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Gmm

November 26, 2002

Mr. Glenn May
Division of Environmental Remediation
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203

Re: Progress Report – May 1 to October 31, 2002
3M Tonawanda, New York Facility
Order on Consent # B9-0369-91-04, Site Code #915148

Dear Mr. May:

In accordance with the referenced Order on Consent (Order) and at 3M's direction, I am submitting the progress report for the 3M Tonawanda, NY facility for the period extending from May 1 to October 31, 2002. As required under the Order, the next progress report will be submitted to the New York State Department of Environmental Conservation in May 2003 and cover the six-month period ending April 30, 2003. If you have any comments or questions, please call us.

Very truly yours,

WESTON SOLUTIONS, INC.

Thomas A. Drew/dc

Thomas A. Drew, P.G.
Principal Project Manager

cc: Division of Environmental Remediation, Albany (w/o enclosure)
Director, Bureau of Environmental Exposure Investigation, Troy (w/o enclosure)
Division of Environmental Enforcement, Buffalo (w/o enclosure)
C. O'Connor - New York State Department of Health, Buffalo (w/ enclosure)
T. Witer, 3M (w/ enclosure)
G. Stubbs, 3M (w/ enclosure)

WESTON SOLUTIONS
Restoring Resource Efficiency

PROGRESS REPORT

Site Name and Location:	3M Facility, Tonawanda, New York
Registry Number:	915148
Order on Consent:	B9-0369-91-04
3M Project Contacts:	Tamera Witer (3M Corporate) Greg Stubbs (3M Tonawanda)
NYSDEC Project Lead:	Glenn May
Reporting Period:	May 1 to October 31, 2002

Background

The New York State Department of Environmental Conservation (NYSDEC) issued a Record of Decision (ROD) (Registry No. 915148) for the Minnesota Mining and Manufacturing Company (3M) facility in Tonawanda, New York. This ROD presents the selected remedial action for the Tonawanda facility based on the site's Administrative Record and public input. Following ROD issuance, the NYSDEC reclassified the 3M Tonawanda site from "Class 3 – Does not present a significant threat to the public health or environment – action may be deferred", to "Class 4 – Site properly closed – requires continued management."

3M is implementing the selected ROD remedy, No Further Action with Monitoring, under an Order on Consent (Index # B9-0369-91-04) (Order) according to the NYSDEC-approved Operation and Maintenance Work Plan (O&M Work Plan), which was made part of the Order. The O&M Work Plan calls for:

- Filing a Declaration of Covenants and Restrictions with the property deed at the Erie County Clerk's Office. This was completed and was reported in the initial progress report for the period ending March 31, 2001.

- Performing long-term groundwater monitoring. Involves semiannual sampling of site monitor wells MW-1, MW-2, MW-3, and MW-4 and annual sampling of the two site lysimeters, LY-1 and LY-2, with groundwater samples analyzed for CS_2.

- Inspecting the completed interim remedial measures (IRMs)(includes the CS_2 tank system, and the catch basin and associated swale) and maintaining the integrity of the IRMs.

This progress report provides a summary of the project activities that have occurred from May 1 to October 31, 2002. In compliance with the Order and agreement reached with the NYSDEC, future progress reports will be submitted to the NYSDEC on a semiannual basis.

1.0 Summary of Activities Performed During the Reporting Period

The following is a summary of activities performed by 3M during the reporting period:

- Daily inspections of the CS_2 tank/secondary containment system and associated truck/rail unloading stations were conducted for evidence of spills, leaks, unpermitted discharges of water containing CS_2, and maintenance requirements. On June 3, 2002, an employee observed a fire in the CS_2 storage tank during CS_2 transfer from the railcar to the storage tank. The site was evacuated and the local emergency squad responded. The fire department extinguished the flames and cleared plant personnel for return to the facility. There were no injuries and minimal fire damage. The NYSDEC was notified on the same day as the incident. Mr. Martin Doster and Mr. Raymond Jonak of the NYSDEC Spill Response Unit were on-site as the incident was mitigated.

  Through observation of the firefighting activities, it was evident that all water sprayed on the CS_2 tank was contained in the tank and railcar secondary containment. The only water discharged to the storm sewer was directly from the firewater booster pump. At the request of the NYSDEC, samples were collected from the water discharged to the storm sewer and analyzed for priority pollutant volatile organic compounds by EPA Method 624, CS_2 by EPA Method 8260, priority pollutant base neutrals by EPA Method 625, and petroleum hydrocarbons by EPA Method 310.13. No CS_2 or petroleum hydrocarbons were detected. Only very low part per billion (ppb) levels of a few priority pollutant compounds were detected and these are not associated with the plant.

  The water which collected in the secondary containment was discharged to the sanitary sewer under the approval of the Town of Tonawanda publicly-owned treatment works (POTW).

  In a letter to Mr. Raymond Jonak dated September 24, 2002, 3M provided a summary and description of the incident, the ensuing investigation and findings, recommendations for corrective action, and the analytical results of the discharge water to the storm sewer. Section 2.0 of this report contains a summary of the deficiencies identified for the CS_2 handling system resulting from the incident investigation and corrective actions taken by 3M.

- Periodic visual inspections were conducted prior to and during the transfer of CS_2 into the storage tank for evidence of malfunctioning equipment. As indicated above, deficiencies were noted and addressed following the incident on June 3, 2002. These deficiencies and associated corrective actions are described in Section 2.0 of this report.

- The fire suppression system was tested on June 27, 2002 by Davis-Ulmer Sprinkler Co. Inc. No deficiencies were noted.

- The annual inspection of the CS_2 system was conducted on October 18, 2002 by Quality Inspection Services, Inc. Mr. Glenn May of the NYSDEC was notified of the scheduled inspection on October 7, 2002. No deficiencies were noted that pertain to the Chemical Bulk Storage requirements. The immediate corrective actions that address critical issues for safe unloading of CS_2 have been completed. There are other recommendations of a less critical nature that will be completed in the future.

- The annual inspection of the catch basins and surrounding area was conducted on July 12, 2002. Where necessary, bare areas were regraded with new topsoil and hydroseeded. Additionally, other areas were covered with filter fabric and stone to prevent erosion.

- Site groundwater monitoring was conducted on July 24, 2002 in accordance with procedures specified in the O&M Plan. The monitoring results are summarized in Section 3.0.

2.0 CS_2 Tank System Deficiencies Identified by 3M and Corrective Actions Taken

The following is a list of the June 3, 2002 incident investigation findings regarding the potential causes of the fire:

- Electrical heat trace was found near the main tank hole and smaller tank openings on top of the CS_2 tank. While the heat trace is rated for Division 1 locations, the temperature classifications (T4 and T6) are not acceptable for all CS_2 zone applications. The heat trace found on top of the tank has operating temperatures within the range (T6 heat trace) and exceeding (T4 heat trace) the autoignition temperature of CS_2, which is 180 to 194°F.

- One heat trace was found to be short-circuited/burned near one of the openings on top of the tank.

- Circuit breaker was tripped prior to the incident.

- The stainless steel ball float valve used to maintain water level in the tank was broken. The water turbulence was causing it to bounce against rusty, abandoned, carbon steel water pipes located in the manway.

To address the investigation findings, the following design changes were implemented:

- A new grounding clamp was attached to existing pigtail and nongrounding holders for clamps were added.

- Installed a new titanium grounding clamp and designated the area where the clamp will be attached to the railcar.

- Grounded all aluminum insulation in classified areas.

- All heat trace tape was removed to beyond 15 feet from any opening on the tank. All tape was replaced with appropriate electrical and temperature classifications of tape.

- Installed components to control the speed of the opening and closing of the CS_2 line inlet valve. This measure reduces the nitrogen "blow through" at the end of unloading operations along with subsequent displacement of CS_2 and water, which exposes CS_2 to air.

- Installed new mass flow meter to sense change in density and shut-off nitrogen. This measure also reduces the nitrogen "blow through".

- The metal float was removed and replaced with a plastic float. The rusty manway pipes will be painted as part of normal maintenance.

- Installed a temporary deluge over the CS_2 storage tank. The existing deluge is over the rail car. A permanent deluge over the CS_2 storage tank is currently being designed.

- New deluge activation switch was installed on the outside of the control room west wall for easier access and egress.

- New start and stop buttons were installed in Building #71 as a secondary control system for unloading.

3.0 Groundwater Monitoring Results

Summary of Carbon Disulfide Groundwater Analytical Results (mg/L)

Date	Sample ID					
	MW-01	MW-02	MW-03	MW-04	LY-01	LY-02
7/24/02	ND	ND	ND	ND/ND*	NS	NS

Notes: ND – Not detected. The reporting limit for CS_2 is 5 µg/L.
NS – Not sampled. Lysimeters will be sampled during the next reporting period as they are monitored annually.
* - Duplicate sample result.

As indicated in the above table, CS_2 was not detected in the groundwater samples collected from site monitor wells MW-01 through MW-04 in July 2002. Additionally, CS_2 was not detected in the field blank or trip blank. A copy of the analytical data package is provided in Attachment A.

4.0 Activities Planned for the Next Reporting Period

The activities planned for the next reporting period (November 1 through April 30, 2003) include:

- Daily and periodic inspections of the CS_2 tank system (includes the containment system and unloading stations).
- Maintenance of the drainage swale, catch basins, and CS_2 tank system, as needed.
- Collection of groundwater samples from monitor wells MW-01 through MW-04 and the two lysimeters (LY-01 and LY-02) for CS_2 analysis. NYSDEC will be notified in advance of sampling.

WESTON SOLUTIONS
Restoring Resource Efficiency

Attachment A
Groundwater Analytical Data Package – July 2002

SEVERN TRENT SERVICES

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Amherst, NY 14228

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ANALYTICAL REPORT

Job#: A02-7555

STL Project#: NY1A8679
Site Name: 3M Tonawanda, NY - Semi-Anual Monitoring
Task: 3M Tonawanda, NY - Semi-Annual Monitoring

Mr. Tom Drew
Roy F. Weston, Inc.
1400 Weston Way
West Chester, PA 19380

STL Buffalo

Mark A. Nemec
Project Manager

08/07/2002

This report contains 15 pages which are individually numbered.

SAMPLE SUMMARY

LAB SAMPLE ID	CLIENT SAMPLE ID	SAMPLED DATE	SAMPLED TIME	RECEIVED DATE	RECEIVED TIME
A2755501	FIELD BLANK	07/24/2002	17:10	07/25/2002	19:10
A2755502	MW-01	07/24/2002	14:10	07/25/2002	19:10
A2755503	MW-02	07/24/2002	17:15	07/25/2002	19:10
A2755504	MW-03	07/24/2002	16:25	07/25/2002	19:10
A2755505	MW-04	07/24/2002	15:25	07/25/2002	19:10
A2755506	MW-04 DUP	07/24/2002	15:25	07/25/2002	19:10
A2755507	TRIP BLANK	07/24/2002	12:00	07/25/2002	19:10

SEVERN TRENT SERVICES

METHODS SUMMARY

Job#: A02-7555

STL Project#: NY1A8679
Site Name: 3M Tonawanda, NY - Semi-Anual Monitoring

PARAMETER	ANALYTICAL METHOD
METHOD 8260 - Carbon Disulfide	SW8463 8260/5ML

References:

SW8463 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

NON-CONFORMANCE SUMMARY

Job#: A02-7555

STL Project#: NY1A8679
Site Name: 3M Tonawanda, NY - Semi-Anual Monitoring

General Comments

The enclosed data have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A02-7555
Sample Cooler(s) were received at the following temperature(s); 4 °C
All samples were received in good condition.

GC/MS Volatile Data

No deviations from protocol were encountered during the analytical procedures.

****

DATA COMMENT PAGE

ORGANIC DATA QUALIFIERS

ND or U	Indicates compound was analyzed for, but not detected.
J	Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the data indicates the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.
C	This flag applies to pesticide results where the identification has been confirmed by GC/MS.
B	This flag is used when the analyte is found in the associated blank, as well as in the sample.
E	This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
D	This flag identifies all compounds identified in an analysis at the secondary dilution factor.
N	Indicates presumptive evidence of a compound. This flag is used only for tentatively identified compounds, where the identification is based on the Mass Spectral library search. It is applied to all TIC results.
P	This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on the data page and flagged with a "P".
A	This flag indicates that a TIC is a suspected aldol-condensation product.
1	Indicates coelution.
*	Indicates analysis is not within the quality control limits.

INORGANIC DATA QUALIFIERS

ND or U	Indicates element was analyzed for, but not detected. Report with the detection limit value.
J or B	Indicates a value greater than or equal to the instrument detection limit, but less than the quantitation limit.
N	Indicates spike sample recovery is not within the quality control limits.
K	Indicates the post digestion spike recovery is not within the quality control limits.
S	Indicates value determined by the Method of Standard Addition.
M	Indicates duplicate injection results exceeded quality control limits.
W	Post digestion spike for Furnace AA analysis is out of quality control limits (85-115%) while sample absorbance is less than 50% of spike absorbance.
E	Indicates a value estimated or not reported due to the presence of interferences.
H	Indicates analytical holding time exceedance. The value obtained should be considered an estimate.
*	Indicates analysis is not within the quality control limits.
+	Indicates the correlation coefficient for the Method of Standard Addition is less than 0.995.

Sample Data Package

Client ID		FIELD BLANK		MW-01		MW-02		MW-03	
Job No / Lab ID		A02-7555	A2755501	A02-7555	A2755502	A02-7555	A2755503	A02-7555	A2755504
Sample Date		07/24/2002		07/24/2002		07/24/2002		07/24/2002	
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Carbon Disulfide	UG/L	ND	5.0	ND	5.0	ND	5.0	ND	5.0
IS/SURROGATE(S)									
Chlorobenzene-D5	%	85	50-200	89	50-200	85	50-200	86	50-200
1,4-Difluorobenzene	%	88	50-200	91	50-200	87	50-200	88	50-200
1,4-Dichlorobenzene-D4	%	65	50-200	81	50-200	63	50-200	81	50-200
Toluene-D8	%	91	77-122	91	77-122	92	77-122	94	77-122
p-Bromofluorobenzene	%	84	73-120	88	73-120	86	73-120	90	73-120
1,2-Dichloroethane-D4	%	81	76-136	79	76-136	84	76-136	81	76-136

Client ID		MW-04		MW-04 DUP		TRIP BLANK			
Job No / Lab ID		A02-7555	A2755505	A02-7555	A2755506	A02-7555	A2755507		
Sample Date		07/24/2002		07/24/2002		07/24/2002			
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Carbon Disulfide	UG/L	ND	5.0	ND	5.0	ND	5.0	NA	
IS/SURROGATE(S)									
Chlorobenzene-D5	%	85	50-200	87	50-200	89	50-200	NA	
1,4-Difluorobenzene	%	86	50-200	87	50-200	91	50-200	NA	
1,4-Dichlorobenzene-D4	%	60	50-200	80	50-200	70	50-200	NA	
Toluene-D8	%	90	77-122	91	77-122	90	77-122	NA	
p-Bromofluorobenzene	%	81	73-120	88	73-120	84	73-120	NA	
1,2-Dichloroethane-D4	%	83	76-136	81	76-136	81	76-136	NA	

000006

NA = Not Applicable ND = Not Detected

Chronology and QC Summary Package

Date: 08/07/2002
Time: 13:18:52

3M Tonawanda, NY - Semi-Anual Monitoring
3M Tonawanda, NY - Semi-Annual Monitoring
METHOD 8260 - CARBON DISULFIDE

Rept: AN0326

Client ID Job No Lab ID Sample Date		VBLK40 A02-7555 A2755508		VBLK41 A02-7555 A2755510					
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Carbon Disulfide	UG/L	ND	5.0	ND	5.0	NA		NA	
IS/SURROGATE(S)									
Chlorobenzene-D5	%	94	50-200	91	50-200	NA		NA	
1,4-Difluorobenzene	%	96	50-200	93	50-200	NA		NA	
1,4-Dichlorobenzene-D4	%	74	50-200	83	50-200	NA		NA	
Toluene-D8	%	86	77-122	90	77-122	NA		NA	
p-Bromofluorobenzene	%	81	73-120	86	73-120	NA		NA	
1,2-Dichloroethane-D4	%	79	76-136	79	76-136	NA		NA	

000008

NA = Not Applicable ND = Not Detected

STL Buffalo

Date: 08/07/2002
Time: 13:18:52

3M Tonawanda, NY - Semi-Anual Monitoring
3M Tonawanda, NY - Semi-Annual Monitoring
METHOD 8260 - CARBON DISULFIDE

Rept: AN0326

Client ID Job No Lab ID Sample Date		Matrix Spike Blank A02-7555 A2755509		Matrix Spike Blank A02-7555 A2755511					
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Carbon Disulfide	UG/L	43	5.0	53	5.0	NA		NA	
IS/SURROGATE(S)									
Chlorobenzene-D5	%	102	50-200	101	50-200	NA		NA	
1,4-Difluorobenzene	%	103	50-200	101	50-200	NA		NA	
1,4-Dichlorobenzene-D4	%	84	50-200	102	50-200	NA		NA	
Toluene-D8	%	87	77-122	90	77-122	NA		NA	
p-Bromofluorobenzene	%	84	73-120	92	73-120	NA		NA	
1,2-Dichloroethane-D4	%	82	76-136	83	76-136	NA		NA	

600009

NA = Not Applicable ND = Not Detected

STL Buffalo

METHOD 8260 - CARBON DISULFIDE

Client Sample ID Job No & Lab Sample ID	FIELD BLANK A02-7555 A2755501	MW-01 A02-7555 A2755502	MW-02 A02-7555 A2755503	MW-03 A02-7555 A2755504	MW-04 A02-7555 A2755505
Sample Date	07/24/2002 17:10	07/24/2002 14:10	07/24/2002 17:15	07/24/2002 16:25	07/24/2002 15:25
Received Date	07/25/2002 19:10	07/25/2002 19:10	07/25/2002 19:10	07/25/2002 19:10	07/25/2002 19:10
Extraction Date					
Analysis Date	07/29/2002 14:40	07/29/2002 14:57	07/29/2002 15:15	07/29/2002 15:33	07/29/2002 15:50
Extraction HT Met?	-	-	-	-	-
Analytical HT Met?	YES	YES	YES	YES	YES
Sample Matrix	WATER	GW	GW	GW	GW
Dilution Factor	1.0	1.0	1.0	1.0	1.0
Sample wt/vol	0.005 LITERS	0.005 LITERS	0.005 LITERS	0.005 LITERS	0.005 LITERS
% Dry					

NA = Not Applicable

METHOD 8260 - CARBON DISULFIDE

Client Sample ID Job No & Lab Sample ID	MW-04 DUP A02-7555 A2755506	TRIP BLANK A02-7555 A2755507			
Sample Date	07/24/2002 15:25	07/24/2002 12:00			
Received Date	07/25/2002 19:10	07/25/2002 19:10			
Extraction Date					
Analysis Date	07/29/2002 16:08	07/29/2002 13:29			
Extraction HT Met?	-	-			
Analytical HT Met?	YES	YES			
Sample Matrix	GW	WATER			
Dilution Factor	1.0	1.0			
Sample wt/vol	0.005 LITERS	0.005 LITERS			
% Dry					

NA = Not Applicable

METHOD 8260 - CARBON DISULFIDE

Client Sample ID Job No & Lab Sample ID	Matrix Spike Blank A02-7555 A2755509	Matrix Spike Blank A02-7555 A2755511			
Sample Date					
Received Date					
Extraction Date					
Analysis Date	07/29/2002 10:45	07/29/2002 11:03			
Extraction HT Met?	-	-			
Analytical HT Met?	-	-			
Sample Matrix	WATER	WATER			
Dilution Factor	1.0	1.0			
Sample wt/vol	0.005 LITERS	0.005 LITERS			
% Dry					

NA = Not Applicable

METHOD 8260 - CARBON DISULFIDE

Client Sample ID Job No & Lab Sample ID	VBLK40 A02-7555 A2755508	VBLK41 A02-7555 A2755510			
Sample Date					
Received Date					
Extraction Date					
Analysis Date	07/29/2002 12:39	07/29/2002 12:56			
Extraction HT Met?	-	-			
Analytical HT Met?	-	-			
Sample Matrix	WATER	WATER			
Dilution Factor	1.0	1.0			
Sample wt/vol	0.005 LITERS	0.005 LITERS			
% Dry					

000013

NA = Not Applicable

Chain of Custody

Chain of Custody Record

SEVERN TRENT SERVICES — **Severn Trent Laboratories, Inc.**

STL-4124 (1200)

Client	Project Manager	Date	Chain of Custody Number
Greg Flasinski / Western Solutions	Mark Nemec	7/24/02	100467
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page ____ of ____**
1400 Western Way	610-701-7293		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
W. Chester / PA / 19380			
Project Name and Location (State)	**Carrier/Waybill Number**		
3M Tonawanda, NY			
Contract/Purchase Order/Quote No.			
02181-086-009			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H_2SO_4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: CS_2	Special Instructions/ Conditions of Receipt
MW-01	7/24/02	1410		✓						✓			✓	CS_2 Detection Limit — 5 ppb
MW-02		1715		✓						✓			✓	
MW-03		1625		✓						✓			✓	
MW-04		1525		✓						✓			✓	
MW-04 Dup		1525		✓						✓			✓	
Field Blank		1710		✓						✓			✓	
Trip Blank		1200		✓						✓			✓	

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other ____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	7/24/02		1. Received By	4°C 7/24/02	19:10
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

100467

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy