

17 June 2011

Michael J. Hinton, P.E.  
Environmental Engineer 2  
New York State Department of Environmental Conservation  
Division of Environmental Remediation - Region 9  
270 Michigan Avenue  
Buffalo, New York 14203



RE: Monthly Progress Report – May 2011  
Greif, Inc. Facility – Tonawanda, New York  
NYSDEC VCP Number V00334-9

---

***Key Actions  
This Period:***

- Performed routine operations and maintenance (O&M) on the Pilot Sub-Slab Depressurization (SSD) system and dense, non-aqueous phase liquid (DNAPL) recovery equipment. Collected and recorded relevant data. Data collected included liquid level measurements in selected Site wells and monitoring points (Table 1), vacuum readings in vacuum monitoring points (Table 2), and treatment system operational data (Table 3). The locations of wells and other monitoring points are presented in Figure 1. A map showing the estimated distribution of vacuum in the sub-slab at the facility on 5 May 2011 is presented in Figure 2.
- Evaluation of Pilot SSD System pilot test data and preparation of a report and SSD system design.
- Completed remedial soil excavation, chemical amendment, backfilling, and asphalt restoration in the Former Varnish UST Area.
- Installed a test pit at the request of the NYSDEC on the south side of the access road to the Short Truck Bay.
- Installed an auto-dialer and updated system controls for the Pilot SSD System.

***Problems/  
Resolutions:***

- ERM discovered an unknown 8-inch inner diameter water pipe during the Former Varnish UST Area excavation with volatile organic compound (VOC)-affected fill surrounding the southern end of the line

exposed during the remedial soil excavation in the Former Varnish UST Area. Greif personnel indicated the pipe was an abandoned fire protection water pipe. Per NYSDEC request after receiving approval from Greif, ERM installed a test pit further south along the abandoned water pipe on the south side of the access road to the Short Truck Bay. Soil and backfill around the water pipe appeared to be “clean”. ERM collected a soil sample for laboratory analysis of Site-specific VOCs.

- Additional water accumulation was observed in the system piping associated with suction point locations SP-01 through SP-08 during the 24 May 2011 O&M site visit. The water accumulation is presumed to be due to condensation of moisture on the inside of SSD system piping. ERM briefly isolated the blower vacuum to discreet sections of the SSD system piping and removed a total of approximately 7-gallons of water from pipes PG-101, PG-102, PG-103, PG-104, and PG-105. Water accumulation will be monitored and potential corrective actions will be discussed in the upcoming SSD design document. Additional system controls were installed to alert ERM if SSD system operation is interrupted.

*Analytical Data Received:* • None.

*Documents Submitted:* • Monthly Progress Report for May 2011 dated 10 June 2011.

*Anticipated Actions – June 2011:*

- Routine O&M of the Pilot SSD System and DNAPL recovery equipment and adjustment of extraction and recovery parameters as necessary based on Site data and observations.
- Evaluation of SSD System pilot test data and results and preparation of a final design for the SSD System.
- Installation of monitoring wells

*NYSDEC-Approved Field* • NYSDEC was present at the Site typically on a daily basis during remedial soil excavation, chemical

- Decisions:** amendment, confirmation soil sampling, and backfilling of the excavation in the Former Varnish UST Area. NYSDEC approved site work during these tasks.
- NYSDEC requested the installation of the test pit on the south side of the access road for the Short Truck Bay to evaluate the extent of VOC-affected material surrounding the abandoned fire protection pipe on the south side of the remedial soil excavation.

**Prepared By:**

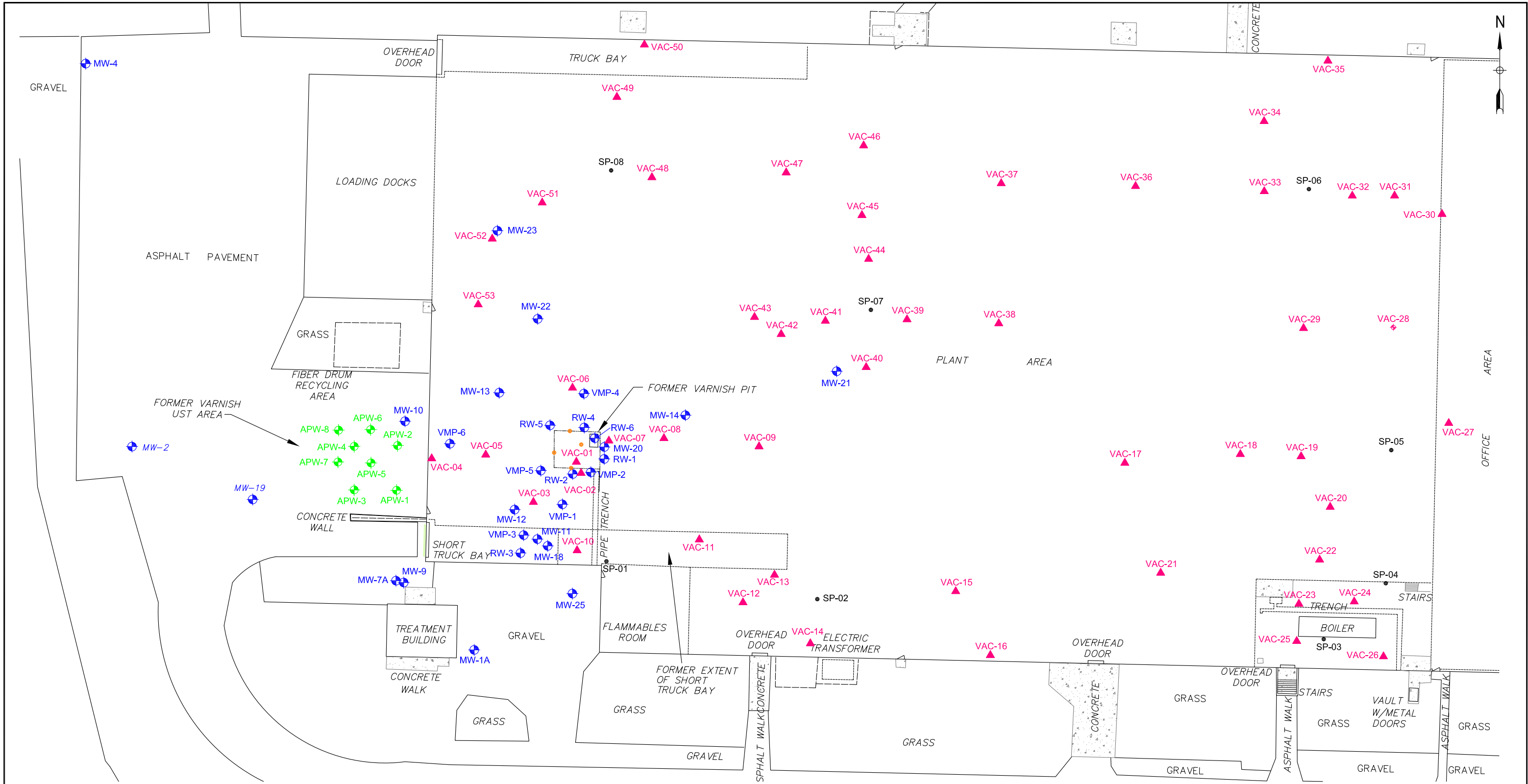


---

Jon S. Fox, P.G.  
Senior Consultant

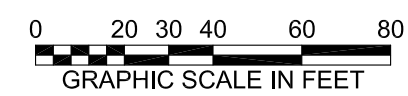
**Date:** 17 June 2011


Cc: Robert Powell, C.S.P., A.R.M. (Sonoco)  
Pete Gruene (Sonoco)  
Mike Sunderland (Sonoco)  
Patrick Wolfe (Greif)  
James Charles, Esq. (NYSDEC)  
Matt Forcucci (NYSDOH)  
Gregory Sutton, P.E. (NYSDEC)  
A. Joseph White (NYSDEC)  
Edward Hinchey, P.G. (ERM)  
John Mohlin, P.E. (ERM)  
Rob Sents (ERM)



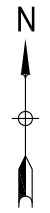
**LEGEND**

- ▲ Vacuum Monitoring Point Location
- ⊕ Monitoring or Recovery Well Location
- ⊕ Antenna Placement Well
- Suction Point Location
- Horizontal Suction Point Location
- Former Varnish Pit
- ⌞ Man Door
- ▣ Concrete Pad



TITLE		
SAMPLE AND MEASUREMENT LOCATIONS GREIF FACILITY-TONAWANDA, NEW YORK NYSDEC VCP NUMBER V00334-9		
PREPARED FOR		
SONOCO PRODUCTS COMPANY		
 Environmental Resources Management	SCALE	FIGURE
	GRAPHIC	1
DATE		
08-Feb-2011		
DRAWN:	JOB NO.:	FILE NAME:
EMF	0112477.01	0112477-01-011

Map Source: Wm. Schutt & Associates, P.C., 37 Central Ave, Lancaster, NY, Survey File: D0135103, WSA Proj: M01351.

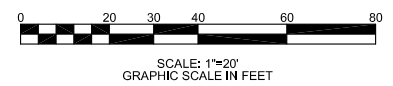


**LEGEND**

- Horizontal Suction Point Location
- Vertical Suction Point Location
- ▲ Vacuum Monitoring Point Location (vacuum in " H<sub>2</sub>O)
- NM Not Measured
- Estimated Extent of Sub-Floor Vacuum
- Former Varnish Pit
- Man Door
- Concrete Pad

**NOTES:**

1. " H<sub>2</sub>O = inches of water column



<p>TITLE</p> <p><b>SUBSURFACE VACUUM DISTRIBUTION</b></p> <p>05 MAY 2011</p> <p><b>GREIF FACILITY-TONAWANDA, NEW YORK</b></p>			
<p>PREPARED FOR</p> <p><b>SONOCO PRODUCTS COMPANY</b></p>			
<p>DRAWN: EMF</p>	<p>JOB NO.: 0112477.01</p>	<p>FILE NAME: 0129254-01-004</p>	<p>SCALE: GRAPHIC</p> <p>FIGURE: 2</p> <p>DATE: 13-June 2011</p>

**Table 1**  
**Summary of Non-Aqueous Phase Liquid Thicknesses in Wells**  
**Greif Facility - Tonawanda, New York**  
**NYSDEC VCP Number V00334-9**

WELL	RW-1 (ft.) (DNAPL)	RW-2 (ft.) (DNAPL)	RW-4 (ft.) (DNAPL)	RW-5 (ft.) (LNAPL)	RW-6 (ft.) (DNAPL)	VMP-2 (ft.) (DNAPL)	VMP-5 (ft.) (DNAPL)	MW-20 (ft.) (DNAPL)	MW-23 (ft.) (LNAPL)
<b>Date</b>									
19-May-08	0.00	0.00	0.00	0.00	NI	0.00	HS	0.09	0.14
30-May-08	0.00	0.16	0.00	0.00	NI	0.00	HS	0.03	0.14
16-Jun-08	0.00	0.14	0.00	0.02	NI	0.00	0.02	0.07	0.13
25-Jun-08	0.00	0.16	0.00	0.02	NI	0.00	HS	0.07	0.26
3-Jul-08	0.00	0.16	0.00	0.02	NI	0.00	HS	0.09	0.18
23-Jul-08	0.00	0.16	0.00	0.02	NI	0.00	HS	0.10	0.09
6-Aug-08	0.03	0.16	0.00	0.04	NI	0.00	HS	0.11	0.09
19-Aug-08	0.03	0.16	0.00	0.04	NI	0.00	HS	0.13	0.11
21-Nov-08	HS	0.11	0.00	0.00	NI	0.00	HS	0.22	0.29
17-Dec-08	HS	0.11	0.00	0.00	NI	0.00	HS	0.24	0.29
14-Jan-09	0.00	0.00	0.00	0.00	NI	0.00	0.00	HS	0.13
26-Feb-09	0.00	0.00	0.00	0.00	NI	0.00	0.00	0.01	0.24
12-Mar-09	0.00	0.00	0.00	0.00	NI	0.00	0.00	0.00	0.09
22-Apr-09	0.00	0.00	0.00	0.00	NI	0.00	0.00	0.00	0.11
13-May-09	0.00	0.00	0.00	0.00	NI	0.00	0.00	0.00	0.09
25-Jun-09	NM	0.00	NM	0.00	NI	0.00	0.00	NM	0.12
17-Jul-09	NM	0.00	NM	0.00	NI	0.00	0.00	NM	0.11
27-Aug-09	0.00	0.00	0.00	0.00	NI	0.00	NM	NM	0.09
25-Sep-09	0.00	0.00	0.00	0.00	NM	0.00	NM	0.04	0.11
16-Oct-09	NM	0.00	0.00	0.00	NM	0.00	NM	NM	0.11
19-Nov-09	NM	0.00	NM	NM	NM	0.00	NM	NM	0.21
17-Dec-09	0.00	0.00	NM	NM	NM	0.00	0.00	0.01	0.23
14-Jan-10	0.00	0.00	0.00	NM	NM	0.00	0.00	0.01	0.21
17-Feb-10	0.00	0.00	NM	NM	NM	0.00	0.00	0.01	0.17
18-Mar-10	0.00	0.00	0.00	0.00	NM	0.00	0.00	0.01	0.09
13-Apr-10	0.00	0.00	0.00	0.00	0.49	0.00	0.00	0.01	0.12
18-May-10	0.00	0.00	0.00	0.00	0.53	0.00	NM	0.01	0.08
15-Jun-10	0.00	0.00	0.00	NM	0.01*	0.00	0.00	0.01	0.07
14-Jul-10	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.07
13-Aug-10	0.00	NM	0.00	NM	0.08	0.00	0.00	HS	0.10
14-Sep-10	0.00	NM	0.00	NM	0.04	0.00	0.00	NM	0.06
14-Oct-10	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.01	0.08
22-Nov-10	0.00	0.00	NM	0.00	0.04	0.00	0.00	0.01	0.14
15-Dec-10	0.00	0.00	0.00	NM	0.01	0.00	NM	0.01	0.09
18-Jan-11	0.00	0.00	0.00	NM	HS	0.00	NM	0.02	0.09
21-Feb-11	NM	0.00	0.00	0.00	0.03	0.00	0.00	0.03	0.04
11-Mar-11	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.04	0.03
21-Apr-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
24-May-11	0.00	0.00	0.00	NM	0.15	0.3	0.00	1.00	0.1

**Notes:**

All values are reported in feet as measured with an electronic interface probe.

HS - heavy sheen but no measureable thickness.

NM - not measured; was covered with pallets or other surface obstruction.

NI - not installed as of this date.

\* - Product level after ERM initiated DNAPL recovery test

**Table 2**  
**Summary of Vacuum/Pressure Readings**  
**Greif Inc. Tonawanda, NY**  
**NYSDEC VCP Number V00334-9**

Location	Vac-01	Vac-02	Vac-03	Vac-04	Vac-05	Vac-06	Vac-07	Vac-08	Vac-09	Vac-10	Vac-11	Vac-12	Vac-13	Vac-14
Date														
16-Jun-10	0.1175	0.1375	0.1375	0	0.1425	0.1625	0.095	0.0325	0	0.10	0.0950	0	NM	0
14-Jul-10	1.65	1.45	0.47	0	0.68	0.46	0.125	0.0525	0	0.1625	0.16	0	0	0
13-Aug-10	1.3	1.25	0.46	0	0.65	0.45	0.135	0.07	0	0.19	0.175	0	0	NM
14-Sep-10	0.8	NM	0.29	0	0.28	0.195	0.055	0.015	0	NM	0.125	0	0	0
14-Oct-10	0.82	0.84	0.29	0	0.28	0.185	0.05	0.015	0	0.1375	0.12	0	0	NM
22-Nov-10	0.29	2.3	0.49	0	0.35	0.28	0.105	0.0025	0	0.155	0.135	0	NM	NM
16-Dec-10	0.26	2.1	0.42	0	0.2	0.14	0.075	0	0	0.13	0.105	0	0	NM
19-Jan-11	0.77	2	0.41	0	0.24	0.18	0.1	NM	0	0.155	0.125	0	NM	0
21-Feb-11	1.35	1.8	0.4	0	NM	0.17	0.1	0	0	NM	0.12	NM	0	0
11-Mar-11	1.8	2.25	0.5	0	NM	0.22	NM	0.01	0	NM	0.12	0	0	NM
21-Apr-11	1.35	2	0.45	0	0.25	0.2	0.1025	0	0	0.155	0.135	0	0	0
24-May-11	2.15	2.05	0.47	0	0.35	0.28	0.1325	0.0275	0	0.1625	0.15	0	NM	0

Location	Vac-15	Vac-16	Vac-17	Vac-18	Vac-19	Vac-20	Vac-21	Vac-22	Vac-23	Vac-24	Vac-25	Vac-26	Vac-27	Vac-28
Date														
16-Jun-10	0	NM	0.0025	0.25	0.42	0.175	0	0.0075	0	0	0.089	0.020	0.005	0.0175
14-Jul-10	0	0	NM	0.31	0.54	0.205	0	0	NM	NM	NM	NM	0.005	0.01
13-Aug-10	0	0	0.0025	0.31	0.52	NM	0	0	0	0	0.08	0.02	0.005	0.025
14-Sep-10	0	0	0	0.165	0.31	0.075	0	0	0	0	0.08	0.015	0.005	0.005
14-Oct-10	NM	0	0	0.18	0.35	0.105	0	0	0	0	0.08	0.015	0.0025	0.005
22-Nov-10	0	0	0	0.2	0.35	0.1	0	0	0	0	0.08	0.02	0.0025	0.0025
16-Dec-10	0	0	0	0.145	0.29	0.08	0	0	0	0	0.055	0.01	0	0.0025
19-Jan-11	0	0	0	0.15	0.29	0.08	0	0	0	0	0.075	0.02	0	0.0075
21-Feb-11	0.005	0	NM	0.18	0.35	NM	0	0.0125	0	0	0.0675	0.035	0.015	0.01
11-Mar-11	0	0	0	0.1875	0.34	0.12	0	0	0	0	0.08	0.025	0.01	0.02
21-Apr-11	0	0	0	0.18	0.32	0.105	0	0.01	0	0	0.08	0.0325	0.01	0.0125
24-May-11	0	0	0	0.215	0.36	0.1475	0	0	0	0	0.0775	0.03	0.015	0.0175

Location	Vac-29	Vac-30	Vac-31	Vac-32	Vac-33	Vac-34	Vac-35	Vac-36	Vac-37	Vac-38	Vac-39	Vac-40	Vac-41	Vac-42
Date														
16-Jun-10	0.040	0	0	0.040	0.0675	0.0225	NM	0	0.030	NM	0.025	0.0275	0.0525	0.0025
14-Jul-10	NM	NM	NM	NM	0.125	0.0325	0	0	0	NM	0.03	0.0325	NM	0.005
13-Aug-10	0.0725	0	0.0375	0.0875	0.1625	0.05	0	0	0	0	0.05	0.04	0.0875	0.015
14-Sep-10	0.025	0	0.01	0.03	0.06	0.015	0	0	0	0	0.02	0.0075	0.025	0.0025
14-Oct-10	0.025	0	0.005	0.03	0.055	0.01	0	0	0	0	0.01	0.01	0.025	NM
22-Nov-10	0.015	0	0.0025	0.025	0.065	0.01	0	NM	0	0	0.005	NM	0.015	NM
16-Dec-10	0.02	NM	0.005	0.035	0.055	0.015	0	NM	0	0	0.005	NM	0.0125	NM
19-Jan-11	0.02	NM	0.0075	0.03	0.04	0.015	0	0	0	0	0.01	NM	0.0125	NM
21-Feb-11	0.015	0	0.01	0.035	0.0325	NM	NM	0	0	0.0025	0.015	0.01	0.0175	NM
11-Mar-11	0.02	0	0.02	0.0425	0.0625	0.03	0	0	0	0	0.0225	0.02	0.02	NM
21-Apr-11	0.0175	0	0.01	0.035	0.06	NM	NM	0	0	0	0.01	0.005	0.0125	0
24-May-11	0.0325	0	0.0225	0.0525	0.075	NM	NM	0	0	NM	0.0125	NM	0.035	0

Location	Vac-43	Vac-44	Vac-45	Vac-46	Vac-47	Vac-48	Vac-49	Vac-50	Vac-51	Vac-52	Vac-53
Date											
16-Jun-10	0.0025	0.0425	0.015	0.0125	NM	0.2125	0.0925	0	0.080	0.0125	0.0125
14-Jul-10	0	NM	NM	0.0125	NM	0.21	0.0875	NM	0.8	0.0175	0.0225
13-Aug-10	0	NM	NM	NM	NM	0.22	0.0925	0	0.085	NM	0.0225
14-Sep-10	0	NM	NM	0.0025	NM	0.1275	0.05	0	0.04	0.005	0
14-Oct-10	NM	NM	0	NM	NM	0.11	0.0375	0	0.03	0	0
22-Nov-10	0	NM	0	0	NM	0.135	0.0475	0	0.03	0.0025	0
16-Dec-10	0	0.015	0	0	NM	0.09	0.02	0	NM	0	0
19-Jan-11	0	NM	0	0	NM	0.12	0.035	0	0.03	0.0025	0
21-Feb-11	0	0.0325	0.01	0	0	0.125	0.035	0	0.03	0	0
11-Mar-11	0	NM	0.02	NM	0.005	0.16	0.0575	NM	0.05	0.03	0.01
21-Apr-11	0	NM	0	NM	0	0.1375	0.045	NM	0.025	0	0
24-May-11	0	0.03	0.005	NM	0.0075	0.175	0.06	0	0.055	0.005	0.0125

**Notes:**  
- All vacuum and/or pressure readings are reported in inches of water column ("H2O).  
NM = not measured; was covered with pallets or other surface obstructions

**Table 3**  
**Summary of Treatment System Data**  
**Greif Facility - Tonawanda, New York**  
**NYSDEC VCP Number V00334-9**  
**Page 1 of 2**

Location Units	Header Vacuum						Header Air Flow					
	PG-101 " H <sub>2</sub> O	PG-102 " H <sub>2</sub> O	PG-103 " H <sub>2</sub> O	PG-104 " H <sub>2</sub> O	PG-105 " H <sub>2</sub> O	PG-106 " H <sub>2</sub> O	PG-101 cfm	PG-102 cfm	PG-103 cfm	PG-104 cfm	PG-105 cfm	PG-106 cfm
Date												
17-Dec-09	NF	-11.5	NM	NF	NF	NF	NF	NM	NM	NF	NF	NF
14-Jan-10	NF	-40	NM	NF	NF	NF	NF	94	NM	NF	NF	NF
17-Feb-10	NF	-4.2	NM	NF	NF	NF	NF	16	NM	NF	NF	NF
18-Mar-10	NF	-1.95	NM	NF	NF	NF	NF	15	NM	NF	NF	NF
13-Apr-10	NF	-2.85	-13.0	NF	NF	NF	NF	73	233	NF	NF	NF
18-May-10	NF	-3.95	-13.0	NF	NF	NF	NF	83	212	NF	NF	NF
15-Jun-10	NF	-2.60	-15.5	NF	NF	NF	NF	65	225	NF	NF	NF
14-Jul-10	NM	-1.75	-4.10	NM	NM	NF	NM	26	75	NM	NM	NF
13-Aug-10	-3.75	-1.30	-3.75	-3.70	-3.75	NF	67	19	73	65	82	NF
14-Sep-10	-3.15	-0.85	-3.25	-3.15	-3.2	NF	68	18	74	65	72	NF
14-Oct-10	-3.45	-0.91	-3.50	-3.45	-3.55	NF	70	32	76	66	72	NF
22-Nov-10	-4.05	-0.30	-4.15	-4.00	-4.2	NF	76	14	80	70	82	NF
16-Dec-10	-4.05	-0.30	-4.05	-3.95	-4.05	NF	70	14	85	75	94	NF
19-Jan-11	-3.55	-0.85	-3.60	-3.55	-3.6	NF	82	39	135	92	164	NF
21-Feb-11	-3.4	-1.55	-3.50	-3.40	-3.5	NF	116	36	105	78	144	NF
11-Mar-11	-3.35	-2.00	-3.35	-3.35	-3.4	NF	98	73	65	76	141	NF
21-Apr-11	-3.1	-1.65	-3.10	-3.05	-3.15	NF	97	84	103	106	170	NF
24-May-11	-3.0	-2.60	-3.10	-3.00	-3.10	NF	89.61	53.94	89.61	71.34	87.87	NF

**Location Key**

- PG-101 = Suction Pits 05, 06, 07 and 08 (pipe 1 of 2).
- PG-102 = interior of former varnish pit.
- PG-103 = horizontal suction points through former varnish pit's north, west, and south walls.
- PG-104 = Suction Pit 05, 06, 07, and 08 (pipe 2 of 2).
- PG-105 = Suction Pit 01 and 02.
- PG-106 = not connected.

**Notes:**

- Vacuum and pressure data are reported in inches of water; negative data represent vacuum; positive data represent pressure.
- Air flow data are based on measured air velocity and are reported in cubic feet per minute.
- NM = not measured
- NF = no flow as the piping associated with these measurement locations was not open/ connected at the time of measurement.



**Table 3 (Continued)**  
**Summary of Treatment System Data**  
**Greif Facility - Tonawanda, New York**  
**NYSDEC VCP Number V00334-9**  
**Page 2 of 2**

Location Units	Pre-Carbon			Mid-Carbon		Post-Carbon		
	Pressure " H <sub>2</sub> O	Temp °F	PID ppm	Temp °F	PID ppm	Temp °F	PID ppm	Flow cfm
<b>Date</b>								
17-Dec-09	+10.5	103	0.0	98	0.0	67	0.0	120
14-Jan-10	+7.5	114	46.5	102	18.7	91	13.9	73
17-Feb-10	+9.5	114	0.0	111	0.0	99	0.0	88
18-Mar-10	+9.0	115	0.0	108	0.0	98	0.0	98
13-Apr-10	+9.0	118	4.7	109	2.0	98	1.1	225
18-May-10	+8.5	108	3.0	103	2.2	94	1.7	220
15-Jun-10	+10.0	114	3.3	103	0.0	89	0.0	245
14-Jul-10	+11.0	112	5.2	106	4.1	98	1.9	263
13-Aug-10	+10.5	118	2.6	112	2.0	103	1.3	255
14-Sep-10	+13.0	100	2.2	90	1.1	NM	0.5	461
14-Oct-10	+15.5	104	0.3	104	0.0	NM	0.0	475
22-Nov-10	+15.5	102	0.4	97	0.0	94	0.0	490
16-Dec-10	+15.5	94	15.1	89	11.8	88	3.2	493
19-Jan-11	+16.5	94	1.0	88	1.1	86	0.2	516
21-Feb-11	+16	91	0.7	85	0	84	0	462
11-Mar-11	+15.5	97	189	91	69.2	91	5.7	522
21-Apr-11	+22.5	98	1.1	NM	0	97	0	220
24-May-11	+28.5	111	6.3	NM	1.5	104	0	202.71

**Notes:**

- Vacuum and pressure data are reported in inches of water; negative data represent vacuum; positive data represent pressure.
- Air flow data are based on measured air velocity and are reported in cubic feet per minute.
- Temperature reported in degrees Fahrenheit.
- PID = photoionization detector reading reported in parts per million.
- NM = not measured