

**QUARTERLY GROUNDWATER MONITORING REPORT**

**Prepared for**

**BLACK & DECKER (U.S.) INC.  
Hampstead, Maryland**

**April 2002**

**Prepared by**

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**SECTION 1**  
**INTRODUCTION**

This Groundwater Monitoring Report has been prepared to meet the requirements of Condition IV.G of the Administrative Consent Order between the State of Maryland Department of the Environment (MDE) and Black & Decker (U.S.) Inc. (April 1995) (Consent Order). Specifically, Condition IV.G calls for preparation of a Groundwater Monitoring Report containing the following information for each reporting period: the quantities of groundwater pumped, treated, and discharged; the calculation of quantities of contaminants removed from groundwater; a summary of all sampling analyses; an explanation of all operational or other problems encountered, and the manner in which each problem was resolved; copies of all reports submitted to the Department of Natural Resources in conjunction with the Groundwater Appropriations Permit; and recommendations for changes to the Interim Groundwater Treatment System. This document is one of several which are being prepared in response to the Consent Order; each of these documents are to be submitted to the MDE in accordance with the schedule outlined in the Consent Order. This document will become part of the Administrative Record for the site which is maintained at the Hampstead Public Library.

**SECTION 2**  
**SITE CHARACTERISTICS**

**2.1 HYDRAULIC PROPERTIES**

In accordance with the Consent Order and the Water Appropriation Permit issued to the Black and Decker (U.S.) Inc. Hampstead, Maryland, facility, the following pumping and water level information is included for the period of January through March 2002.

Pumping records showing the total gallons pumped per month of treatment system operation are presented in Table 2-1. The complete groundwater treatment system pumping records are included in Appendix A.

Monthly water levels for wells included in the water level monitoring plan are presented in Table 2-2. At the time the water level measurements were collected, the extraction wells were pumping at an average combined rate of approximately 140 gallons per minute (gpm).

**2.2 EFFLUENT CHARACTERISTICS**

Effluent characteristics of the NPDES discharge points are recorded monthly on Discharge Monitoring Reports (DMRs) and are submitted to MDE, Water Management Administration, on a quarterly basis. A summary of the sample results from the DMRs is presented in Table 2-3. DMRs for the period of January through March 2002 are included in Appendix B

**2.3 GROUNDWATER QUALITY DATA**

For the reporting period of January through March 2002, approximately 38 pounds of total volatile organic compounds (VOCs) were removed from the groundwater by the extraction and treatment system. In general, the total VOCs removed from the groundwater were comprised primarily of trichloroethene (TCE) (71 %) and tetrachlorethene (PCE) (29 %). Analytical results of the groundwater collected at the inlet to the air stripper for the period of January through March 2002 are included in Appendix C.

A summary of the analytical results from the first quarter (February 2002) groundwater sampling round of the extraction and monitor wells is included in Table 2-4. The complete analytical data package is included in Appendix D. As found in earlier sampling events at the Black & Decker facility, TCE and PCE were the VOCs detected at the highest concentrations in the groundwater samples. The highest concentration of TCE was detected in the groundwater samples

**Table 2-1**  
**Treatment System Pumping Records - 1st Quarter 2002**  
**Black & Decker**  
**Hampstead, Maryland**

| <b>Date</b>          | <b>Water Pumped (gallons)</b> |
|----------------------|-------------------------------|
| <b>January 2002</b>  | 6,097,699                     |
| <b>February 2002</b> | 5,411,483                     |
| <b>March 2002</b>    | 5,967,831                     |

**Table 2-2  
Groundwater Elevation Data - 1st Quarter 2002  
Black & Decker  
Hampstead, Maryland**

| WELL NO.           | TOC ELEV. | TOTAL DEPTH | 01/28/02 |        | 2/20/02 |        | 3/13/02 |        |
|--------------------|-----------|-------------|----------|--------|---------|--------|---------|--------|
|                    |           |             | DTW      | ELEV   | DTW     | ELEV   | DTW     | ELEV   |
| EW-1               | 847.21    | 55          | DRY      | --     | DRY     | --     | DRY     | --     |
| EW-2               | 849.21    | 110         | 89.91    | 759.30 | 93.23   | 755.98 | 94.24   | 754.97 |
| EW-3               | 846.64    | 118         | 93.40    | 753.24 | 63.47   | 783.17 | 58.04   | 788.60 |
| EW-4               | 858.01    | 97.5        | NA       | --     | NA      | --     | NA      | --     |
| EW-5               | 864.17    | 98          | 86.95    | 777.22 | 87.95   | 776.22 | 88.17   | 776.00 |
| EW-6               | 831.98    | 115         | 73.50    | 758.48 | 59.02   | 772.96 | 61.20   | 770.78 |
| EW-7               | 818.38    | 78          | 55.31    | 763.07 | 50.14   | 768.24 | 51.67   | 766.71 |
| EW-8               | 811.13    | 98          | 77.29    | 733.84 | 78.17   | 732.96 | 79.34   | 731.79 |
| EW-9               | 811.35    | 141         | 105.00   | 706.35 | 101.00  | 710.35 | 102.00  | 709.35 |
| EW-10              | 807.74    | NA          | 53.88    | 753.86 | 53.85   | 753.89 | 54.63   | 753.11 |
| RFW-1A             | 864.37    | 78          | 55.06    | 809.31 | 53.58   | 810.79 | 53.35   | 811.02 |
| RFW-1B             | 864.23    | 200         | 55.08    | 809.15 | 53.64   | 810.59 | 53.36   | 810.87 |
| RFW-2A             | 857.41    | 35          | 19.74    | 837.67 | 16.17   | 841.24 | 16.73   | 840.68 |
| RFW-2B             | 857.73    | 75          | 20.26    | 837.47 | 16.80   | 840.93 | 17.21   | 840.52 |
| RFW-3B             | 839.21    | 153         | 39.42    | 799.79 | 36.13   | 803.08 | 36.89   | 802.32 |
| RFW-4A             | 830.37    | 62          | 40.37    | 790.00 | 38.51   | 791.86 | 38.26   | 792.11 |
| RFW-4B             | 830.37    | 120         | 40.28    | 790.09 | 38.35   | 792.02 | 38.12   | 792.25 |
| RFW-5A             | 817.50    | 30          | DRY      | --     | DRY     | --     | DRY     | --     |
| RFW-6              | 785.04    | 120         | 6.11     | 778.93 | 3.06    | 781.98 | 1.26    | 783.78 |
| RFW-7              | 805.14    | 29          | 8.36     | 796.78 | 7.01    | 798.13 | 7.87    | 797.27 |
| RFW-8              | 860.07    | 56          | DRY      | --     | DRY     | --     | DRY     | --     |
| RFW-9              | 862.02    | 49          | 29.42    | 832.60 | 26.72   | 835.30 | 26.57   | 835.45 |
| RFW-10             | 852.06    | 58          | DRY      | --     | DRY     | --     | DRY     | --     |
| RFW-11A            | 849.32    | 72          | NA       | --     | NA      | --     | NA      | --     |
| RFW-11B            | 849.62    | 116         | 78.13    | 771.49 | 64.36   | 785.26 | 66.62   | 783.00 |
| RFW-12B            | 844.87    | 264         | 55.78    | 789.09 | 53.99   | 790.88 | 54.43   | 790.44 |
| RFW-13             | 849.11    | 150         | 64.49    | 784.62 | 63.91   | 785.20 | 64.41   | 784.70 |
| RFW-14B            | 812.39    | 281         | 48.33    | 764.06 | 49.53   | 762.86 | 50.11   | 762.28 |
| RFW-16             | 856.14    | 41          | DRY      | --     | DRY     | --     | DRY     | --     |
| RFW-17             | 834.66    | 60.5        | 30.41    | 804.25 | 28.73   | 805.93 | 28.99   | 805.67 |
| RFW-20             | 842.49    | 142         | 36.66    | 805.83 | 36.46   | 806.03 | 36.38   | 806.11 |
| RFW-21             | 832.65    | 102         | 24.59    | 808.06 | 22.80   | 809.85 | 22.61   | 810.04 |
| PH-7               | 805.94    | 89          | 36.02    | 769.92 | 36.21   | 769.73 | 36.84   | 769.10 |
| PH-9               | 814.94    | 98          | 47.63    | 767.31 | 44.36   | 770.58 | 42.87   | 772.07 |
| PH-11              | 820.68    | 78          | 45.29    | 775.39 | 39.87   | 780.81 | 39.21   | 781.47 |
| PH-12              | 828.35    | 87          | 51.08    | 777.27 | 47.79   | 780.56 | 47.83   | 780.52 |
| B-3                | 803.02    | 83          | 7.94     | 795.08 | 7.17    | 795.85 | 7.43    | 795.59 |
| Amoco              | 842.29    | NA          | 29.47    | 812.82 | 29.01   | 813.28 | 28.94   | 813.35 |
| Hamp. Town #22     | 804.96    | NA          | 26.91    | 778.05 | 0.94    | 804.02 | 0.73    | 804.23 |
| Pembroke #1        | NA        | NA          | 10.98    | --     | 11.27   | --     | 11.38   | --     |
| Pembroke #2        | NA        | NA          | NA       | --     | NA      | --     | NA      | --     |
| N. Houcks. Rd.     | NA        | NA          | --       | --     | 9.82    | --     | 9.86    | --     |
| E. Century St.     | NA        | NA          | --       | --     | 11.23   | --     | 11.16   | --     |
| Lwr. Beckleys. Rd. | NA        | NA          | 57.17    | --     | 55.98   | --     | 56.14   | --     |

NA - Not Available/Not Accessible

**Table 2-3**  
**Effluent Characteristics Summary - 1st Quarter 2002**  
**Black & Decker**  
**Hampstead, Maryland**

| Discharge Number          | Parameter               | Units             | Permit Limits | DMR DATE     |               |            |
|---------------------------|-------------------------|-------------------|---------------|--------------|---------------|------------|
|                           |                         |                   |               | January 2002 | February 2002 | March 2002 |
| 001                       | FLOW                    | average           | NA            | 0.116        | 0.090         | 0.115      |
|                           |                         | maximum           | NA            | 0.171        | 0.104         | 0.327      |
|                           | 1,1,1-Trichloroethane   | ug/l              | 5             | < 5          | < 5           | < 5        |
|                           | Tetrachloroethylene     | ug/l              | 5             | < 5          | < 5           | < 5        |
|                           | Trichloroethylene       | ug/l              | 5             | < 5          | < 5           | < 5        |
|                           | Total Residual Chlorine | mg/l              | <0.1          | <0.1         | <0.1          | <0.1       |
|                           | Oil & Grease            | mg/l              | 15            | < 5          | < 5           | < 5        |
|                           |                         | quarterly average | 10            | NR           | NR            | < 5        |
|                           | pH                      | minimum           | 6.0           | 6.53         | 6.51          | 6.72       |
|                           |                         | maximum           | 8.5           | 6.85         | 6.84          | 6.99       |
|                           | BOD                     | mg/l              | 15            | 5.2          | 3.0           | 3.5        |
|                           | TSS                     | mg/l              | 30            | 5.7          | 4.4           | 4.7        |
|                           | quarterly average       | 20                | NR            | NR           | 4.0           |            |
| 101<br>(Monitoring Point) | FLOW                    | average           | NA            | 0.190        | 0.199         | 0.225      |
|                           |                         | maximum           | NA            | 0.215        | 0.216         | 0.233      |
| 201<br>(Monitoring Point) | Fecal Coliform          | MPN/100ml         | 200           | < 2          | < 2           | < 2        |
|                           | FLOW                    | average           | NA            | 0.197        | 0.193         | 0.193      |
|                           |                         | maximum           | NA            | 0.222        | 0.213         | 0.235      |
|                           | 1,1,1-Trichloroethane   | ug/l              | NA            | < 5          | < 5           | < 5        |
|                           | Tetrachloroethylene     | ug/l              | NA            | < 5          | < 5           | < 5        |
|                           | Trichloroethylene       | ug/l              | NA            | < 5          | < 5           | < 5        |

DMR - Discharge Monitoring Report  
NA - Not Applicable  
NR - Not Reported



**Table 2-4  
Summary of Groundwater Analytical Results - February 2002  
Black & Decker  
Hampstead, Maryland**

| PARAMETER                  | Units | EW-1 | EW-2  | EW-3 | EW-4  | EW-5  | EW-6 | EW-7 | EW-8 | EW-9 | EW-9<br>(DUP) | EW-10 | RFW-1A | RFW-1B |
|----------------------------|-------|------|-------|------|-------|-------|------|------|------|------|---------------|-------|--------|--------|
|                            |       |      | (10)  | (5)  | (10)  | (10)  |      |      |      | (2)  | (2)           |       |        |        |
| Chloromethane              | ug/L  | NS   | 100 U | 50 U | 100 U | 100 U | 10 U | 10 U | 10 U | 20 U | 20 U          | 10 U  | 10 U   | 10 U   |
| Bromomethane               | ug/L  | NS   | 100 U | 50 U | 100 U | 100 U | 10 U | 10 U | 10 U | 20 U | 20 U          | 10 U  | 10 U   | 10 U   |
| Vinyl Chloride             | ug/L  | NS   | 100 U | 50 U | 100 U | 100 U | 10 U | 10 U | 10 U | 20 U | 20 U          | 10 U  | 10 U   | 10 U   |
| Chloroethane               | ug/L  | NS   | 100 U | 50 U | 100 U | 100 U | 10 U | 10 U | 10 U | 20 U | 20 U          | 10 U  | 10 U   | 10 U   |
| Methylene Chloride         | ug/L  | NS   | 50 U  | 25 U | 50 U  | 50 U  | 5 U  | 5 U  | 5 U  | 10 U | 10 U          | 5 U   | 5 U    | 5 U    |
| Acetone                    | ug/L  | NS   | 19 JB | 50 U | 19 JB | 39 JB | 34 B | 4 JB | 3 JB | 6 JB | 4 JB          | 4 JB  | 4 JB   | 4 JB   |
| Carbon Disulfide           | ug/L  | NS   | 50 U  | 25 U | 50 U  | 50 U  | 5 U  | 5 U  | 5 U  | 10 U | 10 U          | 5 U   | 5 U    | 5 U    |
| 1,1-Dichloroethene         | ug/L  | NS   | 50 U  | 25 U | 50 U  | 50 U  | 5 U  | 5 U  | 5 U  | 10 U | 10 U          | 5 U   | 5 U    | 5 U    |
| 1,1-Dichloroethane         | ug/L  | NS   | 50 U  | 25 U | 50 U  | 50 U  | 5 U  | 5 U  | 1 J  | 10 U | 10 U          | 5 U   | 5 U    | 5 U    |
| 1,2-Dichloroethene (total) | ug/L  | NS   | 50 U  | 25 U | 50 U  | 50 U  | 5 U  | 4 J  | 25   | 2 J  | 10 U          | 5 U   | 5 U    | 5 U    |
| Chloroform                 | ug/L  | NS   | 50 U  | 25 U | 50 U  | 50 U  | 5 U  | 5 U  | 5 U  | 10 U | 10 U          | 5 U   | 5 U    | 5 U    |
| 1,2-Dichloroethane         | ug/L  | NS   | 50 U  | 25 U | 50 U  | 50 U  | 5 U  | 5 U  | 5 U  | 10 U | 10 U          | 5 U   | 5 U    | 5 U    |
| 2-Butanone                 | ug/L  | NS   | 100 U | 50 U | 55 J  | 100 U | 10 U | 10 U | 10 U | 20 U | 20 U          | 10 U  | 10 U   | 10 U   |
| 1,1,1-Trichloroethane      | ug/L  | NS   | 50 U  | 25 U | 50 U  | 50 U  | 5 U  | 5 U  | 5 U  | 10 U | 10 U          | 5 U   | 5 U    | 5 U    |
| Carbon Tetrachloride       | ug/L  | NS   | 50 U  | 25 U | 50 U  | 50 U  | 5 U  | 5 U  | 5 U  | 10 U | 10 U          | 5 U   | 5 U    | 5 U    |
| Bromodichloromethane       | ug/L  | NS   | 50 U  | 25 U | 50 U  | 50 U  | 5 U  | 5 U  | 5 U  | 10 U | 10 U          | 5 U   | 5 U    | 5 U    |
| 1,2-Dichloropropane        | ug/L  | NS   | 50 U  | 25 U | 50 U  | 50 U  | 5 U  | 5 U  | 5 U  | 10 U | 10 U          | 5 U   | 5 U    | 5 U    |
| cis-1,3-Dichloropropene    | ug/L  | NS   | 50 U  | 25 U | 50 U  | 50 U  | 5 U  | 5 U  | 5 U  | 10 U | 10 U          | 5 U   | 5 U    | 5 U    |
| Trichloroethene            | ug/L  | NS   | 1400  | 470  | 1400  | 520   | 16   | 6    | 19   | 4 J  | 4 J           | 5 U   | 5 U    | 5 U    |
| Dibromochloromethane       | ug/L  | NS   | 50 U  | 25 U | 50 U  | 50 U  | 5 U  | 5 U  | 5 U  | 10 U | 10 U          | 5 U   | 5 U    | 5 U    |
| 1,1,2-Trichloroethane      | ug/L  | NS   | 50 U  | 25 U | 50 U  | 50 U  | 5 U  | 5 U  | 5 U  | 10 U | 10 U          | 5 U   | 5 U    | 5 U    |
| Benzene                    | ug/L  | NS   | 50 U  | 25 U | 50 U  | 50 U  | 5 U  | 5 U  | 5 U  | 10 U | 10 U          | 5 U   | 5 U    | 5 U    |
| Trans-1,3-Dichloropropene  | ug/L  | NS   | 50 U  | 25 U | 50 U  | 50 U  | 5 U  | 5 U  | 5 U  | 10 U | 10 U          | 5 U   | 5 U    | 5 U    |
| Bromoform                  | ug/L  | NS   | 50 U  | 25 U | 50 U  | 50 U  | 5 U  | 5 U  | 5 U  | 10 U | 10 U          | 5 U   | 5 U    | 5 U    |
| 4-Methyl-2-pentanone       | ug/L  | NS   | 100 U | 50 U | 100 U | 100 U | 10 U | 10 U | 10 U | 20 U | 20 U          | 10 U  | 10 U   | 10 U   |
| 2-Hexanone                 | ug/L  | NS   | 100 U | 50 U | 100 U | 100 U | 10 U | 10 U | 10 U | 20 U | 20 U          | 10 U  | 10 U   | 10 U   |
| Tetrachloroethene          | ug/L  | NS   | 65    | 9 J  | 18 J  | 13 J  | 36   | 16   | 160  | 350  | 360           | 5 J   | 5 U    | 5 U    |
| 1,1,1,2-Tetrachloroethane  | ug/L  | NS   | 50 U  | 25 U | 50 U  | 50 U  | 5 U  | 5 U  | 5 U  | 10 U | 10 U          | 5 U   | 5 U    | 5 U    |
| Toluene                    | ug/L  | NS   | 50 U  | 25 U | 50 U  | 50 U  | 5 U  | 5 U  | 5 U  | 10 U | 10 U          | 5 U   | 5 U    | 5 U    |
| Chlorobenzene              | ug/L  | NS   | 50 U  | 25 U | 50 U  | 50 U  | 5 U  | 5 U  | 5 U  | 10 U | 10 U          | 5 U   | 5 U    | 5 U    |
| Ethylbenzene               | ug/L  | NS   | 50 U  | 25 U | 50 U  | 50 U  | 5 U  | 5 U  | 5 U  | 10 U | 10 U          | 5 U   | 5 U    | 5 U    |
| Styrene                    | ug/L  | NS   | 50 U  | 25 U | 50 U  | 50 U  | 5 U  | 5 U  | 5 U  | 10 U | 10 U          | 5 U   | 5 U    | 5 U    |
| Xylene (total)             | ug/L  | NS   | 50 U  | 25 U | 50 U  | 50 U  | 5 U  | 5 U  | 5 U  | 10 U | 10 U          | 5 U   | 5 U    | 5 U    |

Notes: U = Compound was analyzed for but not detected. Value shown is the method detection limit for quantification DUP = Duplicate sample  
J = Indicates an estimated value.  
NS = Not sampled

**Table 2-4  
Summary of Groundwater Analytical Results - February 2002  
Black & Decker  
Hampstead, Maryland**

| PARAMETER                  | Units | RFW-2A | RFW-2B | RFW-3B | RFW-4A | RFW-4A (DUP) | RFW-4B | RFW-5A | RFW-6 | RFW-7 | RFW-8 | RFW-9 | RFW-10 | RFW-11 | RFW-11B |
|----------------------------|-------|--------|--------|--------|--------|--------------|--------|--------|-------|-------|-------|-------|--------|--------|---------|
| Chloromethane              | ug/L  | 10 U   | 10 U   | 10 U   | 10 U   | 10 U         | 10 U   | NS     | 10 U  | 10 U  | NS    | 10 U  | NS     | NS     | 10 U    |
| Bromomethane               | ug/L  | 10 U   | 10 U   | 10 U   | 10 U   | 10 U         | 10 U   | NS     | 10 U  | 10 U  | NS    | 10 U  | NS     | NS     | 10 U    |
| Vinyl Chloride             | ug/L  | 10 U   | 10 U   | 10 U   | 10 U   | 10 U         | 10 U   | NS     | 10 U  | 10 U  | NS    | 10 U  | NS     | NS     | 10 U    |
| Chloroethane               | ug/L  | 10 U   | 10 U   | 10 U   | 10 U   | 10 U         | 10 U   | NS     | 10 U  | 10 U  | NS    | 10 U  | NS     | NS     | 10 U    |
| Methylene Chloride         | ug/L  | 5 U    | 5 U    | 5 U    | 5 U    | 5 U          | 5 U    | NS     | 5 U   | 5 U   | NS    | 5 U   | NS     | NS     | 3 J     |
| Acetone                    | ug/L  | 3 JB   | 4 JB   | 3 JB   | 2 JB   | 3 JB         | 4 JB   | NS     | 6 JB  | 3 JB  | NS    | 4 JB  | NS     | NS     | 4 JB    |
| Carbon Disulfide           | ug/L  | 5 U    | 5 U    | 5 U    | 5 U    | 5 U          | 5 U    | NS     | 5 U   | 5 U   | NS    | 5 U   | NS     | NS     | 5 U     |
| 1,1-Dichloroethene         | ug/L  | 5 U    | 5 U    | 5 U    | 5 U    | 5 U          | 5 U    | NS     | 5 U   | 5 U   | NS    | 5 U   | NS     | NS     | 5 U     |
| 1,1-Dichloroethane         | ug/L  | 5 U    | 5 U    | 1 J    | 5 U    | 5 U          | 5 U    | NS     | 5 U   | 5 U   | NS    | 5 U   | NS     | NS     | 5 U     |
| 1,2-Dichloroethene (total) | ug/L  | 5 U    | 5 U    | 18     | 1 J    | 1 J          | 4 J    | NS     | 5 U   | 1 J   | NS    | 5 J   | NS     | NS     | 5 U     |
| Chloroform                 | ug/L  | 5 U    | 5 U    | 5 U    | 1 J    | 1 J          | 1 J    | NS     | 5 U   | 5 U   | NS    | 5 U   | NS     | NS     | 5 U     |
| 1,2-Dichloroethane         | ug/L  | 5 U    | 1 J    | 5 U    | 5 U    | 5 U          | 5 U    | NS     | 5 U   | 5 U   | NS    | 5 U   | NS     | NS     | 5 U     |
| 2-Butanone                 | ug/L  | 10 U   | 10 U   | 10 U   | 10 U   | 10 U         | 10 U   | NS     | 10 U  | 10 U  | NS    | 10 U  | NS     | NS     | 10 U    |
| 1,1,1-Trichloroethane      | ug/L  | 2 J    | 1 J    | 5 U    | 5 U    | 5 U          | 5 U    | NS     | 5 U   | 5 U   | NS    | 2 J   | NS     | NS     | 5 U     |
| Carbon Tetrachloride       | ug/L  | 5 U    | 5 U    | 5 U    | 5 U    | 5 U          | 5 U    | NS     | 5 U   | 5 U   | NS    | 5 U   | NS     | NS     | 5 U     |
| Bromodichloromethane       | ug/L  | 5 U    | 5 U    | 5 U    | 5 U    | 5 U          | 5 U    | NS     | 5 U   | 5 U   | NS    | 5 U   | NS     | NS     | 5 U     |
| 1,2-Dichloropropane        | ug/L  | 5 U    | 5 U    | 5 U    | 5 U    | 5 U          | 5 U    | NS     | 5 U   | 5 U   | NS    | 5 U   | NS     | NS     | 5 U     |
| cis-1,3-Dichloropropene    | ug/L  | 5 U    | 5 U    | 5 U    | 5 U    | 5 U          | 5 U    | NS     | 5 U   | 5 U   | NS    | 5 U   | NS     | NS     | 5 U     |
| Trichloroethene            | ug/L  | 6      | 5 J    | 2 J    | 74     | 73           | 29     | NS     | 7     | 12    | NS    | 25    | NS     | NS     | 120     |
| Dibromochloromethane       | ug/L  | 5 U    | 5 U    | 5 U    | 5 U    | 5 U          | 5 U    | NS     | 5 U   | 5 U   | NS    | 5 U   | NS     | NS     | 5 U     |
| 1,1,2-Trichloroethane      | ug/L  | 5 U    | 5 U    | 5 U    | 5 U    | 5 U          | 5 U    | NS     | 5 U   | 5 U   | NS    | 5 U   | NS     | NS     | 5 U     |
| Benzene                    | ug/L  | 5 U    | 5 U    | 5 U    | 5 U    | 5 U          | 5 U    | NS     | 5 U   | 5 U   | NS    | 5 U   | NS     | NS     | 5 U     |
| Trans-1,3-Dichloropropene  | ug/L  | 5 U    | 5 U    | 5 U    | 5 U    | 5 U          | 5 U    | NS     | 5 U   | 5 U   | NS    | 5 U   | NS     | NS     | 5 U     |
| Bromoform                  | ug/L  | 5 U    | 5 U    | 5 U    | 5 U    | 5 U          | 5 U    | NS     | 5 U   | 5 U   | NS    | 5 U   | NS     | NS     | 5 U     |
| 4-Methyl-2-pentanone       | ug/L  | 10 U   | 10 U   | 10 U   | 10 U   | 10 U         | 10 U   | NS     | 10 U  | 10 U  | NS    | 10 U  | NS     | NS     | 10 U    |
| 2-Hexanone                 | ug/L  | 10 U   | 10 U   | 10 U   | 10 U   | 10 U         | 10 U   | NS     | 10 U  | 10 U  | NS    | 10 U  | NS     | NS     | 10 U    |
| Tetrachloroethene          | ug/L  | 5 U    | 5 U    | 8      | 71     | 75           | 85     | NS     | 7     | 5 U   | NS    | 6     | NS     | NS     | 2 J     |
| 1,1,2,2-Tetrachloroethane  | ug/L  | 5 U    | 5 U    | 5 U    | 5 U    | 5 U          | 5 U    | NS     | 5 U   | 5 U   | NS    | 5 U   | NS     | NS     | 5 U     |
| Toluene                    | ug/L  | 5 U    | 5 U    | 5 U    | 5 U    | 5 U          | 5 U    | NS     | 5 U   | 5 U   | NS    | 5 U   | NS     | NS     | 5 U     |
| Chlorobenzene              | ug/L  | 5 U    | 5 U    | 5 U    | 5 U    | 5 U          | 5 U    | NS     | 5 U   | 5 U   | NS    | 5 U   | NS     | NS     | 5 U     |
| Ethylbenzene               | ug/L  | 5 U    | 5 U    | 5 U    | 5 U    | 5 U          | 5 U    | NS     | 5 U   | 5 U   | NS    | 5 U   | NS     | NS     | 5 U     |
| Styrene                    | ug/L  | 5 U    | 5 U    | 5 U    | 5 U    | 5 U          | 5 U    | NS     | 5 U   | 5 U   | NS    | 5 U   | NS     | NS     | 5 U     |
| Xylene (total)             | ug/L  | 5 U    | 5 U    | 5 U    | 5 U    | 5 U          | 5 U    | NS     | 5 U   | 5 U   | NS    | 5 U   | NS     | NS     | 5 U     |

Notes: U = Compound was analyzed for but not detected. Value shown is the method detection limit for quantification. DUP = Duplicate sample  
J = Indicates an estimated value. NS = Not sampled

**Table 2-4  
Summary of Groundwater Analytical Results - February 2002  
Black & Decker  
Hampstead, Maryland**

| PARAMETER                  | Units<br>(5) | RFW-12B | RFW-13 | RFW-16 | RFW-17 | RFW-20 | RFW-21 | Town #22 | Town #23 | Leister Dairy | Leister Res. #1 | Leister Res. #2 | Trip Blank |
|----------------------------|--------------|---------|--------|--------|--------|--------|--------|----------|----------|---------------|-----------------|-----------------|------------|
|                            |              | 50 U    | 10 U   | NS     | 10 U   | 10 U   | 10 U   | 10 U     | 10 U     | 10 U          | 10 U            | 10 U            | NS         |
| Chloromethane              | ug/L         | 50 U    | 10 U   | NS     | 10 U   | 10 U   | 10 U   | 10 U     | 10 U     | 10 U          | 10 U            | NS              | 10 U       |
| Bromomethane               | ug/L         | 50 U    | 10 U   | NS     | 10 U   | 10 U   | 10 U   | 10 U     | 10 U     | 10 U          | 10 U            | NS              | 10 U       |
| Vinyl Chloride             | ug/L         | 50 U    | 10 U   | NS     | 10 U   | 10 U   | 10 U   | 10 U     | 10 U     | 10 U          | 10 U            | NS              | 10 U       |
| Chloroethane               | ug/L         | 50 U    | 10 U   | NS     | 10 U   | 10 U   | 10 U   | 10 U     | 10 U     | 10 U          | 10 U            | NS              | 10 U       |
| Methylene Chloride         | ug/L         | 40      | 5 U    | NS     | 5 U    | 5 U    | 5 U    | 5 U      | 5 U      | 5 U           | 5 U             | NS              | 5 U        |
| Acetone                    | ug/L         | 13 J    | 5 J    | NS     | 3 JB   | 5 JB   | 5 JB   | 3 JB     | 8 JB     | 2 JB          | 3 JB            | NS              | 2 JB       |
| Carbon Disulfide           | ug/L         | 25 U    | 5 U    | NS     | 5 U    | 5 U    | 5 U    | 5 U      | 5 U      | 5 U           | 5 U             | NS              | 5 U        |
| 1,1-Dichloroethene         | ug/L         | 25 U    | 5 U    | NS     | 5 U    | 5 U    | 5 U    | 5 U      | 5 U      | 5 U           | 5 U             | NS              | 5 U        |
| 1,1-Dichloroethane         | ug/L         | 25 U    | 5 U    | NS     | 5 U    | 5 U    | 5 U    | 5 U      | 5 U      | 5 U           | 5 U             | NS              | 5 U        |
| 1,2-Dichloroethene (total) | ug/L         | 12 J    | 5 U    | NS     | 5 U    | 5 U    | 5 U    | 5 U      | 5 U      | 5 U           | 5 U             | NS              | 5 U        |
| Chloroform                 | ug/L         | 25 U    | 5 U    | NS     | 5 U    | 5 U    | 5 U    | 5 U      | 5 U      | 5 U           | 5 U             | NS              | 5 U        |
| 1,2-Dichloroethane         | ug/L         | 25 U    | 5 U    | NS     | 2 J    | 5 U    | 5 U    | 5 U      | 5 U      | 5 U           | 5 U             | NS              | 5 U        |
| 2-Butanone                 | ug/L         | 50 U    | 10 U   | NS     | 10 U   | 10 U   | 10 U   | 10 U     | 10 U     | 10 U          | 10 U            | NS              | 10 U       |
| 1,1,1-Trichloroethane      | ug/L         | 25 U    | 5 U    | NS     | 5 U    | 5 U    | 5 U    | 5 U      | 5 U      | 5 U           | 5 U             | NS              | 5 U        |
| Carbon Tetrachloride       | ug/L         | 25 U    | 5 U    | NS     | 5 U    | 5 U    | 5 U    | 5 U      | 5 U      | 5 U           | 5 U             | NS              | 5 U        |
| Bromodichloromethane       | ug/L         | 25 U    | 5 U    | NS     | 5 U    | 5 U    | 5 U    | 5 U      | 5 U      | 5 U           | 5 U             | NS              | 5 U        |
| 1,2-Dichloropropane        | ug/L         | 25 U    | 5 U    | NS     | 5 U    | 5 U    | 5 U    | 5 U      | 5 U      | 5 U           | 5 U             | NS              | 5 U        |
| cis-1,3-Dichloropropene    | ug/L         | 25 U    | 5 U    | NS     | 5 U    | 5 U    | 5 U    | 5 U      | 5 U      | 5 U           | 5 U             | NS              | 5 U        |
| Trichloroethene            | ug/L         | 530     | 6      | NS     | 5 U    | 3 J    | 5 U    | 5 U      | 5 U      | 5 U           | 5 U             | NS              | 5 U        |
| Dibromochloromethane       | ug/L         | 25 U    | 5 U    | NS     | 5 U    | 5 U    | 5 U    | 5 U      | 5 U      | 5 U           | 5 U             | NS              | 5 U        |
| 1,1,2-Trichloroethane      | ug/L         | 25 U    | 5 U    | NS     | 5 U    | 5 U    | 5 U    | 5 U      | 5 U      | 5 U           | 5 U             | NS              | 5 U        |
| Benzene                    | ug/L         | 25 U    | 5 U    | NS     | 5 U    | 5 U    | 5 U    | 5 U      | 5 U      | 5 U           | 5 U             | NS              | 5 U        |
| Trans-1,3-Dichloropropene  | ug/L         | 25 U    | 5 U    | NS     | 5 U    | 5 U    | 5 U    | 5 U      | 5 U      | 5 U           | 5 U             | NS              | 5 U        |
| Bromoform                  | ug/L         | 25 U    | 5 U    | NS     | 5 U    | 5 U    | 5 U    | 5 U      | 5 U      | 5 U           | 5 U             | NS              | 5 U        |
| 4-Methyl-2-pentanone       | ug/L         | 50 U    | 10 U   | NS     | 10 U   | 10 U   | 10 U   | 10 U     | 10 U     | 10 U          | 10 U            | NS              | 10 U       |
| 2-Hexanone                 | ug/L         | 50 U    | 10 U   | NS     | 10 U   | 10 U   | 10 U   | 10 U     | 10 U     | 10 U          | 10 U            | NS              | 10 U       |
| Tetrachloroethene          | ug/L         | 24 J    | 39     | NS     | 5 U    | 5 U    | 5 U    | 5 U      | 5 U      | 2 J           | 5 U             | NS              | 5 U        |
| 1,1,2,2-Tetrachloroethane  | ug/L         | 25 U    | 5 U    | NS     | 5 U    | 5 U    | 5 U    | 5 U      | 5 U      | 5 U           | 5 U             | NS              | 5 U        |
| Toluene                    | ug/L         | 25 U    | 5 U    | NS     | 5 U    | 5 U    | 5 U    | 5 U      | 5 U      | 5 U           | 5 U             | NS              | 5 U        |
| Chlorobenzene              | ug/L         | 25 U    | 5 U    | NS     | 5 U    | 5 U    | 5 U    | 5 U      | 5 U      | 5 U           | 5 U             | NS              | 5 U        |
| Ethylbenzene               | ug/L         | 25 U    | 5 U    | NS     | 5 U    | 5 U    | 5 U    | 5 U      | 5 U      | 5 U           | 5 U             | NS              | 5 U        |
| Styrene                    | ug/L         | 25 U    | 5 U    | NS     | 5 U    | 5 U    | 5 U    | 5 U      | 5 U      | 5 U           | 5 U             | NS              | 5 U        |
| Xylene (total)             | ug/L         | 25 U    | 5 U    | NS     | 5 U    | 5 U    | 5 U    | 5 U      | 5 U      | 5 U           | 5 U             | NS              | 5 U        |

Notes: U = Compound was analyzed for but not detected. Value shown is the method detection limit for quantific DUP = Duplicate sample  
J = Indicates an estimated value. NS = Not sampled

collected from wells RFW-12B, EW-2 and EW-4. The highest concentration of PCE was detected in the groundwater sample collected from extraction well EW-9. Lower concentrations of 1,2-dichloroethene were also detected. The remainder of VOCs present were detected at levels well below the Federal Maximum Contaminant Levels (MCL).

**SECTION 3**  
**OPERATION AND MAINTENANCE OF THE TREATMENT SYSTEM**

A summary of the maintenance activities which were undertaken with the extraction and treatment system during the reporting period (January through March 2002) is provided in Table 3-1. This table is comprehensive in summarizing significant maintenance events or activities, while not including those activities considered unworthy of note (such as replacement of light bulbs, lubrication of moving parts as appropriate, or other routine activities).

**Table 3-1**  
**Treatment System Maintenance Activities - 1st Quarter 2002**  
**Black & Decker**  
**Hampstead, Maryland**

| <b>Date</b> | <b>Event/Corrective Action</b>                   |
|-------------|--|
|             | No maintenance activities reported this quarter. |

**SECTION 4**  
**RECOMMENDATIONS**

For the reporting period of January through March 2002, the treatment system continued to create a hydraulic boundary preventing off-site migration of groundwater. The extraction system will continue to operate as currently configured to pump and treat contaminated groundwater. Depth-to-water measurements will continue to be collected on a monthly basis in all site monitor wells to construct a groundwater elevation contour map for the site. The groundwater elevation contour map will be used to verify that the required area of groundwater capture is being maintained. If necessary, pumping rates will be adjusted to maintain groundwater capture due to seasonal fluctuations in groundwater elevations. The treatment system will also continue to operate as currently configured, as data collected have proven that the treatment system is fully effective in removing VOCs from the extracted groundwater.