



**QUARTERLY GROUNDWATER MONITORING REPORT**

**Prepared for**

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

**JANUARY 1998**

**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 October through December 1997.

Pumping records showing the total gallons pumped per month of treatment system operation are presented in Table 2-1. 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 148 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 October through December 1997 are included in Appendix A.

**2.3 GROUNDWATER QUALITY DATA**

For the reporting period of October through December 1997, approximately 152 lbs 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 of trichloroethene (TCE) (77 %) and tetrachlorethene (PCE) (23 %). The groundwater treatment

**Table 2-1**  
**Treatment System Pumping Records - 4th Quarter 1997**  
**Black & Decker**  
**Hampstead, Maryland**

<b>Date</b>	<b>Water pumped (gallons)</b>
October 1997	6,785,750
November 1997	6,394,405
December 1997	6,401,574

**Table 2-2**  
**Groundwater Elevation Data - 4th Quarter 1997**  
**Black & Decker**  
**Hampstead, Maryland**

WELL NO.	TOC ELEV.	TOTAL DEPTH	10/23/97		11/18/97		12/19/97	
			DTW	ELEV	DTW	ELEV	DTW	ELEV
EW-1	847.21	55	NA	--	NA	--	NA	--
EW-2	849.21	110	97.88	751.33	76.55	772.66	87.43	761.78
EW-3	846.64	118	86.25	760.39	84.86	761.78	83.91	762.73
EW-4	858.01	97.5	82.45	775.56	86.99	771.02	85.33	772.68
EW-5	864.17	98	87.99	776.18	88.11	776.06	88.37	775.80
EW-6	831.98	115	56.95	775.03	60.66	771.32	59.89	772.09
EW-7	818.38	78	45.49	772.89	47.67	770.71	48.94	769.44
EW-8	811.13	98	66.18	744.95	70.41	740.72	71.77	739.36
EW-9	811.35	141	96.95	714.40	99.38	711.97	99.93	711.42
EW-10	807.74	NA	56.05	751.69	55.67	752.07	55.58	752.16
RFW-1A	864.37	78	53.68	810.69	54.29	810.08	55.11	809.26
RFW-1B	864.23	200	53.72	810.51	54.27	809.96	55.10	809.13
RFW-2A	857.41	35	19.82	837.59	18.61	838.80	19.41	838.00
RFW-2B	857.73	75	20.42	837.31	19.26	838.47	19.87	837.86
RFW-3B	839.21	153	35.75	803.46	36.26	802.95	36.73	802.48
RFW-4A	830.37	62	38.11	792.26	39.32	791.05	39.37	791.00
RFW-4B	830.37	120	38.01	792.36	38.32	792.05	38.56	791.81
RFW-5A	817.50	30	DRY	--	DRY	--	DRY	--
RFW-6	785.04	120	3.25	781.79	2.46	782.58	2.97	782.07
RFW-7	805.14	29	7.98	797.16	7.49	797.65	7.95	797.19
RFW-8	860.07	56	DRY	--	DRY	--	DRY	860.07
RFW-9	862.02	49	29.37	832.65	28.52	833.50	28.73	833.29
RFW-10	852.06	58	DRY	--	DRY	--	DRY	852.06
RFW-11A	849.32	72	70.11	779.21	70.30	779.02	70.61	778.71
RFW-11B	849.62	116	77.40	772.22	77.36	772.26	77.85	771.77
RFW-12B	844.87	264	54.48	790.39	54.48	790.39	54.37	790.50
RFW-13	849.11	150	60.96	788.15	61.97	787.14	62.84	786.27
RFW-14B	812.39	281	44.83	767.56	46.25	766.14	47.48	764.91
RFW-16	856.14	41	DRY	--	DRY	--	DRY	856.14
RFW-17	834.66	60.5	29.05	805.61	29.26	805.40	29.29	805.37
RFW-18	843.67	50	6.02	837.65	5.13	838.54	6.16	837.51
RFW-19	858.28	60	8.90	849.38	7.14	851.14	7.89	850.39
RFW-20	842.49	142	37.24	805.25	37.60	804.89	37.74	804.75
RFW-21	832.65	102	22.85	809.80	22.67	809.98	22.84	809.81
PH-7	805.94	89	36.85	769.09	37.43	768.51	37.47	768.47
PH-9	814.94	98	39.73	775.21	41.29	773.65	42.00	772.94
PH-11	820.68	78	39.87	780.81	40.86	779.82	42.10	778.58
PH-12	828.35	87	46.61	781.74	47.41	780.94	48.12	780.23
B-2	807.68	100	10.45	797.23	5.44	802.24	7.94	799.74
B-3	803.02	83	11.36	791.66	8.75	794.27	9.97	793.05
Amoco	842.29	NA	26.84	815.45	26.19	816.10	26.77	815.52
Hamp. Town #22	804.96	NA	3.16	801.80	2.19	802.77	1.69	803.27
Pembroke #1	NA	NA	17.05	--	15.83	--	16.74	--
Pembroke #2	NA	NA	NA	--	NA	--	NA	--
N. Houcks. Rd.	NA	NA	NA	--	NA	--	9.46	--
E. Century St.	NA	NA	11.28	--	11.13	--	11.49	--
Lwr. Beckleys. Rd.	NA	NA	54.70	--	55.21	--	55.71	--

NA - Not Available/Not Accessible

**Table 2-3**  
**Effluent Characteristics Summary - 4th Quarter 1997**  
**Black & Decker**  
**Hampstead, Maryland**

Discharge Number	Parameter	Units	Permit Limits	DMR DATE			
				October 1997	November 1997	December 1997	
001	FLOW	average	MGD	NA	0.232	0.281	0.223
		maximum	MGD	NA	0.489	0.798	0.248
	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	maximum	mg/l	15	< 5	< 5	< 5
		quarterly average	mg/l	10	NR	NR	< 5
	pH	minimum	STD	6.0	6.85	6.89	6.49
		maximum	STD	8.5	7.29	7.24	7.43
	BOD		mg/l	15	3	4	5
TSS	maximum	mg/l	30	4	7	9	
	quarterly average	mg/l	20	NR	NR	7	
101 (Monitoring Point)	FLOW	average	MGD	NA	0.534	0.557	0.534
		maximum	MGD	NA	0.551	0.570	0.563
	Fecal Coliform	MPN/100ml	200	< 2	< 2	< 2	
201 (Monitoring Point)	FLOW	average	MGD	NA	0.219	0.213	0.207
		maximum	MGD	NA	0.232	0.238	0.234
	1,1,1-Trichloroethane	ug/l	NA	< 5	< 5	< 5	
	Tetrachloroethylene	ug/l	NA	< 5	< 5	< 5	
	Trichloroethylene	ug/l	NA	< 5	< 5	< 5	

NA - Not Applicable

NR - Not Reported



system influent (sample "Air Stripper #2 Pre") and effluent (sample "Outfall 201") analytical results for the period of October through December 1997 are included in Appendix B.

A summary of the analytical results from the fourth quarter (November 1997) groundwater sampling round of the extraction and monitor wells is included in Table 2-4. The complete analytical data package is included in Appendix C. 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 collected from wells RFW-12B and EW-2 and the highest concentration of PCE was detected in the groundwater sample collected from extraction well EW-9. VOCs detected at lower concentrations were 1,2-dichloroethene, 1,1,1-trichloroethane, 1,1-dichloroethene, and 1,1,2-trichloroethane. The remainder of VOCs present were detected at levels well below the Federal Maximum Contaminant Levels (MCL).

Table 2-4

## Summary of Groundwater Analytical Results - November 1997

Black & Decker  
Hampstead, Maryland

PARAMETER	Units	EW-1	EW-2	EW-3	EW-4	EW-5	EW-6	EW-7	EW-8	EW-8	EW-9	EW-10	RFW-1A	RFW-1B	RFW-2A
			(20)	(10)	(25)	(10)			(2)	(DUP) (2)	(5)				
Chloromethane	µg/L	NS	200 U	100 U	250 U	100 U	10 U	10 U	20 U	20 U	50 U	10 U	10 U	10 U	10 U
Bromomethane	µg/L	NS	200 U	100 U	250 U	100 U	10 U	10 U	20 U	20 U	50 U	10 U	10 U	10 U	10 U
Vinyl Chloride	µg/L	NS	200 U	100 U	250 U	100 U	10 U	10 U	20 U	20 U	50 U	10 U	10 U	10 U	10 U
Chloroethane	µg/L	NS	200 U	100 U	250 U	100 U	10 U	10 U	20 U	20 U	50 U	10 U	10 U	10 U	10 U
Methylene Chloride	µg/L	NS	70 JB	57 B	100 JB	43 JB	6 B	5 B	8 JB	7 JB	29 B	2 JB	5 B	2 JB	3 JB
Acetone	µg/L	NS	200 U	50 JB	250 U	100 U	10 U	10 U	20 U	20 U	50 U	10 U	10 U	10 U	10 U
Carbon Disulfide	µg/L	NS	100 U	50 U	120 U	50 U	5 U	5 U	10 U	10 U	25 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	µg/L	NS	100 U	50 U	120 U	50 U	5 U	5 U	10 U	10 U	25 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	µg/L	NS	100 U	50 U	120 U	50 U	5 U	5 U	10 U	10 U	25 U	5 U	5 U	5 U	5 U
1,2-Dichloroethene (total)	µg/L	NS	100 U	50 U	120 U	50 U	1 J	12	33	33	8 J	5 U	5 U	5 U	5 U
Chloroform	µg/L	NS	100 U	50 U	120 U	50 U	5 U	5 U	10 U	10 U	25 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	µg/L	NS	100 U	50 U	120 U	50 U	5 U	5 U	10 U	10 U	25 U	5 U	5 U	5 U	5 U
2-Butanone	µg/L	NS	200 U	100 U	250 U	100 U	10 U	10 U	20 U	20 U	50 U	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane	µg/L	NS	100 U	50 U	120 U	50 U	5 U	5 U	10 U	10 U	25 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride	µg/L	NS	100 U	50 U	120 U	50 U	5 U	5 U	10 U	10 U	25 U	5 U	5 U	5 U	5 U
Vinyl Acetate	µg/L	NS	200 U	100 U	250 U	100 U	10 U	10 U	20 U	20 U	50 U	10 U	10 U	10 U	10 U
Bromodichloromethane	µg/L	NS	100 U	50 U	120 U	50 U	5 U	5 U	10 U	10 U	25 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	µg/L	NS	100 U	50 U	120 U	50 U	5 U	5 U	10 U	10 U	25 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	µg/L	NS	100 U	50 U	120 U	50 U	5 U	5 U	10 U	10 U	25 U	5 U	5 U	5 U	5 U
Trichloroethene	µg/L	NS	3000	1000	1600	1400	16	18	19	20	14 J	1 J	5 U	5 U	3 J
Dibromochloromethane	µg/L	NS	100 U	50 U	120 U	50 U	5 U	5 U	10 U	10 U	25 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	µg/L	NS	100 U	50 U	120 U	50 U	5 U	5 U	10 U	10 U	25 U	5 U	5 U	5 U	5 U
Benzene	µg/L	NS	100 U	50 U	120 U	50 U	5 U	5 U	10 U	10 U	25 U	5 U	5 U	5 U	5 U
Trans-1,3-Dichloropropene	µg/L	NS	100 U	50 U	120 U	50 U	5 U	5 U	10 U	10 U	25 U	5 U	5 U	5 U	5 U
Bromoform	µg/L	NS	100 U	50 U	120 U	50 U	5 U	5 U	10 U	10 U	25 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone	µg/L	NS	200 U	100 U	250 U	100 U	10 U	10 U	20 U	20 U	50 U	10 U	10 U	10 U	10 U
2-Hexanone	µg/L	NS	200 U	100 U	250 U	100 U	10 U	10 U	20 U	20 U	50 U	10 U	10 U	10 U	10 U
Tetrachloroethene	µg/L	NS	110	21 J	40 J	32 J	68	44	240	230	920	120	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	µg/L	NS	100 U	50 U	120 U	50 U	5 U	5 U	10 U	10 U	25 U	5 U	5 U	5 U	5 U
Toluene	µg/L	NS	100 U	50 U	120 U	50 U	5 U	5 U	10 U	10 U	25 U	5 U	5 U	5 U	5 U
Chlorobenzene	µg/L	NS	100 U	50 U	120 U	50 U	5 U	5 U	10 U	10 U	25 U	5 U	5 U	5 U	5 U
Ethylbenzene	µg/L	NS	100 U	50 U	120 U	50 U	5 U	5 U	10 U	10 U	25 U	5 U	5 U	5 U	5 U
Styrene	µg/L	NS	100 U	50 U	120 U	50 U	5 U	5 U	10 U	10 U	25 U	5 U	5 U	5 U	5 U
Xylene (total)	µg/L	NS	100 U	50 U	120 U	50 U	5 U	5 U	10 U	10 U	25 U	5 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.

J = Indicates an estimated value.

B = Indicates that the analyte was found in the associated blank as well as in the sample.

DUP = Duplicate sample

NS = Not sampled

(2.5) = Dilution factor.

Table 2-4 (Continued)  
 Summary of Groundwater Analytical Results - November 1997  
 Black & Decker  
 Hampstead, Maryland

PARAMETER	Units	RFW-2B	RFW-3B	RFW-4A	RFW-4B	RFW-5A	RFW-6	RFW-7	RFW-8	RFW-9	RFW-10	RFW-11A	RFW-11B	RFW-12B	RFW-13
				(2)										(25)	
Chloromethane	µg/L	10 U	10 U	20 U	10 U	NS	10 U	10 U	NS	10 U	NS	10 U	10 U	250 U	3 JB
Bromomethane	µg/L	10 U	10 U	20 U	10 U	NS	10 U	10 U	NS	10 U	NS	10 U	10 U	250 U	10 U
Vinyl Chloride	µg/L	10 U	10 U	20 U	10 U	NS	10 U	10 U	NS	10 U	NS	10 U	10 U	250 U	10 U
Chloroethane	µg/L	10 U	10 U	20 U	10 U	NS	10 U	10 U	NS	10 U	NS	10 U	10 U	250 U	10 U
Methylene Chloride	µg/L	5 B	2 JB	8 JB	2 JB	NS	2 JB	2 JB	NS	3 JB	NS	2 JB	2 JB	120 JB	4 JB
Acetone	µg/L	10 U	10 U	20 U	10 U	NS	6 JB	10 U	NS	10 U	NS	10 U	10 U	250 U	6 JB
Carbon Disulfide	µg/L	5 U	5 U	10 U	5 U	NS	5 U	5 U	NS	5 U	NS	5 U	5 U	120 U	5 U
1,1-Dichloroethene	µg/L	5 U	1 J	10 U	5 U	NS	5 U	5 U	NS	5 U	NS	5 U	5 U	120 U	5 U
1,1-Dichloroethane	µg/L	5 U	5 U	10 U	5 U	NS	5 U	5 U	NS	5 U	NS	5 U	5 U	120 U	5 U
1,2-Dichloroethene (total)	µg/L	5 U	51	4 J	7	NS	3 J	2 J	NS	5 J	NS	5 U	5 U	120 U	5 U
Chloroform	µg/L	5 U	5 U	10 U	2 J	NS	5 U	5 U	NS	5 U	NS	5 U	5 U	120 U	5 U
1,2-Dichloroethane	µg/L	5 U	5 U	10 U	5 U	NS	5 U	5 U	NS	5 U	NS	5 U	5 U	120 U	5 U
2-Butanone	µg/L	10 U	10 U	20 U	10 U	NS	10 U	10 U	NS	10 U	NS	10 U	10 U	250 U	10 U
1,1,1-Trichloroethane	µg/L	5 U	4 J	10 U	5 U	NS	5 U	5 U	NS	5 U	NS	5 U	5 U	120 U	5 U
Carbon Tetrachloride	µg/L	5 U	5 U	10 U	5 U	NS	5 U	5 U	NS	5 U	NS	5 U	5 U	120 U	5 U
Vinyl Acetate	µg/L	10 U	10 U	20 U	10 U	NS	10 U	10 U	NS	10 U	NS	10 U	10 U	250 U	10 U
Bromodichloromethane	µg/L	5 U	5 U	10 U	5 U	NS	5 U	5 U	NS	5 U	NS	5 U	5 U	120 U	5 U
1,2-Dichloropropane	µg/L	5 U	5 U	10 U	5 U	NS	5 U	5 U	NS	5 U	NS	5 U	5 U	120 U	5 U
cis-1,3-Dichloropropene	µg/L	5 U	5 U	10 U	5 U	NS	5 U	5 U	NS	5 U	NS	5 U	5 U	120 U	5 U
Trichloroethene	µg/L	4 J	29	130	63	NS	23	10	NS	28	NS	92	49	3000	6
Dibromochloromethane	µg/L	5 U	5 U	10 U	5 U	NS	5 U	5 U	NS	5 U	NS	5 U	5 U	120 U	5 U
1,1,2-Trichloroethane	µg/L	5 U	5 U	10 U	5 U	NS	5 U	5 U	NS	5 U	NS	5 U	5 U	120 U	5 U
Benzene	µg/L	5 U	5 U	10 U	5 U	NS	5 U	5 U	NS	5 U	NS	5 U	5 U	120 U	5 U
Trans-1,3-Dichloropropene	µg/L	5 U	5 U	10 U	5 U	NS	5 U	5 U	NS	5 U	NS	5 U	5 U	120 U	5 U
Bromoform	µg/L	5 U	5 U	10 U	5 U	NS	5 U	5 U	NS	5 U	NS	5 U	5 U	120 U	5 U
4-Methyl-2-pentanone	µg/L	10 U	10 U	20 U	10 U	NS	10 U	10 U	NS	10 U	NS	10 U	10 U	250 U	10 U
2-Hexanone	µg/L	10 U	10 U	20 U	10 U	NS	10 U	10 U	NS	10 U	NS	10 U	10 U	250 U	10 U
Tetrachloroethene	µg/L	5 U	50	180	130	NS	22	5 U	NS	4 J	NS	2 J	5 U	80 J	43
1,1,2,2-Tetrachloroethane	µg/L	5 U	5 U	10 U	5 U	NS	5 U	5 U	NS	5 U	NS	5 U	5 U	120 U	5 U
Toluene	µg/L	5 U	5 U	10 U	5 U	NS	5 U	5 U	NS	5 U	NS	5 U	5 U	120 U	5 U
Chlorobenzene	µg/L	5 U	5 U	10 U	5 U	NS	5 U	5 U	NS	5 U	NS	5 U	5 U	120 U	5 U
Ethylbenzene	µg/L	5 U	5 U	10 U	5 U	NS	5 U	5 U	NS	5 U	NS	5 U	5 U	120 U	5 U
Styrene	µg/L	5 U	5 U	10 U	5 U	NS	5 U	5 U	NS	5 U	NS	5 U	5 U	120	5 U
Xylene (total)	µg/L	5 U	5 U	10 U	5 U	NS	5 U	5 U	NS	5 U	NS	5 U	5 U	120 U	5 U

Notes: U = Compound was analyzed for but not detected. Value shown is the method detection limit for quantification.  
 J = Indicates an estimated value.  
 B = Indicates that the analyte was found in the associated blank as well as in the sample.

DUP = Duplicate sample  
 NS = Not sampled  
 (2.5) = Dilution factor.

Table 2-4 (Continued)  
 Summary of Groundwater Analytical Results - November 1997  
 Black & Decker  
 Hampstead, Maryland

PARAMETER	Units	RFW-16	RFW-17	RFW-18	RFW-19	RFW-20	RFW-20 (DUP)	RFW-21	Town #22	Town #23	Leister Dairy	Leister Res. #1	Leister Res. #2	Field Blank	Trip Blank
Chloromethane	µg/L	NS	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NS	10 U	10 U	10 U	10 U	10 U
Bromomethane	µg/L	NS	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NS	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	µg/L	NS	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NS	10 U	10 U	10 U	10 U	10 U
Chloroethane	µg/L	NS	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NS	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	µg/L	NS	6 B	6 B	5 B	3 JB	3 JB	2 JB	7 B	NS	6 B	5 B	3 JB	5 JB	8 B
Acetone	µg/L	NS	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NS	10 U	10 U	10 U	10 U	10 U
Carbon Disulfide	µg/L	NS	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NS	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	µg/L	NS	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NS	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	µg/L	NS	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NS	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethene (total)	µg/L	NS	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NS	5 U	5 U	5 U	5 U	5 U
Chloroform	µg/L	NS	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NS	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	µg/L	NS	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NS	5 U	5 U	5 U	5 U	5 U
2-Butanone	µg/L	NS	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NS	10 U	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane	µg/L	NS	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NS	5 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride	µg/L	NS	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NS	5 U	5 U	5 U	5 U	5 U
Vinyl Acetate	µg/L	NS	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NS	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	µg/L	NS	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NS	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	µg/L	NS	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NS	5 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	µg/L	NS	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NS	5 U	5 U	5 U	5 U	5 U
Trichloroethene	µg/L	NS	5 U	5 U	5 U	18	19	5 U	5 U	NS	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	µg/L	NS	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NS	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	µg/L	NS	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NS	5 U	5 U	5 U	5 U	5 U
Benzene	µg/L	NS	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NS	5 U	5 U	5 U	5 U	5 U
Trans-1,3-Dichloropropene	µg/L	NS	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NS	5 U	5 U	5 U	5 U	5 U
Bromoform	µg/L	NS	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NS	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone	µg/L	NS	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NS	10 U	10 U	10 U	10 U	10 U
2-Hexanone	µg/L	NS	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NS	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	µg/L	NS	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NS	3 J	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	µg/L	NS	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NS	5 U	5 U	5 U	5 U	5 U
Toluene	µg/L	NS	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NS	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	µg/L	NS	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NS	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	µg/L	NS	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NS	5 U	5 U	5 U	5 U	5 U
Styrene	µg/L	NS	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NS	5 U	5 U	5 U	5 U	5 U
Xylene (total)	µg/L	NS	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NS	5 U	5 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.  
 J = Indicates an estimated value.  
 B = Indicates that the analyte was found in the associated blank as well as in the sample.

DUP = Duplicate sample  
 NS = Not sampled  
 (2.5) = Dilution factor.

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

A summary of the maintenance activities which were undertaken at the extraction and treatment system during the reporting period (October through December 1997) 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 - 4th Quarter 1997**  
**Black & Decker**  
**Hampstead, Maryland**

Date	Event/Corrective Action
October 1997	Extraction well EW-6 was shut down by the low temperature switch. The temperature switch settings were lowered and the unit heater thermostat settings were increased. EW-6 operating properly.
October 1997	The effluent flow meter at the treatment system was calibrated.
November 1997	The flow switch at the treatment system malfunctioned and was replaced.

**SECTION 4**  
**RECOMMENDATIONS**

For the reporting period of October through December 1997, the treatment system continued to create a hydraulic boundary preventing off-site migration of groundwater. Operation of the extraction system as currently configured will continue, adjusting pumping rates as necessary according to the amount of groundwater recharge. Operation of the treatment system as currently configured will also continue, because the treatment system is fully effective in removing VOCs from the extracted groundwater.

**APPENDIX A**  
**DISCHARGE MONITORING REPORTS**  
**(OCTOBER - DECEMBER 1997)**



NAME: **BLACK & DECKER (U.S.) INC.**  
 ADDRESS: **626 HANOVER PIKE**  
**HAMPSTEAD, MD. 21074**

**MD0001881**      **001**  
 PERMIT NUMBER      DISCHARGE NUMBER

FACILITY:  
 LOCATION: **CARROLL COUNTY**

MONITORING PERIOD  
 FROM: YEAR 97 MO 10 DAY 01 TO YEAR 97 MO 10 DAY 31  
(20-21) (22-23) (24-25) (26-27) (28-29) (30-31)

NOTE: Read instructions before completing this form.

PARAMETER (32-37)	SAMPLE MEASUREMENT	(3 Card Only) QUANTITY OR LOADING			(4 Card Only) QUALITY OR CONCENTRATION			NO EX (62-63)	FREQUENCY OF ANALYSIS (64-66)	SAMPLE TYPE (69-70)
		AVERAGE (46-53)	MAXIMUM (54-61)	UNITS	MINIMUM (38-45)	AVERAGE (46-53)	MAXIMUM (54-61)			
FLOW	SAMPLE MEASUREMENT	0.232	0.489	MGD				0	CONTINUOUS MEASURED	
	PERMIT REQUIREMENT	NO LIMIT	NO LIMIT						CONTINUOUS MEASURED	
1,1,1-TRICHLOROETHANE	SAMPLE MEASUREMENT					<5	ppb	0	1/MONTH GRAB	
	PERMIT REQUIREMENT					5			1/MONTH GRAB	
TETRACHLOROETHYLENE	SAMPLE MEASUREMENT					<5	ppb	0	1/MONTH GRAB	
	PERMIT REQUIREMENT					5			1/MONTH GRAB	
TRICHLOROETHYLENE	SAMPLE MEASUREMENT					<5	ppb	0	1/MONTH GRAB	
	PERMIT REQUIREMENT					5			1/MONTH GRAB	
TOTAL RESIDUAL CHLORINE	SAMPLE MEASUREMENT					<0.1	mg/l	0	4/MONTH GRAB	
	PERMIT REQUIREMENT					<0.1			1/MONTH GRAB	
OIL & GREASE	SAMPLE MEASUREMENT					<5	mg/l	0	1/MONTH GRAB	
	PERMIT REQUIREMENT					10	15		1/MONTH GRAB	
pH	SAMPLE MEASUREMENT				6.85	7.29	STD	0	2/WEEK GRAB	
	PERMIT REQUIREMENT				6.00	8.50			2/WEEK GRAB	
NAME / TITLE PRINCIPAL EXECUTIVE OFFICER	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. (Penalties under these statutes may include fines up to \$10,000 and/or maximum imprisonment of between 6 months and 5 years.)							TELEPHONE	DATE	
LaVere N. Grimes Facilities Manager	<i>LaVere N. Grimes</i>							410-239-5555	97   11   04	
TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT							AREA CODE-NUMBER	YEAR   MO   DAY	

COMMENT AND EXPLANATION OF ANY VIOLATIONS

(Reference all attachments here)

PERMITTEE ADDRESS (Include Facility Name/Location if different)

NAME: **BLACK & DECKER (U.S.) INC.**

ADDRESS: **626 HANOVER PIKE  
HAMPSTEAD, MD. 21074**

FACILITY:

LOCATION: **CARROLL COUNTY**

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

**DISCHARGE MONITORING REPORT (DMR)**

APPROVED

No.2040-0004

**MD0001881**  
PERMIT NUMBER

**001**  
DISCHARGE NUMBER

**MONITORING PERIOD**

FROM	YEAR	MO	DAY	TO	YEAR	MO	DAY
	97	10	01		97	10	31
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

NOTE: Read instructions before completing this form.

PARAMETER (32-37)	SAMPLE MEASUREMENT / PERMIT REQUIREMENT	(3 Card Only) QUANTITY OR LOADING (46-53)			(4 Card Only) QUALITY OR CONCENTRATION (38-45)			UNITS	NO EX (62-63)	FREQUENCY OF ANALYSIS (64-66)	SAMPLE TYPE (69-70)	
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM					
<b>BOD</b>	SAMPLE MEASUREMENT							3	mg/l	0	1/MONTH	GRAB
	PERMIT REQUIREMENT							15		1/MONTH	GRAB	
<b>TOTAL SUSPENDED SOLIDS</b>	SAMPLE MEASUREMENT							4	mg/l	0	1/MONTH	GRAB
	PERMIT REQUIREMENT					20	30	1/MONTH		GRAB		
	SAMPLE MEASUREMENT											
	PERMIT REQUIREMENT											
	SAMPLE MEASUREMENT											
	PERMIT REQUIREMENT											
	SAMPLE MEASUREMENT											
	PERMIT REQUIREMENT											
	SAMPLE MEASUREMENT											
	PERMIT REQUIREMENT											

NAME / TITLE PRINCIPAL EXECUTIVE OFFICER

**LaVere N. Grimes  
Facilities Manager**

TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319 (Penalties under these statutes may include fines up to \$10,000 and/or maximum imprisonment of between 6 months and 5 years.)

*LaVere N. Grimes*

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE

410-239-5555

AREA CODE-NUMBER

DATE

97 | 11 | 04

103

COMMENT AND EXPLANATION OF ANY VIOLATIONS

(Reference all attachments here)