

April 16, 2001

Mr. William Wentworth
U. S. Environmental Protection Agency – Region III
General Operations Branch
1650 Arch Street
Philadelphia, PA 19103-2029

**Re: 2000 Annual Groundwater Monitoring Update
DuPont Washington Works Plant
Washington, West Virginia
HSPA Permit Number WVD045875291**

Dear Mr. Wentworth:

The purpose of this letter is to provide an update for the on-going groundwater monitoring program at DuPont's Washington Works Plant in Washington, West Virginia. This is the first annual groundwater monitoring update for the site following the completion of the RCRA Facility Investigation (RFI) in 1999.

BACKGROUND

A major finding of the RFI at Washington Works was that the constituents detected in groundwater, which were sourced from various Solid Waste Management Units (SWMUs), were being captured by the site's production wells and were not migrating off-site. The RFI Report (dated June 30, 1999) recommended the following steps be taken to ensure and verify that the impacted groundwater continued to be captured:

- ☐ Conduct long-term groundwater quality and elevation monitoring to ensure the continued protection of human health.
- ☐ Conduct long-term groundwater elevation monitoring to ensure the continued capture of site groundwater.
- ☐ Maintain production well pumping rates at or above 35% of the February 1999 pumping rates.

The minimum recommended pumping rate of 35% of the February 1999 pumping rates was established through numerical groundwater modeling as part of the RFI (see Section 5 of the RFI Report for documentation of the Washington Works Groundwater Model). The groundwater modeling results indicate that this pumping rate is required to maintain inward groundwater flow and to capture site groundwater.

In accordance with the RFI Report recommendations, the pumping rate has been maintained and groundwater quality and water-table elevation monitoring have continued at the site. This monitoring has been completed annually.

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GROUNDWATER QUALITY MONITORING

Site-wide groundwater monitoring was completed twice during the RFI (November 1998 and February 1999). Thirty-seven (37) wells were sampled during the Nov. 1998 event, while 36 were sampled in Feb. 1999. In each case, the sampled wells included two potable supply wells (AO08-PW01, AM07-PW01) and three groundwater production wells (L04-PW01, V05-PW01, and K16-PW01).

The first annual groundwater sampling event was completed in November 2000. This sampling included the two potable supply wells and the three production wells sampled during the RFI. Groundwater samples from each of these five wells were analyzed for constituents detected in groundwater during the RFI at concentration exceeding MCLs or the site-specific screening level (SL). These included the following 10 constituents:

arsenic	FC-143
lead	methylene chloride (MC)
barium	trichloroethene (TCE)
cadmium	tetrachloroethene (PCE)
nickel	freon 113

Analytical results from each of the five wells sampled during the November 2000 sampling event are presented in Table 1. Results from the two sampling rounds completed during the RFI are also included in Table 1 for comparative purposes.

As can be seen from Table 1, constituent concentrations in November 2000 were predominantly unchanged from the previous RFI results. The concentration of all constituents in the two potable water supply wells (AO08-PW01 and AM07-PW01) remained below the respective MCL or SL.

In samples from production wells supplying industrial process water, all constituent concentrations in November 2000 were below the MCL or SL, with the exception of trichloroethene and FC-143 in the Ramsey well and FC-143 in the Gallery and Lubeck wells. Specifically, TCE was detected at a concentration of 14 ppb and FC-143 was detected concentrations ranging from 7.5 to 13.8 ppb. These concentrations exceed the drinking water criteria by a factor of 2 to 3. See Section 6.4.3 of the RFI Report for derivation of the site-specific screening level for FC-143.

GROUNDWATER ELEVATIONS AND FLOW DIRECTIONS

Groundwater elevations were measured in all monitoring wells at the site during the RFI and again during the November 2000 groundwater sampling event. Figure 1 shows groundwater elevations and flow directions in November 2000.

The purpose of the groundwater elevation monitoring was to verify that SWMU related constituents detected in groundwater at the site were being captured by the site's production wells and not migrating off-site. Contours of groundwater elevation shown in Figure 1 indicate inward groundwater flow is being maintained at the site and that shallow groundwater continues to be captured by the site's production wells.

PRODUCTION WELL PUMPING RATES

Site production well pumping rates for year 2000 are summarized in Table 2. Included are average monthly pumping rates for each well field. Table 2 also includes the February 1999 and minimum recommended pumping rates for each production well for comparative purposes.

The monthly averaged pumping rates for the site's production well fields during year 2000 were 1.56 to 7.57 times their minimum recommended pumping rates (35% of February 1999 rates). The former occurred in the Gallery well in January, while the later occurred in November in the same well. Similarly, the averaged monthly pumping rate for the site as a whole varied from 3.15 to 4.46 times the minimum recommended total pumping rate for the site during year 2000 (Table 2).

CONCLUSIONS

The concentrations of all constituents in the potable water supply wells remain below their respective drinking water criteria. Concentrations of two constituents, TCE and FC-143, in the production wells were 2 to 3 times the drinking water criteria. Because water from these wells is used as industrial process water only, the low concentrations detected are not deemed to pose a health risk to site workers.

The groundwater elevations and flow directions observed during the November 2000 monitoring event indicate that SWMU-related groundwater constituents continue to be captured by the site's production well system and that off-site migration is being prevented. This conclusion is supported by the high production well pumping rates (relative to the minimum recommended rates).

Groundwater quality and elevations (and flow directions) will continue to be monitored on an annual basis and production well pumping rates will be maintained above the recommended minimum pumping rates. These steps will ensure the continued protection of human health and the environment. Additionally, DuPont will prepare a long-term groundwater monitoring plan upon request by USEPA Region III.

If you require any further information regarding this annual update, please feel free to contact me at (302) 992-6820.

Sincerely,

Andrew S. Hartten
Project Director

Attachments: Table 1
Table 2
Figure 1

cc: ???