monkeys in the study, regardless of exposure levels. (See id. and Exhibits 125 and 126.) Thus, because even exposure to the lowest

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[4] DuPont also became aware of evidence as early as 1981 that at least two children born to its Washington Works employees who worked with C-8 while pregnant appeared to have been born with birth defects similar to those observed among rats exposed to high levels of C-8. (See Exhibit 13.)

dose of C-8 during the studies (3 mg/kg) produced adverse observable effects, a "no observable effects level" (NOEL) could not be found for C-8 in primates. (See Exhibits 105, 126.)

3M eventually notified USEPA of the preliminary results of the monkey study in a filing under TSCA, Section 8(e) during November of 1999. (See Exhibit 111.) Within only a few months, USEPA notified 3M that it intended to pursue more rigorous regulation of the perfluorinated chemicals manufactured by 3M. (See Exhibits 113 and 120.) Soon thereafter, 3M publicly announced that it would "voluntarily" withdraw from the market all of its perfluorinated chemical products, including the C-8 that it sells to DuPont for use in DuPont's Teflon® products, and the chemicals 3M uses to make its Scotchguard® products. (See Exhibits 113 and 114.)[5]

After learning that DuPont was one of the principal users of 3M's C-8 product, USEPA's TSCA Division requested in April of 2000 that DuPont supply information regarding DuPont's usage and release of C-8 within the United States. (See Exhibit 112.) DuPont produced some C-8 research data to USEPA on May 25, 2000, (see Exhibit 115), followed by preliminary usage and release information in a letter dated June 23, 2000. (See Exhibit 118.) In its C-8 disclosure letter to USEPA, DuPont confirmed that it has used C-8 primarily at its Washington Works site and that it had released C-8 into the air, water, and land at the Washington Works, into water at its Parlin Plant, Spruance Plant, and Chambers Works, into soils at the Chambers Works, and into soil and water at the "Local," Letart, and Dry Run Landfills owned and operated by DuPont near the Washington Works in West Virginia. (See id.) DuPont did not, however, reference any of the results of the C-8 monkey studies. (See id.) On October 18, 2000, USEPA proposed to begin regulating most of 3M's perfluorinated chemicals under TSCA on the grounds that the chemicals "may be hazardous to human health and the environment." (See Exhibit 123 (65 Fed. Reg. 62319-33 (Oct. 18, 2000)).) USEPA deferred, however, regulation of C-8, pending further review of the information being obtained from 3M and DuPont. After receiving a draft of this letter in November of 2000, DuPont sent revised C-8 usage and release information to USEPA in a letter dated January 25, 2001. (See Exhibit 136.) As of today's date, however, the Tennants are not aware of the results of the C-8 monkey studies having been "finalized" or published.

## III. DuPont Promised Not To Dispose Of Toxins Like C-8 In Its Dry Run Landfill.

In the early 1980s, DuPont approached the Tennants seeking to buy several hundred acres of the Tennants' property for the purposes of constructing a landfill near the base of Dry Run Creek in Wood County, West Virginia. (See Exhibit 14.) In response to initial resistance from the Tennants to the idea of selling any portion of their land for a landfill, DuPont promised the Tennants that no hazardous materials would ever be disposed of in the landfill. (See Exhibit 14.) After receiving DuPont's verbal and written assurances that no harmful chemicals would ever be disposed of in the proposed landfill and that the Tennants would be permitted to graze their

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[5] ®3M's registered trademark.

cattle along the adjacent Dry Run Creek,[6] the Tennants eventually agreed to sell a portion of their property to DuPont for construction of the "non-hazardous" landfill. DuPont received a permit to operate the Dry Run Landfill as an unlined, non-hazardous, solid waste landfill in 1982, and began actual landfilling operations at the Landfill in 1984. (See Exhibit 5.)

## IV. DuPont Has Dumped Thousands Of Tons Of C-8 Wastes Into The Dry Run Landfill.

Soon after DuPont began operating the Dry Run Landfill in 1984, DuPont received the results of internal sampling confirming that C-8 was leaching into groundwater beneath three old, unlined anaerobic digestion ponds at the Washington Works that DuPont previously had used for the disposal of thousands of tons of C-8-soaked sludges. (See Exhibits 9, 17, 20, and 31.) DuPont's internal sampling indicated that, not only was C-8 getting into the groundwater that DuPont used for the Washington Works' drinking water, but C-8 also was migrating through the groundwater under the Washington Works and into the Lubeck Public Service District's ("Lubeck PSD's") immediately-adjacent public drinking water wells. (See Exhibits 17, 18, 20, and 31.) Internal DuPont sampling confirmed C-8 in the Lubeck PSD community drinking water supply as high as 1.5 ppb in 1984, (see Exhibits 17, 18, and 20), increasing to as high as 1.9 ppb in 1987, (see Exhibits 19 and 20), and further increasing to as high as 2.2 ppb in 1988 (see Exhibits 27 and 28. See also Exhibit 33.) All of these levels exceed DuPont's own 1 ppb CEG for community drinking water. (See Exhibits 2-4, and 9.)

Upon receipt of those results, DuPont decided to try to remove the source of the C-8 in the public and company drinking water supplies by digging up and removing the sludges from Washington Works' three anaerobic digestion ponds and dumping the tons of C-8-contaminated sludge[7] into the Dry Run Landfill. (See Exhibits 20, 21, 22, 23, and 26.) After DuPont submitted data to the West Virginia Division for Environmental Protection ("WVDEP") asserting that the sludges were "non-hazardous" under RCRA, WVDEP granted DuPont permission to dispose of approximately 7,100 tons of the sludge in the unlined Dry Run Landfill. (See Exhibits 21, 23, and 25.) DuPont completed the sludge disposal in 1988. (See Exhibit 6.)

Rather than abate the presence of DuPont's C-8 in the public drinking water supply, DuPont simply purchased the Lubeck PSD well property and the wells were moved approximately two miles further down-gradient from the Washington Works. (See Exhibits 9, 30, 31, and 97.) DuPont then notified its employees to immediately cease all sampling of the

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6 DuPont even agreed to lease back to the Tennants for cattle pasture significant portions of the landfill property along the Dry Run Creek. Those leases remained in effect until the Tennants began complaining about the Dry Run Landfill to USEPA. (See Exhibit 5.)

7 DuPont confirmed C-8 levels as high as 610 ppm in the sludge taken from the three ponds. (See Exhibit 9.)

former Lubeck PSD wells and to destroy all previously-drawn, unanalyzed Lubeck PSD well samples. (See Exhibit 29.)

Also in 1989, WVDEP informed DuPont that new landfill regulations had gone into effect in the State of West Virginia requiring existing, unlined landfills to be upgraded with more rigorous waste containment mechanisms, including liners and more extensive groundwater monitoring well systems. (See Exhibit 32.) In response, DuPont installed a series of new groundwater monitoring wells at its Dry Run Landfill and at its nearby, unlined Letart Landfill in Mason County, West Virginia where DuPont had been disposing of most of its Teflon® and other C-8 wastes from the Washington Works as non-hazardous solid waste since the 1960s. (See Exhibit 121.) After DuPont's initial groundwater sampling at the Letart Landfill confirmed the presence of C-8 at 0.7 ppm, (see Exhibit 9), DuPont began investigating whether any C-8 also was leaching out of the waste at the Dry Run Landfill. (See Exhibit 6.) By April of 1990, DuPont had confirmed that C-8 was, in fact, leaching from the Dry Run Landfill and discharging directly into the Dry Run Creek at levels as high as 1.6 ppm – more than 100 times DuPont's own internal standard for drinking water of 1 ppb. (See Exhibits 9, 35, 37, 41, and 136.) Soon thereafter, DuPont abandoned its efforts to seek a new permit for the Letart Landfill, and notified WVDEP that it had decided, instead, to simply close that landfill "for economic reasons." (See Exhibits 74 and 121.)[8] DuPont proceeded, however, with its efforts to get a revised permit for the Dry Run Landfill that would allow DuPont to continue to operate the landfill without having to install a liner. (See Exhibit 50.)

After confirming elevated C-8 levels in the water at Dry Run, DuPont began investigating how to get rid of the approximately 7,100 tons of C-8-contaminated sludge that it dumped into the landfill in 1988, which DuPont assumed was a source of the C-8 being detected in Dry Run Creek. (See Exhibits 7, 8 and 38.) Although DuPont initially notified WVDEP that it would remove the C-8-contaminated sludges from the Dry Run Landfill and dispose of the material at its Letart Landfill, (see Exhibits 36 and 39), DuPont simply moved the sludges to another location within the Dry Run Landfill in 1991. (See Exhibits 5 and 6.)

By the summer of 1993, WVDEP inspectors noticed increasingly excessive amounts of sediment and discoloration building up in the leachate collection ponds at the Dry Run Landfill. (See Exhibit 44.) In response, DuPont, despite knowledge that the leachate contained high levels of C-8 and despite knowledge that the Tennants' cattle were drinking the water in Dry Run Creek, ordered the drains on its leachate collection ponds opened for more than two weeks (after monthly sampling had been completed (see Exhibit 45)), so that the leachate could flow out of

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[8] After DuPont finally shut down its unlined, "non-hazardous" Letart Landfill in 1996, it began paying to dispose of its C-8-contaminated wastes at a RCRA hazardous waste facility in Alabama. (See Exhibit 121.)

the ponds and directly into the Dry Run Creek. (See Exhibits 46 and 86.)[9] Although WVDEP requested that DuPont submit acute toxicity sampling results for the leachate being discharged out of the sedimentation ponds, (see Exhibit 44), DuPont successfully avoided taking any such samples until four months after the original leachate had drained into the creek. (See Exhibit 48.) The acute toxicity results that DuPont did eventually submit to WVDEP confirmed a 15% mortality, even among neonates exposed to the water four months later. (See id.) In the meantime, dozens of the Tennants' cattle were dying along the Dry Run Creek bed and the Tennants and their family and friends were exposed to C-8.

By the fall of 1994, DuPont had adopted a corporate plan to start routinely dumping C-8 wastes into the Dry Run Landfill, in anticipation of the upcoming closure of its Letart Landfill. (See Exhibit 130.) Thus, in furtherance of this corporate plan, but without any authorization or approval of any kind from WVDEP, DuPont began dumping its C-8-contaminated biocake wastes into the Dry Run Landfill that Fall. (See Exhibits 5 and 86.) According to DuPont's own analyses, the biocake contained 930 ppb of C-8. (See Exhibits 6, 58, 85, and 87.) By the spring of 1995, discolored, foul-smelling water was observed being discharged out of the Dry Run Landfill sedimentation ponds into Dry Run Creek, with almost knee-high suds and foam present along the Dry Run Creek bed, which DuPont assumed contained C-8. (See Exhibits 5, 53, 54, 56, 88 and 91.) At the same time, even more of the Tennants' cattle were dying.

In response to repeated pleas from the Tennants that WVDEP force DuPont to take action to address the black odorous water and foam being discharged into the Dry Run Creek where their cattle were drinking and dying, WVDEP notified DuPont that it would need to start taking steps to address its improper discharges into Dry Run Creek and to upgrade the Dry Run Landfill. (See Exhibits 5 and 57.) After it became evident that little progress was being made by DuPont in response to WVDEP's requests,[10] the Tennants notified USEPA of the problem and provided copies of videotapes showing the discolored foaming water and dead animals along the Dry Run Creek bed. (See Exhibit 61.) Around the same time, the West Virginia Department of Natural Resources contacted DuPont in response to recent reports of numerous deer killed or dying in the area of the Dry Run Creek. (See Exhibit 59.) Despite such complaints, DuPont did nothing to disclose to the Tennants that C-8 was in the Dry Run Creek, nor did DuPont suggest in any way to the Tennants that their cattle should not be drinking the water in the Creek. (See Exhibit 74.) Instead, DuPont kept silent on the C-8 issue and took the position with the public and the regulatory agencies that all of the problems with the creek were simply the result of some high

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9 DuPont also ordered the landfill drain opened in 1989 and again in 1995 so that the contents of the sedimentation pond could flow directly into Dry Run Creek, without any apparent notice to or permission from WVDEP. (See Exhibits 34 and 55.)

10 Discolored, foaming water continued in Dry Run Creek throughout the remainder of 1995, 1996, 1997, 1998, and into 1999.) (See Exhibits 62, 63, 89, and 92.)

iron sulfide levels that had been fully addressed and completely resolved. (See Exhibits 5, 74, and 78.)[11]

In October of 1996, USEPA contacted DuPont and informed the company that it would be initiating an inspection of the Dry Run Landfill in response to the recent reports of hundreds of dead cattle and deer in the area of the Dry Run Creek. (See Exhibits 5, 64, and 68.) On the exact same day that DuPont learned of USEPA's pending inspection, Eli McCoy (with WVDEP's Water Division) forwarded to DuPont a draft complaint to aid DuPont in diffusing any potential enforcement action by USEPA relating to the discharge problems at the Dry Run Landfill. (See Exhibits 5 and 65.) Within a matter of weeks, DuPont completed its negotiations with the State and entered a consent decree to bar further governmental enforcement action in exchange for DuPont's payment to WVDEP of a $200,000 penalty. (See Exhibits 5, 67, and 69.) Soon thereafter Mr. McCoy left WVDEP and began working for the same DuPont consultant that would assist DuPont in complying with the consent decree - Potesta & Associates. (See Exhibit 73.)

As part of the December 1996 settlement with WVDEP, DuPont finally agreed to begin implementing upgrades to the Dry Run Landfill, such as installation of the type of liner that was required under the State's landfill regulations since 1988, and construction of a leachate collection system. (See Exhibits 66 and 69.) DuPont also finally agreed to cease the disposal of its biocake wastes at the Dry Run Landfill. (See id.) Thus, by the time USEPA actually commenced its ecological risk assessment activities in the Dry Run Landfill area in 1997, DuPont allegedly had stopped disposing of its C-8-contaminated biocake sludge at the Dry Run Landfill and had allegedly begun collecting C-8-contaminated leachate from the Landfill for transport to the Washington Works for treatment and discharge directly into the Ohio River. (See Exhibits 5, 70, and 72.)

By the end of 1997, USEPA released to DuPont a draft of its Ecological Risk Assessment Report for the Dry Run Landfill. (See Exhibit 75.) USEPA's report indicated that, although adverse impacts were clearly evident among numerous animals, plants, and other wildlife in the area of the Dry Run Creek, USEPA had not been able to identify any particular known, regulated chemical as the clear cause of the observed problems. (See id. at 52) USEPA, therefore, recommended further assessment and identification of numerous "tentatively identified compounds" that had been detected in various environmental media in the area of Dry Run Creek that might be contributing to the problems. (See id.) In response to the suggestion of further governmental investigation, DuPont immediately requested and USEPA agreed to discuss a "collaborative" effort to further investigate conditions in the area of Dry Run Creek. (See

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[11] DuPont's practices with respect to making public the company's knowledge of the toxicity of its products was addressed in detail in In re E.I. duPont de Nemours & Co., 918 F. Supp. 1524 (M.D. Ga. 1995) (court imposed over $100 million in sanctions against DuPont).

Exhibits 79 and 83.) Part of that collaborative effort included DuPont's agreement that it would disclose more fully the precise identities of each of the various types of chemicals it had dumped into the Dry Run Landfill that DuPont had not previously identified for USEPA.. (See Exhibit 83.) Although DuPont had been monitoring C-8 levels in Dry Run Creek for years and had confirmed C-8 in the water each time, DuPont eventually identified C-8 as being only "possibly" present in the Dry Run Landfill in a list of dozens of chemicals that it sent to USEPA in late 1998 - almost a year after the USEPA had completed its draft Risk Assessment Report. (See Exhibit 83.)[12]

Because of USEPA's persistent concerns that something in the Dry Run Creek was killing hundreds of head of the Tennants' cattle, (see Exhibit 78),[13] DuPont also agreed to jointly fund an investigation into the health of the Tennants' cattle. Specifically, DuPont agreed in the Spring of 1999 to create a "Cattle Team" to "independently" investigate such issues. By that time, however, less than a few dozen of the Tennants' cattle were even still alive. The Cattle Team was comprised of three veterinarians selected by DuPont, including Greg Sykes, a DuPont employee who had been involved in DuPont's internal investigations into the effects of C-8 on animals for many years, (see Exhibit 24), and three veterinarians selected by USEPA. (See Exhibit 95.) Despite DuPont's knowledge that C-8 was a toxic animal carcinogen (as reenforced to DuPont by the recent C-8 monkey study results (see, e.g., Exhibits 87 and 166)), that the Tennants' cows were drinking out of Dry Run Creek, the information currently available to the Tennants does not indicate that anyone from DuPont ever disclosed such facts to the other members of the Cattle Team during the course of the Cattle Team's investigation. (See Exhibit 93.) Consequently, there is no evidence that the Cattle Team even considered the potential impact of C-8 on the Tennants' cattle, despite the release of the C-8 monkey study results to DuPont well before the final Cattle Team Report was released in December of 1999. (See Exhibit 109.) Again, DuPont kept completely silent on the C-8 issue and sat back and let the Cattle Team "independently" investigate the health of the Tennants' cattle, even though the USEPA-appointed Cattle Team members would never have any reason even to think to look at C-8.

Over the last several years, while DuPont was working with USEPA on their "collaborative" effort to address environmental problems in the area of Dry Run Creek, several of the Tennants have been in and out of the hospital suffering from respiratory problems, chemical

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12 At around the same time, DuPont, again, ordered the Dry Run Landfill sedimentation pond drain opened, so that the foul-smelling contents could discharge directly into the Dry Run Creek where the few remaining head of the Tennants' "[c]attle were wallowing in the stream just beyond the fence." (See Exhibits 81 and 82.)

13 At least two other local residents, including at least one current DuPont employee, also have complained that their cattle appear to have been harmed by something in Dry Run Creek. (See Exhibits 54 and 117.)

burns, and other health problems after having been exposed to fugitive air emissions and liquid discharge from DuPont's Dry Run Landfill. Moreover, despite installation several years ago of a leachate collection system that was supposed to prevent contaminants from the Dry Run Landfill from getting into the Dry Run Creek, DuPont's own monitoring reports confirm that C-8 is still getting into the Dry Run Creek with results as high as 87 ppb in the creek, as recently as the Summer of 1999, and as high as 27.6 ppb during the Fall of 2000 – readings more than twenty times DuPont's CEG for C-8 in water. (See Exhibit 134.) Thus, DuPont's own monitoring reports confirm that, despite installation of a purported leachate collection system, there is a continuing, ongoing discharge of high levels of C-8 from the Dry Run Landfill into Dry Run Creek.

## V. DuPont Has Known That Its C-8 Wastes Have Leached Into Drinking Water.

In addition to DuPont's failure to disclose to the Tennants or the USEPA-appointed Cattle Team members the full extent of its knowledge regarding the nature, extent, and likely effects upon wildlife of the C-8 it has been releasing and continues to release into Dry Run Creek, the information currently available to the Tennants indicates that DuPont also has not fully disclosed to USEPA, WVDEP, local governmental entities, its neighbors, or the public its knowledge of the full extent of the impact of its C-8 wastes on local drinking water.

As part of its efforts to complete its RCRA Facility Investigation Report ("RFI Report") for the Washington Works, DuPont was required to investigate whether any of its former solid waste management units, including the three anaerobic digestion ponds that were closed in 1988, are contributing to any release of wastes onto neighboring properties and whether any wastes are exposing any persons to unreasonable health risks. (See Exhibits 98 and 99.) In connection with its RFI efforts, DuPont took more samples of the groundwater under the Washington Works site that it uses for drinking water at the Plant. (See Exhibits 10, 11, 76, and 99.) DuPont also arranged for the sampling of groundwater under the neighboring GE Plastics Plant that GE uses for its own plant drinking water. (See Exhibits 10 and 11.) Sampling confirmed C-8 in the Washington Works' drinking water as high as 3.3 ppb[14] and as high as 0.71 ppb in the neighboring GE Plastics drinking water supply. (See Exhibits 10, 11, 43, 76, 96, 99, 102, 104,

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[14] It is noted that, although DuPont had been sampling three drinking water wells at the Washington Works (wells 331, 332, and 336), when it came time to actually report the results to USEPA in its RFI Report, Dupont was careful to sample only the drinking water well that had previously yielded C-8 results less than 1 ppb (well 336), and conveniently did not even sample the wells that traditionally had yielded the higher C-8 results, nor did DuPont report these higher results in its RFI Report. (See Exhibits 76, 96, 99). Yet, when even the well with the C-8 readings traditionally below 1 ppb yielded a result of 1.9 ppb, DuPont fabricated a new 3.0 ppb "screening level" for C-8 to avoid having to reference any drinking water results exceeding DuPont's own 1 ppb CEG in its own plant drinking water. (See Exhibit 99).

106, 110 and 129.) DuPont even found C-8 as high as 0.8 ppb in the new Lubeck PSD drinking water wells, which are now located approximately two miles farther away from the Washington Works site. (See Exhibits 10-11, 40, and 41.)[15] Recent sampling of the private drinking water wells on the Tennants' property down-gradient from the Dry Run Landfill also has now confirmed C-8 in those drinking water wells. (See Exhibit 131.) DuPont has even investigated what C-8 levels might be present at various cities along the Ohio River, based upon DuPont's on-going releases of C-8 into the River from the Washington Works facility. (See Exhibits 40, 100, and 118.)[16] Approximately 24,000 pounds of C-8 also is discharged directly into the air every year from the Washington Works Site, although it is not clear that C-8 is actually permitted for such air discharge by DuPont. (See Exhibits 101 and 118.)

Thus, it is evident that the residents living in at least the area near DuPont's Washington Works facility, Letart Landfill, and Dry Run Landfill (the "DuPont Sites") may have been and may continue to be exposed to DuPont's C-8 through DuPont's on-going and continuous releases of C-8 into the air, land, and water at and/or around those Sites, (see Exhibit 80), including direct ingestion of C-8 in the C-8-contaminated drinking water extracted from wells at the Washington Works Plant, the neighboring GE Plastics Plant, the Lubeck PSD well fields, and private residential and agricultural properties near DuPont's Sites.[17] Local wildlife and the environment may be similarly exposed. Despite DuPont's knowledge for years of the nature, extent, and effect of these C-8 releases on human health and the environment, including the

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15 Sampling results from 1991 confirmed C-8 at 2.4 ppb in the new Lubeck wells with C-8 levels as high as 3.9 ppb in the tap water of several local, Lubeck-area homes. (See Exhibit 128.) Sampling in August of 2000 confirmed C-8 still present in the new Lubeck PSD wells at levels as high as 0.59 ppb. (See Exhibit 119.)

16 DuPont has been evaluating the levels of C-8 in the Ohio River, which is a source of drinking water for numerous communities, since at least 1982. (See Exhibit 15.)

17 In August of 2000, after the Tennants had made it known to DuPont that they had become aware of the C-8 in the Lubeck PSD wells, DuPont drafted a letter for the Lubeck PSD to send to its water customers to "disclose" the existence of the C-8. (See Exhibit 124.) In that letter, however, DuPont was very careful to refer only to the current C-8 levels in the current Lubeck PSD wells, and avoided any mention whatsoever of the earlier C-8 readings that were substantially above DuPont's 1 ppb CEG. (See id.) DuPont again was careful to avoid any public disclosure of its knowledge of earlier C-8 drinking water results that were well-above DuPont's 1 ppb CEG in recent statements provided to local Parkersburg newspapers, even though DuPont had received in November a draft of this letter referencing the higher C-8 levels. (See Exhibit 135.)

bioaccumulative/biopersistent nature of the material,[18] it appears that DuPont has allowed and continues to allow these releases to occur unabated for fear of not being able to continue to make its Teflon® products, if it cannot use C-8. This situation is particularly disturbing, given that DuPont apparently has known of ways to remediate C-8-laden soils since the early 1990s but because of the expense, chose to do nothing "pending further actions that may be dictated by the EPA for remediation of the Washington Works site." (See Exhibit 122.) Even more disturbing is the fact that DuPont has known for years that C-8 levels in the Washington Works and old Lubeck PSD drinking water wells far exceeded its own 1 ppb CEG but has done absolutely nothing in response. DuPont has chosen, instead, to focus either on current, somewhat lower C-8 levels, or to simply fabricate a totally new drinking water "screening level" of 3 ppb for the Washington Works Plant when faced with having to disclose to USEPA in its RFI report for the Washington Works the existence of C-8 in the Plant's drinking water at levels well above 1 ppb. (See Exhibits 99 and 124.)

## VI. DuPont Should Be Ordered To Remediate Its C-8 Releases And To Immediately Shut Down Its Manufacturing Processes Involving C-8 Until Adequate Demonstrations Are Made That There Is No Unreasonable Risk To Health Or The Environment.

Over the years, DuPont has successfully avoided fully disclosing the nature and extent of the C-8 problem at its Dry Run Landfill by characterizing C-8 as an unregulated "non-hazardous" waste and/or substance under applicable law. Consequently, when the Federal and State agencies have asked questions about the nature and quantity of toxic wastes handled by DuPont at the Dry Run Landfill, DuPont has omitted any comprehensive discussion of C-8 on the grounds that it is not a "hazardous waste," "hazardous substance," or otherwise listed or regulated waste under current laws. DuPont shrewdly avoided any permit limits on its C-8 emissions and/or dumping at its Washington Works facility and Dry Run Landfill through similar corporate strategies. Thus, although DuPont has known for years that C-8 is an animal carcinogen and bioaccumulative/biopersistent substance, it has continued to knowingly dump thousands of tons of the waste into the environment at unlined, uncontrolled landfills and has allowed the waste to be disposed directly into the air, Ohio River, and local drinking water supplies, arguing that there has not been any improper disposal and/or release of any regulated material.

In addition, DuPont has been careful to refer to the chemical in conflicting, inconsistent ways in its filings with regulatory agencies - sometimes calling it "C-8," sometimes calling it "FC-143," sometimes calling it "PFOA," sometimes calling it "APFO," and sometimes calling it by its full chemical name - "ammonium perfluorooctanoate" - thereby making it difficult for the agencies to understand how all the information interrelates. As confirmed by USEPA's recent

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[18] DuPont's own employees even raised concerns about Teflon® customer exposure to C-8 as early as 1983. (See Exhibits 16 and 52.)

proposal to begin regulating 3M's previously-unregulated perfluorinated chemicals, DuPont's past corporate strategy for diverting regulatory attention away from C-8 should stop now.

Based upon the foregoing facts, the Tennants hereby respectfully request that your agencies intervene in the Tennants' pending Federal Court litigation and order the immediate investigation, assessment, containment, removal, and remediation of DuPont's on-going C-8 releases into the environment by virtue of the authority granted to your agencies under at least the following laws and their implementing regulations:

- The Toxic Substances Control Act, as amended, 15 U.S.C. §§ 2601-2692;
- The Federal Clean Water Act, as amended, 33 U.S.C. §§ 1251-1387;
- The Safe Drinking Water Act, as amended, 42 U.S.C. §§ 300f-300j-26;
- The Federal Clean Air Act, as amended, 42 U.S.C. §§ 7401-7671q;
- The Resource Conservation and Recovery Act, as amended, 42 U.S.C. §§ 6901-6992k;
- The Comprehensive Environmental Response, Compensation and Liability Act, as amended, 42 U.S.C. §§ 9601-9675;
- The West Virginia Air Pollution Control Act, W.Va. Code §§ 22-5-1 through 22-5-18;.
- The West Virginia Water Pollution Control Act, W.Va. Code §§ 22-11-1 through 22-11-28;
- The West Virginia Groundwater Protection Act, W.Va. Code §§ 22-12-1 through 22-12-14;
- The West Virginia Natural Streams Preservation Act, W.Va. Code §§ 22-13-1 through 22-13-15;
- The West Virginia Solid Waste Management Act, W.Va. Code §§ 22-15-1 through 22-15-21;
- The West Virginia Hazardous Waste Management Act, W.Va. Code §§ 22-18-1 through 22-18-25; and

- The West Virginia Hazardous Waste Emergency Response Fund Laws, W.Va. Code §§ 22-19-1 through 22-19-6.

The Tennants also request that your agencies exercise their respective authority under the referenced laws to order DuPont to **immediately** cease and desist its C-8 releases into the environment, as addressed in this letter and to provide for immediate, appropriate medical care/testing/evaluation of the Tennants. The Tennants further request that DuPont's permit to operate the Dry Run Landfill be **immediately** revoked until adequate scientific demonstrations are made to prove that the C-8 releases have been abated, will not recur, and pose no unreasonable risk to human or animal health or the environment.

With respect to minimizing harm to the public health and the environment from future C-8 releases, the Tennants hereby specifically request that USEPA exercise its authority under the Toxic Substances Control Act to order DuPont to immediately cease all manufacturing activities using C-8, including DuPont's Teflon® manufacturing operations, until DuPont either confirms that it has stopped its usage of C-8 entirely or has made adequate scientific demonstrations to prove that its continued usage of C-8 (whether from 3M or any other source) does not pose an unreasonable risk of injury to health or the environment. In the meantime, the Tennants request that your agencies take these steps necessary to regulate C-8 emissions/releases to the environment. As mentioned above, the Tennants believe that such steps should include, at a minimum, including C-8 among the list of perfluorinated chemicals that USEPA proposed in October of this year to begin regulating under TSCA on the basis that the chemicals "may be hazardous to human health and the environment." (See Exhibit 123.)

## VII. The Tennants Intend To Bring Citizen Suit Claims Against DuPont Under The CWA, TSCA, And RCRA If Appropriate Action Is Not Taken Immediately To Abate And Remediate DuPont's C-8 Releases From Its Washington Works Facility.

As explained above, DuPont has been and continues to discharge C-8 from its Washington Works Facility in Wood County, West Virginia into the air, groundwater, and Ohio River. Moreover, the C-8 discharged by DuPont has been contaminating and continues to contaminate the land, air, and human and animal drinking water supplies.

### A. DuPont Is Violating The CWA.

Section 505(a)(1) of the Clean Water Act ("CWA") permits citizens to commence a civil action against "any person ... who is alleged to be in violation of (A) an effluent standard or limitation under this chapter." 33 U.S.C. §1365(a)(1). "Effluent standard or limitation" is defined under the CWA to include, among other things, "a permit or condition thereof issued under Section 1342 of this title," such as state-issued but federally-enforceable NPDES discharge permits. Id. at §1365(F). Based upon information currently-available to the Tennants, DuPont's NPDES permit for its Washington Works facility specifies that DuPont shall not discharge any

effluent in violation of applicable Water Quality Standards. (See, e.g., WV/NPDES Permit No. WV0001279, Conditions A.1 - A.10, C.12, and H.2). The West Virginia Water Quality Standards prohibit DuPont from discharging into surface or groundwaters any "materials in concentrations which are harmful, hazardous, or toxic to man, animal, or aquatic life." W. Va. Code St. R. tit. 46, §46-1-3.2 (2000). Based upon currently-available information, as described above, DuPont has been discharging and continues to discharge C-8 into surface and groundwaters in concentrations exceeding DuPont's own CEG for human drinking water and at concentrations that are otherwise harmful, hazardous, or toxic to man, animal, or aquatic life, constituting a continuing violation of the West Virginia Water Quality Standards, and thereby constituting a continuing violation of DuPont's NPDES permit terms and the CWA. See, e.g., 33 U.S.C. §§1311(a), 1342. Notice is, therefore, hereby provided that the Tennants, on behalf of themselves and a class of others similarly situated, intend to file suit against DuPont, pursuant to Section 505(a)(1) of the CWA, within sixty (60) days of this notice to obtain appropriate relief for the violations of the CWA referenced herein.

### B. DuPont Is Violating TSCA.

Section 20(a)(1) of the Toxic Substances Control Act ("TSCA") permits citizens to commence a civil action against "any person . . . who is alleged to be in violation of [TSCA] or any rule promulgated under Sections 2603, 2604, or 2605 of [TSCA], or Subchapters II or IV of [TSCA]." 15 U.S.C. § 2619(a)(1). TSCA requires any "person who manufactures, processes, or distributes in commerce a chemical substance or mixture and who obtains information which reasonably supports the conclusion that such substance or mixture presents a substantial risk of injury to health or the environment" to "immediately" inform USEPA of "such information, unless such person has actual knowledge that" USEPA has been adequately informed of such information. Id. at § 2607(e). TSCA also requires each person who manufactures or processes a chemical substance to comply with the regulations adopted by USEPA under TSCA governing the reporting to USEPA of certain research and adverse health effects information relating to such chemical substances. See id. at § 2607(a), (c), (d); 40 C.F.R. Parts 716 and 717. Failure to comply with such TSCA requirements constitutes a violation of TSCA. See 15 U.S.C. § 2614. As indicated above, the information currently available to the Tennants indicates that DuPont has not reported to USEPA all information within DuPont's possession regarding C-8 that is required to be reported to USEPA under Section 8(a), (c), (d), and (e) of TSCA, 15 U.S.C. § 2607 (a), (c), (d), and (e), such as the results of the C-8 monkey studies and the Tennants' allegations of adverse health effects among themselves, their cattle, and area wildlife arising from exposure to DuPont's C-8. Notice is, therefore, hereby provided that the Tennants, on behalf of themselves and a class of others similarly situated, intend to file suit against DuPont, pursuant to Section 20(a)(1) of TSCA, within sixty (60) days of this notice to obtain appropriate relief for the violations of TSCA referenced herein.

### C. DuPont's C-8 Releases From Its Washington Works Facility May Present An Imminent And Substantial Endangerment To Health Or The Environment Under RCRA.

Section 7002(a)(1)(B) of the Resource Conservation and Recovery Act ("RCRA") permits citizens to commence a civil action against:

> [a]ny person ..., including any past or present generator, past or present transporter, or past or present owner or operator of a treatment, storage, or disposal facility, who has contributed or who is contributing to the past or present handling, storage, treatment, transportation, or disposal of any solid or hazardous waste which may present an imminent and substantial endangerment to health or the environment.

42 U.S.C. § 6972(a)(1)(B). As discussed above, DuPont's past and on-going disposal of C-8 into soil, water, and air from DuPont's Washington Works Facility has resulted in C-8 in soil, water, and air at and/or around the Washington Works Facility in amounts, levels, and/or concentrations which, based upon the currently-available information, may present an imminent and substantial endangerment to health or the environment. Notice is, therefore, hereby provided that the Tennants , on behalf of themselves and a class of others similarly situated, intend to file suit against DuPont, pursuant to Section 7002(a)(1)(B) or RCRA, within ninety (90) days of this notice to obtain appropriate relief for the imminent and substantial endangerment referenced herein.

Please confirm as soon as possible how your respective agencies plan to address our request for your involvement in this important public health and environmental matter. In that regard, please let us know if you will intervene in the Tennants' Federal Court proceedings or if

you would like to review any of the additional backup documentation maintained here at our Cincinnati offices. We would be happy to meet with you at your offices to discuss this matter in more detail. Thank you.

On behalf of the Tennants,

Robert A. Bilott

Robert A. Bilott

RAB/mdm
Enclosures
cc: Larry A. Winter, Esq. (West Virginia Counsel for the Tennants) (w/o encls.)
Paula Durst Gillis, Esq. (Counsel for DuPont) (w/ encls.)
(by **CERTIFIED MAIL NO: 70000600002406963531, RETURN RECEIPT REQUESTED & REGISTERED MAIL NO: R410009299, RETURN RECEIPT REQUESTED**)
Registered Agent for E.I. duPont de Nemours & Co., Inc. (w/o encls.)
(CT Corporation System, 707 Virginia Street, East, Charleston, WV 25301
by **CERTIFIED MAIL NO: 70000600002406963500**)

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# EXHIBIT B

Briefing Paper: Proposed Superseding SDWA Emergency Administrative Order to DuPont (Washington Works plant), for C-8 (PFOA), in Drinking Water

Purpose: To provide information about an upcoming briefing for the OECA AA, and to request RA input on two questions.

Background:

C-8 is an extremely stable surfactant used in the manufacture of Teflon and other perfluorinated compounds (PFCs). Nonstick cookware, stain resistant coatings used in carpets and clothing, fire retardant foams, and grease resistant food packaging are among the products which use PFCs. DuPont has used C-8 in the manufacture of Teflon since the early 1950s at its Washington Works facility in Wood County, WV. Until 2002, 3M manufactured and supplied DuPont with the C-8 it uses at Washington Works. Since that time, DuPont has been manufacturing the compound at its Fayetteville, NC facility. C-8 has the tendency to persist in both the environment and in the blood of humans and animals. Currently, C-8 is an unregulated contaminant in drinking water and the Office of Toxics is still in the process of evaluating the potential toxicity.

C-8 has been identified in both public and private water supplies in the vicinity of DuPont's Washington Works facility, including water supplies in Ohio. As a result, in 2001, WV ordered DuPont to investigate the extent of ground water and surface water contamination of C-8 in private and public water supplies. The 2001 WV Order also established a group of toxicologists to evaluate available toxicity data and establish a temporary concentration of C-8 in drinking water that was protective of public health.

On March 7, 2002, EPA Regions 3 and 5 jointly issued an Emergency Order on Consent to DuPont's Washington Works facility in support of the 2001 WV Order. The EPA Order required the provision of alternate water if any results required in the WV Order, exceeded the temporary concentration of C-8 in drinking water. The toxicologist team established a threshold value of 150 parts per billion (ppb). Because none of the water systems contained C-8 in excess of the threshold value, DuPont was not required to provide alternate water.

In February 2005, in response to the filing of two civil suits brought against DuPont, a Wood County, WV Court ordered the company to provide bottled water and install treatment technology for a number of users from certain public water districts in Ohio and West Virginia.

Current Status:

The Agency has not yet begun development of an MCL for C-8, but OPPT has made progress in evaluating the substance's toxicity. Based on new studies, Agency representatives (including an expert from NEIC) concluded that the value in the 2002 order is not protective of human health and must be replaced by a lower threshold value of 0.20 ppb. In addition, following review of the existing suits, EPA determined that

some residents are not protected by the state court orders requiring provision of alternate water and/or treatment. Therefore, OECA staff recommend issuing a superseding SDWA 1431 Emergency Order to lower the temporary threshold value from 150 ppb to 0.20 ppb C-8. EPA's intent is to seek consent through negotiations with DuPont; however, the order could be issued unilaterally if agreement can not be reached.

A briefing is planned for the AA for OECA to make sure we have agency concurrence to proceed. Dr. Weiss of NEIC will present the technical basis for the 0.20 ppb proposed level. There are no written briefing materials on the science supporting the 0.20 ppb proposed level at this time. Personnel from Regions 3, 4, 5, OECA, WV and Ohio have been involved in discussions to date.

Questions:

1. We have asked that the RA's of the affected Regions be able to attend the AA briefing via conference call. The AA briefing is tentatively scheduled for March 20, 12:00-1:00 CST. Should we continue to request and make arrangements for RA attendance at the AA briefing?
2. The emergency order issued in 2002 was signed by the RA's for Regions 3 and 5. The scope of the order is now greatly expanded (covers more facilities, and more Regions) and is much more likely to be litigated. Under the circumstances, should the new Order be signed by multiple RA's? or should it be signed by OECA?

# EXHIBIT C

Andrea V Malinowski/AE/DuPont

10/26/2006 04:59 PM

To CN=Andrew S Hartten/OU=AE/O=DuPont@DuPont, CN=David W Boothe/OU=AE/O=DuPont@DuPont, CN=Kathryn Kamins McCord/OU=AE/O=DuPont@DuPont, lstennes@steptoe.com, CN=Martha L Rees/OU=AE/O=DuPont@DuPont, wMichaelMcCabe@earthlink.net, msteinberg@morganlewis.com, CN=Pamela Meitner/OU=AE/O=DuPont@DuPont, CN=Robert W Rickard/OU=AE/O=DuPont@DuPont, CN=Susan M Stalnecker/OU=AE/O=DuPont@DuPont

cc

bcc

Subject Fw: DuPont documents for Monday October 30th Meeting - sent to EPA

Attached was sent to Mark Pollins at EPA. Martha has forwarded the documents to the EPA lawyers (Lourdes, Jacquie, Lori).

---- Forwarded by Andrea V Malinowski/AE/DuPont on 10/26/2006 04:59 PM ----

Susan M Stalnecker/AE/DuPont

10/26/2006 04:19 PM

To pollins.mark@epamail.epa.gov

cc Martha L Rees/AE/DuPont@DuPont

Subject DuPont documents for Monday October 31st Meeting

Dear Mark,

As discussed during our call today, in preparation for our meeting on Monday October 30th, I am forwarding to you on behalf of the DuPont team the following documents:

- Memorandum intended to provide important background information for EPA's consideration, summarize the major grounds upon which DuPont disagrees with EPA's October 5 draft order, and urge that the Agency consider a practical alternative to EPA's approach

- Outline of a proposed Memorandum of Agreement (MoA), offered as a practical alternative

Both documents propose an approach, which we can discuss in more detail on Monday, to make the MoA enforceable.

In addition, the Memorandum makes reference in the Occupational Exposure section to a recent DuPont report on results from Phase II of a study on employees at our Washington Works, West Virginia facility. As a courtesy, a copy of that report is provided with this e-mail. The report may be provided to other EPA personnel who have a need to review it for purposes of this issue.

We look forwarding to meeting with you and the rest of the EPA team on Monday. If you have any problems opening the attached documents, please let me know by return e-mail.

DuPont Memorandum 102606.pdf Outline MoA 102606.pdf Phasell Washington Works Final with copyright.pdf

Regards,
Susan

Susan M. Stalnecker
Vice-President and Treasurer
302-774-5470
susan.m.stalnecker@usa.dupont.com

006-0133-0135636

**MEMORANDUM**

The purpose of this memo is to further discussion between the EPA and DuPont regarding reduction of community exposures to PFOA in the area surrounding the DuPont Washington Works site located near Parkersburg, West Virginia while EPA's ongoing risk assessment process is completed. Specifically, this memo is intended to provide important background information for EPA's consideration, summarize the major grounds upon which DuPont disagrees with EPA's October 5 draft order, and urge that the Agency consider a practical alternative to EPA's approach.

Supporting resolution of this agreement is the fact that EPA and DuPont have reached complete agreement on the revised site-specific action level and on the work to be performed, and DuPont has already begun performing that work. On the other hand, EPA and DuPont disagree over many of the statements of fact and law in the draft order. As a result, DuPont cannot sign the draft order, nor can DuPont accept without challenge, a unilateral order that contains such statements of fact and law.

As discussed in our meetings and outlined in detail below, the situation surrounding the Washington Works site does not constitute an emergency. DuPont has worked diligently with the communities in the area to address their needs and concerns and provide the latest scientific information on PFOA. If the Agency issues an emergency order, it will cause undue concern among the communities surrounding Washington Works and could frustrate the ongoing effort by DuPont to provide alternative water.

## Background

DuPont has voluntarily worked with EPA to investigate potential human exposure routes and toxicity of ammonium perfluorooctanoate ("APFO," sometimes referred to as C-8, also referred to as "PFOA," the dissociated anion serum biomarker of ammonium perfluorooctanoate). DuPont uses APFO in manufacturing operations at its Washington Works facility. PFOA has been detected in community and private drinking water sources in the area surrounding Washington Works. DuPont has taken significant steps to reduce emissions of PFOA from Washington Works (98% reduction of plant air and water emissions of PFOA from manufacturing operations from 2000 to 2006) and has outlined goals to continue an aggressive reduction in emissions and product content. DuPont has also entered into voluntary agreements with federal and state agencies to determine the extent of PFOA's presence in drinking water supplies surrounding the Washington Works facility. Additionally, as part of the settlement of a class action, DuPont tested a considerable number of private water sources for PFOA and has installed or offered to install granulated

activated carbon treatment to eligible public and private sources as further described in this memorandum.

Through a round of voluntary discussions earlier this year, DuPont and EPA have agreed in principle to lower the Washington Works site-specific drinking water action levels to water that contains 0.50 parts per billion or greater PFOA. Although DuPont remains committed to reduction of environmental exposures, it respectfully takes issue with the Agency's approach to accomplishing this goal, particularly in light of the parties' agreement reached on the action level, DuPont's actions already underway to provide alternate drinking water, the potential for unnecessarily alarming the community, and the lack of scientific data to conclude exposure at community levels present a hazard to human health.

## Discussions lead to new lower action level

In May 2006, DuPont voluntarily approached EPA's Office of Water to discuss possible legal or programmatic vehicles for setting an interim water standard for the unregulated chemical PFOA. DuPont's interest in exploring a standard was based on the assumption that the regular EPA process of conducting a risk assessment and use of those findings to set a drinking water standard could take years. PFOA is currently not a contaminant for which a national primary drinking water regulation has been established pursuant to the SDWA. DuPont is agreeable to EPA's establishment of a site-specific interim drinking water standard that would guide DuPont's provision of alternate drinking water to the communities near Washington Works where PFOA has been detected and reassure those communities that appropriate action was being taken.

An initial conference call was held on May 25 with representatives from DuPont and EPA's OW, OECA, OPPTS and Regions III and V and it became clear that EPA had an active interest in addressing PFOA levels in affected communities. DuPont then became aware that OECA, Region III and Region V were specifically interested in revising the temporary threshold level of 14 ppb, later revised upward to 150 ppb ,set through Consent Order. [1]

In subsequent discussions, DuPont acknowledged that, although scientific studies had not established PFOA to be harmful to human health, recent studies supported lowering both the 14 ppb and the 150 ppb levels and indicated it was

[1] The Consent Order, Nos. SDWA 03-2002-0019 & SDWA 05-2002-0002, executed on March 7, 2002 established an interim drinking water level of 14 ppb while a team of scientists from federal and state agencies, academia, non-profits and DuPont assessed the toxicity and risk to human health and the environment from PFOA or C-8, as it was referred to in the Order. The team, formed under a separate consent order entered into by DuPont and the West Virginia Department of Environmental Protection (WVDEP) in 2001, was called the C-8 Assessment of Toxicity (CATT) and EPA was represented by Jennifer Seed, toxicologist, OPPT; Samuel Rothenberg, PhD., toxicologist, Region III; Garth Conner, hydrologist, Region III; Roger Reinhart, advisor SDWA, Region III; and John Cicmanec, DVM, toxicologist, Cincinnati. In April 2002, the CAT Team conducted a toxicological and human health risk assessment of C-8 and revised the temporary threshold level of 14 ppb upward to 150 ppb C-8 in drinking water.

willing to pursue a science-based approach to reducing those levels. DuPont noted that the 150 ppb action level would theoretically correspond to about 15,000 ppb (15 ppm) serum level, which exceeds the current occupational exposures at the Washington Works site. DuPont believes that a decrease in exposure would correspond with a reduction in blood levels in the community over time.

Following the conference call and several informal discussions, a meeting was arranged in Region III's Philadelphia office to share information on the significant advances that had been made in understanding the risk assessment and pharmacokinetic profile of PFOA since the Order was issued four years ago (see Human Exposure below). Key points of the meeting from DuPont's perspective were that, although PFOA is biopersistent, scientific studies had not established PFOA to be harmful to human health, and pharmacokinetic patterns had been studied that demonstrated a quantitative correlation between blood levels and PFOA levels in drinking water. DuPont stressed in its presentation that while there are no health effects findings associated with exposure to PFOA resulting in serum levels far above those found in communities surrounding plants, it is prudent to minimize, where possible, exposure to biopersistent materials such as PFOA. In light of this and the continuing work being done by EPA to complete a health-based risk assessment, it was DuPont's view that screening levels for PFOA properly should be based on exposure and not health issues. EPA did not challenge that assumption. The meeting, held on June 22, was perceived by DuPont to be a cordial and highly informative exchange of information.

Another meeting in Philadelphia followed on August 3 where new action levels and geographical boundaries were to be discussed, as well as legal mechanisms for implementing them. At this meeting, EPA affirmed, as it had in prior informal discussions, that it saw a modified or reissued 1431 order as the best vehicle. DuPont did not dismiss this approach, but asserted that if a new 1431 was to be issued, the new action level established by the order could not be tied to the terms "imminent and substantial endangerment" set forth in the 1431 authority. Scientific studies and worker health data had not indicated a human health hazard that warranted that descriptor. DuPont also said that any new order must reflect the current state of scientific knowledge on the toxicological profile of PFOA. In addition, DuPont asserted that any remedies for action under a new level must reflect the considerable actions already undertaken in the affected communities. In light of these limitations, DuPont suggested that a Consent Order not tied to 1431 or a Memorandum of Agreement detailing the new level and actions to be taken be considered. It was reaffirmed by all parties that any new level was to be temporary until a risk assessment was developed and a national drinking water standard was established.

After considerable discussion regarding an updated, science-based level, the parties agreed to a 0.50 ppb action level. The parties also agreed that the purpose of the new lower level was to help promote reductions of PFOA in blood

levels through alternate drinking supplies. The meeting concluded amiably with EPA promising to get back quickly to DuPont with a draft order incorporating the new action level and addressing points raised by DuPont. People who attended both meetings said they were among the most affable and productive negotiations they had ever attended.

On September 13, EPA transmitted its draft 1431 order for review. Upon review, DuPont was disappointed that its major concerns were not addressed. Since then, DuPont has expressed its fundamental objections to the approach and draft, specifically: (1) the existing peer-reviewed body of scientific literature does not support a finding that 0.50 ppb presents an imminent and substantial human health risk; (2) the draft order contains an incomplete and unbalanced statement of the science; and (3) the draft order ignores substantial steps already taken by DuPont to reduce community exposures.

That brings us to the current phase of negotiations where DuPont is proposing an alternative to the 1431 order that accomplishes the objectives of both EPA and DuPont. Simply stated, this is to set a site-specific action level equal to or greater than 0.50 ppb in drinking water as a revised interim measure to reduce exposure to C-8 and to minimize further uptake of this compound from drinking water while the risk assessment is pending.

## DuPont is already providing alternate water supply

In February 2005, DuPont reached final settlement of a class action lawsuit brought by residents near Washington Works regarding releases of PFOA from the plant. The settlement placed priority on the community rather than on a lengthy and costly legal proceeding. The settlement also provided benefit to both the plaintiffs and the company by taking reasonable steps to seek solutions based on science. The settlement class included persons who consumed PFOA at 0.05 ppb or higher for the period of at least one year prior to December 3, 2004 from certain public and private water supplies ("qualifying supplies"), as particularly defined in the settlement agreement.

Under the settlement, DuPont agreed to offer granular activated carbon treatment ("GAC Treatment") (or its functional equivalent) to the owners or operators of qualifying supplies. If an owner or operator of a qualifying supply has accepted DuPont's offer, DuPont's obligations are as follows:

- DuPont must at its sole cost and expense, design and install the treatment.
- DuPont must bear all costs of operation of the treatment until the Science Panel, an independent three-person epidemiology panel created by the settlement to determine whether there is a

probable link between PFOA exposure and human disease, delivers its findings under the settlement. If the Science Panel delivers a no probable link finding for all human diseases, DuPont's obligation ceases – unless the level of C-8 exceeds any applicable regulatory limit. If the Science Panel delivers a probable link finding for any human disease, DuPont must continue to bear all costs of operation of the treatment.

- Notwithstanding the Science Panel findings – DuPont shall be responsible to provide for the water treatment to the extent and for as long as necessary to meet applicable state and federal regulations governing C-8 concentrations in public drinking water supplies.

It is important to recognize that the 0.05 ppb number was, at the time, the analytical limit of quantification, and its use to identify class members for litigation was not based upon human health risk. Nonetheless, DuPont's actions taken as part of the settlement are relevant to this discussion as there are a subset of "qualifying supplies" that contain drinking water at or above 0.5 ppb, specifically Lubeck Public Service District, Little Hocking Water Association and approximately fifty private water sources.

Based upon existing data, there are two public water systems for which data have demonstrated levels of PFOA that exceed 0.5 ppb in their finished water, defined as water that has passed through all the processes in a system's water treatment plant and is ready to be delivered to consumers ("Finished Water"). Those public water systems are the Little Hocking Water Association ("Little Hocking") and the Lubeck Public Service District ("Lubeck").

DuPont has, in collaboration with Lubeck, designed and pilot-tested, through accelerated column testing, GAC Treatment. By approval of its Board, Lubeck has approved the terms of an Operation and Maintenance Agreement for the GAC Treatment. West Virginia Department of Health and Human Resources has approved Lubeck's permit modification. The West Virginia Public Service Commission (WVPSC) is reviewing the rate case filed by Lubeck. Construction of the GAC Treatment facility will begin as soon as the WVPSC grants a Certificate of Convenience.

DuPont has also offered GAC Treatment to Little Hocking pursuant to the terms accepted by other public water districts in the community surrounding Washington Works. Little Hocking has not accepted the offer; however, DuPont has completed design of a water treatment facility, conducted pilot-testing using accelerated column tests, and taken additional actions to facilitate regulatory approval. Because Little Hocking's well field is located entirely in the Ohio River flood plain, OEPA advised that it would not approve a permit for additional treatment on the existing well field. DuPont located and purchased a parcel of

land outside the flood plain where Little Hocking can feasibly move its existing operations and GAC Treatment can be constructed. DuPont prepared designs for the water treatment facility and responded to several rounds of comments from Little Hocking and its consultants before Little Hocking would submit the design and permit application to Ohio EPA, which took place in May 5, 2006. Ohio EPA review of the permit modification application is still underway, but DuPont has responded to all pending comments.

Private GAC treatment systems are operational in approximately thirty private water sources known to contain 0.5 parts per billion PFOA or greater. For remaining locations, either the private water source is not the sole source of drinking water and those residents have or will have alternative water supplied through the connection to a Public Water Source or the owners have declined treatment.

As is demonstrated by DuPont's extensive outreach to the affected communities, provisions for alternate water supplies have been offered to thousands of people in the area. An action by the federal government that labels untreated water as an imminent and substantial threat to public health would cause undue and unjustified alarm. The burden for addressing heightened public concern would fall on those institutions closest to the affected communities, e.g., state and local governments and DuPont.

## Human Exposure

When DuPont entered into these discussions, it stated clearly that any revision to the site-specific level must be based on the considerable body of scientific knowledge surrounding PFOA that has been assembled since the first order was issued. While much has been developed by independent research institutions, DuPont's contributions in this area also have been extensive and comprehensive and have covered topics such as toxicology, atmospheric chemistry and methods, environmental modeling, fate, biodegradation, and risk assessment. More than 60 peer-reviewed studies have been published by DuPont scientists over the past few years.

DuPont understands that a memo was prepared by Christopher P. Weis, Ph.D., Senior Toxicologist with EPA's National Enforcement Investigations Center, describing how health-based assumptions were reached by EPA; however, that memo has not been shared with DuPont. DuPont believes that a scientific approach forms the basis for the proposed screening level and that PFOA does not constitute an imminent and substantial threat to human health and offers the following thorough discussion of the science supporting its position.

***From 150 ppb to 0.50 ppb***

In August 2002, West Virginia's Department of Environmental Protection's C-8 Assessment of Toxicity Team ("CATT") derived a screening level for C-8 of 150 ppb.[2] This screening level was calculated using standard EPA external dose risk assessment methodology, and was based on an oral reference dose ("RfD") of 0.004 mg/kg body weight/day, and methods recommended in EPA's "Risk Assessment Guidance for Superfund," as further delineated in both Region III and Region IX risk-based concentration guidance.

Since the screening level of 150 ppb for PFOA was set by the CATT, advances in risk assessment methodology have resulted in alternative approaches to characterizing the risk of this biopersistent compound. Specifically, Butenhoff et al. (2004)[3] published a risk assessment for PFOA based on internal dose, using the modeled BMDL (BenchMark Dose Level) (referred to as "$LBMIC_{10}$" in the publication) calculated from the serum level at which a 10% response in a health endpoint is modeled to occur. Internal dose more accurately and directly reflects the dose at which biological responses occur and, therefore, should be considered the most appropriate metric for risk assessment. This is particularly true for PFOA, because of its stability, predominantly extracellular distribution, and low elimination rates, which permit biological responses to be correlated with serum levels. Additionally, because information available on the pharmacokinetics of PFOA suggests that there are wide variations in how this compound is eliminated across species, the use of internal dose (i.e., serum PFOA concentrations), as opposed to external dose, helps to minimize the uncertainty associated with intra- and interspecies extrapolation of external doses and allow for direct comparisons.

Using this internal dose risk assessment approach, Butenhoff et al. (2004) calculated Margins of Exposure ("MOE")[4] for the following toxicological endpoints identified in animal studies: liver-weight-to-body-weight ratio increases in male monkeys,[5] postnatal effects in rats, body weight changes in monkeys, and Leydig cell tumors in rats. General population human PFOA serum levels were obtained from several sampling studies in non-occupationally exposed populations, which demonstrated average PFOA serum concentrations of approximately 5 ppb, with a 95% percentile upper bound of 11-14 ppb.[6] The upper bound 95% percentile estimated general population serum PFOA concentration of 14 ppb was used to

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2 State of West Virginia, Department of Environmental Protection. 2002. Final, Ammonium Perfluorooctanoate (C-8) Assessment of Toxicity Team (CATT) Report, August 2002.

3 Butenhoff, J.L., et al. 2004. Characterization of risk for general population exposure to perfluorooctanoate. Reg. Toxicol. Pharmacol. 39(3):363-80.

4 The Margin of Exposure is an estimate of the potential human risk derived by calculating the ratio of the internal or external dose to estimated human exposure levels.

5 Liver to brain weight ratios were selected, rather than liver weight changes, to normalize for body weight changes, since the brain is not affected by body weight changes.

6 Olsen, G.W., et al. 2003. Perfluorooctanesulfonate and other fluorochemicals in the serum of American Red Cross and adult blood donors. Environ. Health Perspect. 11:1892-1901; Olsen, G.W., et al. 2004a. Quantitative evaluation of perfluorooctanesulfonate (PFOS) and other fluorochemicals in the serum of children. J. Children's Health. 2:53-76; Olsen, G.W., et al. 2004b. Serum concentrations of perfluorooctanesulfonate and other fluorochemicals in an elderly population from Seattle, Washington. Chemosphere 54: 1599-1611.

represent human exposure. The MOEs calculated by Butenhoff et al. (2004) represent substantial protection of children, adults, and the elderly in the general population.

***Science Advisory Board and Toxicity***

EPA published a draft risk assessment for PFOA in January 2005 that also was based on internal dose.[7] The toxicity endpoints chosen, and the MOEs estimated, were in general consistent with those published by Butenhoff et al. (2004). EPA's Science Advisory Board ("SAB") convened an expert panel to conduct a peer review of EPA's 2005 draft risk assessment. In a letter to EPA Administrator Stephen Johnson dated May 30, 2006 that accompanied the SAB Panel report, the SAB Chair and the SAP Panel Chair noted that "[i]n general, the SAB Panel endorsed EPA's risk assessment approach, particularly the inclusion of multiple non-cancer health endpoints for risk assessment, and the use of PFOA blood levels as a measure of estimated dose in place of the administered dose in toxicologic studies." The SAB Panel report noted that "[t]he direct use of internal measures by dose by US EPA in this document represents a promising and relatively innovative approach for risk assessments of environmental compounds compared to the more usual practice based on comparing daily dose rates by various routes of administration. This new approach reduces the need to include uncertainties introduced by the use of administered or ambient doses as measures of exposure" and "[t]he internal dose analysis used in this document is considered by the Panel to be a significant step toward reducing uncertainty related to cross species extrapolation." Consistent with the SAB Panel's conclusions, the EPA's use of internal dose measure is supported by FDA's own latest guidance for risk assessment, both for carcinogens[8] and for non-carcinogens.[9]

In May 2006, the SAB issued its report and noted a split among Panel members with regard to the hazard descriptor used to indicate the potential for carcinogenicity. Because of new research developed during the time the SAB process was underway, EPA has declined to reach conclusions regarding the May 2006 SAB Panel report. Referring to new data and the SAB process on its website, EPA states that "[s]ome of this new research may impact the Panel's assessment of PFOA. For this reason, it is premature to draw any conclusion on the potential risks, including cancer, from PFOA until all of this new testing is complete and the data are integrated into the risk assessment." Additionally, US EPA Administrator Stephen Johnson has stated: "[i]t has been nearly two years since the package of information that the Panel reviewed was compiled, and

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7 U.S. Environmental Protection Agency. 2005. Draft Risk Assessment of the Potential Human Health Effects Associated with Exposure to Perfluorooctanoic Acid and Its Salts. (Jan. 4, 2005).

8 U.S. Environmental Protection Agency. 2003. Draft Final Guidelines for Cancer Risk Assessment. Risk Assessment Forum. EPA/630/P-03/001A. NCEA-F-0644A. Available at http://cfpub.epa.gov/ncea/raf/redocrdisplay.cfm?deid=55365.

9 U.S. Environmental Protection Agency. 2002. A Review of the Reference Dose and Reference Concentration Processes. Report prepared for the Risk Assessment Forum. EPA/630/P-02/002F. NCEA-F-0644A. Available at http://www.epa.gov/ncea/raf/cancer2003.html.

since that time, a considerable amount of research has been completed . . . or is presently underway."[10] The Administrator added that the Agency intends to "integrate this new toxicity testing and mechanistic data into the risk assessment as it becomes available." The risk assessment is still underway by the Agency, and the Agency has reported that it will seek a second SAB review once the risk assessment is final. The Agency announced publicly on June 8, 2006: "EPA has no information linking current levels of PFOA in the blood of the general public to any adverse health effects in people. Additional study is still needed to understand these persistent chemicals. While information is being developed, EPA is taking the prudent step of seeking to reduce possible sources now, to avoid potentially larger future problems."

***Pharmacokinetics and Exposure***

Recent publications by Emmett and colleagues from the University of Pennsylvania[11] provide valuable information on the serum PFOA concentrations and selected health endpoints in residents living near a fluoropolymer production facility. These data can be used to refine the pharmacokinetically-based, internal dose risk assessments for PFOA discussed above. Emmett et al. (2006a) found that median serum PFOA levels in randomly selected residents of Little Hocking, OH ranged from 298-370 ppb. When these serum values were correlated with available air and water data, the median serum/drinking water ratio for PFOA was calculated to be 105, i.e., for every 1 ppb of PFOA in drinking water ingested by community residents; 105 ppb of PFOA will be present in serum. The pharmacokinetic model used in an exposure assessment and risk characterization for consumer articles containing PFOA,[12] is in general agreement, and supportive of the serum/drinking water ratio estimated by Emmett et al. (2006a). A recent pharmacokinetic model of PFOA in primates[13] provides further insight into refining the pharmacokinetic model for PFOA and other perfluoroalkylacids.

Importantly, no statistically or clinically significant associations between serum PFOA and liver or renal function tests, cholesterol, thyroid-stimulating hormone, or hematological parameters (red cell indices, white cells, or platelet counts) were found in the residents studied.[14] Moreover, in residents with a history of liver or thyroid disease, the mean serum PFOA levels were not increased. These results support the conclusion that PFOA, even at serum levels far exceeding

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[10] June 20, 2006 letter from Stephen Johnson to SAB Panel Co-Chairs.

[11] Emmett, E.A., et al. 2006a. Community exposure to perfluorooctanoate: Relationships between serum concentrations and exposure sources. J. Occup. Environ. Med. 48:759-70; Emmett, E.A., et al. 2006b. Community exposure to perfluorooctanoate: Relationships between serum levels and certain health parameters. J. Occup. Environ. Med. 48:771-9.

[12] Washburn, S.T., et al. 2005. Exposure assessment and risk characterization for perfluorooctanoate in selected consumer articles. Environ. Sci. & Technol. 39(11):3904-10.

[13] Anderson, M.E., et al. 2006. Pharmacokinetic modeling of saturable, renal resorption of perfluoroalkylacids in monkeys -- Probing the determinants of long plasma half-lives. Toxicology 227:156-64.

[14] Emmett, E.A., et al. 2006b. Community exposure to perfluorooctanoate: Relationships between serum levels and certain health parameters. J. Occup. Environ. Med. 48:771-9.

those found in the general population, is not associated with adverse health effects.

***Occupational Exposure***

For several decades, 3M, as the U.S. manufacturer of APFO, performed and published epidemiology studies of its workers. These studies do not demonstrate a causal connection between PFOA exposure and human disease, even at the higher occupational exposures. As discussed in more detail below, DuPont's findings in its epidemiology study of its employee cohort are consistent with the body of published literature already developed.

In 2004, DuPont initiated an epidemiological study of employees at its Washington Works site in West Virginia. The first phase of this study was a cross-sectional surveillance intended to evaluate, using serum PFOA levels, any potential associations between occupational exposure to ammonium perfluorooctanoate and changes in clinical laboratory measurements or physical examination endpoints.[15] Worker PFOA levels were found to range from 5 to 9550 ppb (0.005 to 9.55 ppm). A slight positive association was found between serum PFOA in workers at the polymer production facility and serum cholesterol, triglycerides, and LDL cholesterol (but not HDL cholesterol).

The second phase of this study, a retrospective cohort mortality study, examined all causes of death combined and cause-specific mortality rates in the Washington Works employees, as compared to the general population in the U.S., the West Virginia general population, and the population of DuPont workers residing in West Virginia and seven neighboring states in the region. The results of the second phase became available on October 17, 2006.[16] No convincing evidence of increased mortality associated with exposure to APFO was found. [17] A detailed analysis for ischemic heart disease mortality showed a slight increase in one model at one time interval (10-year lag). However, this increase was not observed with other models, and the overall mortality rates for heart disease were not increased in this study. This one observed increase could be a random occurrence or it could mean a small increase in those workers most heavily exposed.

Although there are no health effects that are known to be caused by exposure to PFOA, it is prudent to minimize, where possible, exposure to biopersistent

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[15] Haskell Report. 2006. Ammonium Perfluorooctanoate: Cross-Sectional Surveillance of Clinical Measures of General Health Status Related to a Serum Biomarker of Exposure and Retrospective Cohort Mortality Analyses in a Polymer Production Plant. In review.

[16] Haskell Report. 2006. Ammonium Perfluorooctanoate: Phase II. Retrospective Cohort Mortality Analyses Related to a Serum Biomarker of Exposure in a Polymer Production Plant.

[17] A statistically non-significant increase in kidney cancer mortality and a statistically significantly increase in diabetes mortality was found across the site when compared to the regional worker population from the same company. These associations did not appear to be related to PFOA exposure, but there were too few cases to make definitive conclusions.

materials such as PFOA. To accomplish this, screening levels for PFOA should be exposure-based, which would be much lower than the existing health-based screening level. Using the serum to drinking water level ratio of 1 ppb:105 ppb determined by Emmett et al. (2006a),[18] at the current health-based screening level of 150 ppb in drinking water, a serum level of approximately 15 ppm can be predicted. This serum level exceeds the current occupational exposures discussed above. A screening level of 0.50 ppb in drinking water, however, which is significantly below the health-based screening level currently in place, would result in approximately 50 ppb of PFOA in serum. This serum level is within the range found in the general population as reported by Olsen et al.,[19] and provides more than an adequate MOE (>400) based on internal dose risk assessment using the most sensitive (and therefore most-conservative) health endpoint, which may be an adaptive response as opposed to a toxic response (i.e., increase in liver weight in primates). Moreover, an exposure-based screening level of 0.50 ppb is supported by the occupational studies and the Emmett et al. community exposure study.

***Conclusion***

Because the science does not support any suggestion of an imminent and substantial health risk for drinking water supplies at or above 0.5 ppb, DuPont is proposing to EPA an alternative that would allow the work to proceed. The alternative approach accomplishes the stated objectives without the risk of causing unfounded community concern or frustration of pending state and local efforts. DuPont has attached an outline of a draft enforceable Memorandum of Agreement, which would achieve EPA's goal of a secure written commitment by DuPont to take the specified steps to reduce community exposure to PFOA while the risk assessment is pending. DuPont would agree, and the MOA would expressly provide, that these requirements are also enforceable requirements under Section 1445 of the Safe Drinking Water Act. As such, DuPont would agree not to challenge EPA's enforcement authority of these terms under Sections 1414(g) or 1445(c).

DuPont is already performing most of the work that DuPont believes EPA has requested and is prepared to address any additional work required. But the critical need remains to find a mutually acceptable legal document under which that work can be completed. We are willing to entertain alternative proposals, and to continue the dialogue in an effort reach agreement. We ask that EPA do the same.

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[18] Emmett, E.A., et al. 2006a. Community exposure to perfluorooctanoate: Relationships between serum concentrations and exposure sources. J. Occup. Environ. Med. 48:759-70.

[19] Olsen, G.W., et al. 2003. Perfluorooctanesulfonate and other fluorochemicals in the serum of American Red Cross and adult blood donors. Environ. Health Perspect. 11:1892-1901; Olsen, G.W., et al. 2004a. Quantitative evaluation of perfluorooctanesulfonate (PFOS) and other fluorochemicals in the serum of children. J. Children's Health. 2:53-76; Olsen, G.W., et al. 2004b. Serum concentrations of perfluorooctanesulfonate and other fluorochemicals in an elderly population from Seattle, Washington. Chemosphere 54: 1599-1611.

# Outline of Proposed Memorandum of Agreement

## A. RECITALS

1. Perfluorooctanoic Acid and its salts ("PFOA") have been detected in community and private drinking water sources in the area surrounding Washington Works.

2. EPA is currently undertaking, but has not completed, a risk assessment for PFOA.

3. A human exposure study conducted in the Little Hocking, Ohio community, located across the Ohio River from the Facility, demonstrated that the median human blood serum level of C-8 in the study participants using only the local water system (Little Hocking Water Association) was 374 ppb, and the overall range of human blood serum levels for study participants includes levels from 7 - 4520 ppb. [1]

4. Various studies have shown that understanding the pharmacokinetics of C-8 is complicated by highly variable elimination of the compound among test animal species and human subjects.[2] The half-life of C-8 in human blood serum appears to be much longer than the half-life of C-8 in the blood serum of other species tested to date.[3] Because PFOA can remain in the body for a long time, drinking water that contains PFOA can, over time, produce concentrations of PFOA in blood serum that are higher than the concentrations present in the water itself.

5. Although EPA has not yet completed its risk assessment for PFOA, in light of the information gathered to date, EPA and DuPont agree that

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[1] Emmett, E., et al. "Community Exposure to Perfluorooctanoate: Relationships Between Serum Concentrations and Exposure Sources." *Journal of Occupational Medicine*, Vol. 48, No. 8. pp, 759-770 (August 2006). The same authors reported the following results: "No significant positive relationships between serum (PFOA) and liver or renal function tests, cholesterol, thyroid-stimulating hormone, or with red cell indices, white cell, or platelet counts. Mean serum (PFOA) was not increased in those with a history of liver or thyroid disease." Emmett, E, et al. Community Exposure to Perfluorooctanoate: Relationships Between Serum Concentrations and Certain Health Parameters." *Journal of Occupational Medicine*, Vol. 48, No. 8. pp-771-79 (August 2006). Thus, the authors concluded: "No toxicity from PFOA was demonstrated using the measure end points; other end points need to be addressed." *Id.*

[2] Washburn, S. T., et al. "Exposure Assessment and Risk Characterization for Perfluorooctanoate in Selected Consumer Articles" *Environ. Sci. Technol.*; (Article); 2005; 39(11); 3904-3910.

[3] *Id.*

abatement of human exposures in the impacted communities surrounding Washington Works to levels below 0.5 parts per billion ("ppb") in drinking water is appropriate while EPA completes its work. This level, which is significantly below the health-based screening level currently in place, would result in approximately 50 ppb of PFOA in serum based on result of the community study conducted by Emmett. This serum level is within the range found in the general population.

6. DuPont has taken significant steps to reduce exposure to PFOA in the area surrounding Washington Works by reducing emissions from the plant and installing, or offering to install, water treatment at community and private water systems.

7. DuPont estimates that abatement technology installed at Washington Works has led to a 98% reduction of plant air and water emissions of PFOA from manufacturing operations from 2000 to 2006.

8. Environmental monitoring data are available for public and private drinking water sources in communities surrounding Washington Works.[4]

9. EPA will identify areas where additional private water survey and monitoring may be necessary.

10. Based upon existing data, there are two public water systems for which data have demonstrated levels of PFOA that exceed 0.5 ppb in their finished water, defined as water that has passed through all the processes in a system's water treatment plant and is ready to be delivered to consumers ("Finished Water"). Those public water systems are the Little Hocking Water Association ("Little Hocking") and the Lubeck Public Service District ("Lubeck").

11. DuPont has, in collaboration with Lubeck, designed and pilot-tested through accelerated column testing granular activated carbon water treatment ("GAC Treatment"). By approval of its Board, Lubeck has approved the terms of an Operation and Maintenance Agreement for the GAC Treatment. West Virginia Department of Health and Human Resources has approved Lubeck's permit modification. The West Virginia Public Service Commission (WVPSC) is reviewing the rate case

[4] *See* Quarterly MOU Status Report #3, Phase II Monitoring/Sampling Work Plan, DuPont Washington Works (OPPT-2004-0113 PFOA Site-Related Environmental Assessment Program), August 3, 2006, at Table 4.1; C-8 Data Summary Report Consent Order GW-2001-019, DuPont Washington Works Facility and Local, Letart and Dry Run Landfills, February, 2003, at Tables 3.0-3.13; *see also*, Letters from A. Hartten (DuPont) copied to M. Dominiak (EPA) from March, 2005 through June, 2006 (providing the results of private well sampling).

filed by Lubeck. Construction of the GAC Treatment facility will begin as soon as the WVPSC grants a Certificate of Convenience.

12. DuPont has also offered GAC Treatment to Little Hocking pursuant to the terms accepted by other public water districts in the community surrounding Washington Works. Little Hocking has not accepted the offer; however, DuPont has completed design of a water treatment facility including GAC filtration, conducted pilot testing through accelerated column testing and taken additional actions to facilitate regulatory approval. Because Little Hocking's well field is located entirely in the Ohio River flood plain, Ohio EPA advised that it would not approve a permit for additional treatment on the existing well field. DuPont located and purchased a parcel of land outside the flood plain where Little Hocking can feasibly move its existing operations and GAC Treatment can be constructed. DuPont prepared designs for the water treatment facility and responded to several rounds of comments from Little Hocking and its consultants before Little Hocking would submit the design and permit application to Ohio EPA, which took place on May 5, 2006. Ohio EPA review of the permit modification application is still underway, but DuPont has responded to all pending comments.

13. DuPont has offered to install GAC treatment to owners of private water sources for which data have demonstrated levels of PFOA that exceed 0.5 ppb in their finished water. DuPont has installed and is operating private treatment at those private water sources that are the sole source of drinking water at the location and whose owners have accepted DuPont's offer.

## B. AGREEMENT

1. Private Water Sources Receiving Treatment. For private water sources at which DuPont has already installed GAC Treatment, DuPont shall operate and maintain each GAC Treatment system in good working order, including but not limited to timely replacement of carbon filters, until it demonstrates to the satisfaction of EPA that the Finished Water at the source prior to GAC Treatment contains less than 0.5 ppb of PFOA, the national primary drinking water standard, if established sooner, for a period agreed to by EPA and DuPont. DuPont may also elect to satisfy any ongoing obligation under this paragraph by connecting a particular location to a public water source that contains less that 0.5 ppb of PFOA.

2. Lubeck and Little Hocking. For Lubeck and Little Hocking, once GAC Treatment is installed and operational, DuPont shall operate and maintain each GAC Treatment system in good working order, including but not limited to timely carbon bed changes, until it demonstrates to the satisfaction of EPA that the Finished Water in the system prior to GAC Treatment contains less than 0.5 ppb of PFOA, or the national primary

drinking water standard if established sooner, for a period agreed to by EPA and DuPont.

3. Survey and Identification of Additional Water Sources. For geographical areas defined by EPA, DuPont shall conduct a private water source survey and, where a new private water source is identified, monitor the locations for the presence of PFOA.

4. If any additional water sources contain 0.5 ppb or greater of PFOA, DuPont shall, within 30 days of receipt of validated data, provide EPA with a written Water Treatment Plan for each of these water sources. The Water Treatment Plan shall include:

   a. a written offer to install and operate GAC Treatment (including a draft operation and maintenance agreement);

   b. identification of anticipated necessary permits;

   c. a schedule for design of the GAC Treatment system; and

   d. identification of technical and other information needed from the owner or operator of the water source in order for DuPont to design and install the system.

5. For any additional water source whose owner or operator accepts DuPont's offer, DuPont shall act with all deliberate speed to design treatment, seek necessary regulatory permits, and install GAC Treatment.

6. If an owner or operator of a water source rejects DuPont's offer, either through express rejection or silence, DuPont shall inform EPA of this rejection and provide documentation.

7. DuPont's Operation and Maintenance Obligations. DuPont has or will execute operation and maintenance agreements ("O&M Agreements") with each water source owner or operator who has accepted the offer for treatment. DuPont will provide for operation and maintenance of the GAC Treatment consistent with the specific terms of these O&M Agreements until it demonstrates to the satisfaction of EPA that the water source's Finished Water prior to treatment is less than 0.5 ppb of PFOA, or the national primary drinking water standard, if established sooner, for a period agreed to by EPA and DuPont.

8. Follow-up Monitoring. After termination of DuPont's obligation to provide GAC Treatment under this agreement, DuPont will monitor the finished water for a period and frequency agreed to by EPA and DuPont.

9. Enforceability. The terms of this MOA are enforceable requirements of Section 1445 of the Safe Drinking Water Act. DuPont agrees not to

challenge enforceability by EPA of the terms of this MOA under sections 1414(g) or 1445 of the Safe Drinking Water Act.

# EXHIBIT D

# Status of NJDEP PFOA Activities - 8/8/09

## Background

Perfluorooctanoic acid (PFOA) is an industrial chemical used to make fluoropolymers for products such as non-stick cookware and water- and stain-resistant products. PFOA is persistent in the environment and is detected in the blood of the general population worldwide. The science and toxicology of PFOA and other perfluorinated compounds is rapidly advancing.

PFOA has been detected at low levels in public water systems throughout New Jersey. This website provides information about the Department's current activities to address PFOA in New Jersey's environment.

## New Jersey Health-based Drinking Water Guidance

The Department developed a health-based drinking water guidance level of 0.04 ug/L (parts per billion) for PFOA in 2007. In January 2009, USEPA developed a Provisional Short Term Drinking Water Health Advisory of 0.4 ug/L (parts per billion) for PFOA which was developed quickly to address a situation of contamination in Alabama. The primary difference between the New Jersey guidance and the USEPA Provisional Health Advisory is the timeframe for which these guidance values are intended to protect.

The New Jersey health-based drinking water guidance level of 0.04 ug/L is intended to protect for lifetime exposure, normally defined as 70 years, as are all drinking water guidance values, drinking water standards, and ground water criteria developed by the Department. The basis for the guidance has been published in the peer-reviewed journal, Environmental Science & Technology and is posted on the Department's Division of Water Supply web page.

USEPA Short Term Drinking Water Health Advisories are normally intended to protect for one day or ten days of exposure; however the specific timeframe for the Short Term Provisional Health Advisory of 0.4 ug/L for PFOA was not specified by USEPA. The USEPA Advisory is posted at EPA's Drinking Water Health Advisories page.

## Development of New Jersey Drinking Water Standard for PFOA

The New Jersey Drinking Water Quality Institute (NJDWQI) is an advisory body established by New Jersey's drinking water law which is charged with recommending drinking water standards to the Commissioner of the Department. The DWQI has added PFOA to the list of contaminants for which it plans to recommend a drinking water standard (Maximum Contaminant Level, MCL) to the Department. The current New Jersey health-based guidance level was developed in 2007 and is based on studies identified by USEPA in its 2005 draft risk assessment for PFOA. Since that time, many additional studies on the effects of PFOA in humans and experimental animals have become available. These newer studies will be considered by the DWQI while developing a health-based drinking water standard (Health-based MCL) recommendation for PFOA. The DWQI will consider the Health-based MCL recommendation along with analytical limitations and available treatment removal technologies to develop the final MCL recommendation.

The Department believes that the development of an MCL recommendation for PFOA should be given top priority by the DWQI and is determined to move ahead with this process as quickly as possible.

**Testing of Private Wells Near DuPont Chambers Works**

Currently, private wells within two miles of Dupont's Chambers Works facility in Carneys Point Township, Salem County, are being sampled and analyzed for PFOA. DuPont has agreed to voluntarily conduct this sampling and to provide treatment to those private wells that exceed the USEPA Provisional Health Advisory level of 0.4 ug/L. Because the Department does not have a promulgated drinking water standard or an interim specific ground water criterion for PFOA, the Department currently does not have regulatory authority to require DuPont to provide treatment to wells impacted by PFOA to 0.04 ppb.

In order for the Department's Site Remediation Program to provide public funding to provide alternate water supply or treatment, the contaminant of concern (PFOA) must be listed as a hazardous substance under the Spill Compensation and Control Act or in another regulation referenced by this Act. At this time, PFOA does not meet this requirement. However, adding PFOA and other perfluorinated chemicals to the list of compounds for which reporting is required under the New Jersey Community Right-to-Know (RTK) list regulations will provide regulatory authority to use a public funding source for remediation, if necessary.

**New Jersey Interim Specific Ground Water Quality Criterion for PFOA**

New Jersey Ground Water Quality Standards regulations provide for the development of an interim specific ground water criterion if there is sufficient information available to derive a health-based criterion and an analytical practical quantitation limit. Ground water criteria developed by the Department are based on the same risk assessment approaches and assumptions as drinking water standards and guidance, as they are intended to protect from potential health effects resulting from potable use of ground water for a lifetime of exposure. The Department is currently evaluating how to address remediation of private wells with PFOA concentrations that exceed the New Jersey 0.04 ppb guidance level but are below the USEPA 0.4 ppb Advisory level. This evaluation includes the potential enforcement benefits of developing an interim specific ground water criterion for PFOA. The Department anticipates development of a final strategy on this issue during the fall of 2009.

**Listing PFOA and Related Compounds in New Jersey Community Right-to-Know Regulations**

The Department recognizes the concerns about potential environmental and human health impacts which may result from the manufacture and use of PFOA and other perfluorinated chemicals at DuPont Chambers Works. The Department is investigating adding perfluorinated chemicals, including telomer alcohols and other compounds which may degrade to PFOA in the environment, to the list of compounds for which reporting is required under the RTK regulations. Adding these chemicals to the RTK regulations will allow the Department to learn more about their use in facilities throughout the State, as well as their impact on New Jersey's environment.

**Reporting of Air Emissions for PFOA and Related Compounds**

The Department has used air deposition modeling in its investigation of the potential occurrence of PFOA in private wells in the Chambers Work vicinity. The Department is also currently

considering adding PFOA and related compounds to the list of regulated contaminants for which reporting of air emissions is required.

**Occurrence of PFOA in New Jersey Public Drinking Water Systems**

PFOA has been detected in New Jersey public water supplies in the vicinity of DuPont Chambers Works as well as in other parts of the state. In 2006, PFOA was detected at up to 0.19 ppb and 0.0179 ppb in ground water samples from two different public water systems near the Dupont Chambers Works Facility. Also in 2006, the Department conducted a study of PFOA and a related chemical, perfluorooctane sulfonate (PFOS), in 23 other New Jersey public water supplies. This study has been published in a peer reviewed journal, Environmental Science & Technology and is posted on the Department's Division of Water Supply web page. Of the 23 public water systems sampled in this study, the highest level detected was 0.039 ppb.

Based on recommendations by the Department, PFOA and PFOS were analyzed in 2007-2008 in over 200 samples collected by 18 public water systems throughout the state, including 12 systems sampled in the 2006 study. PFOA concentrations ranged from non-detectable (<0.01 ppb) to 0.14 ppb in water from an unconfined well near Chambers Works. PFOA was detected above the Department's health-based guidance level of 0.04 ppb in at least one sample from five systems. Results of quarterly sampling of several systems have consistently exceeded the health-based guidance of 0.04 ppb in one or more points-of-entry.

In order to gain further knowledge of the occurrence of perfluorinated chemicals in New Jersey drinking water, the Department has planned an additional study of 30 sampling stations from 29 public water systems located in 19 of 21 New Jersey counties. In this study, samples will be analyzed for a suite of 11 perfluoroalkylates and perfluorosulfonates detected by the analytical method. Sampling for this study was initiated in July of this year.

**Actions Taken to Address PFOA in New Jersey Public Water Systems**

To date, the Department has sent letters to the four public water systems with annual average PFOA levels exceeding the guidance level of 0.04 ppb, recommending that the water system continue to monitor and develop a plan to reduce PFOA levels: New Jersey American- Pennsgrove, United Water - City of Orange, New Jersey American - Logan; and United Water - Rahway. These water systems are located in four different counties: Essex, Gloucester, Salem and Union.

At this time, one system has taken action to minimize PFOA levels in the water delivered to its customers. New Jersey American-Pennsgrove is currently blending water from wells with lower PFOA levels with water from the wells exceeding the guidance value in order to reduce PFOA concentrations in its finished water delivered to consumers. United Water-City of Orange continues to monitor on a quarterly basis, as requested by the Department. United Water – Rahway has proposed a plan to evaluate their source water and determine the fate of PFOA in their existing treatment plan and optimize design and operation parameters accordingly. NJDEP awaits response from the other system. The Department continues to receive data from these four systems as well as other public water systems that have elected to monitor on a voluntary basis.

**For Further Information**:

Division of Water Supply – PFOA website: http://www.state.nj.us/dep/watersupply/pfoa.htm

Site Remediation Program - General Website: http://www.state.nj.us/dep/srp/

Water Monitoring and Standards - Ground Water Quality Standards Website:
http://www.state.nj.us/dep/wms/bwqsa/gwqs.htm#1

Community Right-to-Know - General Website:
http://www.nj.gov/dep/opppc/crtk/crtkindex.html

# EXHIBIT E

## Table 4.1
## APFO and PFOA Results for Public Water Supply Sampling, West Virginia and Ohio
## Quarterly MOU Status Report #1 Phase III - Final Work Plan
## DuPont Washington Works (OPPT- 2004- 0113)

| Historic Sampling Locations | | | | | |
|---|---|---|---|---|---|
| Location | Sample ID | Sample Date | APFO (C-8) ug/L | PFOA ug/L* | Comments |
| Village of Syracuse, OH | VOSAT | 3/29/2002 | NQ (<0.050) | | After Treatment Sample |
| | VOSAT | 4/24/2002 | ND (<0.010) | | After Treatment Sample |
| | VOSAT | 9/23/2004 | ND (<0.010) | | After Treatment Sample |
| | VOSAT | 9/23/04 (dup) | ND (<0.010) | | duplicate |
| | VOS NORTH 2 | 3/29/2002 | NQ (<0.050) | | Production Well |
| | VOS NORTH 2 | 4/24/2002 | 0.491 | | Production Well |
| | VOS NORTH 2 | 9/23/2004 | ND (<0.010) | | Production Well |
| | VOS SOUTH R3 | 3/26/2002 | 0.208 | | Production Well |
| | VOS SOUTH R3 | 4/24/2002 | ND (<0.010) | | Production Well |
| | VOS SOUTH R3 | 9/23/2004 | NQ (<0.050) | | Production Well |
| Marietta, OH | PSD-WELLPT | 6/26/2007 | NQ (<0.0062) | NQ (<0.0062) | Before Treatment Sample |
| | PSD-WELL1 | 6/26/2007 | 0.013 | 0.012 | Production Well |
| | PSD-WELL5 | 6/26/2007 | NQ (<0.0062) | NQ (<0.0062) | Production Well |
| | PSD-WELL9 | 6/26/2007 | 0.018 | 0.017 | Production Well |
| | PSD-WELL8 | 6/26/2007 | 0.0099 | 0.0097 | Production Well |
| | PSD-WELL2 | 6/26/2007 | NQ (<0.0062) | NQ (<0.0062) | Production Well |
| | PSD-WELL4 | 6/26/2007 | NQ (<0.0062) | NQ (<0.0062) | Production Well |
| | PSD-WELLAT | 6/26/2007 | 0.0079 | 0.0076 | After Treatment Sample |
| City of Vienna, WV | VPSD WELL14 | 5/10/2007 | 0.060 | 0.058 | Production Well |
| | VPSD WELL13 | 5/10/2007 | 0.042 | 0.040 | Production Well |
| | VPSD WELL12 | 5/10/2007 | 0.079 | 0.076 | Production Well |
| | VPSD WELL11 | 5/10/2007 | 0.031 | 0.030 | Production Well |
| | VPSD WELL10 | 5/10/2007 | 0.041 | 0.039 | Production Well |
| | VPSD WELL9 | 5/10/2007 | 0.030 | 0.029 | Production Well |
| | VPSD WELL8 | 5/10/2007 | 0.049 | 0.047 | Production Well |
| | VPSD WELL7 | 5/10/2007 | 0.061 | 0.059 | Production Well |
| | VPSD AT | 5/10/2007 | 0.058 | 0.056 | After Treatment Sample |
| Warren, OH | WarrenPSD-Well1 | 9/28/2007 | ND (<0.0031) | ND (<0.0031) | Production Well |
| | WarrenPSD-Well2 | 9/28/2007 | 0.022 | 0.021 | Production Well |
| | WarrenPSD-Well3 | 9/28/2007 | ND (<0.0031) | ND (<0.0031) | Production Well |
| | WarrenPSD-AT | 9/28/2007 | NQ (<0.016) | NQ (<0.016) | After Treatment Sample |

* Both APFO (C-8) and PFOA are reported starting with the 4Q04 sampling event.

** New personnel conducted sampling starting with 2Q05 event and subsequently determined that samples from 2Q05 through 4Q05 that were identified as K16-PW01 were actually collected from L04-PW01.

*** New personnel conducted sampling starting with 2Q05 event and subsequently determined that the incorrect sampling point was sampled from 2Q05 through 4Q05.

**** Sample collected from concession stand sink faucet. Sampled just after the "big flood". Island still covered with thick layer of river sediments. Access to wellhouse may have been restricted.

^System 1/Well A - "Old System" consists of a typical pressure tank and submersible pump. Rudimentary sanitation equipment was present, but did not appear functional. This system is used to supply the superintendant's house (and any other misc. small demand needs) during the winter months. When System 1 is online, System 2 is inactive.

^^System 2/Well B - "New System" consists of (4) 150+ gallon pressure tanks operating in parallel which feed into a 2000 (approx.) gallon steel storage tank. Sanitation equipment was not observed, but likely exists. This system is used to supply all water needs during spring, summer, and fall. It's primary advantage over system 1 is capacity. However, the system lacks freeze protection so it is shut down during the winter. When System 2 is online, System 1 is inactive.

ND = Not Detected at or above the limit of detection (LOD). The listed LOD is approximate and varies by instrument and over time.

NQ = Not Quantifiable. Detected at a level above the LOD and below the limit of quantification (LOQ).

Misc. = Miscellaneous water use is not used for drinking.

& L04-PW01 is also referred to as the Gallery well and V04-PW01 is also referred to as the Ranney well. West Well Field #1 is also referred to as West Field Well Header 1.

@ Samples mislabeled in the field.



ED_005478_00001740-00055

| PWSID | PWSName | FacilityID | FacilityName | SamplePointName | CollectionDate | SampleID | Contamin | MRL | MethodID | AnalyticalResultValue | Region | State |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WV3305407 | Parkersburg Utility Board | 90001 | Treatment Plant | Entry Point after Treatment | 9/9/2014 | K1409797-001 | PFOA | 0.02 | EPA 537 | 0.0412 | 3 | WV |
| WV3305407 | Parkersburg Utility Board | 90001 | Treatment Plant | Entry Point after Treatment | 3/25/2014 | K1403156-001 | PFOA | 0.02 | EPA 537 | 0.0631 | 3 | WV |

# EXHIBIT F

December 2, 2014

Mr. Ed Swindall, Supervisor
Ohio Environmental Protection Agency
Permit Processing Unit/Division of Surface Water
50 West Town Street, Suite 700
P.O. Box 1049
Columbus, Ohio 43216-1049

**RE: Transfer of Ohio EPA Permit No. 0IN00262*BD DuPont Corporate Remediation Group-Washington Works (Little Hocking Water Association GAC Treatment Site)**

Dear Mr. Swindall:

This letter is to provide notice of upcoming changes in ownership and operational control of the DuPont Corporate Remediation Group-Washington Works site located at 1141 State Route 618, Belpre Township, Ohio Washington County (i.e., Little Hocking Water Association GAC Treatment Site or "Site"). Effective February 1, 2015, the Performance Chemicals reporting segment of E. I. du Pont de Nemours and Company is undergoing a name and ownership change to The Chemours Company FC LLC (Chemours). During this time, this Site will remain under operational control of DuPont. Chemours will operate as a wholly owned subsidiary of DuPont until June 30, 2015. Effective July 1, 2015, Chemours will become a wholly independent publicly traded company and thus, on this date, the Site will become under the operational control of Chemours.

In accordance with condition 19.A of the above referenced permit "Transfer of Ownership or Control", changes in ownership or operational control of the facility must be made 60 days prior to the proposed date of transfer. In light of the upcoming transfer of the property from DuPont to Chemours, we respectfully request that written approval of the modification of the permit to identify Chemours as the new permittee be issued as soon as possible. Also, as required by Condition 19.B, please find attached a copy of the written agreement for transfer of permit responsibility between the current permittee (DuPont) and the new permittee (Chemours). Please note, I will remain the responsible contact for the site and permit on behalf of the Chemours Company.

Thank you for your attention to this matter. If you have any questions, please feel free to contact me at 302-999-6197.

Sincerely,

Andrew S. Hartten
Principal Project Manager
DuPont Corporate Remediation Group

cc: Bjorn Cuento-URS Corporation
Bob Griffin-LHWA

# Attachment - Written Agreement for Transfer of Permit Responsibility Between DuPont and Chemours

# Agreement to Transfer Permit Responsibility

**THIS AGREEMENT** (this "Agreement") is made and entered into this 1st day of December, 2014 by and between E.I. du Pont de Nemours and Company ("DuPont") and Chemours Company FC LLC ("Chemours").

**WHEREAS,** DuPont is the current permittee of Ohio EPA permit 0IN00262*BD, dated November 1, 2014, (the "Permit") relating to a facility located at 1141 State Route 618, Belpre Township, Ohio, Washington County (i.e., Little Hocking Water Association GAC Treatment Site; the "Facility");

**WHEREAS,** ownership of the Facility will be transferred from DuPont to Chemours effective February 1, 2015;

**NOW THEREFORE,** DuPont and Chemours agree that as of February 1, 2015, the Permit will be transferred from Du Pont to Chemours, and Chemours hereby agrees to accept all responsibility and liability for compliance with the Permit as of February 1, 2015.

**IN WITNESS WHEREOF,** and intending to be bound thereby, the parties have executed this Agreement, as of the date first written above.

Current Permittee

Tom Bi
Remediation Team Manager
E.I. du Pont de Nemours and Company

New Permittee

Deana Di Cosimo
President
The Chemours Company FC LLC