NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Office of General Counsel, Region 9
270 Michigan Avenue, Buffalo, NY 14203-2915
P: (716) 851-7190 I F: (716) 851-7296
www.dec.ny.gov

March 20, 2015

Honorable Daniel P. O'Connell
Office of Hearings and Mediation Services
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12223

Dear Judge O'Connell:

Transmitted herewith are several documents for consideration by the participants in the regulatory review of CWM's RMU-2 permit application, the Siting Board, the Commissioner and yourself.

First, in accordance with your December 15, 2014 memorandum, staff is providing its response to CWM's comments on the draft permit, dated November 19, 2014. In the traditional response-to-comment format, the response provides the appropriate portion of the draft permit, the change proposed in that provision by CWM, the reason cited for the proposal, and finally staff's response. The "Staff Evaluation Summary" in the initial portion of our response describes the organization, categories, and staff's proposed disposition of CWM's requested revisions.

Second, included in this transmission is staff's report and an accompanying table relative to comments on the RMU-2 draft permit received from the public during the comment period. The introduction to the Report provides the details relative to the number and form of the public comments, the categorization and description of these comments and again staff's recommendation as to their disposition.

Third, staff has deemed the RMU-2- related modification to the site wide Air State Facility Permit to be complete, and ready for consideration in this process. The modification application and the draft permit with the conditions for that permit modification are included in this transmission.

Fourth, this transmission includes a letter, dated March 18, 2015, from staff to CWM responding to the January 28, 2015 Golder Report on the Supplemental Investigation of the West Drum Area (WDA) and a data report from split samples taken by staff November 6, 2014 in conjunction with the WDA Supplemental Investigation. The split sample report was intended for inclusion in the hydrogeology portion of staff's Response to Petitions submitted February 27, 2015. In its February 27, 2015 Response Submittal, staff refers to the WDA Supplemental Investigation at page 2 of the "General Responses to the Report's Major Topics" and at pages 12, 30 and 38 of its "Responses to the Expert's Report."

Finally, staff is providing hard copies as follows. Albany staff is hand delivering the full array of hard copies to the Commissioner, the Siting Board and yourself, and—posted today—mailing copies of staff's WDA Supplemental Investigation response letter, the Split Sample Data Report, the Air Permit Modification Application and the draft Air Modification Permit to the remaining participants on the CWM Service List. Region 9 is mailing—posted today—Staff's Responses to CWM's Comments on the Draft Permit and Staff's Evaluation of the Public Comments to the non-Albany participants on the CWM Service List.

Very truly yours,

David F. Stever
Counsel to Department Staff

cc: CWM Service List
Commissioner Martens
Siting Board

WASTE MANAGEMENT

CWM CHEMICAL SERVICES, LLC
1550 Balmer Road
Model City, NY 14107
716 286 1550
716 286 0211 Fax

February 5, 2015

Mr. David Denk
New York State Department of
Environmental Conservation
Region 9
270 Michigan Avenue
Buffalo, New York 14203-2915

Re: Air State Facility Permit Modification Application – RMU-2

Dear Mr. Denk:

On October 24, 2014, the New York State Department of Environmental Conservation (NYSDEC) issued an Air State Facility Permit (DEC ID 9-2934-00022/00233) for the CWM Chemical Services, LLC., Model City, New York Facility. Attached please find two hard copies of an Air State Facility Permit Modification Application for the addition of Residuals Management Unit No. 2 (RMU-2), prepared by Conestoga-Rovers & Associates, Inc. (CRA).

As directed by the Air State Facility Permit cover letter dated October 24, 2014, hard copies of the Air State Facility permit modification application for RMU-2 will be placed in the following repositories:

- The Youngstown Free Library in Youngstown;
- The Porter Town Hall in Youngstown;
- The Ransomville Free Library in Ransomville; and
- The Lewiston Free Library in Lewiston.

Please call Mr. Jonathan Rizzo at (716) 286-0354 or myself at (716) 286-0246 if you have any questions or comments.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Sincerely,
CWM CHEMICAL SERVICES, LLC

Jill A. Banaszak

Jill A. Banaszak
Technical Manager
Model City Facility

JPR/JAB/jpr
Attachment

cc:	A. Snyder	- NYSDEC/Region 9 (electronic copy)
	D. Stever	- NYSDEC/Region 9 (electronic copy)
	J. Strickland	- NYSDEC/Region 9 (electronic copy)
	M. Passuite	- NYSDEC/Region 9 (electronic copy)
	D. Weiss	- NYSDEC/Region 9 (electronic copy)
	P. Grasso	- NYSDEC/Region 9 (electronic copy)
	B. Rostami	- NYSDEC/Region 9 (electronic copy)
	C. Laport	- NYSDEC/Region 9 (electronic copy)
	J. Sacco	- NYSDEC/Region 9 (electronic copy)
	M. Cruden	- NYSDEC/Albany, NY (electronic copy)
	T. Killeen	- NYSDEC/Albany, NY (electronic copy)
	M. Mortefolio	- NYSDEC/Albany, NY (electronic copy)
	On-site Monitors	- NYSDEC/ Model City, NY (electronic copy)
	A. Park	- USEPA/Region II (electronic copy)
	N. Azzam	- USEPA/Region II (electronic copy)
	J. Devald	- NCHD/Lockport, NY (electronic copy)
	M. Mahar	- CWM/Model City, NY (electronic copy)
	J. Rizzo	- CWM/Model City, NY (electronic copy)
	D. Darragh	- Cohen & Grigsby/Pittsburgh, PA (electronic copy)
	EMD Subject File	
	Q & A	

CONESTOGA-ROVERS
& ASSOCIATES

www.CRAworld.com

Air State Facility Permit Modification
Proposed Residuals Management Unit 2

Prepared For:

CWM Chemical Services, LLC
Model City, NY

Conestoga-Rovers & Associates
2055 Niagara Falls Boulevard, Suite 3
Niagara Falls, New York 14304

February 2015 • 080335 • Report No. 3

Partners in Sustainability

Table of Contents

List of Figures
(Following Text)

List of Appendices

Section 1.0 Introduction

Conestoga-Rovers & Associates (CRA) has been retained by CWM Chemical Services, LLC (CWM) to prepare an Air State Facility Permit Modification (Modification) for the CWM facility (Facility or Site) located in Model City, New York. The Facility is proposing to modify the permit in order to authorize the construction and operation of the proposed Residuals Management Unit 2 (RMU-2) expansion.

The area encompassed by the proposed RMU-2 area is approximately 43.5 acres and will contain a total of six cells. A plan view of the proposed landfill expansion is provided in Figure 1.

1.1 Permit History

Based on the previous quantification of air emissions from the facility, in accordance with the guidance and regulations presented in 6 NYCRR Part 201, of the New York Code of Rules and Regulations (NYCRR), the facility had not historically qualified as a potential Title V or Air State Facility source prior to February 22, 2013. Therefore, emissions from sources not identified as Exempt or Trivial under 6 NYCRR Part 201-3, had been previously permitted with the New York State Department of Environmental Conservation (NYSDEC) Division of Air Resources in accordance with 6 NYCRR Part 201-4 (Minor Facility Registrations).

Table 1 of 6 NYCRR Part 201-9 presents the new 'Significant Mass Emission Rates for Persistent, Bioaccumulative and Toxic Compounds' and took effect on February 22, 2013. Any facility that has total emissions greater than the thresholds listed in the table for any compound must apply for an Air State Facility Permit or a Title V Permit. In 2013, CRA representatives conducted a thorough review of CWM facility operations and existing permit documentation in order to ascertain the level of air permitting required for the CWM Facility going forward. Based on this review, CRA in consultation with NYSDEC determined that an Air State Facility Permit Application was required for the Facility due to emissions of pesticides, PCBs and polycyclic organic matter (POM).

The Facility submitted an Air State Facility Permit Application in January 2014. NYSDEC issued an Air State Facility Permit for the CWM Facility on October 24, 2014.

1.2 Facility Information

The CWM Chemical Services, LLC (CWM), Model City Facility is located within the Erie-Niagara Region in the western section of New York State. The facility is situated on the boundary between the Towns of Lewiston and Porter in Niagara County. All hazardous waste management units are located within the Town of Porter. The facility's operations are authorized by a RCRA hazardous waste permit issued by NYSDEC and a TSCA (PCB) Approval issued by USEPA. The facility uses a number of processes for the proper storage, treatment and disposal of a variety of liquid and solid organic and inorganic hazardous waste and industrial non-hazardous waste. Storage, treatment and disposal capabilities include an aqueous waste treatment system, which includes phase separation, oxidation/reduction, neutralization, solids precipitation and filtration, biological treatment and carbon filtration. The treated effluent is stored in a facultative (fac) pond, qualified and discharged pursuant to the facility's State Pollutant Discharge Elimination System (SPDES) Permit. Other operations include waste stabilization; secure landfilling of approved solid waste, including PCBs; solvent and fuel blending processes; RCRA and TSCA container storage and transfer; landfill leachate collection, storage and treatment. As a RCRA permitted TSDF, CWM is subject to the hazardous waste regulations in 6 NYCRR Parts 370-376. This includes several regulations focused on minimizing the release of hazardous waste contaminants to the air: 373-2.28, Air Emission Standards for Equipment Leaks, and 373-2.29, Air Emission Standards for Tanks, Containers and Surface Impoundments. Figure 1 presents a layout of the CWM Facility.

The following summarizes the closed and active landfill units at the Facility:

Landfill Area	***Status***
SLF 1-6	Closed
SLF 7	Closed
SLF 10	Closed
SLF 11	Closed
SLF 12	Closed
RMU-1	Active

Section 2.0 Summary of Emissions

2.1 Emission Unit Descriptions

The objective of this emissions inventory is to quantify emissions from the proposed RMU-2 area. The CWM Facility consists of seven emission units as follows:

Emission Unit	Process	Source/Control	Description
1-LANDF	FUG	RMU01	RMU-1 Landfill (S)
		* RMU02	RMU-2 Landfill (S)
1-LEACH	LE1	SPIP1	Standpipes for SLF1-6, SLF-7, SLF-10 & SLF-11 Areas (S)
		LTNK1	Leachate Storage Tanks With Carbon Canisters (S)
		CARB1	Carbon Canisters for Leachate Tanks (C)
2-LEACH	LE2	SPIP2	Standpipes for SLF12, RMU-1 and RMU-2 Areas (S)
		LTNK2	Leachate Storage Tanks Without Carbon Canisters (S)
1-STABL	STB	STBTK	Stabilization Facility Tanks (S)
		BGH01	Baghouse #1 (C)
		BGH02	Baghouse #2 (C)
1-AQWTP	TRE	BIOTW	Biotowers (S)
		AQTNK	Aqueous Water Treatment Plant Tanks (S)
		CARB2	Carbon Canisters for AQWTP (C)
		SCRUB	Caustic Scrubber (C)
		PONDS	Facultative Ponds (S)
		FLTPR	Filter Press (S)
1-BOILR	HTR	BLR01	14.7 MMBtu/hr Fuel Oil Boiler (S)
		BLR02	5.23 MMBtu/hr Fuel Oil Boiler (S)
		BLR03	0.101 MMBtu/hr Fuel Oil Boiler (S)
1-FRPMP	PMP	FRPMP	Fire Pump Subject to 40 CFR 63, Subpart ZZZZ (S)

S = Emission Source   C= Control Device   *Proposed New Source

2.2 Exempt and Trivial Activities

Several activities/operations at the CWM facility are considered to be exempt from permitting pursuant to 6 NYCRR Part 201.3-2(c). These activities are:

i. Stationary or portable combustion installations with a maximum rated heat input capacity less than 10 million Btu/hr burning fuels other than coal or wood (paragraph 1, subparagraph i)

ii. Diesel generators rated < 400 HP (paragraph 3, subparagraph ii)
iii. Distillate fuel oil, residual fuel oil, and liquid asphalt storage tanks with storage capacities below 300,000 barrels (paragraph 21)
iv. Pressurized fixed roof tanks which are capable of maintaining a working pressure at all times to prevent emissions of volatile organic compound to the outdoor atmosphere (paragraph 22)
v. Storage tanks with capacities under 10,000 gallons (paragraph 25)
vi. Storage silos storing solid materials, provided all such silos are exhausted through an appropriate emission control device (paragraph 27)
vii. Cold cleaning degreasers with an open surface area of 11 square feet or less and an internal volume of 93 gallons or less or, having an organic solvent loss of 3 gallons per day or less (paragraph 39, subparagraph i)
viii. Ventilating and exhaust systems for laboratory operations. Laboratory operations do not include processes having a primary purpose to produce commercial quantities of materials (paragraph 40)

In addition, the following activities occurring at the Site are considered to be trivial pursuant to 6 NYCRR Section 201-3.3(c):

i. Exhaust systems for the storage of portable containers, drums, and bags of chemicals in rooms, buildings and warehouses (paragraph 5)
ii. Storage vessels, tanks and containers with a capacity of less than 750 gallons (paragraph 44)
iii. Transportable chemical containers including rail cars, portable tanks, totes and trailers (paragraph 67)
iv. The venting of compressed natural gas, butane or propane gas cylinders (paragraph 79)

Table 1 of the Updated Emissions Inventory (provided in Appendix A) delineates the sources at the Facility that are considered trivial or exempt.

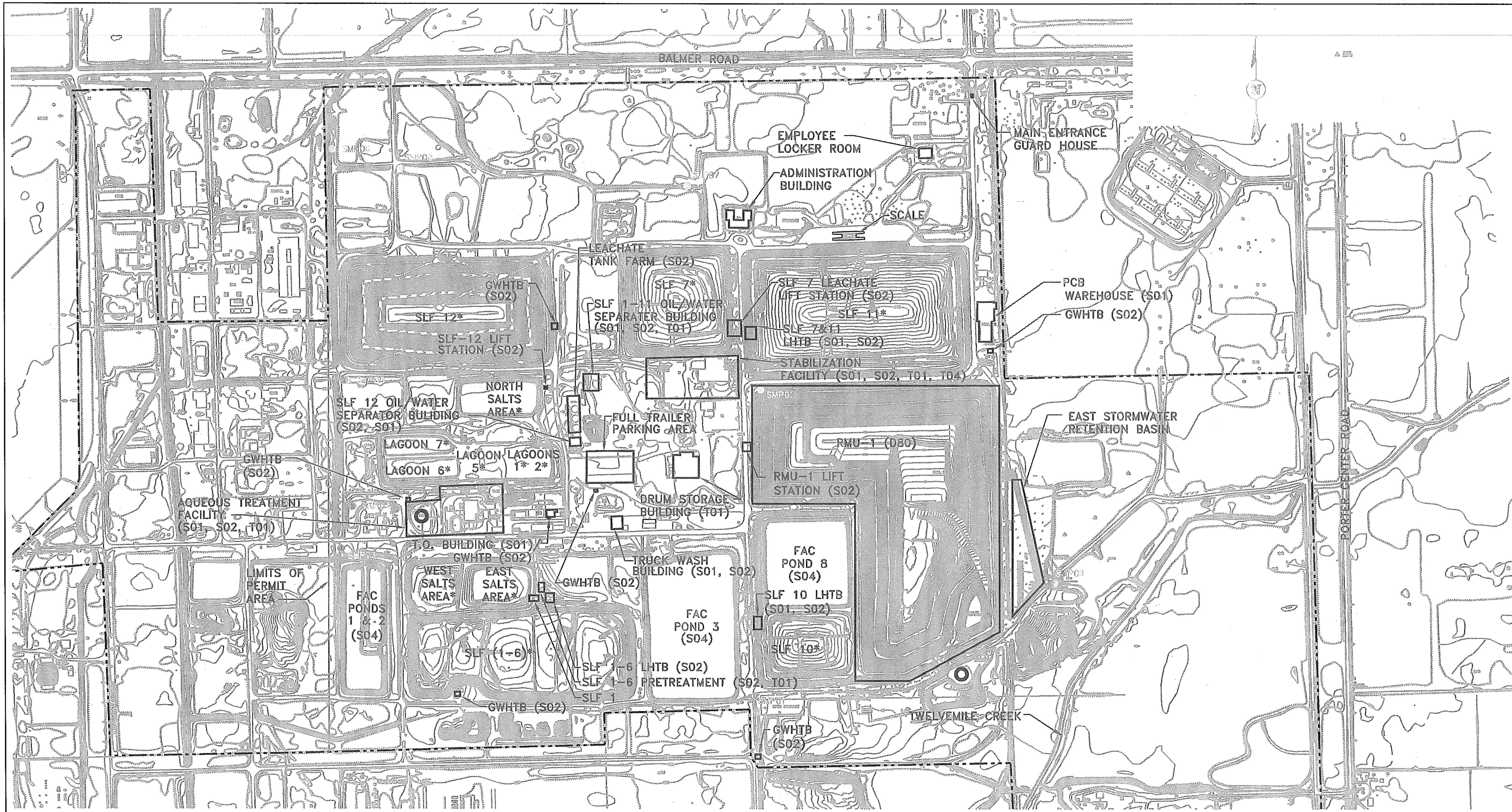
2.2 Summary of Emission Inventory

Based on a thorough review of information provided by CWM and on recent testing performed at the Site, CRA has compiled an Emission Inventory for the Facility, which is provided in Appendix A. Based on the increase in emissions for the proposed RMU-2 Area, the project qualifies as a modification to the Air State Facility Permit pursuant to 6 NYCRR 201-5.4(a). As shown in the table below, criteria pollutant emissions for the CWM facility are well below the State Facility Permit thresholds specified under 6 NYCRR Part 201-4.5(a):

	VOC	***HAP***	***PM$_{10}$***	***PM$_{2.5}$***	***CO***	***NO$_X$***	***SO$_2$***	***GHG***
	(TPY)	(TPY)	(TPY)	(TPY)	(TPY)	(TPY)	(TPY)	(TPY)
Existing Emission Units	2.7	0.8	7.4	5.7	1.9	4.7	3.5	4,863
Proposed RMU-2 Expansion	0.001	0.001	8.5	2.6	---	---	---	---
Total Facility Emissions	**2.7**	**0.8**	**15.9**	**8.3**	**1.9**	**4.7**	**3.5**	**4,863**
State Facility Permit Thresholds	**12.5**	**12.5**	**50**	**50**	**50**	**12.5**	**50**	**Undefined**

Section 3.0 Air Permit Application Forms

The NYSDEC air permit application forms for the proposed modification are presented in Appendix B.



LEGEND

SLF = SECURE LANDFILL
FAC = FACULTATIVE
LAG = LAGOON
* = INACTIVE
LHTB = LEACHATE HOLDING TANK BUILDING
GWHTB = GROUNDWATER COLLECTION HOLDING TANK BUILDING
D80 = LANDFILL
S01 = CONTAINER STORAGE

—·—·— PROPERTY LINE
——— LIMITS OF ACTIVE LANDFILL
S02 = TANK STORAGE
S04 = SURFACE IMPOUNDMENTS
T01 = TANK TREATMENT
T04 = OTHER TREATMENT
SMP09 ● = SURFACE MONITORING POINT (SMP)

NOTES:

1. THIS MAP COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED 5-31-01. (AIR SURVEY CORP. PROJECT NO.71010503)
2. VERTICAL DATUM BASED ON NGS MEAN SEA LEVEL.
3. GRID BASED ON LOCAL COORDINATE SYSTEM.
4. CONTOUR INTERVAL 2 FT.
5. DASHED CONTOURS INDICATE THAT GROUND IS PARTIALLY OBSCURED BY VEGETATION OR SHADOWS. THESE AREAS MAY NOT MEET STANDARD ACCURACY AND REQUIRE FIELD TESTING COMPLETION.
6. PROPERTY LINES ARE APPROXIMATE.
7. 630 PERMITTED ACRES.
8. 710 TOTAL ACRES.
9. LOCATION OF SMPs ARE APPROXIMATE.

EnSol, Inc. Environmental Solutions 452 THIRD STREET NIAGARA FALLS, NY 14301 PHONE (716) 285-3920 FAX (716) 285-3928	FACILITY LAYOUT PLAN CWM CHEMICAL SERVICES, LLC. MODEL CITY, NY	FIGURE 1

Appendix A

Updated Emission Inventory

www.CRAworld.com

Emissions Inventory

Residuals Management Unit 2
Model City, New York

Prepared for:

CWM Chemical Services
1550 Balmer Road
Model City, NY 14107

Conestoga-Rovers & Associates
Address
City, State/Province Postal/Zip Code

Partners in Sustainability

February 2015 • 080335 • Report No. 3 Appendix A

Table of Contents

List of Figures
(Following Text)

List of Tables
(Following Text)

List of Attachments

Section 1.0 Introduction

CRA has been retained by CWM to conduct an emissions inventory (Inventory) of the proposed RMU-2 area. The Inventory will also be used as a basis for the Air State Facility Permit Modification as well as to develop appropriate air permitting strategies for the Facility.

The CWM facility is an existing commercial hazardous waste treatment, storage, and disposal facility (TSDF) in Model City, Niagara County, New York. This TSDF began operation in 1972 as Chem-Trol Pollution Services, Inc. Due to corporate acquisitions and name changes, CWM, a subsidiary of Waste Management, Inc., is the present owner and operator of the facility.

Due to the promulgation of 6 NYCRR Part 201-9 (which took effect on February 22, 2013) that presented the new 'Significant Mass Emission Rates for Persistent, Bioaccumulative and Toxic Compounds,' the Facility submitted an Air State Facility Permit Application in January 2014. The New York State Department of Environmental Conservation issued an Air State Facility Permit for the CWM Facility on October 24, 2014. The Facility is proposing to modify the permit in order to authorize the construction and operation of the proposed RMU-2 landfill expansion.

The area encompassed by the proposed RMU-2 area is approximately 43.5 acres and will contain a total of six cells. A plan view of the proposed landfill expansion is provided in Figure 10.

Section 2.0 Facility Description

The CWM Model City Facility is located within the Erie-Niagara Region in the western section of New York State. The facility is situated on the boundary between the Towns of Lewiston and Porter in Niagara County. All hazardous waste management units are located within the Town of Porter. The facility's operations are authorized by a RCRA hazardous waste permit issued by NYSDEC and a TSCA (PCB) Approval issued by USEPA. The facility uses a number of processes for the proper storage, treatment and disposal of a variety of liquid and solid organic and inorganic hazardous waste and industrial non-hazardous waste. Storage, treatment and disposal capabilities include an aqueous waste treatment system, which includes phase separation, oxidation/reduction, neutralization, solids precipitation and filtration, biological treatment and carbon filtration. The treated effluent is stored in a facultative (fac) pond, qualified and discharged pursuant to the facility's SPDES Permit. Other operations include waste stabilization; secure landfilling of approved solid waste, including PCBs; solvent and fuel blending processes; RCRA and TSCA container storage and transfer; landfill leachate collection, storage and treatment. As a RCRA permitted TSDF, CWM is subject to the hazardous waste regulations in 6 NYCRR Parts 370-376. This includes several regulations focused on minimizing the release of hazardous waste contaminants to the air: 373-2.28, Air Emission Standards for Equipment Leaks, and 373-2.29, Air Emission Standards for Tanks, Containers and Surface Impoundments.

The Model City Facility began operations in 1971 as Chem-Trol Pollution Services, Inc. Activities included reclamation of waste oils, distillation of spent solvents, aqueous waste treatment, and land disposal. In 1973, the stock of Chem-Trol was purchased by SCA Services, Inc. The Chem-Trol name was retained until late 1978 at which time the corporate name changed to SCA Chemical Waste Services, Inc., and in 1981, was renamed SCA Chemical Services, Inc.

In October 1984, WM Acquiring Corp., owned jointly by Waste Management, Inc. (WMI), and Genstar, Inc., acquired SCA Services, Inc., of which SCA Chemical Services, Inc. was a subsidiary. Through a corporate reorganization in October 1986, SCA Chemical Services, Inc. became a wholly owned subsidiary of Chemical Waste Management, Inc. (CWM), itself majority-owned by Waste Management, Inc. In July 1988, the corporate name SCA Chemical Services, Inc. was changed to CWM Chemical Services, Inc. CWM Chemical Services, Inc. became a limited liability company in January 1998 and became CWM Chemical Services, LLC. CWM Chemical Services, LLC, is the owner and operator of the Model City Facility.

The following summarizes the closed and active landfill units at the Facility:

Landfill Area	Status
SLF 1-6	Closed
SLF 7	Closed
SLF 10	Closed
SLF 11	Closed
SLF 12	Closed
RMU-1	Active
RMU-2	Proposed

Section 3.0 Facility Emission Unit Descriptions

The following sections present discussions of the emissions estimated for the sources identified at the Facility. Supporting calculations are provided as referenced. Emissions from the proposed RMU-2 area consist primarily of:

- Fugitive dust emissions from construction and operation activities in the RMU-2 area.
- Emissions due to the collection and storage of RMU-2 leachate.

3.1 Fugitive Dust Emissions

Off-road particulate matter (PM) emissions are primarily caused by the moving and handling of soil by heavy equipment such as loaders and bulldozers. The emissions were calculated based on the equipment and hours of operation for both operational and construction vehicles, and include such activities as soil handling and waste placement.

Operational vehicles and waste hauling vehicles also generate particulate emissions from traveling on both the paved and unpaved roads at the Facility. These emissions differ from those discussed above since they consider PM that is stirred up by vehicle tires on the road surface as opposed to the actual movement of soil. PM road dust emissions were calculated based on information provided by the Facility, which include vehicle traffic, such as types of equipment and roads/paths traveled, as well as distances traveled and hours of operation. Figures 1 through 9 provide a description of the road segments and vehicle traffic routes for the different truck types that operate at the Facility. It should be noted that there are no changes proposed to the types or volumes of waste accepted. In addition, there are no major changes proposed to traffic volumes at the Facility. There are relatively minor changes that will alter traffic routes for some vehicles; certain vehicles, such as landfill disposal vehicles, will even travel shorter distances as a result of the project.

CRA utilized a series of United States Environmental Protection Agency (USEPA) published emission factors and emission factor equations in the performance of this work. Emissions are based on routine operations for a typical year of landfill operation. Attachment 1 presents the calculation of fugitive PM-10 dust emissions for the Facility. Attachment 2 presents the calculation of fugitive PM-2.5 dust emissions for the Facility.

The fugitive dust emission calculations were prepared based on a very conservative scenario that landfill operations in RMU-2, final cover construction in RMU-1, cell construction in RMU-2 and construction of facultative pond 5 will all occur simultaneously.

3.2 Leachate Collection and Storage

This section provides a summary of emissions from the collection, transfer and storage of leachate at the Facility.

3.2.1 Standpipes and Sideslope Risers

Emissions occur within the landfill standpipes and sideslope risers due to the evaporation of leachate to the atmosphere. The calculation methodology for leachate emissions from the landfill standpipes and sideslope risers was taken from the USEPA paper, *"Overall Mass Transfer Coefficient for Pollutant Emissions From Small Water Pools Under Simulated Indoor*

Environmental Conditions (Guo, Z. and Roache, N.F., December 20, 2002)" [See Attachment 3 for paper]. The exposed surface area for the RMU-2 landfill area was calculated by summing the following individual standpipe areas:

- Six (6) 24-inch HDPE vertical risers
- Six (6) 24-inch HDPE sideslope risers
- Twelve (12) 8-inch HDPE sideslope cleanouts

Table 2 presents a summary of VOC and HAP emissions from the RMU-2 standpipes. Individual VOC and HAP concentrations within the leachate in RMU-2 were based on the maximum detected value from the following historical sampling results (see Attachment 4):

- Periodic sampling results for individual RMU-1 standpipes between May 2006 and February 2013
- Periodic sampling results for Tank T-102 between April 2012 and April 2013
- Periodic sampling results for Tank T-160 (lift station for RMU-1 Landfill) between January 31, 2012 and February 15, 2012

It is assumed, since the types and volume of wastes received is not proposed to change, that the leachate collected from the RMU-2 Landfill will have a similar composition and generation rate to that of the RMU-1 Landfill.

Section 4.0 Emission Discussion

The following table summarizes the calculated change in emissions due to the proposed RMU-2 Expansion:

	VOC (TPY)	***HAP (TPY)***	***PM10 (TPY)***	***PM2.5 (TPY)***	***CO (TPY)***	***NOX (TPY)***	***SO2 (TPY)***	***GHG (TPY)***
Existing Emission Units	2.7	0.8	7.4	5.7	1.9	4.7	3.5	4,863
Proposed RMU-2 Expansion	0.001	0.001	8.5	2.6	---	---	---	---
Total Facility Emissions	2.7	0.8	15.9	8.3	1.9	4.7	3.5	4,863

Table 1 presents a detailed summary of emissions for the CWM Facility broken down by emission source. Based on the total change in emissions, the RMU-2 Expansion is considered a modification to the Air State Facility Permit, pursuant to 6 NYCRR 201-5.4(a).

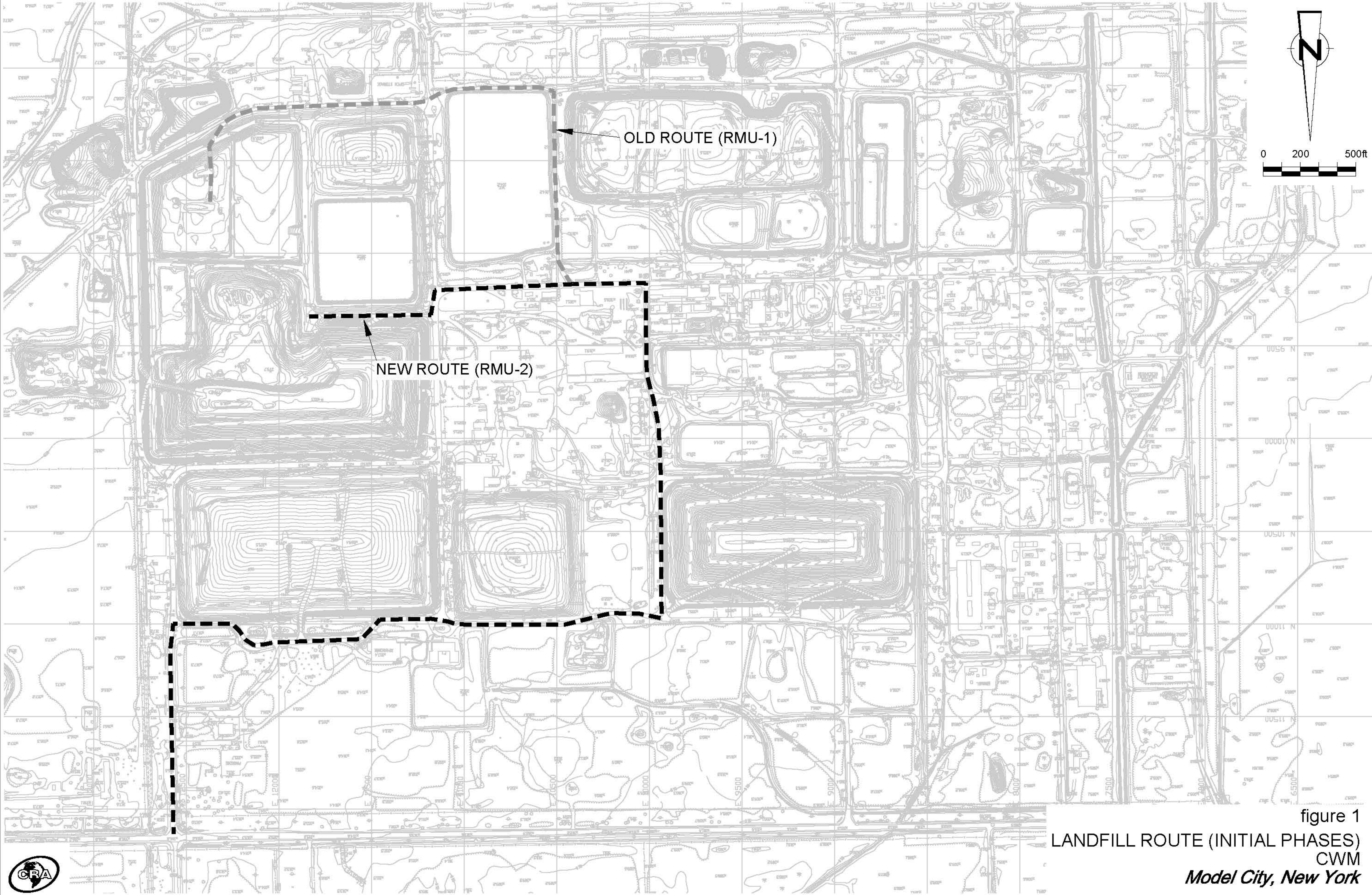


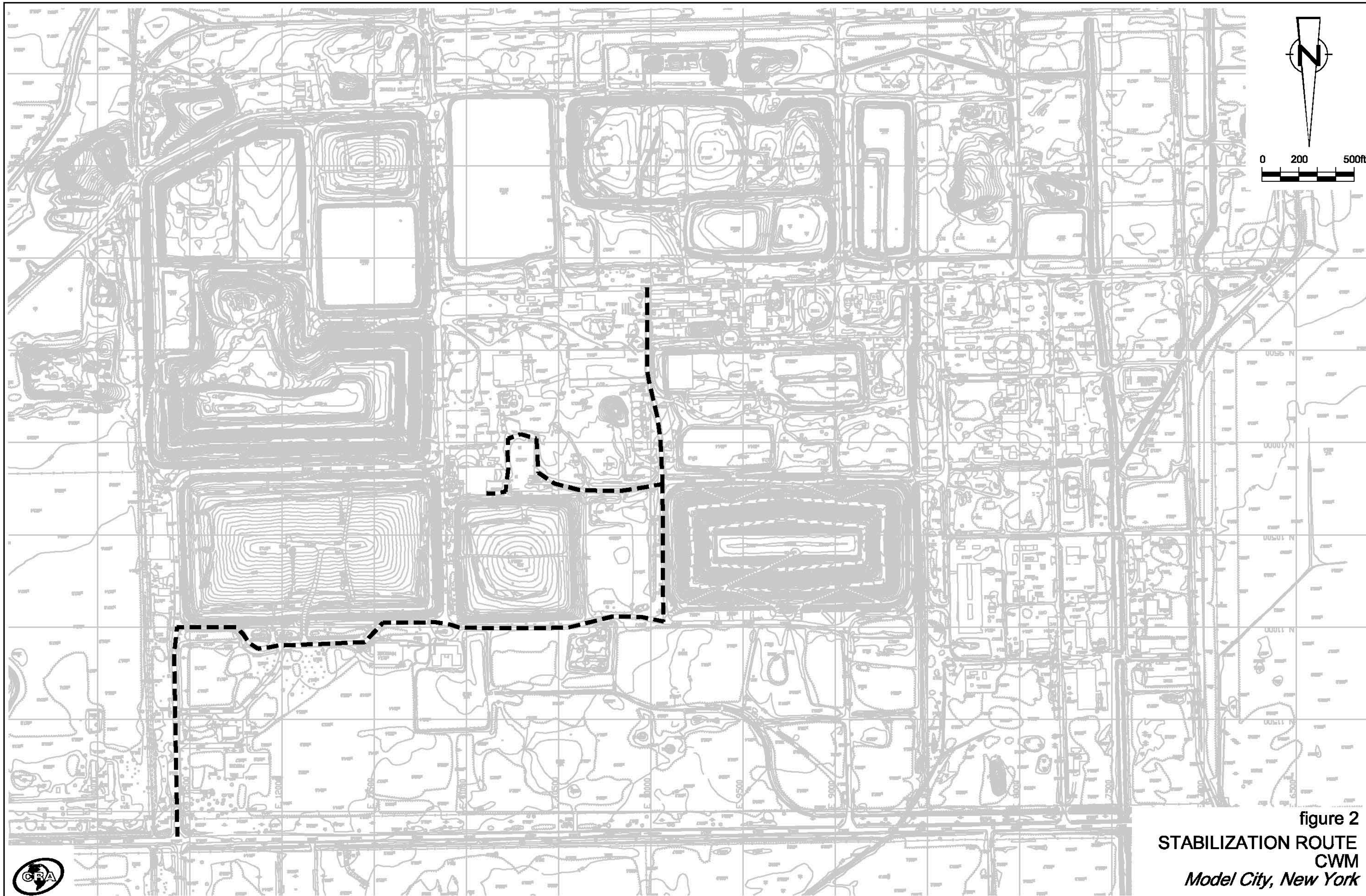
figure 1

LANDFILL ROUTE (INITIAL PHASES)

CWM

Model City, New York

80335-00(001)GN-NI001 JAN 12/2015



48312-00(001)GN-NI002 OCT 29/2007

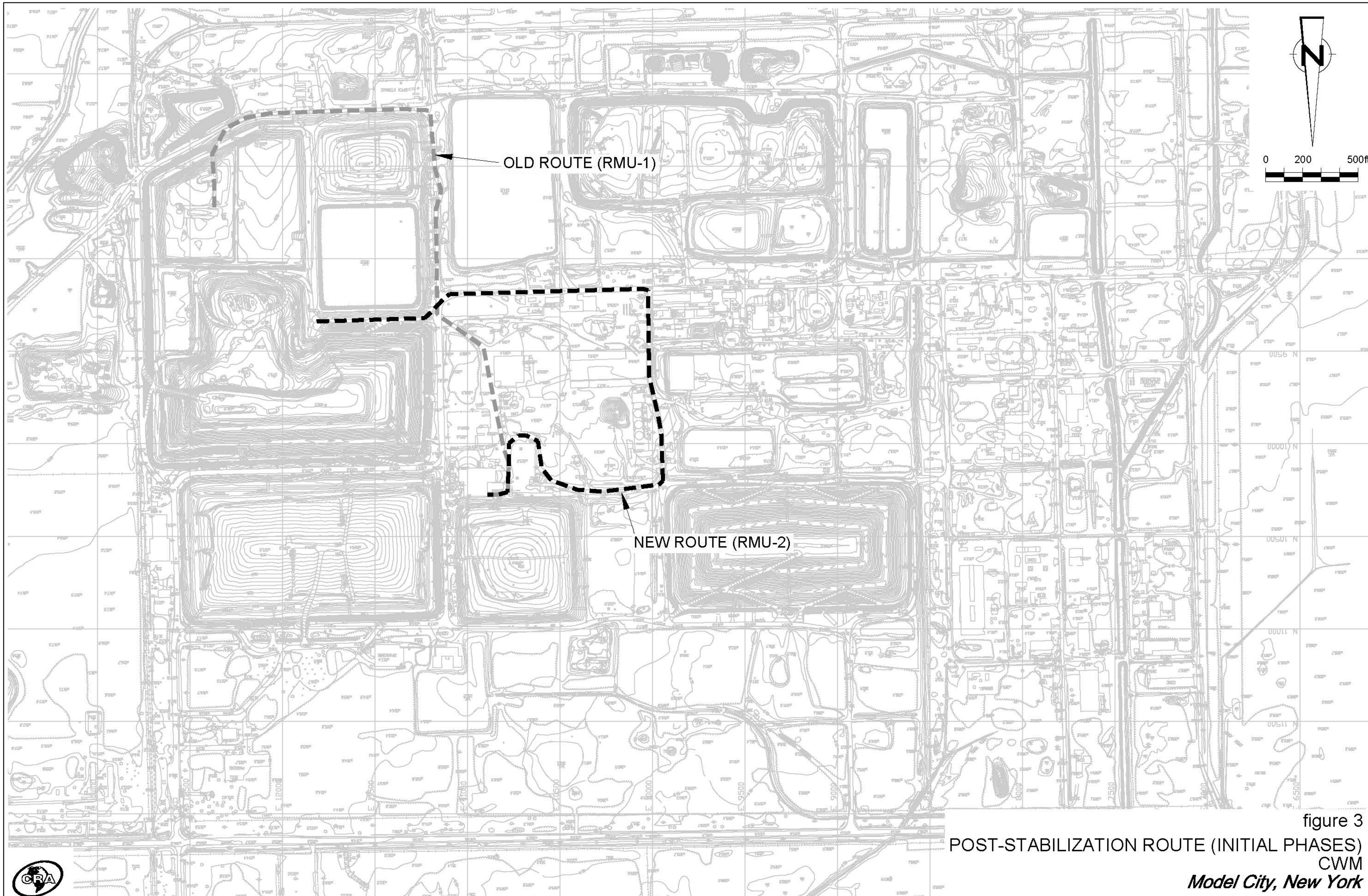


figure 3
POST-STABILIZATION ROUTE (INITIAL PHASES)
CWM
Model City, New York

80335-00(001)GN-NI003 JAN 12/2015

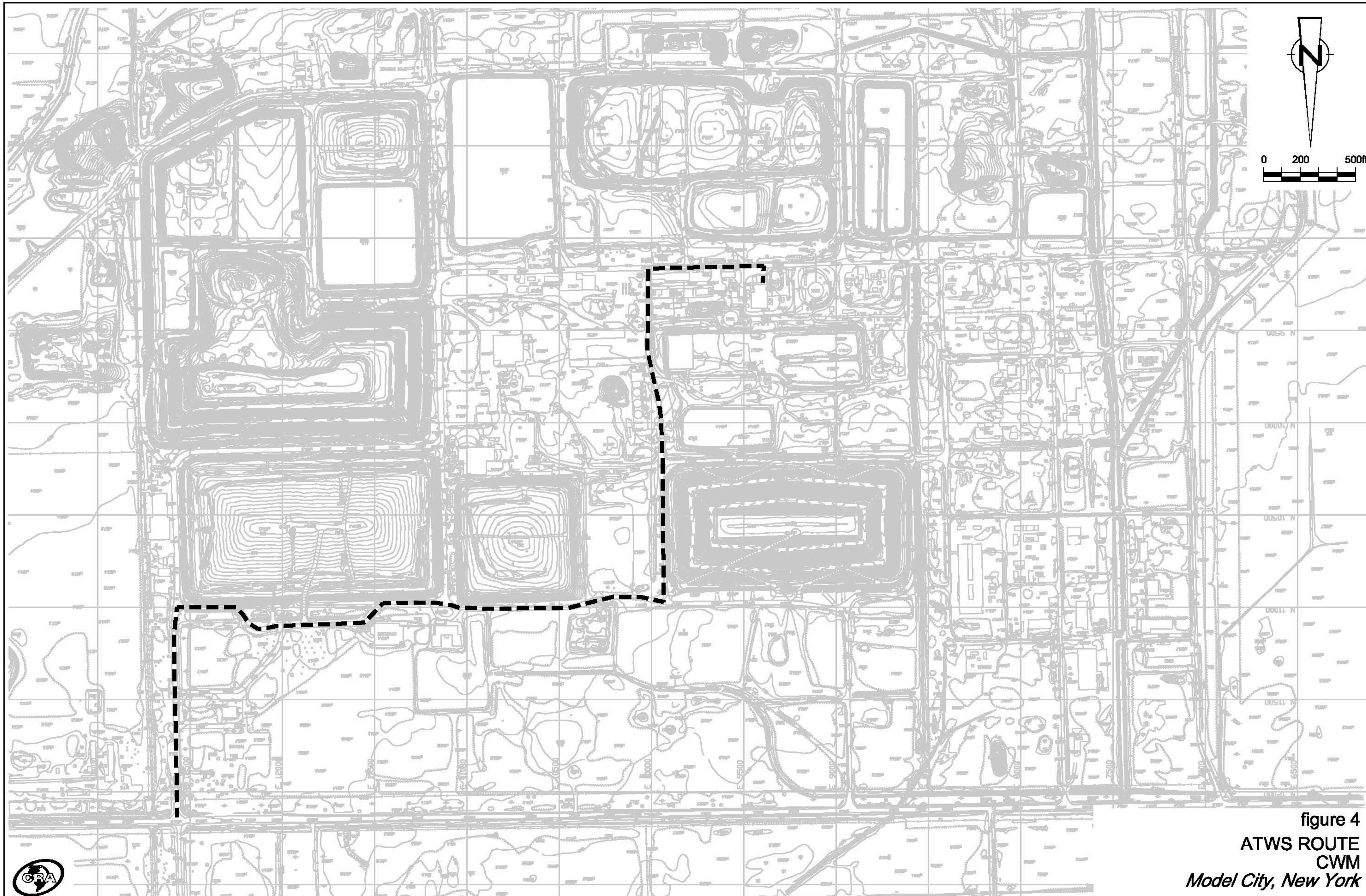


figure 4
ATWS ROUTE
CWM
Model City, New York

48312-00(001)GN-NI004 OCT 29/2007

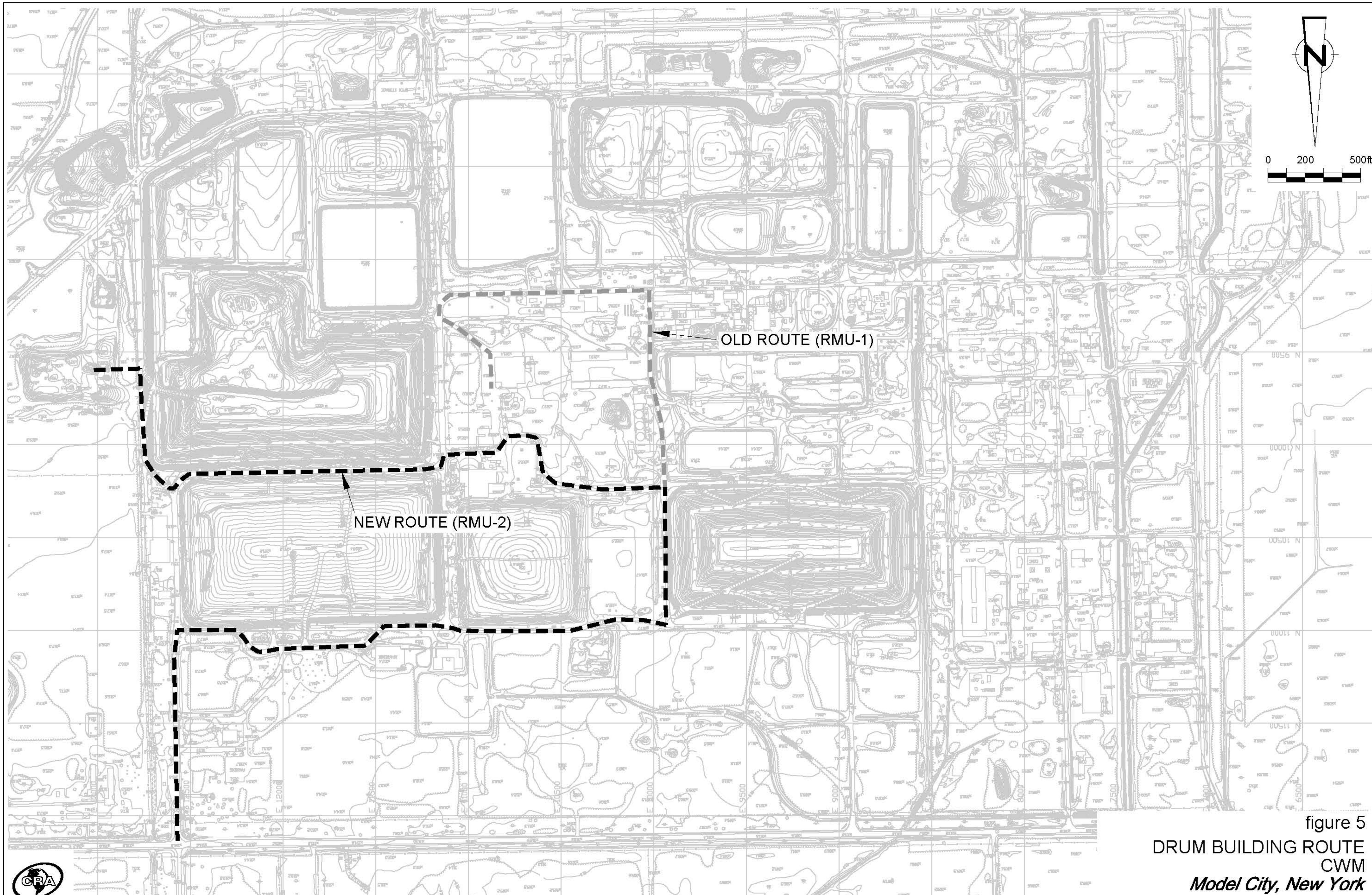


figure 5
DRUM BUILDING ROUTE
CWM
Model City, New York

80335-00(001)GN-NI005 JAN 19/2015

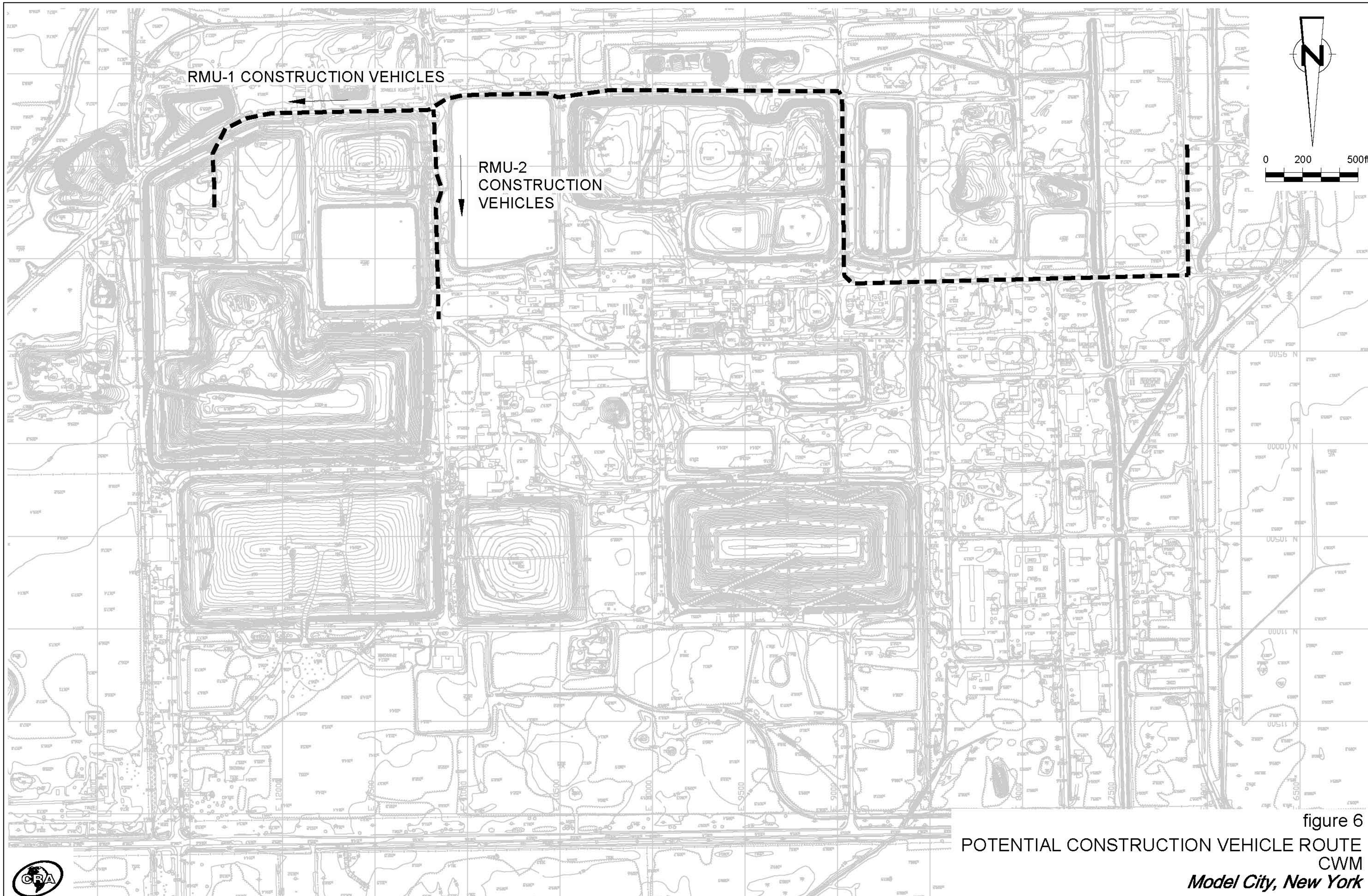


figure 6
POTENTIAL CONSTRUCTION VEHICLE ROUTE
CWM
Model City, New York

80335-00(001)GN-NI006 JAN 12/2015

figure 7
MAIN OFFICE ROUTE
CWM
Model City, New York

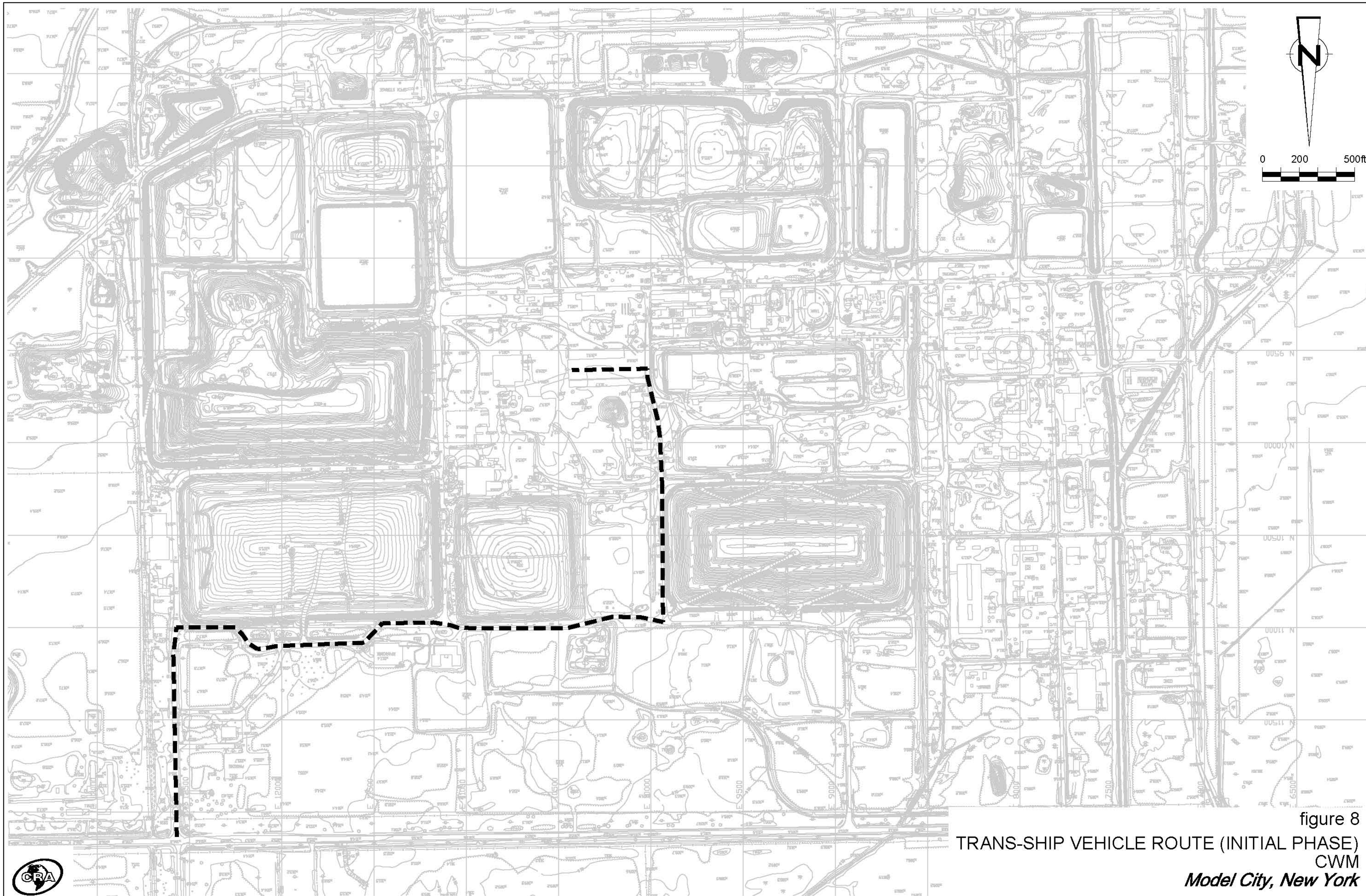
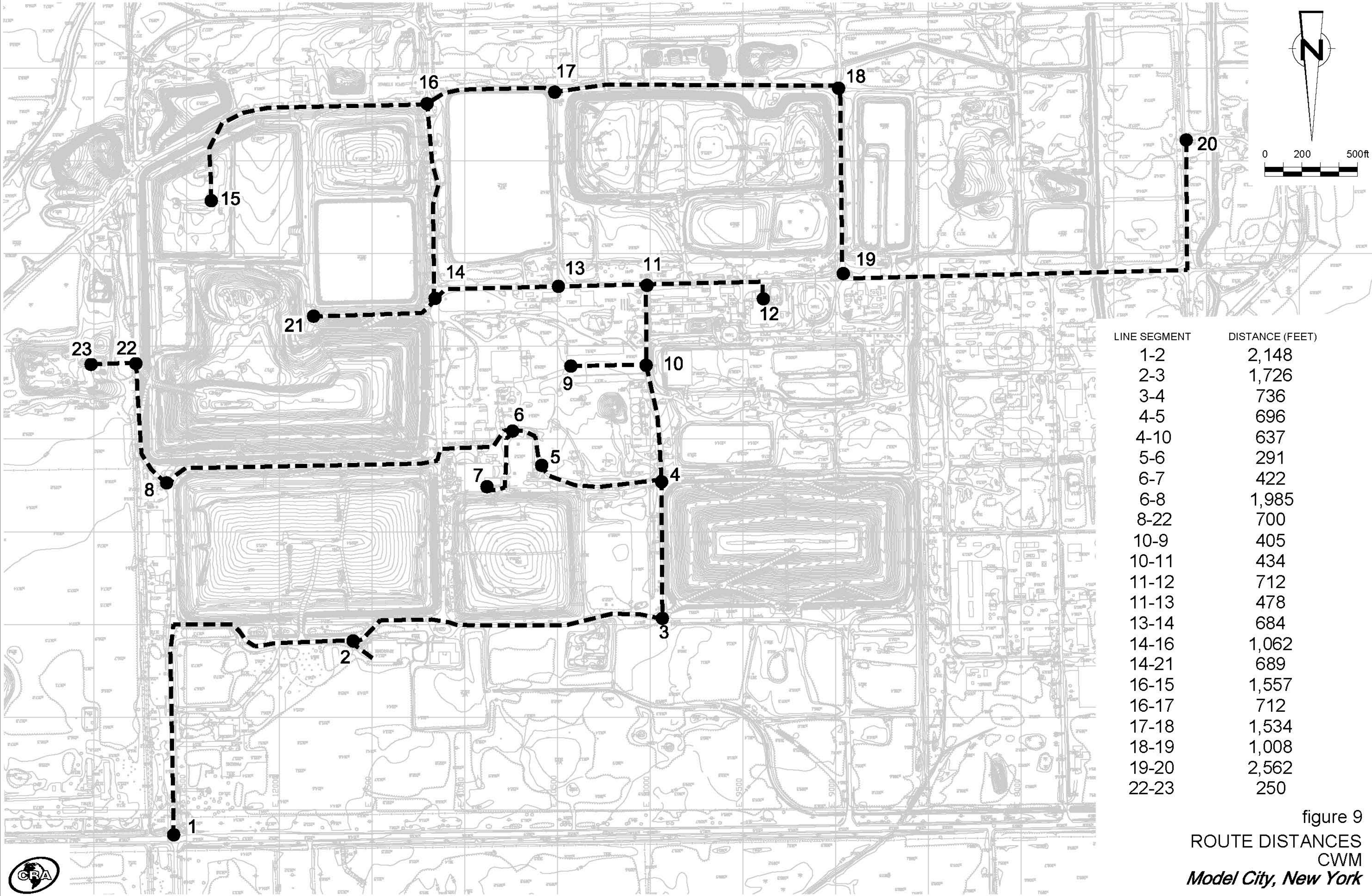


figure 8
TRANS-SHIP VEHICLE ROUTE (INITIAL PHASE)
CWM
Model City, New York

80335-00(001)GN-NI008 JAN 12/2015



LINE SEGMENT	DISTANCE (FEET)
1-2	2,148
2-3	1,726
3-4	736
4-5	696
4-10	637
5-6	291
6-7	422
6-8	1,985
8-22	700
10-9	405
10-11	434
11-12	712
11-13	478
13-14	684
14-16	1,062
14-21	689
16-15	1,557
16-17	712
17-18	1,534
18-19	1,008
19-20	2,562
22-23	250

figure 9

ROUTE DISTANCES

CWM

Model City, New York

80335-00(001)GN-NI009 JAN 12/2015

TABLE 1

FACILITY EMISSION SUMMARY
EMISSIONS INVENTORY
CWM CHEMICAL SERVICES, LLC

Emissions (lb/year)

Emission Source	Exempt/ Trivial	Exempt / Trivial Basis	VOC	HAP	CO	NOx	SO_2	PM-10	PM-2.5	Carbon Tetrachloride	Chloroform	Benzene	Methylene Chloride	TCE	Acrylonitrile	Pesticides, Herbicides, Insecticides	PCBs	POM	CO_2	CH_4	N_2O	Arsenic	Cadmium	Chromium	Manganese	Nickel
SLF 1-6 Standpipes	N	---	391.2	382.9	-	-	-	-	-	0.3	6.6	0.8	183.4	22.1	0.07	0.2	7.3	2.1	-	-	-	-	-	-	-	-
SLF 7 Standpipes	N	---	21.6	40.7	-	-	-	-	-	0.0	0.0	0.0	35.4	0.0	0.00	0.0	0.1	-	-	-	-	-	-	-	-	-
SLF 10 Standpipes	N	---	22.1	26.7	-	-	-	-	-	0.0	0.0	0.0	17.4	0.0	0.00	0.0	1.1	-	-	-	-	-	-	-	-	-
SLF 11 Standpipes	N	---	12.2	5.4	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.00	0.0	1.9	-	-	-	-	-	-	-	-	-
SLF 12 Standpipes	N	---	0.07	0.07	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	-	-	-	-	-	-	-	-	-
RMU-1 Standpipes	N	---	3.0	3.0	-	-	-	-	-	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	-	-	-	-	-	-	-	-	-
RMU-2 Standpipes	N	---	2.1	2.0	-	-	-	-	-	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0									
RMU-1 Capping	N	---	-	-	-	-	-	2,107.4	1,012.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RMU-2 Construction	N	---	-	-	-	-	-	13,869.0	4,202.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RMU-2 Operations	N	---	-	-	-	-	-	15,062.1	10,773.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stabilization Baghouse #1	N	---	-	-	-	-	-	33.8	33.8	-	-	-	-	-	-	-	-	0.01	-	-	-	0.00	0.00	0.14	0.01	0.96
Stabilization Baghouse #2	N	---	-	-	-	-	-	18.8	18.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cement Kiln Silo	Y	6 NYCRR 201-3.2(c)(27)	-	-	-	-	-	3.8	3.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lime Silo	Y	6 NYCRR 201-3.2(c)(27)	-	-	-	-	-	67.1	67.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tank T-101 [C]	N	---	0.05	0.1	-	-	-	-	-	-	-	-	0.05	-	-	-	E	-	-	-	-	-	-	-	-	-
Tank T-102	N	---	0.05	0.08	-	-	-	-	-	-	-	-	0.05	-	-	-	E	-	-	-	-	-	-	-	-	-
Tank T-103	N	---	1.45	1.89	-	-	-	-	-	-	0.01	0.00	0.90	0.00	0.00	-	E	-	-	-	-	-	-	-	-	-
Tank T-105	Y	6 NYCRR 201-3.2(c)(25)	0.67	1.32	-	-	-	-	-	0.01	0.03	0.00	0.70	0.22	-	-	E	-	-	-	-	-	-	-	-	-
Tank T-107	Y	6 NYCRR 201-3.3(c)(44)	0.00	0.01	-	-	-	-	-	-	-	-	0.01	-	-	-	E	-	-	-	-	-	-	-	-	-
Tank T-108	N	---	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	E	-	-	-	-	-	-	-	-	-
Tank T-109	Y	6 NYCRR 201-3.2(c)(25)	0.00	0.00	-	-	-	-	-	-	-	-	0.00	-	-	-	E	-	-	-	-	-	-	-	-	-
Tank T-110	Y	6 NYCRR 201-3.3(c)(44)	0.00	0.00	-	-	-	-	-	-	-	-	0.00	-	-	-	E	-	-	-	-	-	-	-	-	-
Tank T-111	Y	6 NYCRR 201-3.3(c)(44)	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	E	-	-	-	-	-	-	-	-	-
Tank T-130	Y	6 NYCRR 201-3.2(c)(25)	0.73	1.42	-	-	-	-	-	0.01	0.04	0.00	0.75	0.23	-	-	E	-	-	-	-	-	-	-	-	-
Tank T-150	Y	6 NYCRR 201-3.2(c)(25)	0.00	0.19	-	-	-	-	-	-	-	-	0.19	-	-	-	E	-	-	-	-	-	-	-	-	-
Tank T-158	N	---	2.06	4.02	-	-	-	-	-	0.02	0.10	0.01	2.12	0.66	-	-	E	-	-	-	-	-	-	-	-	-
Tank T-160	Y	6 NYCRR 201-3.2(c)(25)	0.00	1.07	-	-	-	-	-	-	-	-	1.07	-	-	-	E	-	-	-	-	-	-	-	-	-
Tank T-165	N	---	7.30	3.92	-	-	-	-	-	-	-	-	-	-	-	-	3.5	-	-	-	-	-	-	-	-	-
Tank T-8001	Y	6 NYCRR 201-3.2(c)(25)	0.00	0.00	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-
Tank T-8002	Y	6 NYCRR 201-3.3(c)(44)	0.00	0.00	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-
Tank T-8004	Y	6 NYCRR 201-3.3(c)(44)	0.00	0.00	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-
Tank T-8005	Y	6 NYCRR 201-3.3(c)(44)	0.00	0.00	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-
Tank T-8006	Y	6 NYCRR 201-3.3(c)(44)	0.00	0.00	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-
Tank T-8007	Y	6 NYCRR 201-3.3(c)(44)	0.00	0.00	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-
Tank T-8008	Y	6 NYCRR 201-3.3(c)(44)	0.00	0.00	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-
Tank T-8009	Y	6 NYCRR 201-3.3(c)(44)	0.00	0.00	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-
Tank T-8010	Y	6 NYCRR 201-3.2(c)(25)	0.00	0.00	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-
Tank T-100	N	---	0.10	0.22	-	-	-	-	-	-	0.00	0.00	0.22	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-
Tank T-210	N	---	0.42	0.56	-	-	-	-	-	-	0.00	0.00	0.27	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-
Tank T-220	N	---	0.42	0.56	-	-	-	-	-	-	0.00	0.00	0.27	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-
Tank T-230	N	---	0.42	0.56	-	-	-	-	-	-	0.00	0.00	0.27	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-
Tank T-1010	N	---	0.29	0.39	-	-	-	-	-	-	0.00	0.00	0.19	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-

TABLE 1

FACILITY EMISSION SUMMARY
EMISSIONS INVENTORY
CWM CHEMICAL SERVICES, LLC

Emission Source	Exempt/ Trivial	Exempt / Trivial Basis	VOC	HAP	CO	NOx	SO_2	PM-10	PM-2.5	Carbon Tetrachloride	Chloroform	Benzene	Methylene Chloride	TCE	Acrylonitrile	Pesticides, Herbicides, Insecticides	PCBs	POM	CO_2	CH_4	N_2O	Arsenic	Cadmium	Chromium	Manganese	Nickel
										Emissions (lb/year)																
Tank T-1020	Y	6 NYCRR 201-3.2(c)(25)	0.24	0.32	-	-	-	-	-	-	0.00	0.00	0.16	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-
Tank T-310	N	---	0.02	0.01	-	-	-	-	-	-	0.00	0.00	0.01	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-
Tank T-320	N	---	0.02	0.01	-	-	-	-	-	-	0.00	0.00	0.01	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-
Tank T-3001	Y	6 NYCRR 201-3.2(c)(25)	0.01	0.03	-	-	-	-	-	-	0.00	0.00	0.03	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-
Tank T-3002	Y	6 NYCRR 201-3.2(c)(25)	0.01	0.03	-	-	-	-	-	-	0.00	0.00	0.03	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-
Tank T-3003	Y	6 NYCRR 201-3.2(c)(25)	0.01	0.03	-	-	-	-	-	-	0.00	0.00	0.03	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-
T-3007/3008 Carbon Adsorbers [A]	Y	6 NYCRR 201-3.2(c)(22)	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tank T-3009	Y	6 NYCRR 201-3.2(c)(25)	0.01	0.00	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-
Tanks T-3010 A/B/C/D [A]	Y	6 NYCRR 201-3.3(c)(44)	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tank T-3011	Y	6 NYCRR 201-3.3(c)(44)	0.01	0.00	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-
Tank T-3012	Y	6 NYCRR 201-3.3(c)(44)	0.01	0.03	-	-	-	-	-	-	0.00	0.00	0.03	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-
Frac Tank #3	N	---	0.01	0.05	-	-	-	-	-	-	0.00	0.00	0.05	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-
Biotower Exhaust	N	---	0.004	0.007	-	-	-	0.0	0.0	0.0	0.0	0.0	0.004	0.0	0.0	-	-	-	-	-	-	-	-	-	-	-
Tanks T-1111 / T-1112 [B]	Y	6 NYCRR 201-3.3(c)(44)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Filter Press	N	---	-	129.0	-	-	-	-	-	-	-	-	129.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Tank T-710 [D]	Y	6 NYCRR 201-3.2(c)(25)	3.5	3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tank T-810 [D]	Y	6 NYCRR 201-3.2(c)(25)	3.5	3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tank T-820 [D]	Y	6 NYCRR 201-3.2(c)(25)	3.5	3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T-830/T-840 Ferrous Sulfate Tanks [B]	Y	6 NYCRR 201-3.2(c)(25)	0.0	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tank T-850 [D]	Y	6 NYCRR 201-3.2(c)(25)	0.0	0.0	-	-	-	4.4	4.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tank T-58 [B]	N	---	0.0	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tank T-125 [B]	N	---	0.0	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fac Pond 1 & 2 [B]	N	---	0.0	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tank T-910 [B]	Y	6 NYCRR 201-3.2(c)(25)	0.0	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tank T-1310 [B]	Y	6 NYCRR 201-3.3(c)(44)	0.0	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tank T-1410 [B]	Y	6 NYCRR 201-3.2(c)(25)	0.0	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Drum Storage Building Ventilation [B]	Y	6 NYCRR 201-3.3(c)(5)(ii)	0.0	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PCB Drum Building Ventilation [B]	Y	6 NYCRR 201-3.3(c)(5)(ii)	0.0	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.7 MMBtu/hr Fuel Oil Boiler	N	---	19.1	-	378.0	1,512.0	2,147.0	75.6	75.6	-	-	-	-	-	-	-	-	-	1,685,880	3.93	19.66	-	-	-	-	-
5.23 MMBtu/hr Fuel Oil Boiler	Y	6 NYCRR 201-3.2(c)(1)(i)	41.4	-	821.3	3,285.0	4,664.7	164.3	164.3	-	-	-	-	-	-	-	-	-	3,662,775	8.54	42.71	-	-	-	-	-
0.101 MMBtu/hr Fuel Oil Boiler	Y	6 NYCRR 201-3.2(c)(1)(i)	0.8	-	15.9	63.4	90.1	3.2	3.2	-	-	-	-	-	-	-	-	-	70,716	0.16	0.82	-	-	-	-	-
0.506 MMBtu/hr Propane Boiler	Y	6 NYCRR 201-3.2(c)(1)(i)	24.4	-	182.7	316.6	0.5	17.0	17.0	-	-	-	-	-	-	-	-	-	304,434	4.87	21.92	-	-	-	-	-
1.34 MMBtu/hr Propane Boiler	Y	6 NYCRR 201-3.2(c)(1)(i)	64.5	-	483.7	838.5	1.3	45.1	45.1	-	-	-	-	-	-	-	-	-	806,209	12.90	58.05	-	-	-	-	-
2 - 0.16 MMBtu/hr Propane Heaters	Y	6 NYCRR 201-3.2(c)(1)(i)	15.4	-	115.5	200.2	0.3	10.8	10.8	-	-	-	-	-	-	-	-	-	192,527	3.08	13.86	-	-	-	-	-
4 MMBtu/hr Propane Heater	Y	6 NYCRR 201-3.2(c)(1)(i)	192.5	-	1,444.0	2,502.9	3.9	134.8	134.8	-	-	-	-	-	-	-	-	-	2,406,593	38.51	173.27	-	-	-	-	-
2 - 0.4 MMBtu/hr Propane Heaters	Y	6 NYCRR 201-3.2(c)(1)(i)	38.5	-	288.8	500.6	0.8	27.0	27.0	-	-	-	-	-	-	-	-	-	481,319	7.70	34.65	-	-	-	-	-
Diesel Engine	Y	6 NYCRR 201-3.2(c)(3)(ii)	11.2	-	30.0	139.1	9.2	9.9	9.9	-	-	-	-	-	-	-	-	-	5,161.2	-	-	-	-	-	-	-
Laboratory Emissions	Y	6 NYCRR 201-3.2(c)(40)	777.3	785.9	-	-	-	58.5	58.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Safety Kleen Parts Washer [B]	Y	6 NYCRR 201-3.2(c)(39)	0.0	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Septic Tanks [B]	Y	6 NYCRR 201-3.3(c)(39)	0.0	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T-27 20,000 gal Fuel Oil Tank	Y	6 NYCRR 201-3.2(c)(21)	9.6	9.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Propane Storage Tanks [A]	Y	6 NYCRR 201-3.3(c)(79)	0.0	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
275-gal Kerosene Tank	Y	6 NYCRR 201-3.3(c)(44)	0.03	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Two 1,000-gal Gasoline Tanks	Y	6 NYCRR 201-3.2(c)(25)	154.4	154.4	-	-	-	-	-	-	-	7.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,000-gal Diesel Fuel Tank	Y	6 NYCRR 201-3.2(c)(25)	0.2	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
117-gal Diesel Fuel Tank	Y	6 NYCRR 201-3.2(c)(25)	0.03	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
325-gal Engine Oil Tank	Y	6 NYCRR 201-3.2(c)(25)	23.8	23.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
325-gal Engine Oil Tank	Y	6 NYCRR 201-3.2(c)(25)	23.8	23.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
270-gal Engine Oil Tank	Y	6 NYCRR 201-3.2(c)(25)	2.4	2.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,500-gal Fuel Oil Tank	Y	6 NYCRR 201-3.2(c)(25)	0.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fuel Transfer Operation	Y	6 NYCRR 201-3.3(c)(67)	3,200.0	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Drum Sampling	Y	6 NYCRR 201-3.3(c)(5)(i)	420.0	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTALS (lb/year)			5,496.6	1,617.7	3,759.7	9,358.3	6,917.7	31,712.3	16,663.0	0.3	6.7	8.5	374.7	23.3	0.07	0.2	14.1	2.1	9,615,614.6	79.7	364.9	0.0	0.0	0.1	0.0	1.0
TOTALS (TPY)			2.7	0.8	1.9	4.7	3.5	15.9	8.3	0.00	0.00	0.00	0.19	0.01	0.00	0.00	0.01	0.00	4,807.81	0.04	0.18	0.00	0.00	0.00	0.00	0.00
MFR Threshold			25 TPY	12.5 TPY	50.0 TPY	50.0 TPY	50.0 TPY	50.0 TPY	50.0 TPY	100 lb/yr	100 lb/yr	100 lb/yr	5,000 lb/yr	1,000 lb/yr	25 lb/yr	0 lb/yr	0.1 lb/yr	1 lb/yr	50,000 TPY	-	-	1 lb/yr	25 lb/yr	250 lb/yr	10 lb/yr	10 lb/yr

Notes:

A - There are no emissions from these tanks because they are sealed vessels with no vent to the atmosphere

B - These sources either do not have quantifiable emissions and/or do not emit regulated air pollutants

C - Tank T-101 is on standby for RMU-1 leachate; assume emissions are equal to Tank T-102

D - Referenced from April 2006 Emission Inventory

E - PCB compounds are not included in the USEPA Tanks 40.9d program and could not be modeled; it is assumed that PCB emissions from these storage tanks are negligible

TABLE 2

ESTIMATED VOC AND HAP EMISSIONS FROM RMU-2 STANDPIPES
EMISSIONS INVENTORY
CWM CHEMICAL SERVICES, LLC

Detected Compounds	CAS Number	VOC	HAP	Mol. Weight (g/mol)	Leachate Concentration [2] (µg/L)	Leachate Concentration (µg/m³)	# Carbon Atoms	# Hydrogen Atoms	# Oxygen Atoms	# Chloride Atoms	# Fluorine Atoms	# Sulfur Atoms	# Bromine Atoms	# Nitrogen Atoms
Carbon disulfide	75-15-0	X	X	76.14	1090	1,090,000	1	0	0	0	0	2	0	0
Toluene [1]	108-88-3	X	X	92.14	1120	1,120,000	7	8	0	0	0	0	0	0
2-Butanone	78-93-3	X		72.11	4880	4,880,000	4	8	1	0	0	0	0	0
4-Methyl-2-pentanone	108-10-1	X	X	100.16	470	470,000	6	12	1	0	0	0	0	0
Acetone	67-64-1			58.08	114000	114,000,000	3	6	1	0	0	0	0	0
Methylene Chloride	75-09-2		X	84.93	1780	1,780,000	1	2	0	2	0	0	0	0
Vinyl Chloride	75-01-4	X	X	62.5	142	142,000	2	3	0	1	0	0	0	0
2,4-Dimethylphenol [1]	105-67-9	X		122.16	140	140,000	8	10	1	0	0	0	0	0
4-Nitrophenol	100-02-7	X	X	139.11	500	500,000	6	5	3	0	0	0	0	1
Phenol [1]	108-95-2	X	X	94.11	1200	1,200,000	6	6	1	0	0	0	0	0
Aroclor 1242 [1]	53469-21-9	X	X	291.99	29.6	29,600	12	6	0	4	0	0	0	0
Aroclor 1260 [1]	11096-82-5	X	X	395.33	112	112,000	12	3	0	7	0	0	0	0

Detected Compounds	Atomic Diffusion Volume for D_a Calculation [3]	Gas Diffusion Coefficient D_a [4] (m^2/h)	Atomic Volume for D_l Calculation [5] (cm^3/mol)	Liquid Diffusion Coefficient D_l [6] (m^2/h)	Schmidt Number S_c [7]	Reynolds Number R_e [7]	Sherwood Number S_h [7]	Total Surface Area [8] (m^2)	Char. Length [9] (m)	k_G [7] (m/h)	k_L [7] (m/h)	K_{OL} [7] (m/h)	Henry's Constant [10]	K_{OG} [7] (m/h)	Emissions [7] (ug/hr)	Emissions (lb/hr)	Emissions (lb/yr)	VOC Emissions (lb/yr)	HAP Emissions (lb/yr)
Carbon disulfide	50.5	3.96E-02	66.00	4.62E-06	1.4	18,835.9	102.6	3.90	1.97	2.06	6.43E-03	6.41E-03	1.24E+00	5.17E-03	2.73E+04	6.01E-05	0.53	0.53	0.53
Toluene [1]	111.34	2.81E-02	118.2	3.28E-06	2.0	18,835.9	115.1	3.90	1.97	1.64	5.41E-03	5.35E-03	2.71E-01	1.97E-02	2.34E+04	5.15E-05	0.45	0.45	0.45
2-Butanone	87.32	3.21E-02	96.2	3.70E-06	1.8	18,835.9	110.1	3.90	1.97	1.79	5.75E-03	2.39E-03	2.28E-03	1.05E+00	4.54E+04	1.00E-04	0.88	0.88	
4-Methyl-2-pentanone	128.24	2.62E-02	140.6	2.96E-06	2.2	18,835.9	117.9	3.90	1.97	1.56	5.14E-03	3.25E-03	5.63E-03	5.77E-01	5.95E+03	1.31E-05	0.11	0.11	0.11
Acetone	66.86	3.70E-02	74	4.32E-06	1.5	18,835.9	105.0	3.90	1.97	1.97	6.22E-03	2.08E-03	1.59E-03	1.31E+00	9.25E+05	2.04E-03	17.87		
Methylene Chloride	59.46	3.67E-02	65.4	4.65E-06	1.5	18,835.9	105.3	3.90	1.97	1.96	6.45E-03	6.22E-03	8.93E-02	6.96E-02	4.31E+04	9.51E-05	0.83		0.83
Vinyl Chloride	58.44	3.86E-02	62.3	4.78E-06	1.5	18,835.9	103.6	3.90	1.97	2.02	6.54E-03	6.52E-03	1.11E+00	5.87E-03	3.61E+03	7.96E-06	0.07	0.07	0.07
2,4-Dimethylphenol [1]	137.28	2.49E-02	147.8	2.87E-06	2.3	18,835.9	119.8	3.90	1.97	1.51	5.07E-03	1.21E-04	8.20E-05	1.47E+00	6.60E+01	1.46E-07	0.00	0.00	
4-Nitrophenol	111.03	2.70E-02	130.1	3.10E-06	2.1	18,835.9	116.7	3.90	1.97	1.59	5.26E-03	2.71E-08	1.70E-08	1.59E+00	5.28E-02	1.16E-10	0.00	0.00	0.00
Phenol [1]	96.36	2.98E-02	103.4	3.55E-06	1.9	18,835.9	112.9	3.90	1.97	1.70	5.63E-03	2.76E-05	1.63E-05	1.69E+00	1.29E+02	2.85E-07	0.00	0.00	0.00
Aroclor 1242 [1]	267.88	1.73E-02	271.2	2.01E-06	3.3	18,835.9	135.2	3.90	1.97	1.19	4.24E-03	2.91E-03	7.79E-03	3.73E-01	3.35E+02	7.40E-07	0.01	0.01	0.01
Aroclor 1260 [1]	320.44	1.57E-02	324.9	1.81E-06	3.6	18,835.9	139.6	3.90	1.97	1.11	4.02E-03	3.18E-03	1.38E-02	2.31E-01	1.39E+03	3.07E-06	0.03	0.03	0.03
																	TOTALS	**2.08**	**2.03**

Notes:

1 Deduction of 20 and 15 applied for calculation of atomic diffusion volumes for air and liquid, respectively (deduction applied for a hexagonal ring)
2 Analytical results from multiple samples taken from: 1.) RMU-1 standpipes over a period of May 2006 through February 2013; 2.) Tank T-160 (RMU-1 lift station) over a period of January 31, 2012 through February 15, 2012; and 3.) Tank T-102 over a period of April 3, 2012 through April 17, 2013 (applied highest detected value for each compound in this column)
3 Method for calculating total diffusion volume for air taken from Fuller et al., 1966
4 Calculation method for gas diffusion coefficient referenced from *Chemical Engineering Design, Principles, Practice and Economics of Plant and Process Design*, 2008
5 Method for calculating total diffusion volume for water was taken from the LeBas Method, 1915
6 Calculation method for liquid diffusion coefficient referenced from *Water Treatment Principles and Design, Third Edition*, 2012
7 Parameter was calculated using method presented in paper: "Overall Mass Transfer Coefficient for Pollutant Emissions from Small Water Pools Under Simulated Indoor Environmental Conditions," December 2002
8 Total surface area of all standpipes in RMU-2 calculated as follows: [(12 standpipes) x (Pi) x (0.305 m radius)^2] + [(12 cleanouts) x (Pi) x (0.102 m radius)^2] = 3.90 m^2
9 Characteristic length calculated as the square root of the total surface area
10 Referenced materials provided on USEPA website and CHEMFATE provided by SRC

Attachment 1

Calculation of Fugitive PM-10 Emissions

PM_{10} CALCULATIONS
TRUCK AND WASTE SUMMARY
CWM CHEMICAL SERVICES, LLC

Truck and Waste Summary

Vehicle Type	Code	Average Vehicle Weight (tons) Gross Weight	Empty Weight	Payload	Total Vehicles	Vehicle Route
Dump Truck	DT	43.9	17.0	26.8	3,454	Landfill
Rolloff Truck	CM	33.4	21.1	12.2	2,446	Landfill
Tanker Truck	TT	30.8	17.4	13.4	132	AWTS
Vacuum Tanker	VT	31.3	15.9	15.4	8	AWTS
Rolloff Truck	CM	32.1	21.7	10.3	1,023	Stabilization
Dump Truck	DT	39.9	17.1	22.9	634	Stabilization
Pneumatic Truck	PT	33.8	17.0	16.8	22	Stabilization
Tanker Truck	TT	27.6	17.7	9.9	4	Stabilization
Off-Road Truck	---	33.0	19.0	14.0	3,366	Post-Stabilization [a]
Rolloff Truck	CM	37.5	22.1	15.4	50	Transship [b]
Dump Truck	DT	38.8	16.8	22.0	4	Transship [b]
Tanker Truck	TT	25.5	17.8	7.7	34	Transship [b]
Vacuum Tanker	VT	20.4	17.5	2.9	4	Transship [b]
Drum Truck	---	26.4	17.5	8.9	833	Drum Building
Site Vehicles	---	2.5	2.5	---	5,200	AWTS
Delivery Trucks	---	5.0	5.0	---	1,300	AWTS
Personal Vehicles	---	1.5	1.5	---	1,300	AWTS
Personal Vehicles	---	1.5	1.5	---	5,200	Main Office

* Based on CWM waste tracking data and non-waste vehicle estimates for the 12-month period of July 2006 - June 2007

Notes:
a Assumes 2 loaded vehicles for each stabilization vehicle
b Total # vehicles equals twice the actual amount of vehicles since each transship load requires 2 round trips

Total Bulk Waste = (3,454 veh)(26.8 tons/veh) + (2,446 veh)(12.2 tons/veh) + (1,023 veh)(10.3 tons/veh) + (634 veh)(22.9 tons/veh) + (22 veh)(16.8 tons/veh) + (4 veh)(9.9 tons/veh)

Total Bulk Waste = 148,024.6 tpy

Fractions
Dump Trucks = 107,251.2 tons / 148,024.6 tons = 0.724
Rolloff Trucks = 40,795.0 tons / 148,024.6 tons = 0.273
Pneumatic Trucks = 368.8 tons / 148,024.6 tons = 0.002
Tanker Trucks = 39.6 tons / 148,024.6 tons = 0.0003

To be conservative, assume bulk waste increase of 10%

Total Bulk Waste = 162,827.0 tpy

Waste Densities (according to CWM facility records):

Truck	Density (lb/ft^3)
Dump	96
Rolloff	81.5

Volume Calculations

$$Volume_{(dump)} = \frac{(0.726)(162,827.0\ tons)(1ft3)(2000\ lb)}{(1\ yr)(96\ lb)(1\ ton)} = 2.46E+06\ ft^3$$

$$Volume_{(rolloff)} = \frac{(0.274)(162,827.07\ tons)(1ft3)(2000\ lb)}{(1\ yr)(81.5\ lb)(1\ ton)} = 1.09E+06\ ft^3$$

$$Volume_{(pneumatic)} = \frac{(0.002)(162,827.0\ tons)(1ft3)(2000\ lb)}{(1\ yr)(81.5\ lb)(1\ ton)} = 9.96E+03\ ft^3$$

$$Volume_{(tanker)} = \frac{(0.0003)(162,827.0\ tons)(1ft3)(2000\ lb)}{(1\ yr)(81.5\ lb)(1\ ton)} = 1.07E+03\ ft^3$$

Total Volume = 3.56E+06 ft^3 = 1.32E+05 yd^3

PM_{10} CALCULATIONS
LANDFILL OPERATIONS
CWM CHEMICAL SERVICES, LLC

Landfill Operation

Waste Unloading

Batch Drop equation from AP-42, Section 13.2.4 (11/06):

$$E = k\,(0.0032)\,\frac{(u / 5)^{1.3}}{(M / 2)^{1.4}}$$

where:

E = emission factor (lb/ton)
k = 0.35 (for PM_{10})
u = mean wind speed (mph) = 6.8 (2006 average wind speed - Model City, NY)
M = % moisture in clay/dirt mix = 14 (from AP-42, Table 13.2.4-1)

$$E = k\,(0.0032)\,\frac{(6.8 / 5)^{1.3}}{(14 / 2)^{1.4}} = 1.089\text{E-04 lb/ton}$$

Total Waste Unloaded =	166,645	tons/year	(Includes stabilization materials)
Total Emissions =	18.1	lb/year	
Total Emissions (90% Control)[1] =	1.81	lb/year	
Total Emissions (90% Control)[1] =	0.001	tons/year	

Waste Compaction

Compaction by Bulldozing equation from Table 11.9-1 of Supplement E of AP-42 Fourth Edition (7/98):

$$E = \frac{(0.75)\,(1.0)\,(\text{silt\%})^{1.5}}{(\text{moisture\%})^{1.4}}$$

where: E = Emission rate of PM_{10} in lb/hr

From Table 13.2.4-1 of AP-42 (11/06):

Clay/dirt mix:
Silt % = 9.2
Moisture % = 14

$$E = \frac{(0.75)\,(1.0)\,(9.2)^{1.5}}{(14)^{1.4}} = 0.520 \text{ lb/hr}$$

Total Operation hours / year =	1560	(6 hours/day, 5 days/week, 52 weeks/year)
Total Bulldozers Operating =	2	

Total Emissions =	0.8	tons/year
Total Emissions (90% Control)[1] =	0.08	tons/year

Notes:

1 During disposal of identified dusty wastes, CWM Model City applies a water spray to minimize dust emissions. In addition, a dust suppressant material called Con-Cover is used to cover the waste on a daily basis. A 90% control efficiency, based on Figure 13.2.2-2 of AP-42, Section 13.2.2 (11/06), is used to account for the reduction in PM emissions due to these operational procedures which are required by the Facility's permit.

PM_{10} CALCULATIONS
LANDFILL CONSTRUCTION - RMU-1 LANDFILL
CWM CHEMICAL SERVICES, LLC

Landfill Construction
Landfill Unit: RMU-1

Material Requirements

Cover Construction (GCL Design)

Material	Volume (yd^3)	Weight (tons)
Soils	157,280	154,999

Material Densities (Appendix A-9 of AP-40, Second Edition)

Material	Density (lb/ft^3)
Coarse Stone	107
Soils	73

*Cover Construction Materials Usage per Phase ****

Material	Volume (yd^3)	Weight (tons)
Soils	17,476	17,222

Landfill Activity Span = 9 phases of cover
Total Landfill Life = 22 years (1995 - 2016)

*** No more than one phase of cover is constructed in one 12-month period

Truck nominal payload = 20 tons

$$\text{Trucks/year} = \frac{17{,}222 \text{ tpy}}{20 \text{ tons / truck}} = 861.1 \text{ trucks/year} = 862 \text{ trucks/year}$$

Roadway Construction Inside Active Landfill

Each layer of landfill material is 6 ft high.
Uncapped landfill height = 115 ft
Total layers = 20 (Road surface on 1st 19 layers only)
Total Cells = 14

Assume length of roadway surface as 1/2 the diagonal across 1 RMU-1 cell, then multiplied by 19

RMU-1 Length =	330	ft	Diagonal =	466.7	ft
RMU-1 Width =	330	ft	1/2 Diagonal =	233.3	ft

$$\text{Length} = \frac{(233.3 \text{ ft})(14 \text{ cells})(19 \text{ lifts})}{(\text{cell-lift})} = 62{,}069.8 \text{ ft}$$

Length / year =	2,821.4	ft
Depth =	0.5	ft (6 inches)
Width =	40	ft
Volume (stone) =	56,427.1	ft^3/yr
Volume (stone) =	2,089.9	yd^3/yr
Trucks needed =	151	/year

Operations Stone

Assume 5 trucks per week or 260 trucks per year for miscellaneous stone usage

Total Stone =	5,200.0	tons/year
Total Stone =	97,196.3	ft^3/yr
Total Stone =	3,599.9	yd^3/yr

PM_{10} CALCULATIONS
LANDFILL CONSTRUCTION - RMU-1 LANDFILL
CWM CHEMICAL SERVICES, LLC

Material Loading / Unloading Emissions

Batch Drop equation from AP-42, Section 13.2.4 (11/06):

$$E = k\,(0.0032)\,\frac{(u/5)^{1.3}}{(M/2)^{1.4}}$$

where:

E =	emission factor (lb/ton)		
k =	0.35 (for PM_{10})		
u =	mean wind speed (mph) =	6.8	(2006 average wind speed - Model City, NY)
M_{stone} =	% moisture in stone =	0.7	(from AP-42, Table 13.2.4-1)
$M_{topsoil/dirt}$ =	% moisture in topsoil/dirt mix =	12	(from AP-42, Table 13.2.4-1)

$$E_{(stone)} = k\,(0.0032)\,\frac{(6.8/5)^{1.3}}{(0.7/2)^{1.4}} = 7.217\text{E-}03 \text{ lb/ton}$$

$$E_{(topsoil/dirt)} = k\,(0.0032)\,\frac{(6.8/5)^{1.3}}{(12/2)^{1.4}} = 1.351\text{E-}04 \text{ lb/ton}$$

Summary - Cover Construction

Material	Usage/Year (tons)	EF (lb/ton)	PM_{10} Emissions (lb/yr)
Soils	17,222	1.351E-04	2.3

Summary - Road Construction

Material	Usage/Year (tons)	EF (lb/ton)	PM_{10} Emissions (lb/yr)
Coarse Stone	3,019	7.217E-03	21.8

Summary - Miscellaneous Stone Usage

Material	Usage/Year (tons)	EF (lb/ton)	PM_{10} Emissions (lb/yr)
Coarse Stone	5,200	7.217E-03	37.5

PM_{10} CALCULATIONS
LANDFILL CONSTRUCTION - RMU-1 LANDFILL
CWM CHEMICAL SERVICES, LLC

Bulldozing Emissions

Compaction by Bulldozing equation from Table 11.9-1 of Supplement E of AP-42 Fourth Edition (7/98):

$$E = \frac{(0.75)\,(1.0)\,(\text{silt\%})^{1.5}}{(\text{moisture\%})^{1.4}}$$

where: E = Emission rate of PM_{10} in lb/hr

From Table 13.2.4-1 of AP-42 (11/06):

Stone:
Silt % = 1.6
Moisture % = 0.7

Topsoil/Dirt:
Silt % = 9
Moisture % = 12

$$E_{(stone)} = \frac{(0.75)\,(1.0)\,(1.6)^{1.5}}{(0.7)^{1.4}} = 2.501E+00 \text{ lb/hr}$$

$$E_{(topsoil/dirt)} = \frac{(0.75)\,(1.0)\,(9)^{1.5}}{(12)^{1.4}} = 6.246E-01 \text{ lb/hr}$$

Total Cover Construction hours / year = 600 (10 hours/day, 5 days/week, 12 weeks/year)
Roadway Construction hours/year = 80
Miscellaneous Stone operation hours/year = 100
Total Bulldozers Operating / Activity = 2

Summary - Cover Construction

Material	Hours/Year	EF (lb/hr)	PM_{10} Emissions (lb/yr)
Soils	600	6.246E-01	749.5

Summary - Road Construction

Material	Hours/Year	EF (lb/hr)	PM_{10} Emissions (lb/yr)
Coarse Stone	80	2.501E+00	400.2

Summary - Miscellaneous Stone Usage

Material	Hours/Year	EF (lb/hr)	PM_{10} Emissions (lb/yr)
Coarse Stone	100	2.501E+00	500.2

PM_{10} CALCULATIONS
LANDFILL CONSTRUCTION - RMU-1 LANDFILL
CWM CHEMICAL SERVICES, LLC

Grading Emissions

Grading equation from Table 11.9-1 of Supplement E of AP-42 Fourth Edition (7/98):

$$E = (0.60)(0.51)(\text{veh speed})^2$$

Assume avg. grader speed = 7.39 mph (650 fpm)

E = 16.711 lb / VMT (independent of material being graded)

Assume equipment blades are 10 feet wide
Assume grading depth of 0.5 feet (6 inches)

1 cubic yard of material graded every 5.4 feet
1 VMT (grader) = 977.8 yd^3 of material graded

EF = 0.017 lb PM_{10} / yd^3

Summary - Cover Construction

Material	Usage/Year (yd^3)	EF (lb/yd^3)	PM_{10} Emissions (lb/yr)
Soils	17,476	1.709E-02	298.7

Summary - Road Construction

Material	Usage/Year (yd^3)	EF (lb/yd^3)	PM_{10} Emissions (lb/yr)
Coarse Stone	2,090	1.709E-02	35.7

Summary - Miscellaneous Stone Usage

Material	Usage/Year (yd^3)	EF (lb/yd^3)	PM_{10} Emissions (lb/yr)
Coarse Stone	3,600	1.709E-02	61.5

PM_{10} CALCULATIONS
LANDFILL CONSTRUCTION - RMU-2 LANDFILL
CWM CHEMICAL SERVICES, LLC

Landfill Construction
Landfill Unit: RMU-2

Material Requirements

Cell Construction

Material	Volume (yd^3)	Weight (tons)
Clay	213,000	181,157
Coarse Stone	189,000	273,011
Soils	676,000	666,198

Material Densities (Appendix A-9 of AP-40, Second Edition)

Material	Density (lb/ft^3)
Clay	63
Coarse Stone	107
Soils	73

Facultative Pond 5 Construction

Material	Volume (yd^3)	Weight (tons)
Clay	26,110	22,207
Coarse Stone	2,500	3,611
Soils	90,990	89,671

Landfill Activity Span = 6 phases of cell construction
Facultative Pond 5 Activity Span = 1 phase of pond construction

Years 1-13: Cell Construction
Year 1: Facultative Pond 5 Construction
Years 5-20: Cover Construction

Total Landfill Life = 20 years

[Year 1 represents worst case scenario]

*Cell Construction Materials Usage per Phase ****

Material	Volume (yd^3)	Weight (tons)
Clay	35,500	30,193
Coarse Stone	31,500	45,502
Soils	112,667	111,033
Total	**179,667**	**186,728**

*Facultative Pond 5 Construction Materials Usage per Phase ****

Material	Volume (yd^3)	Weight (tons)
Clay	26,110	22,207
Coarse Stone	2,500	3,611
Soils	90,990	89,671
Total	**119,600**	**115,488**

*** No more than one phase of cell construction or Facultative Pond 5 construction is completed in one 12-month period

Truck nominal payload = 20 tons

$$\text{Trucks/year} = \frac{(186{,}728\ \text{tpy}) + (115{,}488\ \text{tpy})}{20\ \text{tons / truck}} = 15{,}110.8\ \text{trucks/year} = 15{,}111\ \text{trucks/year}$$

Cell Excavation

Total Area = 44 acres
Depth of cell = 7.5 ft
Density = 73 lb/ft^3 (moist common earth)

$$\text{Volume} = \frac{(44\ \text{acres})(43{,}560\ ft^2)(7.5\ ft)}{(1\ \text{acre})}$$

= 14,374,800 ft^3
= 2,395,800 ft^3/year
= 532,400 yd^3
= 88,733 yd^3/year

Weight (excavated material) = 524,680.2 tons
Weight (excavated material) = 87,446.7 tons/year

- Assume each truckload of excavated material weighs 20 tons

$$\text{Traffic} = \frac{(2{,}395{,}800\ ft^3)(73\ lb)(1\ \text{truckload})}{(1\ yr)(1ft^3)(40{,}000\ lb)} = 4{,}373\ \text{truckloads/yr}$$

Faculatative Pond 5 Excavation

Total Area = 2.5 acres
Depth of pond = 7.5 ft
Density = 73 lb/ft^3 (moist common earth)

$$\text{Volume} = \frac{(2.5\ \text{acres})(43{,}560\ ft^2)(7.5\ ft)}{(1\ \text{acre})}$$

= 816,750 ft^3
= 816,750 ft^3/year
= 30,250 yd^3
= 30,250 yd^3/year

Weight (excavated material) = 29,811.4 tons
Weight (excavated material) = 29,811.4 tons/year

- Assume each truckload of excavated material weighs 20 tons

$$\text{Traffic} = \frac{(816{,}750\ ft^3)(73\ lb)(1\ \text{truckload})}{(1\ yr)(1ft^3)(40{,}000\ lb)} = 1{,}491\ \text{truckloads/yr}$$

PM_{10} CALCULATIONS
LANDFILL CONSTRUCTION - RMU-2 LANDFILL
CWM CHEMICAL SERVICES, LLC

Material Loading / Unloading Emissions

Batch Drop equation from AP-42, Section 13.2.4 (11/06):

$$E = k\,(0.0032)\,\frac{(u / 5)^{1.3}}{(M / 2)^{1.4}}$$

where:

E = emission factor (lb/ton)
k = 0.35 (for PM_{10})
u = mean wind speed (mph) = 6.8 (2006 average wind speed - Model City, NY)
M_{clay} = % moisture in clay = 10 (from AP-42, Table 13.2.4-1)
M_{stone} = % moisture in stone = 0.7 (from AP-42, Table 13.2.4-1)
$M_{topsoil/dirt}$ = % moisture in topsoil/dirt mix = 12 (from AP-42, Table 13.2.4-1)

$$E_{(clay)} = k\,(0.0032)\,\frac{(6.8 / 5)^{1.3}}{(10 / 2)^{1.4}} = 1.744E\text{-}04 \text{ lb/ton}$$

$$E_{(stone)} = k\,(0.0032)\,\frac{(6.8 / 5)^{1.3}}{(0.7 / 2)^{1.4}} = 7.217E\text{-}03 \text{ lb/ton}$$

$$E_{(topsoil/dirt)} = k\,(0.0032)\,\frac{(6.8 / 5)^{1.3}}{(12 / 2)^{1.4}} = 1.351E\text{-}04 \text{ lb/ton}$$

Summary - Cell Construction

Material	Usage/Year (tons)	EF (lb/ton)	PM_{10} Emissions (lb/yr)
Clay	30,193	1.744E-04	5.3
Coarse Stone	45,502	7.217E-03	328.4
Soils	111,033	1.351E-04	15.0

Summary - Facultative Pond 5 Construction

Material	Usage/Year (tons)	EF (lb/ton)	PM_{10} Emissions (lb/yr)
Clay	22,207	1.744E-04	3.9
Coarse Stone	3,611	7.217E-03	26.1
Soils	89,671	1.351E-04	12.1

Summary - Excavation

Material	Usage/Year (tons)	EF (lb/ton)	PM_{10} Emissions (lb/yr)
Soils (Total)	117,258	1.351E-04	15.8

PM_{10} CALCULATIONS
LANDFILL CONSTRUCTION - RMU-2 LANDFILL
CWM CHEMICAL SERVICES, LLC

Bulldozing Emissions

Compaction by Bulldozing equation from Table 11.9-1 of Supplement E of AP-42 Fourth Edition (7/98):

$$E = \frac{(0.75)\,(1.0)\,(\text{silt}\%)^{1.5}}{(\text{moisture}\%)^{1.4}}$$

where: E = Emission rate of PM_{10} in lb/hr

From Table 13.2.4-1 of AP-42 (11/06):

Clay:
Silt % = 6
Moisture % = 10

Stone:
Silt % = 1.6
Moisture % = 0.7

Topsoil/Dirt:
Silt % = 9
Moisture % = 12

$$E_{(clay)} = \frac{(0.75)\,(1.0)\,(6)^{1.5}}{(10)^{1.4}} = 4.388E-01 \text{ lb/hr}$$

$$E_{(stone)} = \frac{(0.75)\,(1.0)\,(1.6)^{1.5}}{(0.7)^{1.4}} = 2.501E+00 \text{ lb/hr}$$

$$E_{(topsoil/dirt)} = \frac{(0.75)\,(1.0)\,(9)^{1.5}}{(12)^{1.4}} = 6.246E-01 \text{ lb/hr}$$

Total Construction hours / year = 1,800 (For Cell Construction, Pond Construction and excavation)
Total Bulldozers (Cell Construction) = 3
Total Bulldozers (Pond Construction) = 1

- Proportion total hours by fraction of each material to get PM_{10} emissions for cell construction, cover construction, and excavation

Total Material = 186,728 tons + 115,448 tons + 87,447 tons + 29,811 tons = 419,474 tons

Summary - Cell Construction

Material	Usage/Year (tons)	EF (lb/hr)	PM_{10} Emissions (lb/yr)
Clay	30,193	4.388E-01	170.6
Coarse Stone	45,502	2.501E+00	1,464.9
Soils	111,033	2.501E+00	3,574.7

Summary - Facultative Pond 5 Construction

Material	Usage/Year (tons)	EF (lb/hr)	PM_{10} Emissions (lb/yr)
Clay	22,207	4.388E-01	41.8
Coarse Stone	3,611	2.501E+00	38.8
Soils	89,671	6.246E-01	240.3

Summary - Excavation

Material	Usage/Year (tons)	EF (lb/hr)	PM_{10} Emissions (lb/yr)
Soils (Cell)	87,447	6.246E-01	703.1
Soils (Pond)	29,811	6.246E-01	79.9

PM_{10} CALCULATIONS
LANDFILL CONSTRUCTION - RMU-2 LANDFILL
CWM CHEMICAL SERVICES, LLC

Grading Emissions

Grading equation from Table 11.9-1 of Supplement E of AP-42 Fourth Edition (7/98):

$$E = (0.60)\ (0.51)\ (\text{veh speed})^2$$

Assume avg. grader speed = 7.39 mph (650 fpm)

E = 16.711 lb / VMT (independent of material being graded)

Assume equipment blades are 10 feet wide
Assume grading depth of 0.5 feet (6 inches)

1 cubic yard of material graded every 5.4 feet
1 VMT (grader) = 977.8 yd^3 of material graded

EF = 0.017 lb PM_{10} / yd^3

Summary - Cell Construction

Material	Usage/Year (yd^3)	EF (lb/yd^3)	PM_{10} Emissions (lb/yr)
Clay	35,500	1.709E-02	606.7
Coarse Stone	31,500	1.709E-02	538.4
Soils	112,667	1.709E-02	1,925.6

Summary - Facultative Pond 5 Construction

Material	Usage/Year (yd^3)	EF (lb/yd^3)	PM_{10} Emissions (lb/yr)
Clay	26,110	1.709E-02	446.2
Coarse Stone	2,500	1.709E-02	42.7
Soils	90,990	1.709E-02	1,555.1

Summary - Excavation

Material	Usage/Year (yd^3)	EF (lb/yd^3)	PM_{10} Emissions (lb/yr)
Soils (Total)	118,983	1.709E-02	2,033.6

PM_{10} CALCULATIONS
PAVED / UNPAVED ROAD DUST
CWM CHEMICAL SERVICES, LLC

Paved / Unpaved Roads

Road Segment #	*Vehicles on Segment*	*NO. OF VEHICLES (a) PER YEAR*	*AVERAGE FULL VEHICLE WEIGHT (b) (tons)*	*AVERAGE EMPTY VEHICLE WEIGHT (b) (tons)*	*ACTUAL MEAN VEHICLE WEIGHT (b) (tons)*	*MILES TRAVELED (c) (MILES)*	*SILT CONTENT (d) (g/m^2)*	*PM10 Emission Rate (lb/VMT) (e)*	*Uncontrolled PM10 (TPY)*	*Efficiency (%) (f) PM10 (TPY)*	*Controlled PM10 (g) (TPY)*
				PAVED						**PAVED**	
1-2	Landfill Disposal	5,900	39.5	18.7	29.1	4,800.5	7.4				
	AWTS	140	30.8	17.3	24.0	113.9	7.4				
	Stabilization	1,683	35.1	19.9	27.5	1,369.4	7.4				
	Transship	92	32.4	20.1	26.2	74.9	7.4				
	Drums	833	26.4	17.5	22.0	677.8	7.4				
	Site Vehicles	5,200	2.5	2.5	2.5	4,230.9	7.4				
	Delivery Trucks	1,300	5.0	5.0	5.0	1,057.7	7.4				
	Personal Veh.	6,500	1.5	1.5	1.5	5,288.6	7.4				
Total/Average		21,648			12.5	17,613.6	7.4	0.179	1.580	90	0.16
2-3	Landfill Disposal	5,900	39.5	18.7	29.1	3,857.3	7.4				
	AWTS	140	30.8	17.3	24.0	91.5	7.4				
	Stabilization	1,683	35.1	19.9	27.5	1,100.3	7.4				
	Transship	92	32.4	20.1	26.2	60.1	7.4				
	Drums	833	26.4	17.5	22.0	544.6	7.4				
	Site Vehicles	5,200	2.5	2.5	2.5	3,399.7	7.4				
	Delivery Trucks	1,300	5.0	5.0	5.0	849.9	7.4				
	Personal Veh.	1,300	1.5	1.5	1.5	849.9	7.4				
Total/Average		16,448			16.0	10,753.5	7.4	0.230	1.239	90	0.12
4-10	Landfill Disposal	5,900	39.5	18.7	29.1	1,423.6	7.4				
	AWTS	140	30.8	17.3	24.0	33.8	7.4				
	Stabilization	1,683	35.1	19.9	27.5	406.1	7.4				
	Post-Stabilization	3,366	33.0	19.0	26.0	812.2	7.4				
	Transship	92	32.4	20.1	26.2	22.2	7.4				
	Site Vehicles	5,200	2.5	2.5	2.5	1,254.7	7.4				
	Delivery Trucks	1,300	5.0	5.0	5.0	313.7	7.4				
	Personal Veh.	1,300	1.5	1.5	1.5	313.7	7.4				
Total/Average		18,981			17.5	4,579.9	7.4	0.253	0.578	90	0.06
5-6	Stabilization	1,683	35.1	19.9	27.5	185.5	7.4				
	Post-Stabilization	3,366	33.0	19.0	26.0	371.0	7.4				
	Drums	833	26.4	17.5	22.0	91.8	7.4				
Total/Average		5,882			25.9	648.4	7.4	0.375	0.122	90	0.01
6-7	Stabilization	1,683	35.1	19.9	27.5	269.0	7.4				
	Post-Stabilization	3,366	33.0	19.0	26.0	538.1	7.4				
Total/Average		5,049			26.5	807.1	7.4	0.385	0.155	90	0.02
6-8	Drums	833	26.4	17.5	22.0	626.3	7.4				
Total/Average		833			22.0	626.3	7.4	0.318	0.099	90	0.01
22-23	Drums	833	26.4	17.5	22.0	78.9	7.4				
Total/Average		833			22.0	78.9	7.4	0.318	0.013	90	0.00
10-11	Landfill Disposal	5,900	39.5	18.7	29.1	969.9	7.4				
	AWTS	140	30.8	17.3	24.0	23.0	7.4				
	Stabilization	1,683	35.1	19.9	27.5	276.7	7.4				
	Post-Stabilization	3,366	33.0	19.0	26.0	553.4	7.4				
	Site Vehicles	5,200	2.5	2.5	2.5	854.8	7.4				
	Delivery Trucks	1,300	5.0	5.0	5.0	213.7	7.4				
	Personal Veh.	1,300	1.5	1.5	1.5	213.7	7.4				
Total/Average		18,889			17.5	3,105.2	7.4	0.252	0.391	90	0.04
11-12	AWTS	140	30.8	17.3	24.0	37.8	7.4				
	Site Vehicles	5,200	2.5	2.5	2.5	1,402.4	7.4				
	Delivery Trucks	1,300	5.0	5.0	5.0	350.6	7.4				
	Personal Veh.	1,300	1.5	1.5	1.5	350.6	7.4				
Total/Average		7,940			3.1	2,141.4	7.4	0.043	0.047	90	0.00
11-13	Landfill Disposal	5,900	39.5	18.7	29.1	1,068.3	7.4				
	Post-Stabilization	3,366	33.0	19.0	26.0	609.5	7.4				
Total/Average		9,266			28.0	1,677.7	7.4	0.407	0.341	90	0.03
15-16	RMU-1 Construction	1,273	36.8	16.8	26.8	750.8	7.4				
Total/Average		1,273			26.8	750.8	7.4	0.388	0.146	90	0.01
16-17	RMU-1 Construction	1,273	36.8	16.8	26.8	343.3	7.4				
	RMU-2 Construction	20,975	36.8	16.8	26.8	5,656.9	7.4				
Total/Average		22,248			26.8	6,000.2	7.4	0.388	1.165	90	0.12
18-19	RMU-1 Construction	1,273	36.8	16.8	26.8	486.1	7.4				
	RMU-2 Construction	20,975	36.8	16.8	26.8	8,008.6	7.4				
Total/Average		22,248			26.8	8,494.7	7.4	0.388	1.650	90	0.16
										Total	**0.75**

PM_{10} CALCULATIONS
PAVED / UNPAVED ROAD DUST
CWM CHEMICAL SERVICES, LLC

Road Segment #	Vehicles on Segment	NO. OF VEHICLES [(a)] PER YEAR	AVERAGE FULL VEHICLE WEIGHT [(b)] (tons)	AVERAGE EMPTY VEHICLE WEIGHT [(b)] (tons)	ACTUAL MEAN VEHICLE WEIGHT [(b)] (tons)	MILES TRAVELED (c) (MILES)	SILT CONTENT [(d)] (g/m^2)	PM10 Emission Rate (lb/VMT) [(e)]	Uncontrolled PM10 (TPY)	Efficiency (%) [(f)] PM10 (TPY)	Controlled PM10 [(g)] (TPY)
UNPAVED										**UNPAVED**	
3-4	Landfill Disposal	5,900	39.5	18.7	29.1	1,644.8	6.4				
	AWTS	140	30.8	17.3	24.0	39.0	6.4				
	Stabilization	1,683	35.1	19.9	27.5	469.2	6.4				
	Transship	92	32.4	20.1	26.2	25.6	6.4				
	Drums	833	26.4	17.5	22.0	232.2	6.4				
	Site Vehicles	5,200	2.5	2.5	2.5	1,449.7	6.4				
	Delivery Trucks	1,300	5.0	5.0	5.0	362.4	6.4				
	Personal Veh.	1,300	1.5	1.5	1.5	362.4	6.4				
Total/Average		16,448			16.0	4,585.5	6.4	1.811	4.152	90	0.42
4-5	Stabilization	1,683	35.1	19.9	27.5	443.7	6.4				
	Post-Stabilization	3,366	33.0	19.0	26.0	887.4	6.4				
	Drums	833	26.4	17.5	22.0	219.6	6.4				
Total/Average		5,882			25.9	1,550.7	6.4	2.246	1.741	90	0.17
9-10	Transship	92	32.4	20.1	26.2	14.1	6.4				
Total/Average		92			26.2	14.1	6.4	2.261	0.016	90	0.00
14-16	RMU-2 Construction	20,975	36.8	16.8	26.8	8,437.7	6.4				
Total/Average		20,975			26.8	8,437.7	6.4	2.280	9.620	90	0.96
17-18	RMU-1 Construction	1,273	36.8	16.8	26.8	739.7	6.4				
	RMU-2 Construction	20,975	36.8	16.8	26.8	12,187.7	6.4				
Total/Average		22,248			26.8	12,927.4	6.4	2.280	14.739	90	1.47
19-20	RMU-1 Construction	1,273	36.8	16.8	26.8	1,235.4	6.4				
	RMU-2 Construction	20,975	36.8	16.8	26.8	20,355.3	6.4				
Total/Average		22,248			26.8	21,590.7	6.4	2.280	24.616	90	2.46
8-22	Drums	833	26.4	17.5	22.0	220.9	6.4				
Total/Average		833			22.0	220.9	6.4	2.087	0.230	90	0.02
13-14	Landfill Disposal	5,900	39.5	18.7	29.1	1,528.6	6.4				
	Post-Stabilization	3,366	33.0	19.0	26.0	872.1	6.4				
Total/Average		9,266			28.0	2,400.7	6.4	2.327	2.794	90	0.28
14-21	RMU-2 Construction	20,975	36.8	16.8	26.8	5,474.2	6.4				
	Landfill Disposal	5,900	39.5	18.7	29.1	1,539.8	6.4				
	Post-Stabilization	3,366	33.0	19.0	26.0	878.5	6.4				
Total/Average		30,241			27.1	7,892.4	6.4	2.295	9.056	90	0.91
										Total	**6.70**

EQUATIONS:

A Fugitive emissions from paved site roads are based on emission factors from AP-42 Section 13.2.1.3 (Equation 1 for paved roads).
Constant 'k' (particle size multiplier) from AP-42 Table 13.2-1.1.

Calculations

$E\ (lb/VMT) = [k(sL)^{.91}(W)^{1.02}]$

$E(TPY) = E(lb/VMT)*(VMT/truck)*(truck/d)*(d/week)*(week/yr)/2000$

Variables/Constants

k = particle size multiplier (dimensionless)
K(PM10) = 0.0022 lb/VMT
W = Average weight of vehicle in tons
sL = silt loading $sL = 7.4\ g/m^2$

B Fugitive emissions from trucks driving on unpaved surfaces, will use emission factor equation in AP-42 Section 13.2.2.4
(Equation 1a for unpaved roads)

Calculations

$E\ (lb/VMT) = [k(s/12)^a(W/3)^b]$

$E(TPY) = E(lb/VMT)*(VMT/truck)*(truck/yr)/2000$

Variables/Constants

k = particle size multiplier (dimensionless)
k(PM10) = 1.5 lb/VMT

a = Constant   a(PM10) = 0.9
b = Constant   b(PM10) = 0.45
s = silt content (%)
(measured or estimated - varies for different sources/materials - see below)
s = 6.4 %

NOTES:

a Number of vehicles information was provided by Site specific data which was supplied by the Site (July 2006 - June 2007)
b Vehicle weight information was provided by Site specific data which was supplied by the Site (July 2006 - June 2007)
c The round-trip distance traveled on the roads determined from analysis of CAD drawing of site (See Below)
d Silt content was referenced from Section 13.2.1 or 13.2.2 from AP-42.
e PM emissions were calculated using equations as shown above.
f Control efficiencies for paved and unpaved roads (and surfaces treated as unpaved roads) were referenced from Figure 13.2.2-2 of AP-42, Section 13.2.2 (11/06); water trucks are used at the Facility to control dust emissions from paved and unpaved roads, and are required by the Facility's permit.
g Controlled PM emissions were calculated by applying the control efficiency to the calculated PM-TPY value.

Distances determined from AutoCAD analysis of Site Drawing

Segment	Length (ft)
1-2	2148
2-3	1726
4-10	637
5-6	291
6-7	422
6-8	1985
22-23	250
10-11	434
11-12	712
11-13	478
15-16	1557
16-17	712
18-19	1008
3-4	736
4-5	696
9-10	405
14-16	1062
17-18	1534
19-20	2562
8-22	700
13-14	684
14-21	689

PM_{10} CALCULATIONS
SILO LOADING / STABILIZATION BAGHOUSES
CWM CHEMICAL SERVICES, LLC

Cement Kiln Silo Loading

- Cement Kiln Silo

Total Waste Stabilized at Facility = 25,454.0 tons/year

- Assume that 15% CKD is added to treat waste

CKD Consumption = 3,818.1 tons/year

* Section 11.12 of AP-42 (6/06) lists controlled emission factor for cement loading to elevated storage silo (pneumatic) as 0.00099 lb/ton loaded (Table 11.12-2)

** Assume that all particulate matter is PM_{10} to be conservative

PM_{10} emissions = 3.78 lb/year
PM_{10} emissions = 0.002 TPY

Lime Silo (AWTS Facility)

From Facility Records:

2005 Lime Consumption = 110 tons
2006 Lime Consumption = 110 tons

* Section 11.17 of AP-42 (2/98) lists emission factor for lime loading (enclosed truck) as:
0.61 lb/ton (Table 11.17-4)

** Assume that all particulate matter is PM_{10} to be conservative

PM_{10} emissions = 67.10 lb/year
PM_{10} emissions = 0.03 TPY

Stabilization Baghouses

- 2 stabilization baghouses in operation

- Facility records indicate that approximately 200 lb of particulates are removed from hoppers every 2 weeks

Collected PM = 5,200 lb/year

- Assume 99 percent capture efficiency in stabilization baghouse
- Assume that all particulate matter is PM_{10}

PM_{10} Emissions = 52.5 lb/year (Controlled emissions)

Baghouse Flowrates:

			Fraction of Total
Baghouse 1 =	90,000	cfm	0.643
Baghouse 2 =	50,000	cfm	0.357

- Proportion emissions according to flowrate in each baghouse

Baghouse #1 Emissions = 33.8 lb/year
Baghouse #1 Emissions = 0.02 tons/year
Baghouse #2 Emissions = 18.8 lb/year
Baghouse #2 Emissions = 0.01 tons/year

PM_{10} CALCULATIONS
LANDFILL TOTALS
CWM CHEMICAL SERVICES, LLC

Totals

Process	**PM_{10} Emissions (lb/year)**	**PM_{10} Emissions (TPY)**
Landfill Operation		
Waste Unloading	1.8	0.00
Waste Compaction	162.3	0.08
Paved Roads	1,505.1	0.75
Unpaved Roads	13,392.9	6.70
Totals	**15,062.1**	**7.53**
Landfill Construction (RMU-1)		
Material Loading/Unloading	61.6	0.03
Bulldozing/Compaction	1,649.8	0.82
Grading	395.9	0.20
Totals	**2,107.4**	**1.05**
Landfill Construction (RMU-2)		
Material Loading/Unloading	406.5	0.20
Bulldozing/Compaction	6,314.1	3.16
Grading	7,148.4	3.57
Totals	**13,869.0**	**6.93**
Silo Loading		
Cement Kiln Silo	3.8	0.002
Lime Silo (AWTS Facility)	67.1	0.03
Totals	**70.9**	**0.04**
Stabilization Baghouses		
Baghouse # 1	33.8	0.02
Baghouse # 2	18.8	0.01
Totals	**52.5**	**0.03**
Facility Totals	**31,161.8**	**15.58**

Attachment 2

Calculation of Fugitive $PM_{2.5}$ Emissions

$PM_{2.5}$ CALCULATIONS
TRUCK AND WASTE SUMMARY
CWM CHEMICAL SERVICES, LLC

Truck and Waste Summary

		Average Vehicle Weight (tons)				
Vehicle Type	**Code**	**Gross Weight**	**Empty Weight**	**Payload**	**Total Vehicles**	**Vehicle Route**
Dump Truck	DT	43.9	17.0	26.8	3,454	Landfill
Rolloff Truck	CM	33.4	21.1	12.2	2,446	Landfill
Tanker Truck	TT	30.8	17.4	13.4	132	AWTS
Vacuum Tanker	VT	31.3	15.9	15.4	8	AWTS
Rolloff Truck	CM	32.1	21.7	10.3	1,023	Stabilization
Dump Truck	DT	39.9	17.1	22.9	634	Stabilization
Pneumatic Truck	PT	33.8	17.0	16.8	22	Stabilization
Tanker Truck	TT	27.6	17.7	9.9	4	Stabilization
Off-Road Truck	---	33.0	19.0	14.0	3,366	Post-Stabilization [a]
Rolloff Truck	CM	37.5	22.1	15.4	50	Transship [b]
Dump Truck	DT	38.8	16.8	22.0	4	Transship [b]
Tanker Truck	TT	25.5	17.8	7.7	34	Transship [b]
Vacuum Tanker	VT	20.4	17.5	2.9	4	Transship [b]
Drum Truck	---	26.4	17.5	8.9	833	Drum Building
Site Vehicles	---	2.5	2.5	---	5,200	AWTS
Delivery Trucks	---	5.0	5.0	---	1,300	AWTS
Personal Vehicles	---	1.5	1.5	---	1,300	AWTS
Personal Vehicles	---	1.5	1.5	---	5,200	Main Office

* Based on CWM waste tracking data and non-waste vehicle estimates for the 12-month period of July 2006 - June 2007

Notes:
a Assumes 2 loaded vehicles for each stabilization vehicle
b Total # vehicles equals twice the actual amount of vehicles since each transship load requires 2 round trips

Total Bulk Waste = (3,454 veh)(26.8 tons/veh) + (2,446 veh)(12.2 tons/veh) + (1,023 veh)(10.3 tons/veh) + (634 veh)(22.9 tons/veh) + (22 veh)(16.8 tons/veh) + (4 veh)(9.9 tons/veh)

Total Bulk Waste = 148,024.6 tpy

Fractions

Dump Trucks =	107,251.2 tons / 148,024.6 tons =	0.724
Rolloff Trucks =	40,795.0 tons / 148,024.6 tons =	0.273
Pneumatic Trucks =	368.8 tons / 148,024.6 tons =	0.002
Tanker Trucks =	39.6 tons / 148,024.6 tons =	0.0003

To be conservative, assume bulk waste increase of 10%

Total Bulk Waste = 162,827.0 tpy

Waste Densities (according to CWM facility records):

Truck	Density (lb/ft^3)
Dump	96
Rolloff	81.5

Volume Calculations

$$Volume_{(dump)} = \frac{(0.726)(162{,}827.0\ tons)(1ft3)(2000\ lb)}{(1\ yr)(96\ lb)(1\ ton)} = 2.46E+06\ ft^3$$

$$Volume_{(rolloff)} = \frac{(0.274)(162{,}827.07\ tons)(1ft3)(2000\ lb)}{(1\ yr)(81.5\ lb)(1\ ton)} = 1.09E+06\ ft^3$$

$$Volume_{(pneumatic)} = \frac{(0.002)(162{,}827.0\ tons)(1ft3)(2000\ lb)}{(1\ yr)(81.5\ lb)(1\ ton)} = 9.96E+03\ ft^3$$

$$Volume_{(tanker)} = \frac{(0.0003)(162{,}827.0\ tons)(1ft3)(2000\ lb)}{(1\ yr)(81.5\ lb)(1\ ton)} = 1.07E+03\ ft^3$$

Total Volume = 3.56E+06 ft^3 = 1.32E+05 yd^3

$PM_{2.5}$ CALCULATIONS
LANDFILL OPERATIONS
CWM CHEMICAL SERVICES, LLC

Landfill Operation

Waste Unloading

Batch Drop equation from AP-42, Section 13.2.4 (11/06):

$$E = k\,(0.0032)\,\frac{(u / 5)^{1.3}}{(M / 2)^{1.4}}$$

where:

E = emission factor (lb/ton)
k = 0.053 (for $PM_{2.5}$)
u = mean wind speed (mph) = 6.8 (2006 average wind speed - Model City, NY)
M = % moisture in clay/dirt mix = 14 (from AP-42, Table 13.2.4-1)

$$E = k\,(0.0032)\,\frac{(6.8 / 5)^{1.3}}{(14 / 2)^{1.4}} = 1.649E-05 \text{ lb/ton}$$

Total Waste Unloaded =	166,645	tons/year	(Includes stabilization materials)
Total Emissions =	2.7	lb/year	
Total Emissions (40% Control)[1] =	1.65	lb/year	
Total Emissions (40% Control)[1] =	0.001	tons/year	

Waste Compaction

Compaction by Bulldozing equation from Table 11.9-1 of Supplement E of AP-42 Fourth Edition (7/98):

$$E = \frac{(0.105)\,(5.7)\,(silt\%)^{1.2}}{(moisture\%)^{1.3}}$$

where: E = Emission rate of $PM_{2.5}$ in lb/hr

From Table 13.2.4-1 of AP-42 (11/06):

Clay/dirt mix:
Silt % = 9.2
Moisture % = 14

$$E = \frac{(0.105)\,(5.7)\,(9.2)^{1.2}}{(14)^{1.3}} = 0.278 \text{ lb/hr}$$

Total Operation hours / year =	1560	(6 hours/day, 5 days/week, 52 weeks/year)
Total Bulldozers Operating =	2	

Total Emissions =	0.4	tons/year
Total Emissions (40% Control)[1] =	0.26	tons/year

Notes:

1 During disposal of identified dusty wastes, CWM Model City applies a water spray to minimize dust emissions. In addition, a dust suppressant material called Con-Cover is used to cover the waste on a daily basis. A 40% control efficiency, based on Figure 13.2.2-2 of AP-42, Section 13.2.2 (11/06), is used to account for the reduction in PM emissions due to these operational procedures which are required by the Facility's permit.

$PM_{2.5}$ CALCULATIONS
LANDFILL CONSTRUCTION - RMU-1 LANDFILL
CWM CHEMICAL SERVICES, LLC

Landfill Construction
Landfill Unit: RMU-1

Material Requirements

Cover Construction (GCL Design)

Material	Volume (yd^3)	Weight (tons)
Soils	157,280	154,999

Material Densities (Appendix A-9 of AP-40, Second Edition)

Material	Density (lb/ft^3)
Coarse Stone	107
Soils	73

*Cover Construction Materials Usage / Phase ****

Material	Volume (yd^3)	Weight (tons)
Soils	17,476	17,222

Landfill Activity Span = 9 phases of cover
Total Landfill Life = 22 years (1995 - 2016)

*** No more than one phase of cover is constructed in one 12-month period

Truck nominal payload = 20 tons

$$\text{Trucks/year} = \frac{17{,}222 \text{ tpy}}{20 \text{ tons / truck}} = 861.1 \text{ trucks/year} = 862 \text{ trucks/year}$$

Roadway Construction Inside Active Landfill

Each layer of landfill material is 6 ft high.
Uncapped landfill height = 115 ft
Total layers = 20 (Road surface on 1st 19 layers only)
Total Cells = 14

Assume length of roadway surface as 1/2 the diagonal across 1 RMU-1 cell, then multiplied by 19

RMU-1 Length = 330 ft
RMU-1 Width = 330 ft

Diagonal = 466.7 ft
1/2 Diagonal = 233.3 ft

$$\text{Length} = \frac{(233.3 \text{ ft})(14 \text{ cells})(19 \text{ lifts})}{(\text{cell-lift})} = 62{,}069.8 \text{ ft}$$

Length / year = 2,821 ft
Depth = 0.5 ft (6 inches)
Width = 40 ft

Volume (stone) = 56,427 ft^3/yr
Volume (stone) = 2,090 yd^3/yr
Trucks needed = 151 /year

Operations Stone

Assume 5 trucks per week or 260 trucks per year for miscellaneous stone usage

Total Stone = 5,200 tons/year
Total Stone = 97,196 ft^3/yr
Total Stone = 3,600 yd^3/yr

$PM_{2.5}$ CALCULATIONS
LANDFILL CONSTRUCTION - RMU-1 LANDFILL
CWM CHEMICAL SERVICES, LLC

Material Loading / Unloading Emissions

Batch Drop equation from AP-42, Section 13.2.4 (11/06):

$$E = k\,(0.0032)\,\frac{(u/5)^{1.3}}{(M/2)^{1.4}}$$

where:

E = emission factor (lb/ton)
k = 0.053 (for $PM_{2.5}$)
u = mean wind speed (mph) = 6.8 (2006 average wind speed - Model City, NY)
M_{stone} = % moisture in stone = 0.7 (from AP-42, Table 13.2.4-1)
$M_{topsoil/dirt}$ = % moisture in topsoil/dirt mix = 12 (from AP-42, Table 13.2.4-1)

$$E_{(stone)} = k\,(0.0032)\,\frac{(6.8/5)^{1.3}}{(0.7/2)^{1.4}} = 1.093E\text{-}03 \text{ lb/ton}$$

$$E_{(topsoil/dirt)} = k\,(0.0032)\,\frac{(6.8/5)^{1.3}}{(12/2)^{1.4}} = 2.046E\text{-}05 \text{ lb/ton}$$

Summary - Cover Construction

Material	Usage/Year (tons)	EF (lb/ton)	$PM_{2.5}$ Emissions (lb/yr)
Soils	17,222	2.046E-05	0.4

Summary - Road Construction

Material	Usage/Year (tons)	EF (lb/ton)	$PM_{2.5}$ Emissions (lb/yr)
Coarse Stone	3,019	1.093E-03	3.3

Summary - Miscellaneous Stone Usage

Material	Usage/Year (tons)	EF (lb/ton)	$PM_{2.5}$ Emissions (lb/yr)
Coarse Stone	5,200	1.093E-03	5.7

$PM_{2.5}$ CALCULATIONS
LANDFILL CONSTRUCTION - RMU-1 LANDFILL
CWM CHEMICAL SERVICES, LLC

Bulldozing Emissions

Compaction by Bulldozing equation from Table 11.9-1 of Supplement E of AP-42 Fourth Edition (7/98):

$$E = \frac{(0.105)\ (5.7)\ (silt\%)^{1.2}}{(moisture\%)^{1.3}}$$

where: E = Emission rate of $PM_{2.5}$ in lb/hr

From Table 13.2.4-1 of AP-42 (11/06):

Stone:

Silt % = 1.6

Moisture % = 0.7

Topsoil/Dirt:

Silt % = 9

Moisture % = 12

$$E_{(stone)} = \frac{(0.105)\ (5.7)\ (1.6)^{1.2}}{(0.7)^{1.3}} = 1.673E+00 \text{ lb/hr}$$

$$E_{(topsoil/dirt)} = \frac{(0.105)\ (5.7)\ (9)^{1.2}}{(12)^{1.3}} = 3.305E-01 \text{ lb/hr}$$

Total Cover Construction hours / year = 600 (10 hours/day, 5 days/week, 12 weeks/year)

Roadway Construction hours/year = 80

Miscellaneous Stone operation hours/year = 100

Total Bulldozers Operating / Activity = 2

Summary - Cover Construction

Material	Hours/Year	EF (lb/hr)	$PM_{2.5}$ Emissions (lb/yr)
Soils	600	3.305E-01	396.6

Summary - Road Construction

Material	Hours/Year	EF (lb/hr)	$PM_{2.5}$ Emissions (lb/yr)
Coarse Stone	80	1.673E+00	267.6

Summary - Miscellaneous Stone Usage

Material	Hours/Year	EF (lb/hr)	$PM_{2.5}$ Emissions (lb/yr)
Coarse Stone	100	1.673E+00	334.5

$PM_{2.5}$ CALCULATIONS
LANDFILL CONSTRUCTION - RMU-1 LANDFILL
CWM CHEMICAL SERVICES, LLC

Grading Emissions

Grading equation from Table 11.9-1 of Supplement E of AP-42 Fourth Edition (7/98):

$$E = (0.031)\ (0.040)\ (\text{veh speed})^{2.5}$$

Assume avg. grader speed = 7.39 mph (650 fpm)

E = 0.184 lb / VMT (independent of material being graded)

Assume equipment blades are 10 feet wide
Assume grading depth of 0.5 feet (6 inches)

1 cubic yard of material graded every 5.4 feet
1 VMT (grader) = 977.8 yd^3 of material graded

EF = 0.0002 lb $PM_{2.5}$ / yd^3

Summary - Cover Construction

Material	Usage/Year (yd^3)	EF (lb/yd^3)	$PM_{2.5}$ Emissions (lb/yr)
Soils	17,476	1.883E-04	3.3

Summary - Road Construction

Material	Usage/Year (yd^3)	EF (lb/yd^3)	$PM_{2.5}$ Emissions (lb/yr)
Coarse Stone	2,090	1.883E-04	0.4

Summary - Miscellaneous Stone Usage

Material	Usage/Year (yd^3)	EF (lb/yd^3)	$PM_{2.5}$ Emissions (lb/yr)
Coarse Stone	3,600	1.883E-04	0.7

$PM_{2.5}$ CALCULATIONS
LANDFILL CONSTRUCTION - RMU-2 LANDFILL
CWM CHEMICAL SERVICES

Landfill Construction
Landfill Unit: RMU-2

Material Requirements

Cell Construction

Material	Volume (yd^3)	Weight (tons)
Clay	213,000	181,157
Coarse Stone	189,000	273,011
Soils	676,000	666,198

Material Densities (Appendix A-9 of AP-40, Second Edition)

Material	Density (lb/ft^3)
Clay	63
Coarse Stone	107
Soils	73

Facultative Pond 5 Construction

Material	Volume (yd^3)	Weight (tons)
Clay	26,110	22,207
Coarse Stone	2,500	3,611
Soils	90,990	89,671

Landfill Activity Span = 6 phases of cell construction
Facultative Pond 5 Activity Span = 1 phase of cover construction

Years 1-13: Cell Construction
Year 1: Facultative Pond 5 Construction
Years 5-20: Cover Construction

Total Landfill Life = 20 years

[Year 1 represents worst case scenario]

*Cell Construction Materials Usage per Phase ****

Material	Volume (yd^3)	Weight (tons)
Clay	35,500	30,193
Coarse Stone	31,500	45,502
Soils	112,667	111,033
Total	**179,667**	**186,728**

*Facultative Pond 5 Construction Materials Usage per Phase ****

Material	Volume (yd^3)	Weight (tons)
Clay	26,110	22,207
Coarse Stone	2,500	3,611
Soils	90,990	89,671
Total	**119,600**	**115,488**

*** No more than one phase of cell construction or Facultative Pond 5 construction is completed in one 12-month period

Truck nominal payload = 20 tons

$$\text{Trucks/year} = \frac{(186{,}728\text{ tpy}) + (115{,}488\text{ tpy})}{20\text{ tons / truck}} = 15{,}110.8\text{ trucks/year} = 15{,}111\text{ trucks/year}$$

Cell Excavation

Total Area = 44 acres
Depth of cell = 7.5 ft
Density = 73 lb/ft^3 (moist common earth)

$$\text{Volume} = \frac{(44\text{ acres})(43{,}560\text{ ft}^2)(7.5\text{ ft})}{(1\text{ acre})}$$

= 14,374,800 ft^3
= 2,395,800 ft^3/year
= 532,400 yd^3
= 88,733 yd^3/year

Weight (excavated material) = 524,680.2 tons
Weight (excavated material) = 87,447 tons/year

- Assume each truckload of excavated material weighs 20 tons

$$\text{Traffic} = \frac{(2{,}395{,}800\text{ ft}^3)(73\text{ lb})(1\text{ truckload})}{(1\text{ yr})(1\text{ft}^3)(40{,}000\text{ lb})} = 4{,}373\text{ truckloads/yr}$$

Faculatative Pond 5 Excavation

Total Area = 2.5 acres
Depth of pond = 7.5 ft
Density = 73 lb/ft^3 (moist common earth)

$$\text{Volume} = \frac{(2.5\text{ acres})(43{,}560\text{ ft}^2)(7.5\text{ ft})}{(1\text{ acre})}$$

= 816,750 ft^3
= 816,750 ft^3/year
= 30,250 yd^3
= 30,250 yd^3/year

Weight (excavated material) = 29,811.4 tons
Weight (excavated material) = 29,811.4 tons/year

- Assume each truckload of excavated material weighs 20 tons

$$\text{Traffic} = \frac{(816{,}750\text{ ft}^3)(73\text{ lb})(1\text{ truckload})}{(1\text{ yr})(1\text{ft}^3)(40{,}000\text{ lb})} = 1{,}491\text{ truckloads/yr}$$

$PM_{2.5}$ CALCULATIONS
LANDFILL CONSTRUCTION - RMU-2 LANDFILL
CWM CHEMICAL SERVICES

Material Loading / Unloading Emissions

Batch Drop equation from AP-42, Section 13.2.4 (11/06):

$$E = k\,(0.0032)\,\frac{(u/5)^{1.3}}{(M/2)^{1.4}}$$

where:

E = emission factor (lb/ton)
k = 0.053 (for $PM_{2.5}$)
u = mean wind speed (mph) = 6.8 (2006 average wind speed - Model City, NY)
M_{clay} = % moisture in clay = 10 (from AP-42, Table 13.2.4-1)
M_{stone} = % moisture in stone = 0.7 (from AP-42, Table 13.2.4-1)
$M_{topsoil/dirt}$ = % moisture in topsoil/dirt mix = 12 (from AP-42, Table 13.2.4-1)

$$E_{(clay)} = k\,(0.0032)\,\frac{(6.8/5)^{1.3}}{(10/2)^{1.4}} = 2.641E\text{-}05 \text{ lb/ton}$$

$$E_{(stone)} = k\,(0.0032)\,\frac{(6.8/5)^{1.3}}{(0.7/2)^{1.4}} = 1.093E\text{-}03 \text{ lb/ton}$$

$$E_{(topsoil/dirt)} = k\,(0.0032)\,\frac{(6.8/5)^{1.3}}{(12/2)^{1.4}} = 2.046E\text{-}05 \text{ lb/ton}$$

Summary - Cell Construction

Material	Usage/Year (tons)	EF (lb/ton)	$PM_{2.5}$ Emissions (lb/yr)
Clay	30,193	2.641E-05	0.8
Coarse Stone	45,502	1.093E-03	49.7
Soils	111,033	2.046E-05	2.3

Summary - Facultative Pond 5 Construction

Material	Usage/Year (tons)	EF (lb/ton)	$PM_{2.5}$ Emissions (lb/yr)
Clay	22,207	2.641E-05	0.6
Coarse Stone	3,611	1.093E-03	3.9
Soils	89,671	2.046E-05	1.8

Summary - Excavation

Material	Usage/Year (tons)	EF (lb/ton)	$PM_{2.5}$ Emissions (lb/yr)
Soils (Total)	117,258	2.046E-05	2.4

$PM_{2.5}$ CALCULATIONS
LANDFILL CONSTRUCTION - RMU-2 LANDFILL
CWM CHEMICAL SERVICES

Bulldozing Emissions

Compaction by Bulldozing equation from Table 11.9-1 of Supplement E of AP-42 Fourth Edition (7/98):

$$E = \frac{(0.105)\ (5.7)\ (silt\%)^{1.2}}{(moisture\%)^{1.3}}$$

where: E = Emission rate of PM_{10} in lb/hr

From Table 13.2.4-1 of AP-42 (11/06):

Clay:
Silt % = 6
Moisture % = 10

Stone:
Silt % = 1.6
Moisture % = 0.7

Topsoil/Dirt:
Silt % = 9
Moisture % = 12

$$E_{(clay)} = \frac{(0.105)\ (5.7)\ (6)^{1.2}}{(10)^{1.3}} = 2.575E\text{-}01 \text{ lb/hr}$$

$$E_{(stone)} = \frac{(0.105)\ (5.7)\ (1.6)^{1.2}}{(0.7)^{1.3}} = 1.673E\text{+}00 \text{ lb/hr}$$

$$E_{(topsoil/dirt)} = \frac{(0.105)\ (5.7)\ (9)^{1.2}}{(12)^{1.3}} = 3.305E\text{-}01 \text{ lb/hr}$$

Total Construction hours / year = 1,800 (For Cell Construction, Pond Construction and excavation)
Total Bulldozers (Cell Construction) = 3
Total Bulldozers (Pond Construction) = 1

- Proportion total hours by fraction of each material to get $PM_{2.5}$ emissions for cell construction, cover construction, and excavation

Total Material = 186,728 tons + 115,448 tons + 87,447 tons + 29,811 tons = 419,474 tons

Summary - Cell Construction

Material	Usage/Year (tons)	EF (lb/hr)	$PM_{2.5}$ Emissions (lb/yr)
Clay	30,193	2.575E-01	100.1
Coarse Stone	45,502	1.673E+00	979.7
Soils	111,033	1.673E+00	2,390.7

Summary - Facultative Pond 5 Construction

Material	Usage/Year (tons)	EF (lb/hr)	$PM_{2.5}$ Emissions (lb/yr)
Clay	22,207	2.575E-01	24.5
Coarse Stone	3,611	1.673E+00	25.9
Soils	89,671	3.305E-01	127.2

Summary - Excavation

Material	Usage/Year (tons)	EF (lb/hr)	$PM_{2.5}$ Emissions (lb/yr)
Soils (Cell)	87,447	3.305E-01	372.1
Soils (Pond)	29,811	3.305E-01	42.3

$PM_{2.5}$ CALCULATIONS
LANDFILL CONSTRUCTION - RMU-2 LANDFILL
CWM CHEMICAL SERVICES

Grading Emissions

Grading equation from Table 11.9-1 of Supplement E of AP-42 Fourth Edition (7/98):

$$E = (0.031)\ (0.040)\ (\text{veh speed})^{2.5}$$

Assume avg. grader speed = 7.39 mph (650 fpm)

E = 0.184 lb / VMT (independent of material being graded)

Assume equipment blades are 10 feet wide
Assume grading depth of 0.5 feet (6 inches)

1 cubic yard of material graded every 5.4 feet
1 VMT (grader) = 977.8 yd^3 of material graded

EF = 0.0002 lb $PM_{2.5}$ / yd^3

Summary - Cell Construction

Material	Usage/Year (yd^3)	EF (lb/yd^3)	$PM_{2.5}$ Emissions (lb/yr)
Clay	35,500	1.883E-04	6.7
Coarse Stone	31,500	1.883E-04	5.9
Soils	112,667	1.883E-04	21.2

Summary - Cover Construction

Material	Usage/Year (yd^3)	EF (lb/yd^3)	$PM_{2.5}$ Emissions (lb/yr)
Clay	26,110	1.883E-04	4.9
Coarse Stone	2,500	1.883E-04	0.5
Soils	90,990	1.883E-04	17.1

Summary - Excavation

Material	Usage/Year (yd^3)	EF (lb/yd^3)	$PM_{2.5}$ Emissions (lb/yr)
Soils (Total)	118,983	1.883E-04	22.4

$PM_{2.5}$ CALCULATIONS
PAVED / UNPAVED ROAD DUST
CWM CHEMICAL SERVICES, LLC

Paved / Unpaved Roads

Road Segment #	Vehicles on Segment	NO. OF VEHICLES [a] PER YEAR	AVERAGE FULL VEHICLE WEIGHT [b] (tons)	AVERAGE EMPTY VEHICLE WEIGHT [b] (tons)	ACTUAL MEAN VEHICLE WEIGHT [b] (tons)	MILES TRAVELED (c) (MILES)	SILT CONTENT [d] (g/m^2)	PM2.5 Emission Rate (lb/VMT) [e]	Uncontrolled PM2.5 (TPY)	Efficiency (%) [f] PM2.5 (TPY)	Controlled PM2.5 [g] (TPY)
				PAVED						PAVED	
1-2	Landfill Disposal	5,900	39.5	18.7	29.1	4,800.5	7.4				
	AWTS	140	30.8	17.3	24.0	113.9	7.4				
	Stabilization	1,683	35.1	19.9	27.5	1,369.4	7.4				
	Transship	92	32.4	20.1	26.2	74.9	7.4				
	Drums	833	26.4	17.5	22.0	677.8	7.4				
	Site Vehicles	5,200	2.5	2.5	2.5	4,230.9	7.4				
	Delivery Trucks	1,300	5.0	5.0	5.0	1,057.7	7.4				
	Personal Veh.	6,500	1.5	1.5	1.5	5,288.6	7.4				
Total/Average		21,648			12.5	17,613.6	7.4	0.044	0.388	40	0.23
2-3	Landfill Disposal	5,900	39.5	18.7	29.1	3,857.3	7.4				
	AWTS	140	30.8	17.3	24.0	91.5	7.4				
	Stabilization	1,683	35.1	19.9	27.5	1,100.3	7.4				
	Transship	92	32.4	20.1	26.2	60.1	7.4				
	Drums	833	26.4	17.5	22.0	544.6	7.4				
	Site Vehicles	5,200	2.5	2.5	2.5	3,399.7	7.4				
	Delivery Trucks	1,300	5.0	5.0	5.0	849.9	7.4				
	Personal Veh.	1,300	1.5	1.5	1.5	849.9	7.4				
Total/Average		16,448			16.0	10,753.5	7.4	0.057	0.304	40	0.18
4-10	Landfill Disposal	5,900	39.5	18.7	29.1	1,423.6	7.4				
	AWTS	140	30.8	17.3	24.0	33.8	7.4				
	Stabilization	1,683	35.1	19.9	27.5	406.1	7.4				
	Post-Stabilization	3,366	33.0	19.0	26.0	812.2	7.4				
	Transship	92	32.4	20.1	26.2	22.2	7.4				
	Site Vehicles	5,200	2.5	2.5	2.5	1,254.7	7.4				
	Delivery Trucks	1,300	5.0	5.0	5.0	313.7	7.4				
	Personal Veh.	1,300	1.5	1.5	1.5	313.7	7.4				
Total/Average		18,981			17.5	4,579.9	7.4	0.062	0.142	40	0.09
5-6	Stabilization	1,683	35.1	19.9	27.5	185.5	7.4				
	Post-Stabilization	3,366	33.0	19.0	26.0	371.0	7.4				
	Drums	833	26.4	17.5	22.0	91.8	7.4				
Total/Average		5,882			25.9	648.4	7.4	0.092	0.030	40	0.02
6-7	Stabilization	1,683	35.1	19.9	27.5	269.0	7.4				
	Post-Stabilization	3,366	33.0	19.0	26.0	538.1	7.4				
Total/Average		5,049			26.5	807.1	7.4	0.094	0.038	40	0.02
6-8	Drums	833	26.4	17.5	22.0	626.3	7.4				
Total/Average		833			22.0	626.3	7.4	0.078	0.024	40	0.01
22-23	Drums	833	26.4	17.5	22.0	78.9	7.4				
Total/Average		833			22.0	78.9	7.4	0.078	0.003	40	0.00
10-11	Landfill Disposal	5,900	39.5	18.7	29.1	969.9	7.4				
	AWTS	140	30.8	17.3	24.0	23.0	7.4				
	Stabilization	1,683	35.1	19.9	27.5	276.7	7.4				
	Post-Stabilization	3,366	33.0	19.0	26.0	553.4	7.4				
	Site Vehicles	5,200	2.5	2.5	2.5	854.8	7.4				
	Delivery Trucks	1,300	5.0	5.0	5.0	213.7	7.4				
	Personal Veh.	1,300	1.5	1.5	1.5	213.7	7.4				
Total/Average		18,889			17.5	3,105.2	7.4	0.062	0.096	40	0.06
11-12	AWTS	140	30.8	17.3	24.0	37.8	7.4				
	Site Vehicles	5,200	2.5	2.5	2.5	1,402.4	7.4				
	Delivery Trucks	1,300	5.0	5.0	5.0	350.6	7.4				
	Personal Veh.	1,300	1.5	1.5	1.5	350.6	7.4				
Total/Average		7,940			3.1	2,141.4	7.4	0.011	0.011	40	0.01
11-13	Landfill Disposal	5,900	39.5	18.7	29.1	1,068.3	7.4				
	Post-Stabilization	3,366	33.0	19.0	26.0	609.5	7.4				
Total/Average		9,266			28.0	1,677.7	7.4	0.100	0.084	40	0.05
15-16	RMU-1 Construction	1,273	36.8	16.8	26.8	750.8	7.4				
Total/Average		1,273			26.8	750.8	7.4	0.095	0.036	40	0.02
16-17	RMU-1 Construction	1,273	36.8	16.8	26.8	343.3	7.4				
	RMU-2 Construction	20,975	36.8	16.8	26.8	5,656.9	7.4				
Total/Average		22,248			26.8	6,000.2	7.4	0.095	0.286	40	0.17
18-19	RMU-1 Construction	1,273	36.8	16.8	26.8	486.1	7.4				
	RMU-2 Construction	20,975	36.8	16.8	26.8	8,008.6	7.4				
Total/Average		22,248			26.8	8,494.7	7.4	0.095	0.405	40	0.24
										Total	**1.11**

$PM_{2.5}$ CALCULATIONS
PAVED / UNPAVED ROAD DUST
CWM CHEMICAL SERVICES, LLC

Road Segment #	*Vehicles on Segment*	*NO. OF VEHICLES[a] PER YEAR*	*AVERAGE FULL VEHICLE WEIGHT[b] (tons)*	*AVERAGE EMPTY VEHICLE WEIGHT[b] (tons)*	*ACTUAL MEAN VEHICLE WEIGHT[b] (tons)*	*MILES TRAVELED (c) (MILES)*	*SILT CONTENT[d] (g/m^2)*	*PM2.5 Emission Rate (lb/VMT)[e]*	*Uncontrolled PM2.5 (TPY)*	*Efficiency (%)[f] PM2.5 (TPY)*	*Controlled PM2.5[g] (TPY)*
UNPAVED										**UNPAVED**	
3-4	Landfill Disposal	5,900	39.5	18.7	29.1	1,644.8	6.4				
	AWTS	140	30.8	17.3	24.0	39.0	6.4				
	Stabilization	1,683	35.1	19.9	27.5	469.2	6.4				
	Transship	92	32.4	20.1	26.2	25.6	6.4				
	Drums	833	26.4	17.5	22.0	232.2	6.4				
	Site Vehicles	5,200	2.5	2.5	2.5	1,449.7	6.4				
	Delivery Trucks	1,300	5.0	5.0	5.0	362.4	6.4				
	Personal Veh.	1,300	1.5	1.5	1.5	362.4	6.4				
Total/Average		16,448			16.0	4,585.5	6.4	0.181	0.415	40	0.25
4-5	Stabilization	1,683	35.1	19.9	27.5	443.7	6.4				
	Post-Stabilization	3,366	33.0	19.0	26.0	887.4	6.4				
	Drums	833	26.4	17.5	22.0	219.6	6.4				
Total/Average		5,882			25.9	1,550.7	6.4	0.225	0.174	40	0.10
9-10	Transship	92	32.4	20.1	26.2	14.1	6.4				
Total/Average		92			26.2	14.1	6.4	0.226	0.002	40	0.00
14-16	RMU-2 Construction	20,975	36.8	16.8	26.8	8,437.7	6.4				
Total/Average		20,975			26.8	8,437.7	6.4	0.228	0.962	40	0.58
17-18	RMU-1 Construction	1,273	36.8	16.8	26.8	739.7	6.4				
	RMU-2 Construction	20,975	36.8	16.8	26.8	12,187.7	6.4				
Total/Average		22,248			26.8	12,927.4	6.4	0.228	1.474	40	0.88
19-20	RMU-1 Construction	1,273	36.8	16.8	26.8	1,235.4	6.4				
	RMU-2 Construction	20,975	36.8	16.8	26.8	20,355.3	6.4				
Total/Average		22,248			26.8	21,590.7	6.4	0.228	2.462	40	1.48
8-22	Drums	833	26.4	17.5	22.0	220.9	6.4				
Total/Average		833			22.0	220.9	6.4	0.209	0.023	40	0.01
13-14	Landfill Disposal	5,900	39.5	18.7	29.1	1,528.6	6.4				
	Post-Stabilization	3,366	33.0	19.0	26.0	872.1	6.4				
Total/Average		9,266			28.0	2,400.7	6.4	0.233	0.279	40	0.17
14-21	RMU-2 Construction	20,975	36.8	16.8	26.8	5,474.2	6.4				
	Landfill Disposal	5,900	39.5	18.7	29.1	1,539.8	6.4				
	Post-Stabilization	3,366	33.0	19.0	26.0	878.5	6.4				
Total/Average		30,241			27.1	7,892.4	6.4	0.229	0.906	40	0.54
										Total	**4.02**

EQUATIONS:

A Fugitive emissions from paved site roads are based on emission factors from AP-42 Section 13.2.1.3 (Equation 1 for paved roads).
Constant 'k' (particle size multiplier) from AP-42 Table 13.2-1.1.

Calculations

$E (lb/VMT) = [k(sL)^{.91}(W)^{1.02}]$

E(TPY) = E(lb/VMT)*(VMT/truck)*(truck/d)*(d/week)*(week/yr)/2000

Variables/Constants

k = particle size multiplier (dimensionless)

K(PM2.5) = 0.00054 lb/VMT

W = Average weight of vehicle in tons

sL = silt loading $sL = 7.4\ g/m^2$

B Fugitive emissions from trucks driving on unpaved surfaces, will use emission factor equation in AP-42 Section 13.2.2.4
(Equation 1a for unpaved roads)

Calculations

$E (lb/VMT) = [k(s/12)^a(W/3)^b]$

E(TPY) = E(lb/VMT)*(VMT/truck)*(truck/yr)/2000

Variables/Constants

k = particle size multiplier (dimensionless)

k(PM2.5) = 0.15 lb/VMT

a = Constant   a(PM2.5) = 0.9

b = Constant   b(PM2.5) = 0.45

s = silt content (%)

(measured or estimated - varies for different sources/materials - see below)

s = 6.4 %

Notes:

a Number of vehicles information was provided by Site specific data which was supplied by the Site (July 2006 - June 2007)

b Vehicle weight information was provided by Site specific data which was supplied by the Site (July 2006 - June 2007)

c The round-trip distance traveled on the roads determined from analysis of CAD drawing of site (See Below)

d Silt content was referenced from Section 13.2.1 or 13.2.2 from AP-42.

e PM emissions were calculated using equations as shown above.

f Control efficiencies for paved and unpaved roads (and surfaces treated as unpaved roads) were referenced from Figure 13.2.2-2 of AP-42, Section 13.2.2 (11/06); water trucks are used at the Facility to control dust emissions from paved and unpaved roads, and are required by the Facility's permit.

g Controlled PM emissions were calculated by applying the control efficiency to the calculated PM-TPY value.

Distances determined from AutoCAD analysis of Site Drawing

Segment	Length (ft)
1-2	2148
2-3	1726
4-10	637
5-6	291
6-7	422
6-8	1985
22-23	250
10-11	434
11-12	712
11-13	478
15-16	1557
16-17	712
18-19	1008
3-4	736
4-5	696
9-10	405
14-16	1062
17-18	1534
19-20	2562
8-22	700
13-14	684
14-21	689

$PM_{2.5}$ CALCULATIONS
SILO LOADING AND STABILIZATION BAGHOUSES
CWM CHEMICAL SERVICES, LLC

Cement Kiln Silo Loading

- Cement Kiln Silo

Total Waste Stabilized at Facility = 25,454.0 tons/year

- Assume that 15% CKD is added to treat waste

CKD Consumption = 3,818.1 tons/year

* Section 11.12 of AP-42 (6/06) lists controlled emission factor for cement loading to elevated storage silo (pneumatic) as 0.00099 lb/ton loaded (Table 11.12-2)

** Assume that all particulate matter is $PM_{2.5}$ to be conservative

$PM_{2.5}$ emissions = 3.78 lb/year
$PM_{2.5}$ emissions = 0.002 TPY

Lime Silo (AWTS Facility)

From Facility Records:

2005 Lime Consumption = 110 tons
2006 Lime Consumption = 110 tons

* Section 11.17 of AP-42 (2/98) lists emission factor for lime loading (enclosed truck) as: 0.61 lb/ton (Table 11.17-4)

** Assume that all particulate matter is $PM_{2.5}$ to be conservative

$PM_{2.5}$ emissions = 67.10 lb/year
$PM_{2.5}$ emissions = 0.03 TPY

Stabilization Baghouses

- 2 stabilization baghouses in operation

- Facility records indicate that approximately 200 lb of particulates are removed from hoppers every 2 weeks

Collected PM = 5,200 lb/year

- Assume 99 percent capture efficiency in stabilization baghouse

** Assume that all particulate matter is $PM_{2.5}$ to be conservative

$PM_{2.5}$ Emissions = 52.5 lb/year (Controlled emissions)

Baghouse Flowrates:

			Fraction of Total
Baghouse 1 =	90,000	cfm	0.643
Baghouse 2 =	50,000	cfm	0.357

- Proportion emissions according to flowrate in each baghouse

Baghouse #1 Emissions = 33.8 lb/year
Baghouse #1 Emissions = 0.02 tons/year
Baghouse #2 Emissions = 18.8 lb/year
Baghouse #2 Emissions = 0.01 tons/year

$PM_{2.5}$ CALCULATIONS
LANDFILL TOTALS
CWM CHEMICAL SERVICES, LLC

Totals

Process	**$PM_{2.5}$ Emissions (lb/year)**	**$PM_{2.5}$ Emissions (TPY)**
Landfill Operation		
Waste Unloading	1.6	0.00
Waste Compaction	519.9	0.26
Paved Roads	2,216.6	1.11
Unpaved Roads	8,035.7	4.02
Totals	**10,773.9**	**5.39**
Landfill Construction (RMU-1)		
Material Loading/Unloading	9.3	0.00
Bulldozing/Compaction	998.8	0.50
Grading	4.4	0.00
Totals	**1,012.5**	**0.51**
Landfill Construction (RMU-2)		
Material Loading/Unloading	61.6	0.03
Bulldozing/Compaction	4,062.5	2.03
Grading	78.7	0.04
Totals	**4,202.8**	**2.10**
Silo Loading		
Cement Kiln Silo	3.8	0.002
Lime Silo (AWTS Facility)	67.1	0.03
Totals	**70.9**	**0.04**
Stabilization Baghouses		
Baghouse # 1	33.8	0.02
Baghouse # 2	18.8	0.01
Totals	**52.5**	**0.03**
Facility Totals	**16,112.6**	**8.06**

Attachment 3

USEPA Paper *"Overall Mass Transfer Coefficient for Pollutant Emissions From Small Water Pools Under Simulated Indoor Environmental Conditions"*

Ann. occup. Hyg., Vol. 47, No. 4, pp. 279–286, 2003
Published by Oxford University Press
DOI: 10.1093/annhyg/meg035

Overall Mass Transfer Coefficient for Pollutant Emissions from Small Water Pools under Simulated Indoor Environmental Conditions

Z. GUO[1]* and N. F. ROACHE[2]

[1]US Environmental Protection Agency, Office of Research and Development, National Risk Management Research Laboratory, Air Pollution Prevention and Control Division, Mail Code E305-03, Research Triangle Park, NC 27711; [2]ARCADIS Geraghty & Miller Inc., PO Box 13109, Research Triangle Park, NC 27709, USA

Received 5 August 2002; in final form 20 December 2002

Small chamber tests were conducted to experimentally determine the overall mass transfer coefficient for pollutant emissions from still aqueous solutions under simulated indoor (residential or occupational) environmental conditions. The tests covered six organic compounds with a Henry's constant range from 3.33×10^{-7} to 3.67×10^{-3} (atm m^3/mol). The estimated overall liquid phase mass transfer coefficients for still solutions varied from 1.8×10^{-6} to 5.7×10^{-3} m/h; the estimated liquid phase mass transfer coefficients were 9.7×10^{-3} m/h for the reference compound (oxygen) and 5.00×10^{-3} to 6.04×10^{-3} m/h for the test compounds. An empirical model is proposed to estimate the overall mass transfer coefficient, which can be used to predict pollutant emissions from still aqueous solutions (e.g. pools and puddles) in indoor environments.

Keywords: aqueous solution; emission; indoor environment; mass transfer coefficient; water

INTRODUCTION

The overall mass transfer coefficient, also known as the total transfer velocity, is a key parameter in predicting the rate of pollutant emissions from aqueous solutions. It is well established that, based on the classic two-resistance theory, the emission rate can be estimated by equation (1) or, equivalently, equation (2) (Lyman *et al.*, 1990).

$$R = SK_{OL}(C_L - C_G/H) \quad (1)$$

$$R = SK_{OG}(C_L H - C_G) \quad (2)$$

where R is the emission rate (µg/h), S is the source area (m^2), K_{OL} is the overall liquid phase mass transfer coefficient (m/h), K_{OG} is the overall gas phase mass transfer coefficient (m/h), C_L is the pollutant concentration in the liquid (µg/m^3), C_G is the pollutant concentration in air (µg/m^3) and H is the dimensionless Henry's constant [(µg/m^3)$_{air}$/(µg/m^3)$_{liquid}$]. The two overall mass transfer coefficients, K_{OL} and K_{OG}, are defined by equations (3) and (4), respectively.

$$1/K_{OL} = (1/k_L) + (1/k_G H) \quad (3)$$

$$1/K_{OG} = (H/k_L) + (1/k_G) \quad (4)$$

where k_L is the liquid phase mass transfer coefficient (m/h) and k_G is the gas phase mass transfer coefficient (m/h). K_{OL} and K_{OG} are so closely related that one can regard them as the measurement of the same physical property on different scales, a case similar to weighing an object in kilograms and pounds. The conversion factor between K_{OL} and K_{OG} is the Henry's constant (equation 5).

$$K_{OL} = HK_{OG} \quad (5)$$

The difference between the phase mass transfer coefficient (k_L or k_G) and the overall mass transfer coefficient (K_{OL} or K_{OG}) is that the former considers the transfer velocity in a single phase (either liquid or

*Author to whom correspondence should be addressed.
Tel: +1 919 541 0185; fax: +1 919 541 2157; e-mail: guo.zhishi@epa.gov

Table 1. Selected properties of the test compounds at 25°C

Compound	Formula	Molecular weight	Vapor pressure[a] (mmHg)	Henry's constant[b]		D_a[c] (m^2/h)	D_L[d] (m^2/h)
				(atm m^3/mol)	(dimensionless)		
Chloroform	$CHCl_3$	119.4	198	3.67×10^{-3}	1.50×10^{-1}	3.28×10^{-2}	3.90×10^{-6}
Butyl acetate	$CH_3COOC_4H_9$	116.2	11.6	2.81×10^{-4}	1.15×10^{-2}	2.61×10^{-2}	2.79×10^{-6}
Ethyl acetate	$CH_3COOC_2H_5$	88.10	93.6	1.34×10^{-4}	5.48×10^{-3}	3.14×10^{-2}	3.45×10^{-6}
1-Butanol	C_4H_9OH	74.12	7.07	8.81×10^{-6}	3.60×10^{-4}	3.24×10^{-2}	3.54×10^{-6}
1-Propanol	C_3H_7OH	60.09	20.8	7.41×10^{-6}	3.03×10^{-4}	3.71×10^{-2}	4.08×10^{-6}
Phenol	C_6H_5OH	94.11	0.53	3.33×10^{-7}	1.36×10^{-5}	3.07×10^{-2}	3.55×10^{-6}

[a]From Yaws (1994).
[b]From Howard and Meylan (1997).
[c]D_a is diffusivity in air, calculated with the method of Fuller *et al.* (1966).
[d]D_L is diffusivity in water, calculated with the method of Hayduk and Laudie (1974).

gas) while the latter considers both phases. In other words, the overall mass transfer coefficient represents the combined effects of k_L, k_G and H.

Since Henry's constants are available in the literature for most compounds of interest, estimation of either overall mass transfer coefficient becomes the main issue for predicting pollutant emissions from aqueous solutions. Ways to estimate the phase mass transfer coefficients (k_L and k_G) have been thoroughly studied in the ambient environment, in which the sources of interest include oceans, lakes, rivers and waste water treatment facilities. Excellent summaries on this subject are given by Lyman *et al.* (1990) and Schwarzenbach *et al.* (1993). For example, Southworth (1979) used equations (6) and (7) to calculate k_L and k_G, respectively.

$$k_L = 23.51(V_{curr}^{0.969}/Z^{0.673})\sqrt{32/M} \quad (6)$$

$$k_G = 1137.5(V_{wind} + V_{curr})\sqrt{18/M} \quad (7)$$

where k_G and k_L are in cm/h, V_{curr} is the river current velocity (m/s), V_{wind} is the wind speed (m/s), Z is the depth of water (m) and M is the molecular weight of the chemical of interest (g/mol). The applicability of these ambient models to indoor environments is doubtful, however, because the conditions in the latter environments, occupational or residential, can be drastically different from those found outdoors. For instance, the velocity (or speed) of indoor air is usually much lower, typically 5–10 cm/s, and source areas are much smaller too. If the water is virtually still, equation (6) gives 0 for k_L.

In a comprehensive study on emissions from water use to indoor air (EPA, 2000), lumped overall mass transfer coefficients (SK_{OL}) were reported for washing machine, dishwasher, shower and bathtub. The absolute values of k_G and k_L were not determined, however.

This study concerns pollutant emissions from still aqueous solutions in the indoor environment. Examples of such emission sources include buckets of water-based hard surface cleaners used by janitors, water-based cleaners applied to horizontal surfaces and puddles of water-based insecticides applied to the floor. A more complex case is the emission of organic solvents from latex paint applied to a wall. The objective of this work was two-fold: (i) to experimentally determine the overall mass transfer coefficients for organic compounds with a wide range of Henry's constants under simulated indoor environmental conditions; (ii) to develop an empirical model to estimate the overall mass transfer coefficients for still aqueous solutions. The results of this work can be used to predict pollutant emissions from aqueous solutions in the forms of pools, puddles and films in residential and occupational environments.

METHODS

Six test compounds were selected (Table 1). They cover a range of Henry's constant from 3.33×10^{-7} to 3.67×10^{-3} (atm m^3/mol) or 1.36×10^{-5} to 1.50×10^{-1} (dimensionless). Their dilute solutions, ranging from 3.99×10^{-6} to 5.65×10^{-3} mol/l, were prepared one day before the chamber tests by dissolving a known amount of pure compound in deionized water. Prior to the start of chamber tests, the concentration of the stock solution was analyzed by flash vaporization of the liquid onto Tenax sorbent tubes with subsequent analysis by gas chromatography–mass spectroscopy (GC/MS). The source containers were identical circular pools made from stainless steel. They had an inside diameter of 7.4 cm, an outside diameter (including the edges at the top) of 8.9 cm and a depth of 3.1 cm. The emissions tests were conducted in two identical 53 l stainless steel environmental chambers (Tichenor *et al.*, 1990) with a ventilation rate of 1 air change/h, a temperature of 23.5°C and a relative humidity of inlet air of 20%. Temperature was measured by thermocouples (model E49008U-00-04; Inotek Technologies) and relative humidity by humidity probes (model HHT-2WC-RP-TTB; HyCal Sensing Products). Controlled by small circulation fans, the air speeds in the chambers were measured with a calibrated hot-wire anemometer (1213 Indoor Climate

Analyzer; Brüel & Kjær) at five locations, 1 cm over the pool. The two chambers differed only in air speeds: 12.6 ± 4.5 cm/s in chamber 1 and 21.6 ± 7.9 cm/s in chamber 2. Prior to a test, the source container was filled with test solution and then placed at the center of the chamber bottom. The test start time was recorded as the chamber door closed. Air samples were collected onto Tenax TA sorbent tubes (Supelco) with mass flow controllers and analyzed by GC with a mass selective detector (6890/5973; Hewlett Packard) equipped with a 30 m DB624 column (0.25 mm i.d. × 1.4 µm film thickness). Samples collected on the sorbents were introduced into the GC by a multitube thermal desorption unit (ATD 400; Perkin Elmer).

RESULTS

Summary of test parameters

A total of 14 chamber tests were conducted, including one duplicate in each chamber. The test conditions are summarized in Table 2.

Time–concentration profiles

The time–concentration profiles were strongly affected by the Henry's constants. For chloroform, which has the largest Henry's constant among the test compounds, the two chambers had almost identical results, indicating that the emissions were limited by the liquid phase mass transfer. In addition, the emission rates decreased significantly over time due to exhaustion of the source (Fig. 1). For phenol, which has the smallest Henry's constant among the test compounds, the difference between the two chambers was significant, indicating that the emissions were limited by the gas phase mass transfer (Fig. 2). The time–concentration profiles for the remaining compounds were between these two extreme cases.

Estimation of the overall liquid phase mass transfer coefficient (K_{OL})

The overall liquid phase mass transfer coefficient (K_{OL}) was estimated by fitting the following mass balance model (equations 8–10) to the chamber concentration data with K_{OL} being the only unknown parameter.

$$V(dC_G/dt) = SK_{OL}(C_L - C_G/H) - QC_G \quad (8)$$

$$dW_L/dt = -SK_{OL}(C_L - C_G/H) \quad (9)$$

$$C_L = W_L/[V_L - (r_w t/\rho_w)] \quad (10)$$

where V is the chamber volume (m^3), t is the time (h), Q is the air exchange flow rate (m^3/h), W_L is the amount of test compound in the liquid (µg), V_L is the initial volume of liquid (m^3), r_w is the water evaporation rate (g/h) and ρ_w is the density of water (g/m^3). Data fitting software SCIENTIST (MicroMath Scientific Software, Salt Lake City, UT) was used for the non-linear regression, and the initial conditions were $t = 0$, $C_G = 0$ and $W_L = C_{L0} \times V_L$, where C_{L0} is the initial concentration in the liquid. The estimated K_{OL} values and their associated standard errors for the non-linear regression are given in the last column of Table 2.

AN EMPIRICAL MODEL FOR ESTIMATING K_{OL} AND K_{OG}

Approach

In order to use equations (1) and (2) as predictive models, one must know how to estimate the overall mass transfer coefficient for a given compound. The objective here is to develop a parameter estimation method for pollutant emissions from still aqueous solutions under indoor environmental conditions. The proposed model calculates the overall mass transfer coefficient (K_{OL} or K_{OG}) in three steps: (i) calculate the gas phase mass transfer coefficient (k_G) from the Sherwood number; (ii) calculate the liquid phase mass transfer coefficient (k_L) from that for a reference compound; (iii) calculate the overall mass transfer coefficient from equation (3) or (4). Details are discussed below.

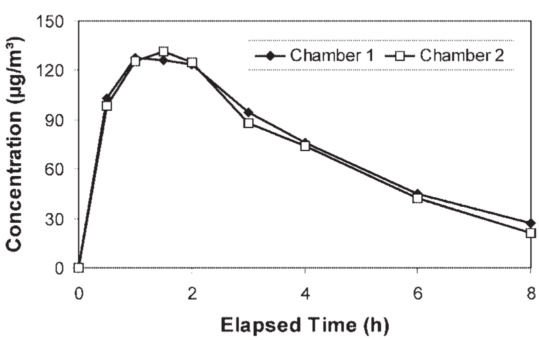


Fig. 1. Time–concentration profile for chloroform.

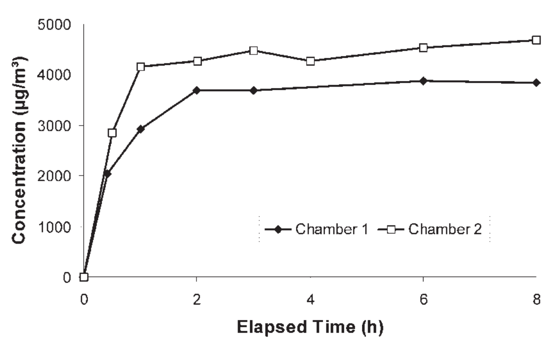


Fig. 2. Time–concentration profile for phenol.

Table 2. Conditions of 14 chamber tests and estimated overall liquid phase mass transfer coefficients[a]

Test no.	Chemical	Chamber ID[b]	Ach (per h)	C_{L0} (mol/l)	V_L (ml)	T (°C)	RH (%)		r_w (g/h)	Estimated K_{OL} (m/h)
							Inlet	Outlet		
1	Chloroform	1	1.05	3.99×10^{-6}	98.3	23.3 ± 0.03	14.0 ± 0.10	62.0 ± 0.86	0.524	$(5.68 \pm 0.47) \times 10^{-3}$
2	Chloroform	2	1.05	3.99×10^{-6}	98.1	23.5 ± 0.03	14.2 ± 0.12	69.7 ± 0.79	0.625	$(5.60 \pm 0.52) \times 10^{-3}$
3	Butyl acetate	1	1.05	5.23×10^{-5}	96.7	23.4 ± 0.10	13.7 ± 0.13	60.3 ± 1.2	0.510	$(5.17 \pm 0.27) \times 10^{-3}$
4	Butyl acetate	2	1.07	5.23×10^{-5}	97.4	23.5 ± 0.07	13.7 ± 0.09	69.8 ± 1.7	0.649	$(5.00 \pm 0.26) \times 10^{-3}$
5	Butyl acetate	1	1.06	5.61×10^{-5}	95.8	23.3 ± 0.06	12.7 ± 0.13	57.8 ± 2.0	0.540	$(4.02 \pm 0.26) \times 10^{-3}$
6	Butyl acetate	2	1.08	5.61×10^{-5}	99.5	23.5 ± 0.04	12.6 ± 0.15	68.8 ± 1.3	0.644	$(4.41 \pm 0.29) \times 10^{-3}$
7	Ethyl acetate	1	1.05	7.54×10^{-5}	95.7	23.3 ± 0.03	14.0 ± 0.40	61.0 ± 0.89	0.555	$(5.03 \pm 0.22) \times 10^{-3}$
8	Ethyl acetate	2	1.06	7.54×10^{-5}	98.6	23.5 ± 0.03	13.8 ± 0.25	69.4 ± 0.89	0.680	$(5.28 \pm 0.26) \times 10^{-3}$
9	1-Butanol	1	1.05	1.33×10^{-3}	92.6	23.4 ± 0.25	14.5 ± 0.17	58.8 ± 1/86	0.541	$(1.44 \pm 0.06) \times 10^{-3}$
10	1-Butanol	2	1.05	1.33×10^{-3}	96.3	23.6 ± 0.14	14.1 ± 0.15	71.3 ± 1.4	0.669	$(1.52 \pm 0.10) \times 10^{-3}$
11	1-Propanol	1	1.05	9.78×10^{-3}	101	23.3 ± 0.03	13.6 ± 0.15	59.6 ± 1.15	0.555	$(1.33 \pm 0.05) \times 10^{-3}$
12	1-Propanol	2	1.06	9.78×10^{-3}	98.0	23.5 ± 0.03	13.5 ± 0.10	69.0 ± 2.5	0.660	$(1.85 \pm 0.09) \times 10^{-3}$
13	Phenol	1	1.05	5.65×10^{-3}	93.1	23.6 ± 0.30	14.7 ± 0.16	59.8 ± 1.94	0.565	$(1.80 \pm 0.06) \times 10^{-4}$
14	Phenol	2	1.05	5.65×10^{-3}	93.3	23.7 ± 0.15	14.7 ± 0.19	69.4 ± 2.4	0.634	$(2.68 \pm 0.11) \times 10^{-4}$

Ach, air exchange rate; C_{L0}, initial concentration in liquid; V_L, initial volume of liquid; T, temperature; RH, relative humidity; r_w, water evaporation rate.
[a]The test duration was 4 h for tests 3 and 4 and 8 h for the rest.
[b]The air speed was 12.6 ± 4.5 cm/s in chamber 1 and 21.6 ± 7.9 cm/s in chamber 2.

Estimation of gas phase mass transfer coefficient (k_G)

Several methods have been developed to estimate the gas phase mass transfer coefficient in indoor environments. A brief review of these methods is given by Guo (2002). The method used here is based on the Sherwood number (S_h), which is a dimensionless number related to k_G (equation 11) and can be correlated to Schmidt and Reynolds numbers (S_c and R_e). A series of correlations have been developed between S_h, S_c and R_e (Bennet and Myers, 1982; White, 1988). For example, equation (12) applies to laminar flow conditions and is often used for indoor environments.

$$S_h = (k_G L)/D_a \quad (11)$$

where L is the characteristic length (m), calculated from the square root of the source area, and D_a is the diffusivity in air (m^2/h).

$$S_h = 0.664 S_c^{1/3} R_e^{1/2} \quad (12)$$

where S_c and R_e are defined by equations (13) and (14), respectively.

$$S_c = \mu/(\rho D_a) \quad (13)$$

$$R_e = (Lu\rho)/\mu \quad (14)$$

where u is the air velocity (m/h), ρ is the density of air (g/m^3) and μ is the viscosity of air (g/m/h). The accuracy of this method was evaluated by using the water evaporation data from the 14 chamber tests (column 10 in Table 2). The k_G values for water evaporation were estimated from equation (15).

$$r_w = S k_G (C_{sw} - C_w) \quad (15)$$

where r_w is the experimental water evaporation rate (g/h), C_{sw} is the saturation concentration for water vapor at chamber temperature, converted from vapor pressure (g/m^3), and C_w is the experimental water vapor concentration in the chamber, converted from relative humidity (g/m^3). As shown in Table 3, the calculated gas phase mass transfer coefficients agreed well with the experimental results.

Estimation of liquid phase mass transfer coefficient (k_L)

With the overall liquid phase mass transfer coefficient (K_{OL}) presented in Table 2, the gas phase mass transfer coefficient (k_G) calculated from the Sherwood number and Henry's constant (H) from Table 1, the liquid phase mass transfer coefficients (k_L) can be calculated from equation (3). This direct calculation approach worked well for compounds with dimensionless Henry's constants $>10^{-3}$. With smaller Henry's constants, however, the calculation failed (see column 4 in Table 4) due to error propagation: the calculation involves subtraction between two large numbers to yield a small number.

The authors then used a different method to estimate k_L. It has been reported that k_L is proportional to

Table 3. Experimental and calculated gas phase mass transfer coefficients (k_G) for water evaporation from small pools

Chamber	k_G (m/h)		Relative error (%)
	Experimental	Calculated (equation 11)	
1	14.2 ± 0.92 ($n = 7$)	16.8	17
2	22.3 ± 0.88 ($n = 7$)	22.0	–1.3

Table 4. Estimated liquid phase mass transfer coefficient (k_L) from experimental K_{OL}

Test no.	Compound	Chamber	Estimated k_L (m/h)	
			Direct from equation (3)	From equation (18)
1	Chloroform	1	5.71×10^{-3}	5.91×10^{-3}
2	Chloroform	2	5.62×10^{-3}	5.91×10^{-3}
3	Butyl acetate	1	5.52×10^{-3}	5.00×10^{-3}
4	Butyl acetate	2	5.84×10^{-3}	5.00×10^{-3}
5	Butyl acetate	1	4.23×10^{-3}	5.00×10^{-3}
6	Butyl acetate	2	4.60×10^{-3}	5.00×10^{-3}
7	Ethyl acetate	1	5.68×10^{-3}	5.55×10^{-3}
8	Ethyl acetate	2	6.42×10^{-3}	5.55×10^{-3}
9	1-Butanol	1	2.80×10^{-3}	5.63×10^{-3}
10	1-Butanol	2	2.49×10^{-3}	5.63×10^{-3}
11	1-Propanol	1	2.60×10^{-3}	6.04×10^{-3}
12	1-Propanol	2	3.83×10^{-3}	6.04×10^{-3}
13	Phenol	1	-2.71×10^{-4}	5.63×10^{-3}
14	Phenol	2	-3.00×10^{-4}	5.63×10^{-3}

the square root of the molecular diffusivity in water (Mackay and Yeun, 1983). Since the diffusivity can be readily calculated by existing methods (Hayduk and Laudie, 1974), the problem is reduced to selecting a reference compound and estimating its k_L. The liquid phase mass transfer coefficient for a given compound X can then be calculated from equation (16), in which oxygen was chosen as the reference compound. It should be pointed out that any compound can serve as the reference. The only reason to select oxygen here is for comparison with the literature values.

$$k_L(X) = k_L(O_2)\sqrt{\frac{D_L(X)}{D_L(O_2)}} \qquad (16)$$

Substituting equation (16) into equation (3) yields:

$$k_L(O_2) = \frac{k_G H K_{OL}}{k_G H - K_{OL}}\sqrt{\frac{D_L(O_2)}{D_L(X)}} \qquad (17)$$

A single value of $k_L(O_2)$ was estimated by applying equation (17) to the 14 experimental K_{OL} values (Table 2). Other input data included H and $D_L(X)$ from Table 1, k_G from the Sherwood number and $D_L(O_2)$ = 1.07 × 10^{-5} m^2/h at 23.5°C from the Hayduk and Laudie (1974) method. The non-linear regression yielded a $k_L(O_2)$ value of (9.78 ± 0.36) × 10^{-3} m/h. This value is fairly close to the literature value of 0.0144 m/h for ambient water bodies suggested by Schwarzenbach *et al.* (1993). This agreement suggests that the area of the source does not affect k_L if the water is still.

Substituting the values for $k_L(O_2)$ and $D_L(O_2)$ into equation (16) gives:

$$k_L(X) = 2.99\sqrt{D_L(X)} \qquad (18)$$

where $k_L(X)$ and $D_L(X)$ are in m/h and m^2/h, respectively. Equation (18) can be used to estimate k_L for any chemical emissions from still water. The estimated k_L values for the test compounds are presented in the last column of Table 4.

Calculation of K_{OL}

Using k_G from the Sherwood number and k_L from equation (18), one can calculate K_{OL} from equation (3). Figure 3 compares the calculated K_{OL} with the experimental values. On average, the relative predictive error was 22.1%. In general, compounds with smaller Henry's constants tend to have greater relative errors. A complete example of estimating K_{OL} is provided in the Appendix.

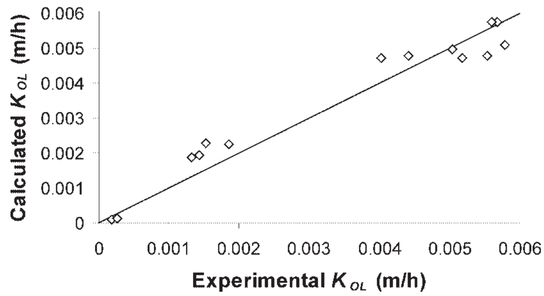


Fig. 3. Comparison between experimental and calculated overall liquid phase mass transfer coefficients. The solid line represents linearity.

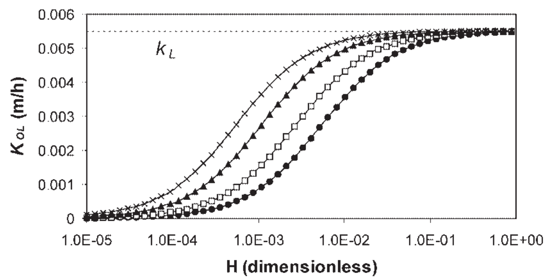


Fig. 4. Overall liquid phase mass transfer coefficient (K_{OL}) as a function of Henry's constant (H) and gas phase mass transfer coefficient (k_G). The curves from left to right are for k_G = 1, 2, 5 and 10 m/h, respectively.

DISCUSSION

Independent estimation of k_G and k_L allows one to study the effect of the Henry's constant on the overall mass transfer coefficient by using equation (3) or (4). Figure 4 shows K_{OL} as a function of H and k_G, assuming that the diffusivity in water is 3.6 × 10^{-6} m^2/h, which is roughly the average for the test compounds. When the Henry's constant becomes large, all curves converge to a single value of k_L. The curves do not converge to a single value, however, when the Henry's constant becomes very small. Assuming that the gas phase mass transfer coefficient typically varies from 1 to 10 m/h in indoor environments, the k_G/k_L ratio for still aqueous solutions would be in the range 180–1800. These values are significantly higher than the reported values (54–78) for a bathtub with a simulated person present (EPA, 2000).

As a practical matter, researchers often want to know under what conditions K_{OL} can be approximated by either k_L or k_G. There have been many discussions on this matter for the ambient environment (e.g. Munz and Roberts, 1989). In general, it depends on whether the gas or liquid phase mass transfer resistance is dominant in the overall mass transfer resistance ($1/K_{OL}$ or $1/K_{OL}$). Using the results of this work, Fig. 5 illustrates the contribution of the gas phase mass transfer resistance $1/(Hk_G)$ to $1/K_{OL}$

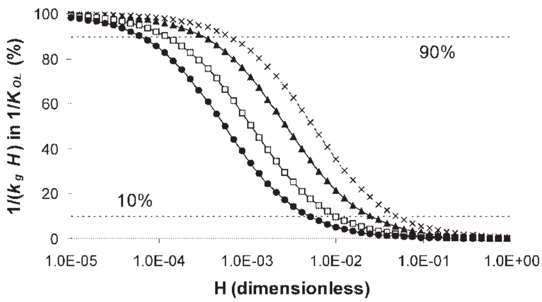


Fig. 5. Contribution of the gas phase mass transfer resistance $[1/(k_G H)]$ to the overall mass transfer resistance $(1/K_{OL})$. The curves from left to right are for $k_G = 10$, 5, 2 and 1 m/h, respectively.

as a function of H and k_G. For still water under indoor environmental conditions, the authors suggest that K_{OL} be approximated by k_L when $H > 10^{-1}$ and by k_G when $H < 10^{-4}$, where H is dimensionless.

Previous studies (for example, Schwarzenbach *et al.*, 1993) indicate that the depth of the water pool affects the liquid phase mass transfer coefficient. Thus, the applicability of equation (18) to liquid puddles and films is yet to be further evaluated. On the other hand, according to Schwarzenbach *et al.* (1993), the values of k_L for still water imply a 'stagnant water film' of no greater than 200 µm. We therefore speculate that equation (18) can be applied to liquid puddles and films with a depth >200 µm.

CONCLUSION

The emissions of six volatile organic compounds from pools of dilute aqueous solutions were tested under simulated indoor environmental conditions. These compounds cover a range of Henry's constant from 3.33×10^{-7} to 3.67×10^{-3} atm m^3/mol. The experimentally determined overall liquid phase mass transfer coefficient (K_{OL}) ranged from 2.68×10^{-4} to 5.68×10^{-3} m/h. Using these values, the liquid phase mass transfer coefficient (k_L) for still water was estimated to be $(9.78 \pm 0.36) \times 10^{-3}$ m/h for the reference compound (O_2). An empirical model was proposed to estimate K_{OL} and K_{OG} based on equations (3) and (4), respectively, with k_L calculated from equation (18) and k_G from the Sherwood number (equation 11). With this empirical model, one can use equations (1) and (2) as genuine predictive models for pollutant emissions from still aqueous solutions in indoor environments.

APPENDIX. AN EXAMPLE OF USING THE PROPOSED EMPIRICAL MODEL

Problem

Estimate the overall liquid phase mass transfer coefficient (K_{OL}) for 1-hexanal emissions from a water pool, given the following parameters: molecular formula, $C_6H_{12}O$; Henry's constant, 0.0105 (dimensionless); pool diameter, 0.20 m; air speed in room, 15 cm/s (540 m/h); air and liquid temperature, 25°C. Additional parameters needed for the calculation are summarized in Table A1. All the values are at 25°C.

Step 1: Calculate Schmidt number using equation (13)

$$S_c = \mu/(\rho D_a) = 66.8/(1180 \times 0.0270) = 2.097$$

Step 2: Calculate Reynolds number using equation (14)

$$R_e = (Lu\rho)/\mu = (0.447 \times 540 \times 1180)/66.8 = 4264$$

Step 3: Calculate Sherwood number using equation (12)

$$S_h = 0.664 S_c^{1/3} R_e^{1/2} = 0.664 \times 2.097^{1/3} \times 4262^{1/2} = 55.5$$

Step 4: Calculate k_G using equation (11)

$$k_G = (S_h D_a)/L = (55.5 \times 0.0270)/0.447 = 3.35 \text{ (m/h)}$$

Step 5: Calculate k_L using equation (16)

$$k_L(Hx) = 2.99\sqrt{D_L(Hx)}$$

$$k_L(Hx) = 2.99\sqrt{2.96 \times 10^{-6}} = 5.14 \times 10^{-3} \text{m/h}$$

Step 6: Calculate K_{OL}

Rearranging equation (3) yields

Table A1. Additional parameters needed to calculate K_{OL} for 1-hexanal

Parameter	Symbol	Value	Data source or method
Density of air	ρ	1180 g/m^3	Literature
Viscosity of air	μ	66.8 g/h/m	Literature
Characteristic length of the pool	L	0.447 m	Square root of source area
Diffusivity in air for 1-hexanal	$D_a(Hx)$	2.70×10^{-2} m^2/h	FSG method[a]
Diffusivity in water for 1-hexanal	$D_L(Hx)$	2.78×10^{-6} m^2/h	Hayduk & Laudie method[b]

[a]Fuller *et al.* (1966).
[b]Hayduk and Laudie (1974).

$$K_{OL} = (k_L k_G H)/(k_L + k_G H)$$

$$K_{OL} = \frac{5.14 \times 10^{-3} \times 3.35 \times 0.0105}{5.14 \times 10^{-3} + 3.35 \times 0.0105} = 4.48 \times 10^{-3} \text{m/h}$$

REFERENCES

Bennet CO, Myers JE. (1982) Momentum, heat, and mass transfer, 3rd edn. New York: McGraw-Hill.

EPA. (2000) Volatilization rates from water to indoor air—phase II, EPA 600/R-00/096: 2000. Washington, DC: US Environmental Protection Agency.

Fuller EN, Schettler PD, Giddings JC. (1966) A new method for prediction of binary gas-phase diffusion coefficients. Ind Eng Chem; 58: 19–27.

Guo Z. (2002) Review of indoor emission source models—part 2: parameter estimation. Environ Pollut; 120: 551–64.

Hayduk W, Laudie H. (1974) Prediction of diffusion coefficient for non-electrolysis in dilute aqueous solution. Am Inst Chem Eng J; 20: 611–5.

Howard PH, Meylan WM. (1997) Handbook of physical properties of organic chemicals. Boca Raton, FL: CRC Lewis.

Lyman WL, Reehl WF, Rosenblatt DH. (1990) Handbook of chemical property estimation methods: environmental behavior of organic compounds. Washington, DC: American Chemical Society.

Mackay D, Yeun ATK. (1983) Mass transfer coefficient correlations for volatilization of organic solutes from water. Environ Sci Technol; 17: 211–33.

Munz C, Roberts PV. (1989) Gas- and liquid-phase mass transfer resistances of organic compounds during mechanical surface aeration. Water Res; 23: 589–601.

Schwarzenbach RP, Gschwend PM, Imboden DM. (1993) Environmental organic chemistry. New York: John Wiley.

Southworth GR. (1979) The role of volatilization in removing polycyclic aromatic hydrocarbons from aquatic environments. Bull Environ Contam Toxicol; 21: 507–14.

Tichenor BA, Guo Z, Mason MA, Dunn JE. (1990) Evaluating sources of indoor air pollution. J Air Waste Manage Assoc; 40: 487–92.

White FM. (1988) Heat and mass transfer. Reading, MA: Addison-Wesley.

Yaws CL. (1994) Handbook of vapor pressure, Vols 1–3. Houston, TX: Gulf.

Attachment 4

Historical Sampling Results for RMU-1 Leachate

L55

		1208078-01	1202062-01	1107076-01	1102051-01	1007059-01	1002080-01	0907120-01	0902088-01	0807173-01	0802071-01	0707061-01	0702073-01	0607077-01
		08/22/12	02/14/12	07/19/11	02/15/11	07/13/10	02/18/10	07/21/09	02/17/09	07/29/08	02/13/08	07/12/07	02/12/07	07/14/06
Analyte	Units	L55	L55	L-55	L-55	L-55	L-55	L-55	L-55	L-55	L-55	L-55	L-55	L-55
1,1,1-Trichloroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,1,2,2-Tetrachloroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,1,2-Trichloroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,1-Dichloroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,1-Dichloroethene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,2-Dichlorobenzene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,2-Dichloroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,2-Dichloroethane-d4	[surr]	90.1%	102%	101%	100%	92.0%	103%	101%	90.6%	106%	100%	99.6%	107%	113%
1,2-Dichloropropane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,3-Dichlorobenzene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,4-Dichlorobenzene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
2-Butanone	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
2-Chloroethylvinyl ether	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0 [2]	<50.0	<50.0	<50.0	<50.0	<50.0 [1]	<50.0 [1]	<50.0 [1]	<50.0
2-Hexanone	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
4-Bromofluorobenzene	[surr]	90.6%	94.9%	98.8%	93.8%	90.0%	91.8%	96.6%	92.1%	104%	102%	91.5%	99.9%	102%
4-Methyl-2-pentanone	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Acetone	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Benzene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Bromodichloromethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Bromoform	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Bromomethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Carbon disulfide	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Carbon tetrachloride	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Chlorobenzene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Chloroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Chloroform	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Chloromethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
cis-1,3-Dichloropropene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Dibromochloromethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Diethyl ether	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Ethyl acetate	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Ethylbenzene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Methylene chloride	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Styrene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0 [2]	<50.0	<50.0	<50.0	<50.0	<50.0 [1]	<50.0	<50.0	<50.0
Tetrachloroethene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Toluene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Toluene-d8	[surr]	101%	101%	102%	96.2%	93.1%	97.0%	100%	95.3%	107%	101%	96.5%	109%	104%
trans-1,2-Dichloroethene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
trans-1,3-Dichloropropene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Trichloroethene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Trichlorofluoromethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Vinyl acetate	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Vinyl chloride	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0 [2]	<50.0	<50.0	<50.0	<50.0	<50.0 [1]	<50.0	<50.0	<50.0
Xylenes, total	ug/L	<150	<150	<150	<150	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0

		1208078-02	1202062-02	1107076-02	1102051-02	1007059-02	1002080-02	0907120-02	0902088-02	902088-02RE	0807173-02	0802071-02	0707061-02	0702073-02	0607077-02
		08/22/12	02/14/12	07/19/11	02/15/11	07/13/10	02/18/10	07/21/09	02/17/09	02/17/09	07/29/08	02/13/08	07/12/07	02/12/07	07/14/06
Analyte	Units	L56	L56	L-56	L-56	L-56	L-56	L-56	L-56	L-56	L-56	L-56	L-56	L-56	L-56
1,1,1-Trichloroethane	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
1,1,2,2-Tetrachloroethane	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
1,1,2-Trichloroethane	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
1,1-Dichloroethane	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
1,1-Dichloroethene	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
1,2-Dichlorobenzene	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
1,2-Dichloroethane	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
1,2-Dichloroethane-d4	[surr]	93.1%	102%	104%	102%	91.5%	106%	99.6%	90.7%	98.6%	104%	99.7%	97.4%	109%	111%
1,2-Dichloropropane	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
1,3-Dichlorobenzene	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
1,4-Dichlorobenzene	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
2-Butanone	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	53.3	<100	<50.0	<50.0	<50.0	<50.0	<50.0
2-Chloroethylvinyl ether	ug/L	<100	<50.0	<50.0	<50.0	<50.0 [2]	<50.0	<50.0	<50.0	<100	<50.0	<50.0 [1]	<50.0 [1]	<50.0 [1]	<50.0
2-Hexanone	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
4-Bromofluorobenzene	[surr]	95.5%	93.5%	100%	96.1%	91.9%	96.2%	97.0%	90.9%	99.2%	104%	99.8%	91.8%	102%	100%
4-Methyl-2-pentanone	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
Acetone	ug/L	849	<50.0	877	<50.0	<50.0	<50.0	<50.0	1170	1070	<50.0	<50.0	<50.0	86.7	126
Benzene	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
Bromodichloromethane	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
Bromoform	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
Bromomethane	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
Carbon disulfide	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
Carbon tetrachloride	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
Chlorobenzene	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
Chloroethane	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
Chloroform	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
Chloromethane	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
cis-1,3-Dichloropropene	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
Dibromochloromethane	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
Diethyl ether	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
Ethyl acetate	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
Ethylbenzene	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
Methylene chloride	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
Styrene	ug/L	<100	<50.0	<50.0	<50.0	<50.0 [2]	<50.0	<50.0	<50.0	<100	<50.0	<50.0 [1]	<50.0	<50.0	<50.0
Tetrachloroethene	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
Toluene	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
Toluene-d8	[surr]	106%	98.3%	104%	98.9%	93.8%	101%	98.7%	96.4%	103%	103%	99.3%	94.4%	109%	102%
trans-1,2-Dichloroethene	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
trans-1,3-Dichloropropene	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
Trichloroethene	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
Trichlorofluoromethane	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
Vinyl acetate	ug/L	<100	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0
Vinyl chloride	ug/L	<100	<50.0	<50.0	<50.0	<50.0 [2]	<50.0	<50.0	<50.0	<100	<50.0	<50.0 [1]	<50.0	<50.0	<50.0
Xylenes, total	ug/L	<300	<150	<150	<150	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<50.0

L57

Analyte	Units	1208078-03	1202062-03	1107076-03	1102051-03	1007059-03	1002080-03	0907120-03	0902088-03	0807173-03	0802071-03	0707061-03	0702073-03	0607077-03
		08/22/12	02/14/12	07/19/11	02/15/11	07/13/10	02/18/10	07/21/09	02/17/09	07/29/08	02/13/08	07/12/07	02/12/07	07/14/06
		L57	L57	L-57	L-57	L-57	L-57	L-57	L-57	L-57	L-57	L-57	L-57	L-57
1,1,1-Trichloroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,1,2,2-Tetrachloroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,1,2-Trichloroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,1-Dichloroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,1-Dichloroethene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,2-Dichlorobenzene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,2-Dichloroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,2-Dichloroethane-d4	[surr]	91.7%	101%	96.2%	99.8%	90.7%	105%	97.6%	93.1%	103%	99.8%	95.7%	105%	113%
1,2-Dichloropropane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,3-Dichlorobenzene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,4-Dichlorobenzene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
2-Butanone	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
2-Chloroethylvinyl ether	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0 [2]	<50.0	<50.0	<50.0	<50.0	<50.0 [1]	<50.0 [1]	<50.0 [1]	<50.0
2-Hexanone	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
4-Bromofluorobenzene	[surr]	91.8%	95.2%	93.9%	94.4%	90.0%	94.6%	94.0%	94.8%	102%	102%	91.0%	101%	103%
4-Methyl-2-pentanone	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Acetone	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Benzene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Bromodichloromethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Bromoform	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Bromomethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Carbon disulfide	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Carbon tetrachloride	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Chlorobenzene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Chloroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Chloroform	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Chloromethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
cis-1,3-Dichloropropene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Dibromochloromethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Diethyl ether	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Ethyl acetate	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Ethylbenzene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Methylene chloride	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Styrene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0 [2]	<50.0	<50.0	<50.0	<50.0	<50.0 [1]	<50.0	<50.0	<50.0
Tetrachloroethene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Toluene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Toluene-d8	[surr]	103%	97.7%	96.4%	97.0%	91.6%	99.8%	96.4%	99.0%	102%	102%	94.2%	107%	106%
trans-1,2-Dichloroethene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
trans-1,3-Dichloropropene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Trichloroethene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Trichlorofluoromethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Vinyl acetate	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Vinyl chloride	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0 [2]	<50.0	<50.0	<50.0	<50.0	<50.0 [1]	<50.0	<50.0	<50.0
Xylenes, total	ug/L	<150	<150	<150	<150	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0

		1208078-04	1202062-04	1107076-04	1102051-04	1007059-04	1002080-04	0907120-04	0905095-01	0902088-04	0807173-04	0802071-04	0707061-04	0702073-04	0607077-04
		08/22/12	02/14/12	07/19/11	02/15/11	07/13/10	02/18/10	07/21/09	05/18/09	02/17/09	07/29/08	02/13/08	07/12/07	02/12/07	07/14/06
Analyte	Units	L58	L58	L-58	L-58	L-58	L-58	L-58	L-58	L-58	L-58	L-58	L-58	L-58	L-58
1,1,1-Trichloroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,1,2,2-Tetrachloroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,1,2-Trichloroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,1-Dichloroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,1-Dichloroethene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,2-Dichlorobenzene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,2-Dichloroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,2-Dichloroethane-d4	[surr]	87.6%	103%	101%	102%	93.1%	106%	96.8%	99.2%	92.3%	106%	100%	95.8%	109%	112%
1,2-Dichloropropane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,3-Dichlorobenzene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
1,4-Dichlorobenzene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
2-Butanone	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
2-Chloroethylvinyl ether	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0 [2]	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0 [1]	<50.0 [1]	<50.0 [1]	<50.0
2-Hexanone	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
4-Bromofluorobenzene	[surr]	88.5%	96.0%	98.6%	97.6%	91.5%	95.5%	92.0%	96.7%	96.2%	105%	100%	89.2%	99.3%	102%
4-Methyl-2-pentanone	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Acetone	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Benzene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Bromodichloromethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Bromoform	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Bromomethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Carbon disulfide	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Carbon tetrachloride	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Chlorobenzene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Chloroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Chloroform	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Chloromethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
cis-1,3-Dichloropropene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Dibromochloromethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Diethyl ether	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Ethyl acetate	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Ethylbenzene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Methylene chloride	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Styrene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0 [2]	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0 [1]	<50.0	<50.0	<50.0
Tetrachloroethene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Toluene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Toluene-d8	[surr]	98.8%	102%	101%	100%	94.0%	101%	96.6%	99.1%	101%	105%	99.1%	93.9%	110%	103%
trans-1,2-Dichloroethene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
trans-1,3-Dichloropropene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Trichloroethene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Trichlorofluoromethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Vinyl acetate	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Vinyl chloride	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0 [2]	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0 [1]	<50.0	<50.0	<50.0
Xylenes, total	ug/L	<150	<150	<150	<150	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0

		1208078-05	1202062-05	1107076-05	1102051-05	1007059-05	1002080-05	0907120-05	0902088-05	0807173-05	0802071-05	0707061-05	0702073-05	0607077-05
		08/22/12	02/14/12	07/19/11	02/15/11	07/13/10	02/18/10	07/21/09	02/17/09	07/29/08	02/13/08	07/12/07	02/12/07	07/14/06
Analyte	Units	L59	L59	L-59	L-59	L-59	L-59	L-59	L-59	L-59	L-59	L-59	L-59	L-59
1,1,1-Trichloroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
1,1,2,2-Tetrachloroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
1,1,2-Trichloroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
1,1-Dichloroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
1,1-Dichloroethene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
1,2-Dichlorobenzene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
1,2-Dichloroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
1,2-Dichloroethane-d4	[surr]	90.8%	106%	103%	103%	92.8%	107%	100%	<100	<100	<100	<200	<50.0	<50.0
1,2-Dichloropropane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100 [1]	<200 [1]	<50.0 [1]	<50.0
1,3-Dichlorobenzene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
1,4-Dichlorobenzene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
2-Butanone	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
2-Chloroethylvinyl ether	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0 [2]	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
2-Hexanone	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
4-Bromofluorobenzene	[surr]	91.0%	96.2%	97.7%	97.1%	91.2%	95.7%	97.6%	<100	<100	<100	<200	<50.0	<50.0
4-Methyl-2-pentanone	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	95.4%	103%	97.3%	95.3%	108%	112%
Acetone	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
Benzene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
Bromodichloromethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
Bromoform	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
Bromomethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
Carbon disulfide	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
Carbon tetrachloride	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
Chlorobenzene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100 [1]	<200	<50.0	<50.0
Chloroethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
Chloroform	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
Chloromethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
cis-1,3-Dichloropropene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
Dibromochloromethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
Diethyl ether	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
Ethyl acetate	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
Ethylbenzene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
Methylene chloride	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
Styrene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0 [2]	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
Tetrachloroethene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	102%	102%	97.0%	92.8%	109%	102%
Toluene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
Toluene-d8	[surr]	101%	103%	104%	100%	94.7%	100%	98.2%	<100	<100	<100	<200	<50.0	<50.0
trans-1,2-Dichloroethene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
trans-1,3-Dichloropropene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	97.9%	102%	98.0%	89.5%	100%	100%
Trichloroethene	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
Trichlorofluoromethane	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
Vinyl acetate	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0
Vinyl chloride	ug/L	<50.0	<50.0	<50.0	<50.0	<50.0 [2]	<50.0	<50.0	<100	<100	<100 [1]	<200	<50.0	<50.0
Xylenes, total	ug/L	<150	<150	<150	<150	<50.0	<50.0	<50.0	<100	<100	<100	<200	<50.0	<50.0

Analyte	Units	1302105-01 02/25/13 L60	1211120-01 11/30/12 L60	1208112-01 08/30/12 L60	1205142-01 05/25/12 L60	1202076-01 02/16/12 L60	1112105-01 12/22/11 L-60	1111006-01 11/01/11 L-60	1102051-06 02/15/11 L-60	1012072-01 12/15/10 L-60	1007059-06 07/13/10 L-60	1005079-01 05/18/10 L-60	1002080-06 02/18/10 L-60	0912112-01 12/21/09 L-60	0907120-06 07/21/09 L-60	0905095-02 05/18/09 L-60	0902088-06 02/17/09 L-60
1,1,1-Trichloroethane	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
1,1,2,2-Tetrachloroethane	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
1,1,2-Trichloroethane	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
1,1-Dichloroethane	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
1,1-Dichloroethene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
1,2-Dichlorobenzene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
1,2-Dichloroethane	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
1,2-Dichloroethane-d4	[surr]	104%	107%	98.2%	92.7%	103%	104%	99.6%	102%	110%	92.0%	89.9%	104%	95.8%	97.6%	99.1%	93.1%
1,2-Dichloropropane	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
1,3-Dichlorobenzene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
1,4-Dichlorobenzene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
2-Butanone	ug/L	<200	<200	270	<200	349	242	122	137	152	201	189	212	140	271	385	<100
2-Chloroethylvinyl ether	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100 [4]	<100	<100	<100	<200	<50.0	<100
2-Hexanone	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
4-Bromofluorobenzene	[surr]	101%	100%	93.6%	89.3%	97.0%	93.6%	96.1%	95.0%	102%	92.3%	94.8%	93.2%	98.1%	96.1%	97.0%	94.3%
4-Methyl-2-pentanone	ug/L	<200	<200	<200	<200	105	<100	<100	<100	<100	130	<100	105	<100	<200	175	<100
Acetone	ug/L	<200	318	640	516	924	764	448	593	558	645	619	805	646	1050	1340	338
Benzene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
Bromodichloromethane	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
Bromoform	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
Bromomethane	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
Carbon disulfide	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
Carbon tetrachloride	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
Chlorobenzene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
Chloroethane	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
Chloroform	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
Chloromethane	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
cis-1,3-Dichloropropene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
Dibromochloromethane	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
Diethyl ether	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
Ethyl acetate	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
Ethylbenzene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
Methylene chloride	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
Styrene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100 [4]	<100	<100	<100	<200	<50.0	<100
Tetrachloroethene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
Toluene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
Toluene-d8	[surr]	107%	105%	98.7%	94.0%	99.1%	99.6%	101%	98.5%	103%	92.6%	96.4%	100%	99.9%	96.8%	98.1%	98.1%
trans-1,2-Dichloroethene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
trans-1,3-Dichloropropene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
Trichloroethene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
Trichlorofluoromethane	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
Vinyl acetate	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<50.0	<100
Vinyl chloride	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<100	<100 [4]	<100	<100	<100	<200	<50.0	<100
Xylenes, total	ug/L	<600	<600	<600	<600	<300	<300	<300	<300	<100	<100	<100	<100	<100	<200	<50.0	<100

L60

Analyte	Units	0812030-01	0807173-06	0805043-01	0802071-06	0712071-01	0707061-06	0705127-01	0702073-06	702073-06RE	0612057-01	0607077-06	0605021-01
		12/05/08	07/29/08	05/08/08	02/13/08	12/13/07	07/12/07	05/17/07	02/12/07	02/12/07	12/07/06	07/14/06	05/02/06
		L-60	L-60	L-60	L-60	L-60	L-60	L-60	L-60	L-60	L-60	L-60	L-60
1,1,1-Trichloroethane	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
1,1,2,2-Tetrachloroethane	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
1,1,2-Trichloroethane	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
1,1-Dichloroethane	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
1,1-Dichloroethene	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
1,2-Dichlorobenzene	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
1,2-Dichloroethane	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
1,2-Dichloroethane-d4	[surr]	93.6%	106%	102%	99.1%	106%	98.4%	115%	113%	78.3%	117%	110%	106%
1,2-Dichloropropane	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
1,3-Dichlorobenzene	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
1,4-Dichlorobenzene	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
2-Butanone	ug/L	<200	205	255	222	<100	<200	<200	482	295	239	124	240
2-Chloroethylvinyl ether	ug/L	<200	<200	<200	<200 [1]	<100 [1]	<200 [1]	<200 [1]	<50.0 [1]	<200 [1]	<100	<50.0	<100
2-Hexanone	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
4-Bromofluorobenzene	[surr]	96.2%	104%	104%	102%	104%	91.6%	99.1%	104%	93.6%	107%	101%	96.7%
4-Methyl-2-pentanone	ug/L	<200	<200	<200	<200	<100	<200	<200	247	<200	<100	60.7	118
Acetone	ug/L	543	954	1270	955	153	728	716	2480 [2]	1320	1190	385	1110
Benzene	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
Bromodichloromethane	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
Bromoform	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
Bromomethane	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
Carbon disulfide	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
Carbon tetrachloride	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
Chlorobenzene	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
Chloroethane	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
Chloroform	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
Chloromethane	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
cis-1,3-Dichloropropene	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
Dibromochloromethane	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
Diethyl ether	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
Ethyl acetate	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
Ethylbenzene	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
Methylene chloride	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
Styrene	ug/L	<200	<200	<200	<200 [1]	<100	<200	<200	<50.0	<200	<100	<50.0	<100
Tetrachloroethene	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
Toluene	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
Toluene-d8	[surr]	101%	107%	106%	99.9%	104%	97.0%	95.4%	114%	100%	108%	101%	103%
trans-1,2-Dichloroethene	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
trans-1,3-Dichloropropene	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
Trichloroethene	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
Trichlorofluoromethane	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
Vinyl acetate	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100
Vinyl chloride	ug/L	<200	<200	<200	<200 [1]	<100	<200	<200	75.1	<200	<100	<50.0	<100
Xylenes, total	ug/L	<200	<200	<200	<200	<100	<200	<200	<50.0	<200	<100	<50.0	<100

Analyte	Units	1302105-02	1211120-02	1208078-06	1205142-02	1202062-06	1112105-02	1107076-06	1105128-01	1102051-07	1012072-02	1007059-07	1005079-02	1002080-07	0912057-01	0907120-07	0905095-03	0902088-07	0812030-02
		02/25/13	11/30/12	08/22/12	05/25/12	02/14/12	12/22/11	07/19/11	05/23/11	02/15/11	12/15/10	07/13/10	05/18/10	02/18/10	12/10/09	07/21/09	05/18/09	02/17/09	12/05/08
		L61	L61	L61	L61	L61	L-61	L-61	L-61	L-61	L-61	L-61	L-61	L-61	L-61	L-61	L-61	L-61	L-61
1,1,1-Trichloroethane	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
1,1,2,2-Tetrachloroethane	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
1,1,2-Trichloroethane	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
1,1-Dichloroethane	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
1,1-Dichloroethene	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
1,2-Dichlorobenzene	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
1,2-Dichloroethane	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
1,2-Dichloroethane-d4	[surr]	101%	111%	90.1%	96.1%	104%	104%	102%	102%	98.8%	106%	90.9%	92.4%	101%	99.5%	99.7%	100%	97.7%	92.1%
1,2-Dichloropropane	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
1,3-Dichlorobenzene	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
1,4-Dichlorobenzene	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
2-Butanone	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
2-Chloroethylvinyl ether	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100 [6]	<100	<100	<100	<100	<100	<100	<200
2-Hexanone	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
4-Bromofluorobenzene	[surr]	96.1%	103%	91.1%	89.1%	97.0%	97.1%	99.5%	96.4%	97.5%	99.9%	91.8%	97.2%	92.8%	99.3%	96.0%	97.7%	101%	96.9%
4-Methyl-2-pentanone	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
Acetone	ug/L	<200	<200	<500	435	<100	265	<100	<100	234	107	128	613	<100	<100	<100	<100	<100	360
Benzene	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
Bromodichloromethane	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
Bromoform	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
Bromomethane	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
Carbon disulfide	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
Carbon tetrachloride	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
Chlorobenzene	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
Chloroethane	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
Chloroform	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
Chloromethane	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
cis-1,3-Dichloropropene	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
Dibromochloromethane	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
Diethyl ether	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
Ethyl acetate	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
Ethylbenzene	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
Methylene chloride	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
Styrene	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100 [6]	<100	<100	<100	<100	<100	<100	<200
Tetrachloroethene	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
Toluene	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
Toluene-d8	[surr]	102%	107%	102%	95.4%	101%	99.9%	101%	99.3%	97.0%	101%	92.5%	97.6%	97.4%	102%	98.2%	99.9%	102%	101%
trans-1,2-Dichloroethene	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
trans-1,3-Dichloropropene	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
Trichloroethene	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
Trichlorofluoromethane	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
Vinyl acetate	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200
Vinyl chloride	ug/L	<200	<200	<500	<200	<100	<100	<100	<100	<100	<100	<100 [6]	<100	<100	<100	<100	<100	<100	<200
Xylenes, total	ug/L	<600	<600	<1500	<600	<300	<300	<300	<300	<300	<100	<100	<100	<100	<100	<100	<100	<100	<200

L61

Analyte	Units	0807173-07 07/29/08 L-61	0802071-07 02/13/08 L-61	0707061-07 07/12/07 L-61	0705127-02 05/17/07 L-61	0702073-07 02/12/07 L-61	702073-07RE 02/12/07 L-61	0612057-02 12/07/06 L-61	612057-02RE 12/07/06 L-61	0607077-07 07/14/06 L-61	607077-07RE 07/14/06 L-61	0605021-02 05/02/06 L-61	605021-02RE 05/02/06 L-61	605021-02RE2 05/02/06 L-61
1,1,1-Trichloroethane	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
1,1,2,2-Tetrachloroethane	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
1,1,2-Trichloroethane	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
1,1-Dichloroethane	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
1,1-Dichloroethene	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
1,2-Dichlorobenzene	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
1,2-Dichloroethane	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
1,2-Dichloroethane-d4	[surr]	100%	98.4%	94.9%	116%	111%	79.3%	112%	112%	109%	103%	98.9%	52.0%	96.3%
1,2-Dichloropropane	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
1,3-Dichlorobenzene	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
1,4-Dichlorobenzene	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
2-Butanone	ug/L	<500	<500	<1000	<1000	1080 [2]	<1000	213	<200	905	<1000	865	<1000	<1000
2-Chloroethylvinyl ether	ug/L	<500	<500 [1]	<1000 [1]	<1000 [1]	<50.0 [1]	<1000 [1]	<100	<200 [3]	<50.0	<1000	<100	<1000	<1000
2-Hexanone	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
4-Bromofluorobenzene	[surr]	98.5%	98.2%	89.6%	102%	104%	93.2%	103%	102%	97.0%	95.6%	93.4%	48.1%	92.1%
4-Methyl-2-pentanone	ug/L	<500	<500	<1000	<1000	470	<1000	<100	<200	258	<1000	330	<1000	<1000
Acetone	ug/L	7480	909	7100	6150	9050 [2]	6470	2610 [2]	2250	12000 [2]	8280	10400 [2]	8580	8990 [4]
Benzene	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
Bromodichloromethane	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
Bromoform	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
Bromomethane	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
Carbon disulfide	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	50.7	<1000	<100	<1000	<1000
Carbon tetrachloride	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
Chlorobenzene	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
Chloroethane	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
Chloroform	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
Chloromethane	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
cis-1,3-Dichloropropene	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
Dibromochloromethane	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
Diethyl ether	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
Ethyl acetate	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
Ethylbenzene	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
Methylene chloride	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
Styrene	ug/L	<500	<500 [1]	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
Tetrachloroethene	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
Toluene	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
Toluene-d8	[surr]	98.7%	99.5%	92.8%	97.2%	112%	99.8%	103%	105%	100%	95.5%	100%	51.7%	98.5%
trans-1,2-Dichloroethene	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
trans-1,3-Dichloropropene	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
Trichloroethene	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
Trichlorofluoromethane	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
Vinyl acetate	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
Vinyl chloride	ug/L	<500	<500 [1]	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000
Xylenes, total	ug/L	<500	<500	<1000	<1000	<50.0	<1000	<100	<200	<50.0	<1000	<100	<1000	<1000

		1302105-03	1211120-03	1208078-07	1205142-03	1202062-07	1112105-03	1107076-07	1105128-02	1102051-08	1012072-03	1007059-08	1005079-03	1002080-08	0912057-02	0907120-08	0905095-04	0902088-08
		02/25/13	11/30/12	08/22/12	05/25/12	02/14/12	12/22/11	07/19/11	05/23/11	02/15/11	12/15/10	07/13/10	05/18/10	02/18/10	12/10/09	07/21/09	05/18/09	02/17/09
Analyte	Units	L62	L62	L62	L62	L62	L-62	L-62	L-62	L-62	L-62	L-62	L-62	L-62	L-62	L-62	L-62	L-62
1,1,1-Trichloroethane	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
1,1,2,2-Tetrachloroethane	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
1,1,2-Trichloroethane	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
1,1-Dichloroethane	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
1,1-Dichloroethene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
1,2-Dichlorobenzene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
1,2-Dichloroethane	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
1,2-Dichloroethane-d4	[surr]	99.8%	113%	92.1%	107%	104%	103%	104%	101%	107%	114%	90.4%	90.2%	107%	100%	94.9%	99.1%	95.1%
1,2-Dichloropropane	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
1,3-Dichlorobenzene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
1,4-Dichlorobenzene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
2-Butanone	ug/L	<200	<200	<200	<200	<100	<100	125	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
2-Chloroethylvinyl ether	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100 [3]	<100	<100	<100	<100	<100	<100
2-Hexanone	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
4-Bromofluorobenzene	[surr]	96.9%	106%	94.7%	102%	96.8%	94.4%	99.0%	97.7%	100%	102%	91.6%	90.1%	95.2%	98.3%	91.7%	97.0%	97.9%
4-Methyl-2-pentanone	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
Acetone	ug/L	400	<200	650	<200	171	263	1490	<100	349	<50.0	103	<100	117	571	616	299	306
Benzene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
Bromodichloromethane	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
Bromoform	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100 [3]	<100	<100	<100	<100	<100	<100
Bromomethane	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
Carbon disulfide	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
Carbon tetrachloride	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
Chlorobenzene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
Chloroethane	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
Chloroform	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
Chloromethane	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
cis-1,3-Dichloropropene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
Dibromochloromethane	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
Diethyl ether	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
Ethyl acetate	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
Ethylbenzene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
Methylene chloride	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
Styrene	ug/L	<600	<600	<600	<600	<300	<300	<300	<300	<150	<50.0	<100	<100	<100	<100	<100	<100	<100
Tetrachloroethene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
Toluene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
Toluene-d8	[surr]	103%	111%	105%	107%	103%	99.9%	103%	99.6%	100%	102%	94.0%	94.4%	101%	102%	94.7%	98.2%	100%
trans-1,2-Dichloroethene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
trans-1,3-Dichloropropene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
Trichloroethene	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
Trichlorofluoromethane	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
Vinyl acetate	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100
Vinyl chloride	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100 [3]	<100	<100	<100	<100	<100	<100
Xylenes, total	ug/L	<200	<200	<200	<200	<100	<100	<100	<100	<50.0	<50.0	<100	<100	<100	<100	<100	<100	<100

		0812030-03	0807173-08	807173-08RE	0805043-02	0802071-08	0712071-02	0707061-08	0705127-03	0702073-08	0612057-03	0607077-08	0605021-03
		12/05/08	07/29/08	07/29/08	05/08/08	02/13/08	12/13/07	07/12/07	05/17/07	02/12/07	12/07/06	07/14/06	05/02/06
Analyte	Units	L-62	L-62	L-62	L-62	L-62	L-62	L-62	L-62	L-62	L-62	L-62	L-62
1,1,1-Trichloroethane	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
1,1,2,2-Tetrachloroethane	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
1,1,2-Trichloroethane	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
1,1-Dichloroethane	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
1,1-Dichloroethene	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
1,2-Dichlorobenzene	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
1,2-Dichloroethane	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
1,2-Dichloroethane-d4	[surr]	94.4%	106%	109%	98.8%	105%	108%	91.6%	118%	109%	115%	112%	99.2%
1,2-Dichloropropane	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
1,3-Dichlorobenzene	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
1,4-Dichlorobenzene	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
2-Butanone	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
2-Chloroethylvinyl ether	ug/L	<100	<100	<200	<100 [1]	<100 [1]	<200 [1]	<200 [1]	<50.0 [1]	<50.0 [1]	<100	<50.0	<100
2-Hexanone	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
4-Bromofluorobenzene	[surr]	97.8%	106%	107%	103%	103%	106%	85.4%	99.1%	101%	105%	106%	92.7%
4-Methyl-2-pentanone	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
Acetone	ug/L	1990	2230	2690	686	229	340	1980	194	<50.0	<100	120	<100
Benzene	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
Bromodichloromethane	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
Bromoform	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
Bromomethane	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
Carbon disulfide	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
Carbon tetrachloride	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
Chlorobenzene	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
Chloroethane	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
Chloroform	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
Chloromethane	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
cis-1,3-Dichloropropene	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
Dibromochloromethane	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
Diethyl ether	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
Ethyl acetate	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
Ethylbenzene	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
Methylene chloride	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
Styrene	ug/L	<100	<100	<200	<100 [1]	<100 [1]	<200	<200	<50.0	<50.0	<100	<50.0	<100
Tetrachloroethene	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
Toluene	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
Toluene-d8	[surr]	102%	106%	106%	103%	106%	106%	89.3%	95.8%	111%	105%	103%	99.1%
trans-1,2-Dichloroethene	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
trans-1,3-Dichloropropene	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
Trichloroethene	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
Trichlorofluoromethane	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
Vinyl acetate	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100
Vinyl chloride	ug/L	<100	<100	<200	<100 [1]	<100 [1]	<200	<200	<50.0	<50.0	<100	<50.0	<100
Xylenes, total	ug/L	<100	<100	<200	<100	<100	<200	<200	<50.0	<50.0	<100	<50.0	<100

		1302105-04	1211120-04	1208078-08	1205142-04	1202062-08	1112105-04	1107076-08	1105128-03	1102051-09	1012072-04	1007059-09	1005079-04	1002080-09	0912057-03	0907120-09	0905095-05
		02/25/13	11/30/12	08/22/12	05/25/12	02/14/12	12/22/11	07/19/11	05/23/11	02/15/11	12/15/10	07/13/10	05/18/10	02/18/10	12/10/09	07/21/09	05/18/09
Analyte	Units	L63	L63	L63	L63	L63	L-63	L-63	L-63	L-63	L-63	L-63	L-63	L-63	L-63	L-63	L-63
1,1,1-Trichloroethane	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
1,1,2,2-Tetrachloroethane	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
1,1,2-Trichloroethane	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
1,1-Dichloroethane	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
1,1-Dichloroethene	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
1,2-Dichlorobenzene	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
1,2-Dichloroethane	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
1,2-Dichloroethane-d4	[surr]	104%	108%	91.1%	97.2%	96.2%	99.3%	99.8%	103%	102%	113%	87.9%	89.6%	104%	100%	99.4%	99.0%
1,2-Dichloropropane	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
1,3-Dichlorobenzene	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
1,4-Dichlorobenzene	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
2-Butanone	ug/L	305	302	239	<200	<200	331	293	<100	266	216	399	472	699	420	673	877
2-Chloroethylvinyl ether	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200 [5]	<200	<200	<200	<500	<100
2-Hexanone	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
4-Bromofluorobenzene	[surr]	99.6%	102%	92.4%	94.0%	90.2%	93.3%	97.7%	97.7%	96.9%	104%	87.5%	93.9%	94.5%	98.1%	97.9%	95.5%
4-Methyl-2-pentanone	ug/L	<200	<200	<200	<200	<200	180	<200	<100	<200	<200	255	296	328	<200	<500	446
Acetone	ug/L	860	1260	1040	735	511	1300	889	164	985	846	1180	1330	2520	1210	2090	2880
Benzene	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
Bromodichloromethane	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
Bromoform	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
Bromomethane	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
Carbon disulfide	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
Carbon tetrachloride	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
Chlorobenzene	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
Chloroethane	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
Chloroform	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
Chloromethane	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
cis-1,3-Dichloropropene	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
Dibromochloromethane	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
Diethyl ether	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
Ethyl acetate	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
Ethylbenzene	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
Methylene chloride	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
Styrene	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200 [5]	<200	<200	<200	<500	<100
Tetrachloroethene	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
Toluene	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
Toluene-d8	[surr]	106%	105%	104%	98.7%	96.9%	98.4%	100%	101%	98.0%	106%	89.3%	96.1%	99.7%	103%	98.8%	97.9%
trans-1,2-Dichloroethene	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
trans-1,3-Dichloropropene	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
Trichloroethene	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
Trichlorofluoromethane	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
Vinyl acetate	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200	<200	<200	<200	<500	<100
Vinyl chloride	ug/L	<200	<200	<200	<200	<200	<100	<200	<100	<200	<200	<200 [5]	<200	<200	<200	<500	<100
Xylenes, total	ug/L	<600	<600	<600	<600	<600	<300	<600	<300	<600	<200	<200	<200	<200	<200	<500	<100

		0902088-09	0812030-04	0807173-09	0805043-03	0802071-09	0712071-03	0707061-09	0705127-04	0702073-09	0612057-04	0610203-01	0607077-09	0605021-04
		02/17/09	12/05/08	07/29/08	05/08/08	02/13/08	12/13/07	07/12/07	05/17/07	02/12/07	12/07/06	10/20/06	07/14/06	05/02/06
Analyte	Units	L-63	L-63	L-63	L-63	L-63	L-63	L-63	L-63	L-63	L-63	L-63	L-63	L-63
1,1,1-Trichloroethane	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
1,1,2,2-Tetrachloroethane	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
1,1,2-Trichloroethane	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
1,1-Dichloroethane	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	11.8	<50.0	<100
1,1-Dichloroethene	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
1,2-Dichlorobenzene	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
1,2-Dichloroethane	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
1,2-Dichloroethane-d4	[surr]	94.4%	93.8%	103%	103%	99.1%	104%	91.9%	117%	111%	116%	207%	109%	98.5%
1,2-Dichloropropane	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
1,3-Dichlorobenzene	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
1,4-Dichlorobenzene	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
2-Butanone	ug/L	<100	127	<100	111	<100	<100	<100	121	146	<100	502	55.0	<100
2-Chloroethylvinyl ether	ug/L	<100	<100	<100	<100	<100 [1]	<100 [1]	<100 [1]	<50.0	<50.0 [1]	<100	<10.0	<50.0	<100
2-Hexanone	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
4-Bromofluorobenzene	[surr]	95.5%	97.3%	103%	104%	102%	101%	86.8%	100%	103%	105%	194%	98.5%	92.6%
4-Methyl-2-pentanone	ug/L	<100	<100	<100	<100	<100	<100	<100	60.7	92.4	<100	232	<50.0	<100
Acetone	ug/L	945	852	312	507	350	280	256	637	903	634	2240	287	<100
Benzene	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
Bromodichloromethane	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
Bromoform	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
Bromomethane	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
Carbon disulfide	ug/L	<100	<100	<100	<100	281	223	<100	121	495	<100	1090	76.4	<100
Carbon tetrachloride	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
Chlorobenzene	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
Chloroethane	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
Chloroform	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
Chloromethane	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
cis-1,3-Dichloropropene	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
Dibromochloromethane	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
Diethyl ether	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
Ethyl acetate	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
Ethylbenzene	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
Methylene chloride	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
Styrene	ug/L	<100	<100	<100	<100	<100 [1]	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
Tetrachloroethene	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
Toluene	ug/L	629	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	22.9	<50.0	<100
Toluene-d8	[surr]	99.0%	102%	102%	105%	101%	101%	88.8%	95.5%	112%	106%	204%	100%	101%
trans-1,2-Dichloroethene	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
trans-1,3-Dichloropropene	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
Trichloroethene	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
Trichlorofluoromethane	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
Vinyl acetate	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100
Vinyl chloride	ug/L	<100	<100	<100	<100	<100 [1]	<100	<100	55.8	<50.0	<100	142	<50.0	<100
Xylenes, total	ug/L	<100	<100	<100	<100	<100	<100	<100	<50.0	<50.0	<100	<10.0	<50.0	<100

		1302105-05	1211120-05	1208078-09	1205142-05	1202076-02	1112081-01	1107076-09	1105128-04	1102051-10	1012072-05	1007059-10	1005079-05	1002080-10	0912057-04	0907120-10	0905095-06	0902088-10	0807173-10
		02/25/13	11/30/12	08/22/12	05/25/12	02/16/12	12/19/11	07/19/11	05/23/11	02/15/11	12/15/10	07/13/10	05/18/10	02/18/10	12/10/09	07/21/09	05/18/09	02/17/09	07/29/08
Analyte	Units	L64	L64	L64	L64	L64	L-64	L-64	L-64	L-64	L-64	L-64	L-64	L-64	L-64	L-64	L-64	L-64	L-64
1,1,1-Trichloroethane	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
1,1,2,2-Tetrachloroethane	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
1,1,2-Trichloroethane	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
1,1-Dichloroethane	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
1,1-Dichloroethene	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
1,2-Dichlorobenzene	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
1,2-Dichloroethane	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
1,2-Dichloroethane-d4	[surr]	103%	108%	92.7%	93.7%	105%	96.5%	98.6%	102%	102%	113%	89.8%	90.7%	105%	95.8%	100%	102%	95.2%	102%
1,2-Dichloropropane	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
1,3-Dichlorobenzene	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
1,4-Dichlorobenzene	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
2-Butanone	ug/L	<10000	<10000	<10000	<5000	4880	<1000	<2500	<1000	<1000	<2500	<1000	<1000	668	<500	<1000	822	<200	<500
2-Chloroethylvinyl ether	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000 [5]	<1000	<500	<500	<1000	<100	<200	<500
2-Hexanone	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
4-Bromofluorobenzene	[surr]	99.7%	105%	94.4%	89.8%	98.5%	94.2%	98.2%	97.3%	95.8%	103%	91.0%	93.5%	94.4%	94.5%	97.6%	98.8%	96.5%	100%
4-Methyl-2-pentanone	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	344	<200	<500
Acetone	ug/L	27700	98600	114000	51600	56800	12700	19900	12100	13800	45800	24300	10100	16400	1570	11800	7500 [4]	560	20200 [2]
Benzene	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
Bromodichloromethane	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
Bromoform	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
Bromomethane	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
Carbon disulfide	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
Carbon tetrachloride	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
Chlorobenzene	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
Chloroethane	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
Chloroform	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
Chloromethane	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
cis-1,3-Dichloropropene	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
Dibromochloromethane	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
Diethyl ether	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
Ethyl acetate	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
Ethylbenzene	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
Methylene chloride	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
Styrene	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000 [5]	<1000	<500	<500	<1000	<100	<200	<500
Tetrachloroethene	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
Toluene	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	1120	<2500	<1000	<1000	<500	<500	<1000	216	<200	638
Toluene-d8	[surr]	103%	107%	105%	94.4%	101%	100%	99.8%	99.9%	96.8%	105%	92.3%	94.5%	100%	97.6%	99.1%	99.9%	101%	101%
trans-1,2-Dichloroethene	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
trans-1,3-Dichloropropene	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
Trichloroethene	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
Trichlorofluoromethane	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
Vinyl acetate	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500
Vinyl chloride	ug/L	<10000	<10000	<10000	<5000	<2500	<1000	<2500	<1000	<1000	<2500	<1000 [5]	<1000	<500	<500	<1000	<100	<200	<500
Xylenes, total	ug/L	<30000	<30000	<30000	<15000	<7500	<3000	<7500	<3000	<3000	<2500	<1000	<1000	<500	<500	<1000	<100	<200	<500

		807173-10RE	0805043-04	805043-04RE	0802071-10	0712071-04	0707061-10	0705127-05	0702073-10	702073-10RE	0612057-05	0607077-10	607077-10RE	0605021-05	605021-05RE	605021-05RE2
		07/29/08	05/08/08	05/08/08	02/13/08	12/13/07	07/12/07	05/17/07	02/12/07	02/12/07	12/07/06	07/14/06	07/14/06	05/02/06	05/02/06	05/02/06
Analyte	Units	L-64	L-64	L-64	L-64	L-64	L-64	L-64	L-64	L-64	L-64	L-64	L-64	L-64	L-64	L-64
1,1,1-Trichloroethane	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
1,1,2,2-Tetrachloroethane	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
1,1,2-Trichloroethane	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
1,1-Dichloroethane	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
1,1-Dichloroethene	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
1,2-Dichlorobenzene	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
1,2-Dichloroethane	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
1,2-Dichloroethane-d4	[surr]	104%	101%	98.7%	97.3%	103%	96.1%	117%	107%	73.7%	115%	106%	104%	100%	52.3%	94.6%
1,2-Dichloropropane	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
1,3-Dichlorobenzene	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
1,4-Dichlorobenzene	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
2-Butanone	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	58.0	<1000	<100	452	<2500	342	<1000	<1000
2-Chloroethylvinyl ether	ug/L	<2500	<500	<2500	<1000 [1]	<2500 [1]	<2500 [1]	<1000 [1]	<50.0 [1]	<1000 [1]	<100	<50.0	<2500	<100	<1000	<1000
2-Hexanone	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
4-Bromofluorobenzene	[surr]	104%	104%	103%	96.4%	103%	87.9%	100%	99.7%	89.2%	104%	95.8%	94.5%	95.0%	48.1%	92.6%
4-Methyl-2-pentanone	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	102	<2500	109	<1000	<1000
Acetone	ug/L	6630 [4]	17000 [2]	8670 [4]	1000	8780	34300	2480	14500 [2]	10300	1520	20900 [2]	13300	16500 [2]	12700	12600 [3]
Benzene	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
Bromodichloromethane	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
Bromoform	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
Bromomethane	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
Carbon disulfide	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
Carbon tetrachloride	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
Chlorobenzene	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
Chloroethane	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
Chloroform	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
Chloromethane	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
cis-1,3-Dichloropropene	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
Dibromochloromethane	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
Diethyl ether	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
Ethyl acetate	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
Ethylbenzene	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
Methylene chloride	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
Styrene	ug/L	<2500	<500	<2500	<1000 [1]	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
Tetrachloroethene	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
Toluene	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	2050 [2]	1790	1130	543	<2500	871	<1000	<1000
Toluene-d8	[surr]	104%	104%	102%	98.0%	101%	91.1%	95.3%	109%	93.6%	104%	97.5%	94.8%	102%	51.1%	99.2%
trans-1,2-Dichloroethene	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
trans-1,3-Dichloropropene	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
Trichloroethene	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
Trichlorofluoromethane	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
Vinyl acetate	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000
Vinyl chloride	ug/L	<2500	<500	<2500	<1000 [1]	<2500	<2500	<1000	84.5	<1000	<100	<50.0	<2500	<100	<1000	<1000
Xylenes, total	ug/L	<2500	<500	<2500	<1000	<2500	<2500	<1000	<50.0	<1000	<100	<50.0	<2500	<100	<1000	<1000

		1304080-06	1304062-06	1304052-06	1304045-06	1304041-06	1304036-06	1304035-03	1304014-06	1304011-06	1304010-03	1303119-06	1303105-06
		04/17/13	04/13/13	04/12/13	04/11/13	04/10/13	04/09/13	04/08/13	04/03/13	04/02/13	04/01/13	03/26/13	03/22/13
		T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102
Analyte	Units	4/17/2013 7:	4/15/2013 6:	4/12/2013 6:	4/11/2013 7:	4/10/2013 6:	4/9/2013 6:5	4/9/2013 6:5	4/3/2013 6:4	4/2/2013 6:4	4/2/2013 6:4	3/26/2013 6:	3/22/2013 6:
Chloromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
Vinyl chloride	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
Bromomethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
Chloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
Trichlorofluoromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
Diethyl ether	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
Acetone	ug/L	2570	2510	2850	4720	6000	5810	6200	<2500	36500	37400	4590	4910
1,1-Dichloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
Methylene chloride	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
Carbon disulfide	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
trans-1,2-Dichloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
1,1-Dichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
Vinyl acetate	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
2-Butanone	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
Ethyl acetate	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
Chloroform	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
1,1,1-Trichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
Carbon tetrachloride	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
1,2-Dichloroethane-d4	[surr]	107%	109%	106%	107%	106%	105%	107%	109%	109%	106%	104%	103%
1,2-Dichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
Benzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
Trichloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
1,2-Dichloropropane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
Bromodichloromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
2-Chloroethylvinyl ether	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
4-Methyl-2-pentanone	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
cis-1,3-Dichloropropene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
Toluene-d8	[surr]	104%	108%	106%	104%	105%	105%	107%	102%	103%	101%	103%	103%
Toluene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
trans-1,3-Dichloropropene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
1,1,2-Trichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
4-Bromofluorobenzene	[surr]	96.7%	99.8%	100%	100%	100%	103%	107%	99.4%	102%	98.9%	99.4%	101%
2-Hexanone	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
Tetrachloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
Dibromochloromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
Chlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
Ethylbenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
Xylenes, total	ug/L	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<7500	<7500	<7500	<3000	<3000
Styrene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
Bromoform	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
1,1,2,2-Tetrachloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
1,3-Dichlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
1,4-Dichlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000
1,2-Dichlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000

		1303098-06	1303097-03	1303061-06	1303055-06	1303052-06	1303051-01	1303019-06	1303011-06	1303010-06	1303009-06	1302122-06	1302114-06
		03/21/13	03/20/13	03/14/13	03/13/13	03/12/13	03/11/13	03/05/13	03/04/13	03/03/13	03/02/13	02/28/13	02/27/13
		T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102
Analyte	Units	3/21/2013 7:	3/21/2013 7:	3/14/2013 6:	3/13/2013 6:	3/12/2013 6:	3/12/2013 6:	3/5/2013 6:3	3/4/2013 6:4	3/4/2013 6:4	3/4/2013 6:4	2/28/2013 6:	2/27/2013 6:
Chloromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Vinyl chloride	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Bromomethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Chloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Trichlorofluoromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Diethyl ether	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Acetone	ug/L	5480	5480	3300	3490	3390	3980	3140	3150	2870	3140	16100	11300
1,1-Dichloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Methylene chloride	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Carbon disulfide	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
trans-1,2-Dichloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,1-Dichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Vinyl acetate	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
2-Butanone	ug/L	<1000	<1000	<1000	<1000	<1000	1140	<1000	<1000	<1000	<1000	6420	<1000
Ethyl acetate	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Chloroform	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,1,1-Trichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Carbon tetrachloride	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,2-Dichloroethane-d4	[surr]	104%	105%	104%	102%	103%	104%	109%	107%	111%	111%	102%	110%
1,2-Dichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Benzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Trichloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,2-Dichloropropane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Bromodichloromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
2-Chloroethylvinyl ether	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
4-Methyl-2-pentanone	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	1290	<1000
cis-1,3-Dichloropropene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Toluene-d8	[surr]	104%	105%	105%	102%	104%	104%	106%	106%	104%	106%	100%	107%
Toluene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
trans-1,3-Dichloropropene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,1,2-Trichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
4-Bromofluorobenzene	[surr]	101%	103%	101%	99.6%	100%	100%	99.2%	101%	97.3%	99.7%	99.3%	104%
2-Hexanone	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Tetrachloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Dibromochloromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Chlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Ethylbenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Xylenes, total	ug/L	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000
Styrene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Bromoform	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,1,2,2-Tetrachloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,3-Dichlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,4-Dichlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,2-Dichlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000

		1302113-03	1302083-06	1302076-06	1302065-06	1302059-06	1302049-06	1302041-06	1302040-03	1302019-06	1302016-06	1302001-06	1301138-06	1301126-06	1301122-06	1301094-06	1301083-06	1301082-06	1301073-01	1301061-06	1301053-06	1301047-03	1301018-06	1301005-01	1301001-06
		02/26/13	02/20/13	02/19/13	02/15/13	02/14/13	02/13/13	02/12/13	02/11/13	02/06/13	02/05/13	02/01/13	01/31/13	01/30/13	01/29/13	01/23/13	01/21/13	01/20/13	01/18/13	01/16/13	01/15/13	01/14/13	01/07/13	01/02/13	01/01/13
		T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102
Analyte	Units	2/26/2013 1:	2/20/2013 6:	2/19/2013 6:	2/15/2013 6:	2/14/2013 6:	2/13/2013 6:	2/12/2013 6:	2/12/2013 6:	2/6/2013 6:3	2/5/2013 6:4	2/1/2013 7:0	1/31/2013 6:	1/30/2013 6:	1/29/2013 6:	1/23/2013 7:	1/21/2013 6:	1/21/2013 6:	1/18/2013 8:	1/16/2013 6:	1/15/2013 6:	1/14/2013 10	1/7/2013 6:3	1/2/2013 9:5	1/2/2013 6:25
Chloromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Vinyl chloride	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Bromomethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Chloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Trichlorofluoromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Diethyl ether	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Acetone	ug/L	3380	5190	14800	3930	3420	4090	<2500	<2500	3990	3430	2900	2900	3920	5460	3620	3750	3540	3040	2690	3280	6230	6230	5410	5590
1,1-Dichloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Methylene chloride	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Carbon disulfide	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
trans-1,2-Dichloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,1-Dichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Vinyl acetate	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
2-Butanone	ug/L	<1000	<1000	1410	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Ethyl acetate	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Chloroform	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,1,1-Trichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Carbon tetrachloride	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,2-Dichloroethane-d4	[surr]	94.2%	107%	111%	107%	104%	112%	111%	111%	107%	102%	106%	107%	110%	106%	106%	107%	106%	108%	109%	107%	95.2%	103%	102%	105%
1,2-Dichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Benzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Trichloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,2-Dichloropropane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Bromodichloromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
2-Chloroethylvinyl ether	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
4-Methyl-2-pentanone	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
cis-1,3-Dichloropropene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Toluene-d8	[surr]	99.3%	102%	106%	103%	102%	107%	106%	107%	104%	101%	100%	104%	106%	102%	105%	104%	100%	104%	104%	105%	96.0%	103%	99.6%	103%
Toluene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
trans-1,3-Dichloropropene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,1,2-Trichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
4-Bromofluorobenzene	[surr]	96.7%	92.2%	97.2%	94.9%	96.5%	100%	100%	98.4%	96.9%	93.2%	95.3%	97.6%	99.8%	95.9%	95.6%	96.0%	92.9%	95.9%	95.5%	96.2%	92.6%	97.3%	95.2%	98.1%
2-Hexanone	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Tetrachloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Dibromochloromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Chlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Ethylbenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Xylenes, total	ug/L	<3000	<3000	<3000	<3000	<3000	<3000	<7500	<7500	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000
Styrene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Bromoform	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,1,2,2-Tetrachloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,3-Dichlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,4-Dichlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,2-Dichlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000

		1212128-03	1212109-03	1212107-06	1212106-03	1212097-06	1212085-06	1212079-03	1212073-03	1212046-03	1212040-06	1212033-06	1212015-06	1212012-03	1211117-03	1211084-06	1211039-06	1211038-06	1211037-06	1211033-06	1211015-06	1211014-06	1211009-06	1211004-06	1210148-06
		12/31/12	12/26/12	12/25/12	12/24/12	12/21/12	12/19/12	12/18/12	12/17/12	12/12/12	12/11/12	12/10/12	12/05/12	12/04/12	11/29/12	11/21/12	11/12/12	11/11/12	11/10/12	11/09/12	11/05/12	11/04/12	11/02/12	11/01/12	10/31/12
		T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102
Analyte	Units	12/31/2012 1	12/26/2012 1	12/26/2012 8	12/24/2012 1	12/21/2012 6	12/19/2012 6	12/18/2012 1	12/17/2012 1	12/12/2012 1	12/11/2012 6	12/10/2012 6	12/5/2012 6:	12/4/2012 11	11/30/2012 6	11/21/2012 6	11/12/2012 6	11/12/2012 6	11/12/2012 6	11/9/2012 6:	11/5/2012 6:	11/5/2012 6:	11/2/2012 8:	11/1/2012 10	10/31/2012 6
Chloromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
Vinyl chloride	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
Bromomethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
Chloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
Trichlorofluoromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
Diethyl ether	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
Acetone	ug/L	5620	4270	3900	3710	5040	4810	6160	5680	5660	5270	5770	5460	5830	7480	5440	4350	3610	4220	3290	1890	1760	1080	<1000	<1000
1,1-Dichloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
Methylene chloride	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
Carbon disulfide	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
trans-1,2-Dichloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
1,1-Dichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
Vinyl acetate	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
2-Butanone	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
Ethyl acetate	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
Chloroform	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
1,1,1-Trichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
Carbon tetrachloride	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
1,2-Dichloroethane-d4	[surr]	105%	109%	109%	108%	113%	105%	107%	91.5%	99.7%	101%	103%	99.3%	102%	114%	109%	105%	107%	105%	100%	106%	106%	100%	92.2%	90.6%
1,2-Dichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
Benzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
Trichloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
1,2-Dichloropropane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
Bromodichloromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
2-Chloroethylvinyl ether	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
4-Methyl-2-pentanone	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
cis-1,3-Dichloropropene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
Toluene-d8	[surr]	102%	105%	107%	106%	109%	104%	110%	90.7%	95.5%	95.0%	96.9%	94.5%	96.7%	108%	105%	104%	106%	104%	100%	108%	106%	102%	94.3%	93.9%
Toluene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
trans-1,3-Dichloropropene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
1,1,2-Trichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
4-Bromofluorobenzene	[surr]	98.9%	101%	105%	101%	105%	102%	105%	83.1% [2]	87.4%	89.5%	91.0%	90.9%	94.4%	105%	101%	99.1%	100%	98.9%	95.4%	102%	99.3%	96.9%	89.8%	88.9%
2-Hexanone	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
Tetrachloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
Dibromochloromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
Chlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
Ethylbenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
Xylenes, total	ug/L	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<1500	<1500	<1500	<3000	<3000	<3000	<3000	<3000	<3000
Styrene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
Bromoform	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
1,1,2,2-Tetrachloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
1,3-Dichlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
1,4-Dichlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000
1,2-Dichlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<500	<500	<500	<1000	<1000	<1000	<1000	<1000	<1000

		1210142-06	1210132-06	1210131-06	1210130-06	1210126-06	1210120-06	1210113-06	1210109-06	1210094-03	1210079-06	1210074-03	1210067-06	1210062-06	1210059-03	1210015-06	1210005-03	1209126-06	1209123-06	1209124-03	1209094-06	1209087-03	1209081-06	1209077-06	1209071-06
		10/30/12	10/29/12	10/28/12	10/27/12	10/26/12	10/25/12	10/24/12	10/23/12	10/19/12	10/16/12	10/15/12	10/12/12	10/11/12	10/10/12	10/02/12	10/01/12	09/28/12	09/27/12	09/26/12	09/20/12	09/18/12	09/16/12	09/15/12	09/14/12
		T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102
Analyte	Units	10/30/2012 6	10/29/2012 6	10/29/2012 6	10/29/2012 6	10/26/2012 6	10/25/2012 6	10/24/2012 6	10/23/2012 6	10/19/2012 1	10/16/2012 6	10/15/2012 1	10/12/2012 8	10/11/2012 6	10/10/2012 1	10/2/2012 7:	10/1/2012 11	9/28/2012 7:	9/27/2012 10	9/27/2012 11	9/20/2012 8:	9/18/2012 1:	9/17/2012 9:	9/17/2012 9:	9/14/2012 7:
Chloromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
Vinyl chloride	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
Bromomethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
Chloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
Trichlorofluoromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
Diethyl ether	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
Acetone	ug/L	<1000	<1000	1740	<1000	3340	3390	4510	6350	8610	6330	11800	4420	1670	<1000	7030	7450	3710	4670	4280	6660	6250	4800	4090	<1000
1,1-Dichloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
Methylene chloride	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
Carbon disulfide	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
trans-1,2-Dichloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
1,1-Dichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
Vinyl acetate	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
2-Butanone	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	1810	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
Ethyl acetate	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
Chloroform	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
1,1,1-Trichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
Carbon tetrachloride	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
1,2-Dichloroethane-d4	[surr]	94.4%	94.5%	96.0%	94.8%	94.3%	89.7%	92.8%	94.7%	109%	115%	120% [1]	114%	108%	108%	101%	113%	105%	104%	108%	100%	102%	96.8%	101%	90.2%
1,2-Dichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
Benzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
Trichloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
1,2-Dichloropropane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
Bromodichloromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
2-Chloroethylvinyl ether	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
4-Methyl-2-pentanone	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
cis-1,3-Dichloropropene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
Toluene-d8	[surr]	97.4%	94.2%	97.4%	94.8%	94.4%	91.7%	95.3%	93.7%	104%	99.7%	108%	100%	95.6%	98.0%	93.1%	102%	98.5%	98.3%	101%	97.3%	99.4%	94.7%	102%	95.7%
Toluene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
trans-1,3-Dichloropropene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
1,1,2-Trichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
4-Bromofluorobenzene	[surr]	92.4%	89.3%	92.6%	91.9%	90.7%	89.5%	94.4%	92.3%	102%	98.4%	105%	98.7%	95.6%	95.2%	91.6%	101%	97.8%	95.1%	99.7%	95.7%	99.1%	93.6%	100%	93.0%
2-Hexanone	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
Tetrachloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
Dibromochloromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
Chlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
Ethylbenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
Xylenes, total	ug/L	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<7500	<7500	<7500	<3000	<3000	<3000	<3000	<3000
Styrene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
Bromoform	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
1,1,2,2-Tetrachloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
1,3-Dichlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
1,4-Dichlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000
1,2-Dichlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<2500	<1000	<1000	<1000	<1000	<1000

		1209063-06	1209052-06	1209044-06	1209035-06	1209034-06	1209033-06	1209032-03	1209013-06	1209012-03	1208113-06	1208108-06	1208104-06	1208097-06	1208075-06	1208074-03	1208053-06	1208040-06	1208030-03	1208016-06	1208014-03	1207108-03	1207102-06	1207100-06	1207098-03
		09/13/12	09/12/12	09/11/12	09/10/12	09/09/12	09/08/12	09/07/12	09/05/12	09/04/12	08/31/12	08/30/12	08/29/12	08/28/12	08/22/12	08/21/12	08/15/12	08/10/12	08/09/12	08/07/12	08/06/12	07/30/12	07/27/12	07/26/12	07/25/12
		T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102
Analyte	Units	9/13/2012 7:	9/12/2012 7:	9/11/2012 8:	9/10/2012 7:	9/10/2012 7:	9/10/2012 7:	9/10/2012 7:	9/5/2012 7:0	9/5/2012 7:0	8/31/2012 7:	8/30/2012 8:	8/29/2012 7:	8/28/2012 7:	8/22/2012 7:	8/22/2012 7:	8/15/2012 7:	8/10/2012 7:	8/9/2012 11:	8/7/2012 7:0	8/6/2012 9:1	7/30/2012 10	7/27/2012 8:	7/26/2012 11	7/26/2012 9:
Chloromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
Vinyl chloride	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
Bromomethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
Chloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
Trichlorofluoromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
Diethyl ether	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
Acetone	ug/L	1350	1640	3080	2680	6280	3960	4660	9000	8200	1920	2350	2060	7150	4130	4530	4860	2110	3470	4250	9780	7210	4640	4930	13400
1,1-Dichloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
Methylene chloride	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
Carbon disulfide	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
trans-1,2-Dichloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
1,1-Dichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
Vinyl acetate	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
2-Butanone	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
Ethyl acetate	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
Chloroform	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
1,1,1-Trichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
Carbon tetrachloride	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
1,2-Dichloroethane-d4	[surr]	86.0%	95.7%	93.3%	101%	89.7%	102%	102%	101%	101%	99.1%	96.4%	98.3%	97.8%	91.6%	93.2%	104%	98.2%	104%	103%	109%	89.6%	102%	102%	101%
1,2-Dichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
Benzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
Trichloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
1,2-Dichloropropane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
Bromodichloromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
2-Chloroethylvinyl ether	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
4-Methyl-2-pentanone	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
cis-1,3-Dichloropropene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
Toluene-d8	[surr]	94.6%	97.4%	97.8%	97.1%	94.7%	95.9%	96.8%	96.6%	97.4%	96.9%	94.1%	97.3%	95.8%	104%	105%	104%	101%	101%	99.7%	104%	101%	102%	100%	83.2% [1]
Toluene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
trans-1,3-Dichloropropene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
1,1,2-Trichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
4-Bromofluorobenzene	[surr]	93.0%	95.2%	95.0%	95.1%	93.8%	94.9%	95.5%	95.0%	95.4%	95.2%	91.9%	94.7%	93.0%	93.7%	95.7%	97.6%	94.7%	97.3%	94.0%	101%	99.0%	97.9%	96.4%	87.9%
2-Hexanone	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
Tetrachloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
Dibromochloromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
Chlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
Ethylbenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
Xylenes, total	ug/L	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<7500	<7500	<3000	<3000	<7500	<3000	<3000	<3000	<3000	<7500	<3000
Styrene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
Bromoform	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
1,1,2,2-Tetrachloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
1,3-Dichlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
1,4-Dichlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000
1,2-Dichlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<2500	<2500	<1000	<1000	<2500	<1000	<1000	<1000	<1000	<2500	<1000

		1207071-06	1207067-06	1207063-03	1207045-06	1207035-06	1207034-01	1207009-06	1206099-06	1206098-03	1206077-06	1206076-03	1206061-06	1206056-06	1206055-03	1206017-06	1206013-06	1206009-03	1206005-04	1205167-03	1205160-06	1205117-06	1205097-06	1205084-06	1205074-06
		07/19/12	07/18/12	07/17/12	07/12/12	07/11/12	07/10/12	07/03/12	06/26/12	06/25/12	06/19/12	06/18/12	06/14/12	06/13/12	06/12/12	06/06/12	06/05/12	06/04/12	06/03/12	05/31/12	05/30/12	05/22/12	05/17/12	05/15/12	05/14/12
		T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102	T-102
Analyte	Units	7/19/2012 7:	7/18/2012 7:	7/17/2012 10	7/12/2012 7:	7/11/2012 7:	7/11/2012 7:	7/3/2012 7:4	6/26/2012 7:	6/25/2012 1:	6/19/2012 7:	6/19/2012 7:	6/14/2012 9:	6/13/2012 7:	6/13/2012 7:	6/6/2012 7:0	6/5/2012 7:1	6/4/2012 11:	6/4/2012 7:0	5/31/2012 10	5/30/2012 7:	5/22/2012 7:	5/17/2012 8:	5/15/2012 7:	5/14/2012 7:
Chloromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Vinyl chloride	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Bromomethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Chloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Trichlorofluoromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Diethyl ether	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Acetone	ug/L	11100	8240	9150	5900	5330	9290	8290	11000	13900	7820	7900	4690	5910	6700	3250	5130	5410	7380	7880	7500	7400	4040	2590	2720
1,1-Dichloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Methylene chloride	ug/L	<1000	<1000	<1000	<1000	<1000	1780	<1000	<1000	1640	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Carbon disulfide	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
trans-1,2-Dichloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,1-Dichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Vinyl acetate	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
2-Butanone	ug/L	<1000	<1000	<1000	<1000	<1000	1910	<1000	<1000	2370	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Ethyl acetate	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Chloroform	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,1,1-Trichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Carbon tetrachloride	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,2-Dichloroethane-d4	[surr]	109%	98.5%	96.3%	91.5%	90.3%	92.0%	98.6%	105%	110%	104%	102%	89.9%	95.4%	95.4%	104%	104%	103%	104%	99.6%	100%	98.6%	89.0%	89.5%	86.9%
1,2-Dichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Benzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Trichloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,2-Dichloropropane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Bromodichloromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
2-Chloroethylvinyl ether	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
4-Methyl-2-pentanone	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
cis-1,3-Dichloropropene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Toluene-d8	[surr]	98.5%	92.9%	90.5%	92.2%	92.6%	92.5%	96.5%	95.6%	101%	97.7%	97.4%	90.0%	96.0%	95.5%	104%	103%	103%	104%	97.6%	101%	95.9%	97.4%	95.6%	94.1%
Toluene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
trans-1,3-Dichloropropene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,1,2-Trichloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
4-Bromofluorobenzene	[surr]	97.8%	91.6%	90.5%	91.3%	92.4%	91.9%	94.4%	96.9%	102%	97.9%	97.6%	88.6%	93.0%	93.6%	102%	100%	100%	102%	94.9%	97.0%	94.1%	94.6%	91.5%	93.9%
2-Hexanone	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Tetrachloroethene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Dibromochloromethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Chlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Ethylbenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Xylenes, total	ug/L	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000
Styrene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Bromoform	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,1,2,2-Tetrachloroethane	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,3-Dichlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,4-Dichlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,2-Dichlorobenzene	ug/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000

Leachate Analytical Data - T-160
AWTS & FacPond Evaluation

CWM Chemical Services, LLC
Model City, NY

SLF 12 standpipe

SLF 12 lift station

May 2012 - rev. 1

RMU-1, SLF-12

Parameter	Units	Analytical Method	RMU-1 T-160 1/31/2012	RMU-1 T-160 2/1/2012	RMU-1 T-160 2/7/2012	RMU-1 T-160 2/9/2012	RMU-1 T-160 2/14/2012	RMU-1 T-160 2/15/2012	RMU-1 8/22/12	L-54 2/14/2012	T-150 2/14/2012	T-150 2/14/2012	T-150 7/23/2012	Combined T-102 11/15/2011
			tank sampl	120202028	T160 AES 0	120210022	120215024	120216018CMW.xls,	T160 021512.xlsx	120215035	120215034	Old Landfill	Old Landfill Leachates_	111116033
Samples Collected			***6***							***1***	***1***			***1***
Samples Required			***6***							***3***	***3***			***24***
Conventional/General Water Quality														
Total Organic Carbon	mg/L	SM 5310C		167	263	262	277	290		257	49.5		66.6	315
Total Suspended Solids	mg/L	SM 2540D		86.7	55	96	133	65		72.0	10		44	16.5
Total Dissolved Solids	mg/L	SM 2540C		11900	17700	18600	22000	21300		27200.00	1430		4090	18000
Total Petroleum Hydrocarbons	mg/L	E1664		25.6	40	47.9	64.9	57.9		12.5	13.4		<1	16.8
Liquid Volume Processed	gpd	----	28393	80254	6480	26374								
Sulfide	mg/L		<0.200	<0.200	<1.00	<1.00	<0.200	<0.200		125	<0.200	<0.200		
Metals														
Phenolic, Total	mg/L	420.4, 420.1		2.55	5.1	6.5	6.5			0.800	0.108		0.031	6.79
Volatile Organic Compounds - Purgeables (10)														
Chloromethane	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
Vinyl Chloride	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
Bromomethane	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
Chloroethane	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
Trichlorofluoromethane	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
Diethyl ether	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
1,1,2-Trichloro-1,2,2-trifluoroe	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
Acetone	µg/L	8260C	4200	4440	7160	7380	8260	9040		<50.0	60.1	362		
1,1-Dichloroethene	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
Methylene chloride	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	2280		
Carbon disulfide	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
trans-1,2-Dichlorethene	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
1,1-Dichloroethane	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
Vinyl acetate	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
2-Butanone	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
Ethyl acetate	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
Chloroform	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
1,1,1-Trichloroethane	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
Carbon tetrachloride	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
1,2-Dichloroethane	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
Benzene	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
Trichloroethene	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
1,2-Dichlropropane	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
Bromodichloromethane	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
2-Chloroethylvinyl ether	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
4-Methyl-2-pentanone	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
cis-1,3-Dichloropropene	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
Toluene	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
trans-1,3-Dichloropropene	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
1,1,2-Trichloroethane	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
2-Hexanone	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
Tetrachloroethene	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
Dibromochloromethane	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
Chlorobenzene	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
Ethylbenezene	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
Xylenes, total	µg/L	8260C	<3000	<3000	<3000	<3000	<3000	<3000		<150	<60.0	<150		
Styrene	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
Bromoform	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
1,1,2,2-Tetrachloroethane	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
1,3-Dichlorobenzene	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
1,4-Dichlorobenzene	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
1,2-Dichlorobenzene	µg/L	8260C	<1000	<1000	<1000	<1000	<1000	<1000		<50.0	<20.0	<50.0		
Semi-Volatile Organic Compounds - Base Acid/Neutrals														
1,2,4-Trichlorobenzene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
1,2-Dichlorobenzene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
1,3-Dichlorobenzene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
1,4-Dichlorobenzene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
2,4,5-Trichlorophenol	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
2,4,6-Trichlorophenol	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
2,4-Dichlorophenol	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
2,4-Dimethylphenol	µg/L	625		71	140	110	120	110		<50	<50		<5	140
2,4-Dinitrophenol	µg/L	625		<250	<500	<500	<500	<500		<250	<250		<25	<500
2,4-Dinitrotoluene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
2,6-Dinitrotoluene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
2-Chloronaphthalene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
2-Chlorophenol	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
2-Methylnaphthalene	µg/L	625												
2-Methylphenol	µg/L	625												
2-Nitrophenol	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
3,3´-Dichlorobenzidine	µg/L	625		<100	<200	<200	<200	<200		<100	<100		<10	<200
4,6-Dinitro-2-methylphenol	µg/L	625		<250	<500	<500	<500	<500		<250	<250		<25	<500
4-Bromophenyl phenyl ether	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
4-Chloro-3-methylphenol	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
4-Chlorophenyl phenyl ether	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
4-Methylphenol	µg/L	625												
4-Nitrophenol	µg/L	625		<250	<500	500	<500	<500		<250	<250		<25	<500
Acenaphthene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100

Leachate Analytical Data - T-160
AWTS & FacPond Evaluation

CWM Chemical Services, LLC
Model City, NY

SLF 12 standpipe

SLF 12 lift station

May 2012 - rev. 1

RMU-1, SLF-12

			tank sampl	120202028	T160 AES 0	120210022	120215024	120216018CMW.xls, T160 021512.xlsx		120215035	120215034	Old Landfill	Old Landfill Leachates_	111116033
Parameter	**Units**	**Analytical Method**	**RMU-1 T-160 1/31/2012**	**RMU-1 T-160 2/1/2012**	**RMU-1 T-160 2/7/2012**	**RMU-1 T-160 2/9/2012**	**RMU-1 T-160 2/14/2012**	**RMU-1 T-160 2/15/2012**	**RMU-1 8/22/12**	**L-54 2/14/2012**	**T-150 2/14/2012**	**T-150 2/14/2012**	**T-150 7/23/2012**	**Combined T-102 11/15/2011**
Samples Collected			***6***							***1***	***1***			***1***
Samples Required			***6***							***3***	***3***			***24***
Acenaphthylene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Anthracene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Azobenzene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Benz(a)anthracene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Benzidine	µg/L	625		<250	<500	<500	<500	<500		<250	<250		<25	<500
Benzo(a)pyrene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Benzo(b)fluoranthene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Benzo(g,h,i)perylene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Benzo(k)fluoranthene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Benzothiazole	µg/L	625												
Bis(2-chloroethoxy)methane	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Bis(2-chloroethyl)ether	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Bis(2-chloroisopropyl)ether	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Bis(2-ethylhexyl)phthalate	µg/L	625		<50	<100	<100	<100	<100		<50	330		<5	<100
Butyl benzyl phthalate	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Carbazole	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Chrysene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Dibenz(a,h)anthracene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Dibenzofuran	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Diethyl phthalate	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Dimethyl phthalate	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Di-n-butyl phthalate	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Di-n-octyl phthalate	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Fluoranthene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Fluorene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Hexachlorobenzene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Hexachlorobutadiene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Hexachlorocyclopentadiene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Hexachloroethane	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Hexamethylbenzene	µg/L	625												
Indeno(1,2,3-cd)pyrene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Isophorone	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Naphthalene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
n-decane	µg/L	625												
Nitrobenzene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
N-Nitrosodimethylamine	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
N-Nitrosodi-n-propylamine	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
N-Nitrosodiphenylamine	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
n-Octadecane	µg/L	625												
Pentachlorophenol	µg/L	625		<250	<500	<500	<500	<100		<250	<250		<25	<500
Phenanthrene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Phenol	µg/L	625		630	1100	990	1200	<100		<50	<50		<5	<100
Pyrene	µg/L	625		<50	<100	<100	<100	<100		<50	<50		<5	<100
Pyridine	µg/L	625												
PCB Aroclor														
Aroclor 1016	µg/L	608		<1.3	<5.2	<0.26	<0.074	<0.349		<0.357	<13.1		<16.8	<3.25
Aroclor 1221	µg/L	608		<1.3	<5.2	<0.26	<0.074	<0.349		<0.357	<13.1		<16.8	<3.25
Aroclor 1232	µg/L	608		<1.3	<5.2	<0.26	<0.074	<0.349		<0.357	<13.1		<16.8	<3.25
Aroclor 1242	µg/L	608		3	29.6	<0.26	2.04	<0.349		<0.357	34.6		226	5.32
Aroclor 1248	µg/L	608		<1.3	<5.2	<0.26	<0.074	<0.349		<0.357	<13.1		<16.8	<3.25
Aroclor 1254	µg/L	608		<1.3	<5.2	<0.26	<0.074	<0.349		<0.357	289		92.5	<3.25
Aroclor 1260	µg/L	608		1.67	112	<0.26	<0.074	<0.349		<0.357	227		69.7	<3.25
Aroclor 1016	µg/L	8082A												
Aroclor 1221	µg/L	8082A												
Aroclor 1232	µg/L	8082A												
Aroclor 1242	µg/L	8082A												
Aroclor 1248	µg/L	8082A												
Aroclor 1254	µg/L	8082A												
Aroclor 1260	µg/L	8082A												
Aroclor 1262	µg/L	8082A												
Aroclor 1268	µg/L	8082A												
Chlorinated Pesticides														
4,4´-DDD	µg/L	608		<0.4	<8	<0.4	<0.114	<0.108		<0.110	<20.2		<25.8	<1.11
4,4´-DDE	µg/L	608		<0.4	<8	<0.4	<0.114	<0.108		<0.110	<20.2		<25.8	<1.11
4,4´-DDT	µg/L	608		<0.4	<8	<0.4	<0.114	<0.108		<0.110	<20.2		<25.8	<1.11
Aldrin	µg/L	608		<0.2	<4	<0.2	<0.057	<0.054		<0.055	<10.1		<12.9	<0.56
alpha-BHC	µg/L	608		<0.2	<4	<0.2	<0.057	<0.054		<0.055	<10.1		<12.9	<0.56
alpha-Chlordane	µg/L	608		<0.2	<4	<0.2	<0.057	<0.054		<0.055	<10.1		<12.9	<0.56
beta-BHC	µg/L	608		<0.2	<4	<0.2	<0.057	<0.054		<0.055	<10.1		<12.9	<0.56
Chlordane	µg/L	608		<0.2	<4	<0.2	<0.057	<0.054		<0.055	<10.1		<12.9	<0.56
delta-BHC	µg/L	608		<0.2	<4	<0.2	<0.057	<0.054		<0.055	<10.1		<12.9	<0.56
Dieldrin	µg/L	608		<0.4	<8	<0.4	<0.114	<0.108		<0.110	<20.2		<25.8	<1.11
Endosulfan I	µg/L	608		<0.2	<4	<0.2	<0.057	<0.054		<0.055	<10.1		<12.9	<0.56
Endosulfan II	µg/L	608		<0.4	<8	<0.4	<0.114	<0.108		<0.110	<20.2		<25.8	<1.11
Endosulfan sulfate	µg/L	608		<0.4	<8	<0.4	<0.114	<0.108		<0.110	<20.2		<25.8	<1.11
Endrin	µg/L	608		<0.4	<8	<0.4	<0.114	<0.108		<0.110	<20.2		<25.8	<1.11

Leachate Analytical Data - T-160
AWTS & FacPond Evaluation

CWM Chemical Services, LLC
Model City, NY

SLF 12 standpipe

SLF 12 lift station

May 2012 - rev. 1

RMU-1, SLF-12 | tank sampl 120202028 T160 AES 0 120210022 120215024 120216018CMW.xls, T160 021512.xlsx | 120215035 120215034 Old Landfill Old Landfill Leachates_ 111116033

Parameter	Units	Analytical Method	RMU-1 T-160 1/31/2012	RMU-1 T-160 2/1/2012	RMU-1 T-160 2/7/2012	RMU-1 T-160 2/9/2012	RMU-1 T-160 2/14/2012	RMU-1 T-160 2/15/2012	RMU-1 8/22/12	L-54 2/14/2012	T-150 2/14/2012	T-150 2/14/2012	T-150 7/23/2012	Combined T-102 11/15/2011
Samples Collected						***6***				***1***	***1***			***1***
Samples Required						***6***				***3***	***3***			***24***
Endrin aldehyde	µg/L	608		<8	<0.114	<0.108				<0.110	<20.2		<25.8	<1.11
Endrin Ketone	µg/L	608		<8	<0.108	<0.108				<0.110	<20.2		<25.8	<1.11
gamma-BHC	µg/L	608		<4	<0.054	<0.054				<0.055	<10.1		<12.9	<0.56
gamma-Chlordane	µg/L	608		<4	<0.054	<0.054				<0.055	<10.1		<12.9	<0.56
Heptachlor	µg/L	608		<4	<0.054	<0.054				<0.055	<10.1		<12.9	<0.56
Heptachlor epoxide	µg/L	608		<4	<0.054	<0.054				<0.055	<10.1		<12.9	<0.56
Methoxychlor	µg/L	608		<40	<0.538	<0.538				<0.549	<101		<129	<5.56
Toxaphene	µg/L	608		<80	<1.08	<1.08				<1.10	<202		<258	<11.1
Other key considerations														

Key:

Appendix B

Air State Facility Permit Application Forms

New York State Department of Environmental Conservation
Air Permit Application

DEC ID	APPLICATION ID	OFFICE USE ONLY
9-2934-00022	- - /	

Section I - Certification

Title V Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information [required pursuant to 6 NYCRR 201-6.3(d)] I believe the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Responsible Official	Title
Signature	Date / /

State Facility Certification

I certify that this facility will be operated in conformance with all provisions of existing regulations.

Responsible Official Michael Mahar	Title District Manager
Signature [signature]	Date 1 / 30 / 15

Section II - Identification Information

Title V Facility Permit	State Facility Permit
__ New __ Significant Modification __ Administrative Amendment	__ New X Modification
__ Renewal __ Minor Modification General Permit Title:________	General Permit Title:________
__ Application involves construction of new facility	X Application involves construction of new emission unit(s)

Owner / Firm

Name	CWM Chemical Services, LLC				
Street Address	1550 Balmer Road				
City	Model City	State NY	Country	Zip 14107	
Owner Classification	__ - Federal X - Corporation/Partnership	__ -State __ - Individual	__ - Municipal	Taxpayer ID 364203347	

Facility

_ Confidential

Name	CWM Model City Facility
Location Address	1550 Balmer Road
X City / __Town / __ Village	Model City — Zip 14107

Project Description

_ Continuation Sheet(s)

CWM Chemical Services, LLC is applying for an Air State Facility Permit Modification to incorporate the RMU-2 Area. The project is considered a minor modification.

Owner / Firm Contact Mailing Address

Name (Last, First, Middle Initial)	Rizzo, Jonathan P.		Phone No. (716) 286 - 0354
Affiliation	CWM Chemical Services, LLC	Title Permitting Manager	Fax No. (716) 286 - 0224
Street Address	1550 Balmer Road		
City	Model City	State NY	Country USA Zip 14107

Facility Contact Mailing Address

Name (Last, First, Middle Initial)	Rizzo, Jonathan P.		Phone No. (716) 286 - 0354
Affiliation	CWM Chemical Services, LLC	Title Permitting Manager	Fax No. (716) 286 - 0224
Street Address	1550 Balmer Road		
City	Model City	State NY	Country USA Zip 14107

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
9-2934-00022

Section III - Facility Information

Classification

_ Hospital _ Residential _ Educational/Institutional _ Commercial **X** Industrial _ Utility

Affected States (Title V Only)

_ Vermont _ Massachusetts _ Rhode Island _ Pennsylvania Tribal Land: **Tuscarora IR**
_ New Hampshire _ Connecticut _ New Jersey _ Ohio Tribal Land: **Tonawanda IR**
Tribal Land: **Cattaraugus IR**

SIC Codes

Facility Description

_ Continuation Sheet(s)

Compliance Statements (Title V Only)

For all emission sources at this facility that are operating in compliance with all applicable requirements including any compliance certification requirements under section 114 (a) (3) of the clean air act amendments of 1990, complete the following:

__ This Facility will continue to be operated and maintained in such a manner as to assure compliance for the duration of the permit.

__ For all emission units, subject to any applicable requirements that will become effective during the term of the permit, this facility will meet all such requirements on a timely basis.

__ Compliance certification reports will be submitted at least once a year. Each report will certify compliance status with respect to each requirement, and the method used to determine the status.

Facility Applicable Federal Requirements

__ Continuation Sheet(s)

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause
40	**CFR**	**63**	**ZZZZ**						

Facility State Only Requirements

__ Continuation Sheet(s)

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause
6	**NYCRR**	**200**							
6	**NYCRR**	**201**							
6	**NYCRR**	**211**							
6	**NYCRR**	**212**							
6	**NYCRR**	**215**							

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
9 - 2 9 3 4 - 0 0 0 2 2

Section III - Facility Information (continued)

Facility Compliance Certification

_ Continuation Sheet(s)

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause

_ Applicable Federal Requirement _ State Only Requirement	_ Capping	CAS. No.	Contaminant Name
		- -	

Monitoring Information

_ Ambient Air Monitoring _ Work Practice Involving Specific Operations _ Record Keeping/Maintenance Procedures

Description

Work Practice		Process Material	Reference Test Method
Type	Code	Description	

Parameter		Manufacturer Name/Model No.
Code	Description	

Limit		Limit Units	
Upper	Lower	Code	Description

Averaging Method		Monitoring Frequency		Reporting Requirements	
Code	Description	Code	Description	Code	Description

Facility Emissions Summary

X Continuation Sheet(s)

CAS No.	Contaminant Name	PTE (lbs/yr)	PTE Range Code	Actual (lbs/yr)
NY075 - 00 - 5	PM-10		**C**	
NY075 - 02 - 5	PM-2.5		**B**	
7446 - 09 - 5	SO_2		**B**	
NY210 - 00 - 0	NO_x		**B**	
630 - 08 - 0	CO		**A**	
NY998 - 00 - 0	VOC		**B**	
NY100 - 00 - 0	HAP		**A**	
- -	**All Individual Speciated HAPs**		**Y**	
- -				
- -				
- -				
- -				

DEC ID
9 - 2 9 3 4 - 0 0 0 2 2

Section IV - Emission Unit Information

Emission Unit Description

_ Continuation Sheet(s)

EMISSION UNIT **1 - L A N D F**

Landfill Operations: Paved / unpaved road dust emissions, waste unloading and compacting, landfill capping

Building

_ Continuation Sheet(s)

Building	Building Name	Length (ft)	Width (ft)	Orientation

Emission Point

_ Continuation Sheet(s)

Emission Unit	-					EMISSION PT.
Ground Elev. (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (^oF)	Cross Section Length (in)	Cross Section Width (in)
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal

Emission Unit	-					EMISSION PT.
Ground Elev. (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (^oF)	Cross Section Length (in)	Cross Section Width (in)
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal

Emission Source/Control

_ Continuation Sheet(s)

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
RMU01	**I**	**1994**	**1994**				**RMU-1 Landfill**

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description
3,601,900		**CUBIC YARDS**				

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
RMU02	**I**	**TBD**	**TBD**				**RMU-2 Landfill**

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description
4,030,700		**CUBIC YARDS**				

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
9 - 2 9 3 4 - 0 0 0 2 2

Section IV - Emission Unit Information

Emission Unit Description

_ Continuation Sheet(s)

EMISSION UNIT 2 - L E A C H

This emission unit consists of leachate collection, handling and storage for landfill areas SLF-12, RMU-1 and RMU-2.

Building

_ Continuation Sheet(s)

Building	Building Name	Length (ft)	Width (ft)	Orientation

Emission Point

_ Continuation Sheet(s)

Emission Unit -   EMISSION PT.

Ground Elev. (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (^oF)	Cross Section Length (in)	Cross Section Width (in)
Exit Velocity (FPS)	**Exit Flow (ACFM)**	**NYTM (E) (KM)**	**NYTM (N) (KM)**	**Building**	**Distance to Property Line (ft)**	**Date of Removal**

Emission Unit -   EMISSION PT.

Ground Elev. (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (^oF)	Cross Section Length (in)	Cross Section Width (in)
Exit Velocity (FPS)	**Exit Flow (ACFM)**	**NYTM (E) (KM)**	**NYTM (N) (KM)**	**Building**	**Distance to Property Line (ft)**	**Date of Removal**

Emission Source/Control

_ Continuation Sheet(s)

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
SPIP2	**I**	**1990**	**1990**				**Standpipes for SLF-12, RMU-01, and RMU-2 Landfill Areas**

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
LTNK2	**I**	**1990**	**1990**				**Leachate Storage Tanks Without Carbon Canisters**

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description
11,000	**15**	**GALLONS**				

DEC ID
9 - 2 9 3 4 - 0 0 0 2 2

Section IV - Emission Unit Information (continued)

Process Information

_ Continuation Sheet(s)

EMISSION UNIT 1 - L A N D F   Process F U G

Description

Process FUG includes operation of the RMU-2 Landfill. Emissions occur from paved/ unpaved roads, waste unloading and compacting, and landfill capping.

Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units	
	Quantity/Hr	Quantity/Yr	Code	Description

__ Confidential
__ Operating at Maximum Capacity
__ Activity with Insignificant Emissions

Operating Schedule		Building	Floor
Hrs/Day	Days/Yr		

Emission Source/Control Identifier(s) (continued)

RMU01	**RMU02**						

EMISSION UNIT 2 - L E A C H   Process L E 2

Description

Process LE2 includes emissions from the collection, handling and storage of leachate from the newer landfills: SLF 12, RMU-1 and RMU-2. These units have lower levels of organics; no carbon canisters are present on storage tanks.

Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units	
	Quantity/Hr	Quantity/Yr	Code	Description

__ Confidential
__ Operating at Maximum Capacity
__ Activity with Insignificant Emissions

Operating Schedule		Building	Floor
Hrs/Day	Days/Yr		

Emission Source/Control Identifier(s) (continued)

SPIP2	**LTNK2**						

New York State Department of Environmental Conservation
Air Permit Application

DEC ID											
9	-	2	9	3	4	-	0	0	0	2	2

Section IV - Emission Unit Information (continued)

Emission Unit	Emission Point	Process	Emission Source	Emission Unit Applicable Federal Requirement							_ Continuation Sheet(s)		
				Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	SubClaus

Emission Unit	Emission Point	Process	Emission Source	Emission Unit State Only Requirements							_ Continuation Sheet(s)		
				Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	SubClaus
-													
-													
-													
-													
-													
-													

Emission Unit Compliance Certification

X Continuation Sheet(s)

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause

_ Applicable Federal Requirement   _ State Only Requirement   _ Capping

Emission Unit	Emission Point	Process	Emission Source	CAS. No.	Contaminant Name

Monitoring Information

_ Continuous Emission Monitoring
_ Intermittent Emission Testing
_ Ambient Air Monitoring
_ Monitoring of Process or Control Device Parameters as Surrogate
_ Work Practice Involving Specific Operations
_ Record Keeping/Maintenance Procedures

Description

Work Practice	Process Material		Reference Test Method
Type	Code	Description	

Parameter		Manufacturer Name/Model No.
Code	Description	

Limit		Limit Units	
Upper	Lower	Code	Description

Averaging Method		Monitoring Frequency		Reporting Requirements	
Code	Description	Code	Description	Code	Description

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
9-2934-00022

Section IV - Emission Unit Information (continued)

Determination of Non-Applicability (Title V Only)

_ Continuation Sheet(s)

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause

Emission Unit	Emission Point	Process	Emission Source	
				_ Applicable Federal Requirement _ State Only Requirement

Description

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause

Emission Unit	Emission Point	Process	Emission Source	
				_ Applicable Federal Requirement _ State Only Requirement

Description

Process Emissions Summary

_ Continuation Sheet(s)

EMISSION UNIT 1-LANDF — Process FUG

CAS No.	Contaminant Name	% Thruput	% Capture	% Control	ERP (lb/hr)	ERP How Determ.
NY075-00-5	PM-10					

PTE (lb/hr)	PTE (lb/yr)	PTE (standard units)	Standard Units	PTE How Determined	Actual (lb/hr)	Actual (lb/yr)
3.54	31,038.4	15.5	38	03		

EMISSION UNIT 1-LANDF — Process FUG

CAS No.	Contaminant Name	% Thruput	% Capture	% Control	ERP (lb/hr)	ERP How Determ.
NY075-02-5	PM-2.5					

PTE (lb/hr)	PTE (lb/yr)	PTE (standard units)	Standard Units	PTE How Determined	Actual (lb/hr)	Actual (lb/yr)
1.83	15,989.1	8.0	38	03		

EMISSION UNIT 2-LEACH — Process LE2

CAS No.	Contaminant Name	% Thruput	% Capture	% Control	ERP (lb/hr)	ERP How Determ.
NY998-00-0	VOC					

PTE (lb/hr)	PTE (lb/yr)	PTE (standard units)	Standard Units	PTE How Determined	Actual (lb/hr)	Actual (lb/yr)
0.00	12.6	0.0	38	04		

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
9-2934-00022

Section IV - Emission Unit Information (continued)

Process Emissions Summary (continuation)

EMISSION UNIT	2-LEACH					Process	LE2
CAS No.	Contaminant Name		% Thruput	% Capture	% Control	ERP (lb/hr)	ERP How Determ.
NY100-00-0	HAP						
PTE (lb/hr)	PTE (lb/yr)	PTE (standard units)	Standard Units	PTE How Determined		Actual (lb/hr)	Actual (lb/yr)
0.00	10.5	0.0	38	04			

EMISSION UNIT	-					Process	
CAS No.	Contaminant Name		% Thruput	% Capture	% Control	ERP (lb/hr)	ERP How Determ.
PTE (lb/hr)	PTE (lb/yr)	PTE (standard units)	Standard Units	PTE How Determined		Actual (lb/hr)	Actual (lb/yr)

EMISSION UNIT	-					Process	
CAS No.	Contaminant Name		% Thruput	% Capture	% Control	ERP (lb/hr)	ERP How Determ.
PTE (lb/hr)	PTE (lb/yr)	PTE (standard units)	Standard Units	PTE How Determined		Actual (lb/hr)	Actual (lb/yr)

EMISSION UNIT	-					Process	
CAS No.	Contaminant Name		% Thruput	% Capture	% Control	ERP (lb/hr)	ERP How Determ.
PTE (lb/hr)	PTE (lb/yr)	PTE (standard units)	Standard Units	PTE How Determined		Actual (lb/hr)	Actual (lb/yr)

EMISSION UNIT	-					Process	
CAS No.	Contaminant Name		% Thruput	% Capture	% Control	ERP (lb/hr)	ERP How Determ.
PTE (lb/hr)	PTE (lb/yr)	PTE (standard units)	Standard Units	PTE How Determined		Actual (lb/hr)	Actual (lb/yr)

EMISSION UNIT	-					Process	
CAS No.	Contaminant Name		% Thruput	% Capture	% Control	ERP (lb/hr)	ERP How Determ.
PTE (lb/hr)	PTE (lb/yr)	PTE (standard units)	Standard Units	PTE How Determined		Actual (lb/hr)	Actual (lb/yr)

New York State Department of Environmental Conservation
Air Permit Application

DEC ID											
9	-	2	9	3	4	-	0	0	0	2	2

Section IV - Emission Unit Information (continued)

Emission Unit Emissions Summary

_ Continuation Sheet(s)

Emission Unit
-

CAS No.	Contaminant Name			
ERP (lb/yr)	PTE Emissions		Actual	
	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)
CAS No.	Contaminant Name			
ERP (lb/yr)	PTE Emissions		Actual	
	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)
CAS No.	Contaminant Name			
ERP (lb/yr)	PTE Emissions		Actual	
	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)
CAS No.	Contaminant Name			
ERP (lb/yr)	PTE Emissions		Actual	
	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)

Compliance Plan

_ Continuation Sheet(s)

For any emission units which will not be in compliance at the time of permit issuance, complete the following:

_ This facility meets all applicable requirements except for those units listed below. This facility will achieve compliance for those units according to the following schedule:

Consent Order: | Certified progress reports are to be submitted every 6 months beginning:

Emission Unit	Process	Emission Source	Applicable Federal Requirement									
			Title	Type	Part	Sub Part	Section	Sub Division	Parag.	Sub Parag.	Clause	Sub Clause

Remedial Measure/Intermediate Milestones	R/I	Date Scheduled

DEC ID											
9	-	2	9	3	4	-	0	0	0	2	2

Section IV - Emission Unit Information (continued)

Request for Emission Reduction Credits

_ Continuation Sheet(s)

EMISSION UNIT -

Emission Reduction Description

Contaminant Emission Reduction Data

Baseline Period __/__/__ to __/__/__

CAS No.	Contaminant Name	Reduction Date	Reduction Method

CAS No.	Contaminant Name	ERC (lbs/yr) Netting	ERC (lbs/yr) Offset
- -			
- -			
- -			

Facility to Use Future Reduction

Name	APPLICATION ID: - - /
Location Address	
__ City / __ Town / __ Village	State / Zip

Use of Emission Reduction Credits

_ Continuation Sheet(s)

EMISSION UNIT -

Proposed Project Description

Contaminant Emissions Increase Data

CAS No.	Contaminant Name	PEP (lbs/yr)
- -		

Statement of Compliance

_ All major facilities under the ownership of this "ownership/firm" are operating in compliance with all applicable requirements and state regulations including any compliance certification requirements under section 114(a)(3) of the clean air act amendments of 1990, or are meeting the schedule of a consent order.

Source of Emission Reduction Credit - Facility

Name	PERMIT ID: - - /
Location Address	
__ City / __ Town / __ Village	State / Zip

Emission Unit	CAS No.	Contaminant Name	ERC (lbs/yr) Netting	ERC (lbs/yr) Offset
-	- -			
-	- -			
-	- -			

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
9-2934-00022

List of Attachments

Supporting Documentation

__ P.E. Certification
__ List of Exempt Activities (form attached)
X Methods Used to Determine Compliance (form attached)
__ Plot Plan
X Calculations
__ Air Quality Model (__/__/__)
__ Confidentiality Justification
__ Ambient Air Monitoring Plan (__/__/__)
__ Stack Test Protocols/Reports (__/__/__)
__ Continuous Emissions Monitoring Plans/QA/QC (__/__/__)
__ MACT Demonstration (__/__/__)
__ Operational Flexibility: Description of Alternative Operating Scenarios and Protocols
__ Title IV: Application/Registration
__ ERC Quantification (form attached)
__ Use of ERC(s) (form attached)
__ Baseline Period Demonstration
__ Analysis of Contemporaneous Emission Increase/Decrease
__ LAER Demonstration (__/__/__)
__ BACT Demonstration (__/__/__)
__ Other Document(s): ________ (__/__/__)
________ (__/__/__)
________ (__/__/__)
________ (__/__/__)
________ (__/__/__)
________ (__/__/__)
________ (__/__/__)
________ (__/__/__)
________ (__/__/__)
________ (__/__/__)
________ (__/__/__)
________ (__/__/__)
________ (__/__/__)
________ (__/__/__)
________ (__/__/__)
________ (__/__/__)

New York State Department of Environmental Conservation
Air Permit Application

DEC ID											
9	-	2	9	3	4	-	0	0	0	2	2

METHODS USED TO DETERMINE COMPLIANCE

Emission Unit ID	Applicable Requirement	Method Used to Determine Compliance and Corresponding Date
1-LANDF	6 NYCRR Part 373	Employ best management practices specified in the Facility's 'Fugitive Dust Control Plan'

PERMIT
Under the Environmental Conservation Law (ECL)

IDENTIFICATION INFORMATION

Permit Type: Air State Facility
Permit ID: 9-2934-00022/00233
Mod 0 Effective Date: 10/24/2014 Expiration Date: 10/23/2024

Mod 1 Effective Date: Expiration Date:

Permit Issued To:CWM CHEMICAL SERVICES LLC
1550 BALMER RD
MODEL CITY, NY 14107

Facility: CWM CHEMICAL SERVICES - MODEL CITY SITE
1550 BALMER RD
MODEL CITY, NY 14107

Contact: MICHAEL F MAHAR
CWM CHEMICAL SERVICES LLC
1550 BALMER ROAD
MODEL CITY, NY 14107
(716) 286-1550

Description:
(1) CWM Chemical Services, L.L.C., a wholly owned subsidiary of Waste Management of New Jersey, Inc. and indirect, wholly owned subsidiary of Waste Management, Inc. owns and operates the Model City Facility located at 1550 Balmer Road, Model City, New York. The facility is a hazardous waste treatment, storage and disposal, and recovery facility, which accepts hazardous and industrial non-hazardous waste.

(2) This permit action is a modification to the Air State Facility permit to include the construction and operation of the Residual Management Unit 2 (RMU-2) landfill expansion.

(3)The change in facility emissions from the proposed RMU-2 Expansion are:

	VOC (tpy)	HAP (tpy)	PM10 (tpy)	PM2.5 (tpy)	CO (tpy)	NOx (tpy)	SO2 (tpy)	GHG (tpy)
Existing Facility	2.7	0.8	7.4	5.7	1.9	4.7	3.5	4,863
Proposed RMU-2	0.001	0.001	8.5	2.6	0	0	0	0
Proposed Total	2.7	0.8	15.9	8.3	1.9	4.7	3.5	4,863

(4) In reference to the significant mass emission rates for persistent, bioaccumulative or toxic (PBT) compounds as listed in Table 1 of 6NYCRR Part 201-9, the facility exceeds the threshold for three compounds as compared below. None of the PBT emissions are emitted from RMU-1 or RMU-2. These emissions are from other existing sources at the facility. Exceedance of the listed threshold only requires the facility to obtain an air state facility permit instead of an air facility registration. The major source threshold is listed in the table for reference and comparison purposes.

Compound	Facility Emission Rate (lb/yr)	6NYCRR Part 201-9 Threshold to Obtain an Air State facility Permit (lb/yr)	6NYCRR Part 201-6 Major Source Threshold to Obtain an Air Title V permit (lb/yr)
Pesticides	0.2	0	20,000
PCBs	14.0	0.1	20,000
Polycyclic organic Matter (POM)	2.1	1	20,000

(5) The facility is subject to specific air emission standards as specified in the facility's Site-Wide Part 373 RCRA Permit. The regulations include Part 373-2.28 Air Emission Standards for Equipment Leaks, and Part 373-2.29 Air Emission Standards for Tanks, Surface Impoundments, and Containers. For this reason, the Air State Facility permit does not duplicate air emission control requirements that are required under the RCRA permit.

(6) Based on air emission estimates from this permit application, the Department has determined CWM Chemical Services, Inc. is not a major source of hazardous air pollutants and, thus, is not subject to the National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations - 40 CFR 63 Subpart DD.

(7) The Air State Facility permit references certain RCRA monitoring protocols identified as follows:
(a) Fugitive Dust Control Plan;
(b) Stabilization Operations and Maintenance Manual;
(c) Compliance Program for Air Emission Standards for Equipment Leaks;
(d) Aqueous Wastewater Treatment System Operations and Maintenance Manual; and
(e) Compliance Program Air Emission Standards for Tanks, Surface Impoundments and Containers.

(8) The facility has three oil-fired boilers (BLR01, BLR02, BLR03) that are subject to the work practice standards of 40 CFR 63 Subpart JJJJJJ – National Emission

Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources. The requirements include:
(a) Completing an Initial Compliance Tune-up on each boiler by March 21, 2014;
(b) Conducting a tune-up of boilers BLR01 and BLR02 every two (2) years;
(c) Conducting a tune-up of boiler BLR03 every five (5) years; and
(d) Completing a one-time energy assessment on boiler BLR01 by March 21, 2014.

(9) The facility has one existing emergency engine, Cummins Diesel Fire-Water Pump (rated at 187 bhp) that is subject to 40 CFR 63 Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. The requirements include:
(a) Change oil and filter every 500 hours of operation or annually, whichever comes first;
(b) Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary;
(c) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary; and
(d) Installation of a non-resettable hour meter.

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, the General Conditions specified and any Special Conditions included as part of this permit.

Permit Administrator: DAVID S DENK
DIVISION OF ENVIRONMENTAL PERMITS
270 MICHIGAN AVE
BUFFALO, NY 14203-2915

Authorized Signature: _________________________________ Date: ___ / ___ / _____

Notification of Other State Permittee Obligations

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification

The permittee expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the compliance permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in any compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit

The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits

The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights

This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

PAGE LOCATION OF CONDITIONS

DEC GENERAL CONDITIONS
****** General Provisions ******
GENERAL CONDITIONS - Apply to ALL Authorized Permits.

Condition 1: Facility Inspection by the Department
Applicable State Requirement: ECL 19-0305

Item 1.1:
The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71-0301 and SAPA 401(3).

Item 1.2:
The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

Item 1.3:
A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

Condition 2: Relationship of this Permit to Other Department Orders and Determinations
Applicable State Requirement: ECL 3-0301 (2) (m)

Item 2.1:
Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

Condition 3: Applications for permit renewals, modifications and transfers
Applicable State Requirement: 6 NYCRR 621.11

Item 3.1:
The permittee must submit a separate written application to the Department for renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing.

Item 3.2:
The permittee must submit a renewal application at least 180 days before expiration of permits for Title V Facility Permits, or at least 30 days before expiration of permits for State Facility Permits.

Item 3.3:
Permits are transferrable with the approval of the department unless specifically prohibited by the statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.

Condition 4: Permit modifications, suspensions or revocations by the Department
Applicable State Requirement: 6 NYCRR 621.13

Item 4.1:
The Department reserves the right to exercise all available authority to modify, suspend, or revoke this permit in accordance with 6NYCRR Part 621. The grounds for modification, suspension or revocation include:

a) materially false or inaccurate statements in the permit application or supporting papers;
b) failure by the permittee to comply with any terms or conditions of the permit;
c) exceeding the scope of the project as described in the permit application;
d) newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;
e) noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

****** Facility Level ******

Condition 5: Submission of application for permit modification or renewal-REGION 9 HEADQUARTERS
Applicable State Requirement: 6 NYCRR 621.6 (a)

Item 5.1:
Submission of applications for permit modification or renewal are to be submitted to:
NYSDEC Regional Permit Administrator
Region 9 Headquarters
Division of Environmental Permits
270 Michigan Avenue
Buffalo, NY 14203-2915
(716) 851-7165

Permit Under the Environmental Conservation Law (ECL)

ARTICLE 19: AIR POLLUTION CONTROL - AIR STATE FACILITY PERMIT

IDENTIFICATION INFORMATION

Permit Issued To: CWM CHEMICAL SERVICES LLC
1550 BALMER RD
MODEL CITY, NY 14107

Facility: CWM CHEMICAL SERVICES - MODEL CITY SITE
1550 BALMER RD
MODEL CITY, NY 14107

Authorized Activity By Standard Industrial Classification Code:
4953 - REFUSE SYSTEMS

Mod 0 Permit Effective Date: 10/24/2014 Permit Expiration Date: 10/23/2024

Mod 1 Permit Effective Date: Permit Expiration Date:

PAGE LOCATION OF CONDITIONS

FEDERALLY ENFORCEABLE CONDITIONS
****** Facility Level ******

NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS
This section contains terms and conditions which are federally enforceable. Permittees may also have other obligations under regulations of general applicability

Item A: Sealing - 6 NYCRR 200.5

The Commissioner may seal an air contamination source to prevent its operation if compliance with 6 NYCRR Chapter III is not met within the time provided by an order of the Commissioner issued in the case of the violation. Sealing means labeling or tagging a source to notify any person that operation of the source is prohibited, and also includes physical means of preventing the operation of an air contamination source without resulting in destruction of any equipment associated with such source, and includes, but is not limited to, bolting, chaining or wiring shut control panels, apertures or conduits associated with such source.

No person shall operate any air contamination source sealed by the Commissioner in accordance with this section unless a modification has been made which enables such source to comply with all requirements applicable to such modification.

Unless authorized by the Commissioner, no person shall remove or alter any seal affixed to any contamination source in accordance with this section.

Item B: Acceptable Ambient Air Quality - 6 NYCRR 200.6

Notwithstanding the provisions of 6 NYCRR Chapter III, Subchapter A, no person shall allow or permit any air contamination source to emit air contaminants in quantities which alone or in combination with emissions from other air contamination sources would contravene any applicable ambient air quality standard and/or cause air pollution. In such cases where contravention occurs or may occur, the Commissioner shall specify the degree and/or method of emission control required.

Item C: Maintenance of Equipment - 6 NYCRR 200.7

Any person who owns or operates an air contamination source which is equipped with an emission control device shall operate such device and keep it in a satisfactory state of maintenance and repair in accordance with ordinary and necessary practices, standards and procedures, inclusive of manufacturer's specifications, required to operate such device effectively.

Item D: Unpermitted Emission Sources - 6 NYCRR 201-1.2

If an existing emission source was subject to the permitting requirements of 6 NYCRR Part 201 at the time of construction or modification, and the owner and/or operator failed to apply for a permit for such emission source then the following provisions apply:

(a) The owner and/or operator must apply for a permit for such emission source or register the facility in accordance with the provisions of Part 201.

(b) The emission source or facility is subject to all regulations that were applicable to it at the time of construction or modification and any subsequent requirements applicable to existing sources or facilities.

Item E: **Emergency Defense - 6 NYCRR 201-1.5**

An emergency constitutes an affirmative defense to an action brought for noncompliance with emissions limitations or permit conditions for all facilities in New York State.

(a) The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

(1) An emergency occurred and that the facility owner and/or operator can identify the cause(s) of the emergency;
(2) The equipment at the permitted facility causing the emergency was at the time being properly operated;
(3) During the period of the emergency the facility owner and/or operator took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and
(4) The facility owner and/or operator notified the Department within two working days after the event occurred. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

(b) In any enforcement proceeding, the facility owner and/or operator seeking to establish the occurrence of an emergency has the burden of proof.

(c) This provision is in addition to any emergency or upset provision contained in any applicable requirement.

Item F: **Recycling and Salvage - 6 NYCRR 201-1.7**

Where practical, any person who owns or operates an air contamination source shall recycle or salvage air contaminants collected in an air cleaning device according to the requirements of 6 NYCRR.

Item G: **Prohibition of Reintroduction of Collected Contaminants to the Air - 6 NYCRR 201-1.8**

No person shall unnecessarily remove, handle, or cause to be handled, collected air contaminants from an air cleaning device for recycling, salvage or disposal in a manner that would reintroduce them to the outdoor atmosphere.

Item H: **Proof of Eligibility for Sources Defined as Exempt Activities - 6 NYCRR 201-3.2 (a)**
The owner and/or operator of an emission source or unit that is eligible to be exempt, may be required to certify that it operates within the specific criteria described in 6 NYCRR Subpart 201-3. The owner or operator of any such emission source must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility which contains emission sources or units subject to 6 NYCRR Subpart 201-3, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations, or law.

Item I: **Proof of Eligibility for Sources Defined as Trivial Activities - 6 NYCRR 201-3.3 (a)**
The owner and/or operator of an emission source or unit that is listed as being trivial in 6 NYCRR Part 201 may be required to certify that it operates within the specific criteria described in 6 NYCRR Subpart 201-3. The owner or operator of any such emission source must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility which contains emission sources or units subject to 6 NYCRR Subpart 201-3, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations, or law.

Item J: **Required Emission Tests - 6 NYCRR 202-1.1**

An acceptable report of measured emissions shall be submitted, as may be required by the Commissioner, to ascertain compliance or noncompliance with any air pollution code, rule, or regulation. Failure to submit a report acceptable to the Commissioner within the time stated shall be sufficient reason for the Commissioner to suspend or deny an operating permit. Notification and acceptable procedures are specified in 6 NYCRR Subpart 202-1.

Item K: **Open Fires Prohibitions - 6 NYCRR 215.2**
Except as allowed by section 215.3 of 6 NYCRR Part 215, no person shall burn, cause, suffer, allow or permit the burning of any materials in an open fire.

Item L: **Permit Exclusion - ECL 19-0305**
The issuance of this permit by the Department and the receipt thereof by the Applicant does not and shall not be construed as barring, diminishing, adjudicating or in any way affecting any legal, administrative or equitable rights or claims, actions, suits, causes

of action or demands whatsoever that the Department may have against the Applicant for violations based on facts and circumstances alleged to have occurred or existed prior to the effective date of this permit, including, but not limited to, any enforcement action authorized pursuant to the provisions of applicable federal law, the Environmental Conservation Law of the State of New York (ECL) and Chapter III of the Official Compilation of the Codes, Rules and Regulations of the State of New York (NYCRR). The issuance of this permit also shall not in any way affect pending or future enforcement actions under the Clean Air Act brought by the United States or any person.

Item M: Federally Enforceable Requirements - 40 CFR 70.6 (b)
All terms and conditions in this permit required by the Act or any applicable requirement, including any provisions designed to limit a facility's potential to emit, are enforceable by the Administrator and citizens under the Act. The Department has, in this permit, specifically designated any terms and conditions that are not required under the Act or under any of its applicable requirements as being enforceable under only state regulations.

FEDERAL APPLICABLE REQUIREMENTS
The following conditions are federally enforceable.

Condition 1-1: Non Applicable requirements
Effective for entire length of Permit

Applicable Federal Requirement:6 NYCRR 201-6.4 (g)

Item 1-1.1:
This section contains a summary of those requirements that have been specifically identified as being not applicable to this facility and/or emission units, emission points, processes and/or emission sources within this facility. The summary also includes a justification for classifying any such requirements as non-applicable.

Condition 1: Air pollution prohibited
Effective between the dates of 10/24/2014 and Permit Expiration Date

Applicable Federal Requirement:6 NYCRR 211.1

Item 1.1:
No person shall cause or allow emissions of air contaminants to the outdoor atmosphere of such quantity, characteristic or duration which are injurious to human, plant or animal life or to property, or which unreasonably interfere with the comfortable enjoyment of life or property. Notwithstanding the existence of specific air quality standards or emission limits, this prohibition applies, but is not limited to, any particulate, fume, gas, mist, odor, smoke, vapor, pollen, toxic or deleterious emission, either alone or in combination with others.

Condition 1-2: Compliance Demonstration
Effective for entire length of Permit

Applicable Federal Requirement:40CFR 63, Subpart DD

Item 1-2.1:
The Compliance Demonstration activity will be performed for the Facility.

Regulated Contaminant(s):
CAS No: 0NY100-00-0 TOTAL HAP

Item 1-2.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

Based on air emission estimates from this permit application, the Department has determined CWM Chemical Services, Inc. is not a major source of hazardous air pollutants and, thus, is not subject to the National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations - 40 CFR 63 Subpart DD.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

****** Emission Unit Level ******

Condition 3: Compliance Demonstration
Effective between the dates of 10/24/2014 and Permit Expiration Date

Applicable Federal Requirement:6 NYCRR Part 212

Item 3.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-AQWTP

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Item 3.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

EMISSION UNIT 1-AQWTP
OPERATION AND MONITORING REQUIREMENTS

(1) Tanks containing hazardous waste with >500 ppm VOCs, as listed in the facility's RCRA permit, are subject to 6NYCRR 373-2.29 AIR EMISSION STANDARDS for Tanks, Containers and Surface Impoundments. As required by this regulation, tanks determined to be Level 1 are either closed with no cracks, gaps or openings or if they are vented, a control device such as a carbon canister is employed. The facility must perform tank inspections and corrective action as specified in this regulation. As a best management practice, the carbon canisters are monitored routinely for breakthrough and replaced in accordance with the facility's 6NYCRR 373-2.29 Compliance Plan. The monitoring and carbon canister replacement for the Level 2 tanks are also completed in accordance with the Compliance Plan.

(2) When strong acid wastes are being processed, the tanks in use are vented to the caustic scrubber to neutralize the acid vapor. The caustic scrubber is operated, monitored and maintained in accordance with the facility's Aqueous Waste Treatment Operations & Maintenance Manual.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 4: Compliance Demonstration
Effective between the dates of 10/24/2014 and Permit Expiration Date

Applicable Federal Requirement:40CFR 63, Subpart JJJJJJ

Item 4.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-BOILR

Regulated Contaminant(s):
CAS No: 000630-08-0 CARBON MONOXIDE
CAS No: 0NY100-00-0 TOTAL HAP

Item 4.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

OIL-FIRED BOILER REQUIREMENTS

The three oil-fired boilers (BLR01, BLR02, BLR03) are subject to the work practice standards of 40 CFR 63 Subpart JJJJJJ – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources as follows:

(1) As per §63.11225(a), submit an Initial Notification of Applicability by January 20, 2014.

(2) As per §63.11214, complete an Initial Compliance Tune-up on Boilers BLR01, BLR02, and BLR03 by March 21, 2014. In addition, complete a one-time energy assessment on Boiler BLR01 by March 21, 2014. CWM completed the initial tune-ups on the boilers in November, 2013 and submitted a Notification of Compliance status on December 18, 2013.

(3) As per §63.11214, submit a Notification of Compliance Status for the energy assessment for BLR01 by July 19, 2014.

(4) As per §63.11223, demonstrate continuous compliance with the work practice and management practice standards for boilers BLR01 and BLR02 by conducting a tune-up of the boilers every two (2) years. Each biennial tune-up must be conducted no more than 25 months after the previous tune-up.

(5) As per §63.11223, demonstrate continuous compliance with the work practice and management practice standards for boiler BLR03 by conducting a tune-up of the boiler every five (5) years. Each 5-year tune-up must be conducted no more than 61 months after the previous tune-up.

(6) As per §63.11223, the tune-ups shall be completed as follows:
(a) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (you may delay the burner inspection until the next scheduled unit shutdown, not to exceed 36 months from the previous inspection). Units that produce electricity for sale may delay the burner inspection until the first outage, not to exceed 36 months from the previous inspection.
(b) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available.
(c) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (you may delay the inspection until the next scheduled unit shutdown, not to exceed 36 months from the previous inspection). Units that produce electricity for sale may delay the inspection until the first outage, not to exceed 36 months from the previous inspection.
(d) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any nitrogen oxide requirement to which the unit is subject.
(e) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer.
(f) Maintain on-site and submit, if requested by the Administrator, a report containing the following information.
(i) The concentrations of CO in the effluent stream in parts

per million, by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler.
(ii) A description of any corrective actions taken as a part of the tune-up of the boiler.
(iii) The type and amount of fuel used over the 12 months prior to the tune-up of the boiler, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel use by each unit.
(g) If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 days of startup.

(7) As per §63.11225, prepare by March 1, a biennial or 5-year compliance report as specified below.
(a) Company name and address.
(b) Statement by a responsible official, with the official's name, title, phone number, email address, and signature, certifying the truth, accuracy and completeness of the notification and a statement of whether the source has complied with all the relevant standards and other requirements of this subpart. Your notification must include the following certification(s) of compliance, as applicable, and signed by a responsible official:
(i) "This facility complies with the requirements in § 63.11223 to conduct a biennial or 5-year tune-up, as applicable, of each boiler."
(ii) For units that do not qualify for a statutory exemption as provided in section 129(g)(1) of the Clean Air Act: "No secondary materials that are solid waste were combusted in any affected unit."
(iii) "This facility complies with the requirement in §§ 63.11214(d) and 63.11223(g) to minimize the boiler's time spent during startup and shutdown and to conduct startups and shutdowns according to the manufacturer's recommended procedures or procedures specified for a boiler of similar design if manufacturer's recommended procedures are not available."

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 5: Compliance Demonstration
Effective between the dates of 10/24/2014 and Permit Expiration Date

Applicable Federal Requirement:40CFR 63.6603(a), Subpart ZZZZ

Item 5.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-FRPMP

Regulated Contaminant(s):
CAS No: 0NY100-00-0 TOTAL HAP

Item 5.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

EMERGENCY ENGINE
EMISSION RELATED OPERATING LIMITATIONS

Operate the existing emergency engine, Cummins Diesel Fire-Water Pump (rated at 187 bhp) with the following maintenance procedures:

(1) Change oil and filter every 500 hours of operation or annually, whichever comes first;
(2) Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and
(3) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 6: Compliance Demonstration
Effective between the dates of 10/24/2014 and Permit Expiration Date

Applicable Federal Requirement:40CFR 63.6625, Subpart ZZZZ

Item 6.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-FRPMP

Regulated Contaminant(s):
CAS No: 0NY100-00-0 TOTAL HAP

Item 6.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

EMERGENCY ENGINE
OPERATION AND MAINTENANCE REQUIREMENTS

(1) Operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.

(2) Install a non-resettable hour meter if one is not already installed.

(3) Minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards apply at all times.

(4) Utilize an oil analysis program in order to extend the specified oil change requirement, if desired. The oil analysis must be performed at the same frequency specified for changing the oil. The analysis program must, at a minimum, analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows:

(a) Total Base Number is less than 30 percent of the total base Number of the oil when new;
(b) Viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or
(c) Percent water content (by volume) is greater than 0.5.

(5) If all of the condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 days of receiving the results of the analysis. If the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 7: Compliance Demonstration
Effective between the dates of 10/24/2014 and Permit Expiration Date

Applicable Federal Requirement:40CFR 63.6640, Subpart ZZZZ

Item 7.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-FRPMP

Regulated Contaminant(s):
CAS No: 0NY100-00-0 TOTAL HAP

Item 7.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

EMERGENCY ENGINE
OPERATIONAL REQUIREMENTS

(1) Unlimited use for emergencies (e.g., power outage, fire, flood).

(2) May operate for 100 hr/yr for any combination of the following:

(a)maintenance/testing;

(b)50 hr/yr of the 100 hr/yr allocation can be used for non-emergency situations if no financial arrangement.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 8: Compliance Demonstration
Effective between the dates of 10/24/2014 and Permit Expiration Date

Applicable Federal Requirement:40CFR 63.6655, Subpart ZZZZ

Item 8.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-FRPMP

Regulated Contaminant(s):
CAS No: 0NY100-00-0 TOTAL HAP

Item 8.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

EMERGENCY ENGINE
RECORDKEEPING KEEPING AND REPORTING

(1) Keep records of the maintenance conducted on the emergency engine in order to demonstrate that you operated and maintained the engine according to manufacturer’s instructions or your own maintenance plan;

(2) Keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. Document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 9: Compliance Demonstration
Effective between the dates of 10/24/2014 and Permit Expiration Date

Applicable Federal Requirement:6 NYCRR Part 212

Item 9.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-LANDF

Regulated Contaminant(s):
CAS No: 0NY075-00-5 PM-10

Item 9.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

GENERAL FUGITIVE DUST OPERATIONAL REQUIREMENTS

(1) The facility must employ the best management practices specified in the facility's FUGITIVE DUST CONTROL PLAN to control dust during landfill operations and on the facility roadways. This plan is an attachment to the facility's Site-wide RCRA Operating Permit. In addition, the Part 373 Permit contains a requirement for the application of Daily Cover on bulk waste placed in the active landfill.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 10: Compliance Demonstration
Effective between the dates of 10/24/2014 and Permit Expiration Date

Applicable Federal Requirement:6 NYCRR Part 212

Item 10.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-LEACH

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Item 10.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

EMISSION UNIT 1-LEACH
OPERATION AND MONITORING REQUIREMENTS

(1) Tanks containing hazardous waste with >500 ppm VOCs, as listed in the facility's RCRA permit, are subject to 6NYCRR 373-2.29 AIR EMISSION STANDARDS for Tanks, Containers and Surface Impoundments. As required by this regulation, tanks determined to be Level 1 are either closed with no cracks, gaps or openings or if they are vented, a control device such as a carbon canister is employed. The facility must perform tank inspections and corrective action as specified in this regulation. As a best management practice, the carbon canisters are monitored routinely for breakthrough and replaced in accordance with the facility's 6NYCRR 373-2.29 Compliance Plan.

(2) All landfill standpipes must be covered at all times, except when being attended. As required by the facility's Site-wide RCRA Operating Permit, covers shall be inspected on a routine basis.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 11: Compliance Demonstration
Effective between the dates of 10/24/2014 and Permit Expiration Date

Applicable Federal Requirement:6 NYCRR Part 212

Item 11.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-LEACH

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Item 11.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

EMISSION UNIT 1-LEACH
EQUIPMENT LEAK REQUIREMENTS

(1) Equipment including pumps, valves, and flanges in contact with hazardous waste containing more than 10 percent organics is subject to 6NYCRR 373-2.28 AIR EMISSION STANDARDS for Equipment Leaks. The facility must perform monitoring and corrective actions as specified in the regulation and referenced in the facility's RCRA permit.

(2) Specified valves and flanges in the landfill standpipes shall be inspected and monitored in accordance with the requirements in the facility's 6 NYCRR 373-2.28 Compliance Plan.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 12: Compliance Demonstration
Effective between the dates of 10/24/2014 and Permit Expiration Date

Applicable Federal Requirement:6 NYCRR Part 212

Item 12.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-STABL

Regulated Contaminant(s):
CAS No: 0NY075-00-5 PM-10

Item 12.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

EMISSION UNIT 1-STABL
OPERATION AND MONITORING REQUIREMENTS

(1)The facility shall perform a monthly visual inspection of the bags located within the stabilization facility baghouses in accordance with the facility's STABILIZATION Operation & Maintenance Manual. Upon inspection, any damaged or defective bags shall be replaced. If the bags are caked with dust, a change out shall be performed. A record of the inspection and any necessary corrective action is placed in the Operating Record.

(2)The facility shall complete a daily visual inspection of the stabilization facility baghouses on operating days to verify no visible releases of particulates to the air. The inspection shall be completed in accordance with the Inspection Plan as specified in the facility's RCRA Permit. A completed inspection form is placed in the Daily Operating Record.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

STATE ONLY ENFORCEABLE CONDITIONS
****** Facility Level ******

NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS
This section contains terms and conditions which are not federally enforceable. Permittees may also have other obligations under regulations of general applicability

Item A: **Public Access to Recordkeeping for Facilities With State Facility Permits - 6 NYCRR 201-1.10 (a)**
Where facility owners and/or operators keep records pursuant to compliance with the requirements of 6 NYCRR Subpart 201-5.4, and/or the emission capping requirements of 6 NYCRR Subpart 201-7, the Department will make such records available to the public upon request in accordance with 6 NYCRR Part 616 - Public Access to Records. Facility owners and/or operators must submit the records required to comply with the request within sixty working days of written notification by the Department.

Item B: **General Provisions for State Enforceable Permit Terms and Condition - 6 NYCRR Part 201-5**
Any person who owns and/or operates stationary sources shall operate and maintain all emission units and any required emission control devices in compliance with all applicable Parts of this Chapter and existing laws, and shall operate the facility in accordance with all criteria, emission limits, terms, conditions, and standards in this permit. Failure of such person to properly operate and maintain the effectiveness of such emission units and emission control devices may be sufficient reason for the Department to revoke or deny a permit.

The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

STATE ONLY APPLICABLE REQUIREMENTS
The following conditions are state only enforceable.

Condition 13: **Contaminant List**
Effective between the dates of 10/24/2014 and Permit Expiration Date

Applicable State Requirement:ECL 19-0301

Item 13.1:
Emissions of the following contaminants are subject to contaminant specific requirements in this

permit(emission limits, control requirements or compliance monitoring conditions).

CAS No: 000630-08-0
Name: CARBON MONOXIDE

CAS No: 0NY075-00-5
Name: PM-10

CAS No: 0NY100-00-0
Name: TOTAL HAP

CAS No: 0NY998-00-0
Name: VOC

Condition 14: Malfunctions and start-up/shutdown activities
Effective between the dates of 10/24/2014 and Permit Expiration Date

Applicable State Requirement:6 NYCRR 201-1.4

Item 14.1:
(a) The facility owner or operator shall take all necessary and appropriate actions to prevent the emission of air pollutants that result in contravention of any applicable emission standard during periods of start-up, shutdown, or malfunction.

(b) The facility owner or operator shall compile and maintain records of all equipment malfunctions, maintenance, or start-up/shutdown activities when they can be expected to result in an exceedance of any applicable emission standard, and shall submit a report of such activities to the department when requested to do so, or when so required by a condition of a permit issued for the corresponding air contamination source. Such reports shall state whether any violations occurred and, if so, whether they were unavoidable, include the time, frequency and duration of the maintenance and/or start-up/shutdown activities, and an estimate of the emission rates of any air contaminants released. Such records shall be maintained for a period of at least five years and made available for review to department representatives upon request. Facility owners or operators subject to continuous stack monitoring and quarterly reporting requirements need not submit additional reports for equipment maintenance or start-up/shutdown activities for the facility to the department.

(c) In the event that emissions of air contaminants in excess of any emission standard in this Subchapter occur due to a malfunction, the facility owner or operator shall compile and maintain records of the malfunction and notify the department as soon as possible during normal working hours, but not later than two working days after becoming aware that the malfunction occurred. When requested by the department, the facility owner or operator shall submit a written report to the department describing the malfunction, the corrective action taken, identification of air contaminants, and an estimate of the emission rates.

(d) The department may also require the owner or operator to include, in reports described under Subdivisions (b) and (c) of this Section, an estimate of the maximum ground level concentration of each air contaminant emitted and the effect of such emissions.

(e) A violation of any applicable emission standard resulting from start-up, shutdown, or malfunction conditions at a permitted or registered facility may not be subject to an enforcement action by the department and/or penalty if the department determines, in its sole discretion, that such a violation was unavoidable. The actions and recordkeeping and reporting requirements listed above must be adhered to in such circumstances.

Condition 15: Emission Unit Definition
Effective between the dates of 10/24/2014 and Permit Expiration Date

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 15.1(From Mod 1):
The facility is authorized to perform regulated processes under this permit for:
Emission Unit: 1-LANDF
Emission Unit Description:
Emission Unit 1-LANDF consists of landfill operations including paved/unpaved road dust emissions, waste unloading and compacting, and landfill capping.

Item 15.2(From Mod 1):
The facility is authorized to perform regulated processes under this permit for:
Emission Unit: 2-LEACH
Emission Unit Description:
Emission Unit 2-LEACH consists of leachate collection, handling and storage for landfill areas SLF-12, RMU-1 and RMU-2.

Item 15.3(From Mod 0):
The facility is authorized to perform regulated processes under this permit for:
Emission Unit: 1-AQWTP
Emission Unit Description:
Emission Unit 1-AQWTP includes the Aqueous Waste Treatment Plant.

Item 15.4(From Mod 0):
The facility is authorized to perform regulated processes under this permit for:
Emission Unit: 1-BOILR
Emission Unit Description:
Emission Unit 1-BOILR includes the operation of three distillate fuel oil boilers.

Item 15.5(From Mod 0):
The facility is authorized to perform regulated processes under this permit for:
Emission Unit: 1-FRPMP
Emission Unit Description:
Emission Unit 1-FRPMP includes the fire pump for supplying water from the water storage tank to the sprinkler system in the drum warehouse.

Item 15.6(From Mod 0):
The facility is authorized to perform regulated processes under this permit for:
Emission Unit: 1-LEACH
Emission Unit Description:
Emission Unit 1-LEACH consists of leachate collection, handling and storage for landfill areas SLF1-6, SLF-7, SLF-10 and SLF-11.

Item 15.7(From Mod 0):
The facility is authorized to perform regulated processes under this permit for:
Emission Unit: 1-STABL
Emission Unit Description:
Emission Unit 1-STABL consists of the Stabilization Facility including two baghouses for control of particulates.

Condition 16: Renewal deadlines for state facility permits
Effective between the dates of 10/24/2014 and Permit Expiration Date

Applicable State Requirement:6 NYCRR 201-5.2 (c)

Item 16.1:
The owner or operator of a facility having an issued state facility permit shall submit a complete application at least 180 days, but not more than eighteen months, prior to the date of permit expiration for permit renewal purposes.

Condition 17: Compliance Demonstration
Effective between the dates of 10/24/2014 and Permit Expiration Date

Applicable State Requirement:6 NYCRR 201-5.3 (c)

Item 17.1:
The Compliance Demonstration activity will be performed for the Facility.

Item 17.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
Any reports or submissions required by this permit shall be submitted to the Regional Air Pollution Control Engineer (RAPCE) at the following address:

Division of Air Resources
NYS Dept. of Environmental Conservation
Region 9
270 Michigan Ave.
Buffalo, NY 14203

Reporting Requirements: BIENNIAL (CALENDAR)

Condition 18: Visible Emissions Limited
Effective between the dates of 10/24/2014 and Permit Expiration Date

Applicable State Requirement:6 NYCRR 211.2

Item 18.1:
Except as permitted by a specific part of this Subchapter and for open fires for which a restricted burning permit has been issued, no person shall cause or allow any air contamination source to

emit any material having an opacity equal to or greater than 20 percent (six minute average) except for one continuous six-minute period per hour of not more than 57 percent opacity.

****** Emission Unit Level ******

Condition 19: Emission Point Definition By Emission Unit
Effective between the dates of 10/24/2014 and Permit Expiration Date

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 19.1(From Mod 0):
The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: 1-AQWTP

Emission Point: 00003
Height (ft.): 7 Diameter (in.): 4
NYTMN (km.): 4793.671 NYTME (km.): 176.957

Emission Point: 00004
Height (ft.): 37 Diameter (in.): 8
NYTMN (km.): 4793.671 NYTME (km.): 176.957

Emission Point: 00005
Height (ft.): 35 Diameter (in.): 12
NYTMN (km.): 4793.671 NYTME (km.): 176.957

Item 19.2(From Mod 0):
The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: 1-STABL

Emission Point: 00001
Height (ft.): 50 Diameter (in.): 96
NYTMN (km.): 4793.671 NYTME (km.): 176.957

Emission Point: 00002
Height (ft.): 30 Diameter (in.): 52
NYTMN (km.): 4793.671 NYTME (km.): 176.957

Condition 20: Process Definition By Emission Unit
Effective between the dates of 10/24/2014 and Permit Expiration Date

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 20.1(From Mod 1):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 1-LANDF
Process: FUG Source Classification Code: 5-03-008-99

Process Description:
Process FUG includes operation of the RMU-1 Landfill. Emissions occur from paved/unpaved roads, waste unloading and compacting, and landfill capping.

Emission Source/Control: RMU01 - Process
Design Capacity: 117,359 square meters

Emission Source/Control: RMU02 - Process
Design Capacity: 4,030,700 cubic yards

Item 20.2(From Mod 1):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 2-LEACH
Process: LE2 Source Classification Code: 5-03-008-99
Process Description:
Process LE2 includes emissions from the collection, handling and storage of leachate from the newer landfills, SLF-12 and RMU-1. These units have lower levels of organic emissions than process LE1. As such, there are no carbon canisters used on these storage tanks (LTNK2). The landfill standpipes are identified as SPIP2.

Emission Source/Control: LTNK2 - Process
Design Capacity: 11,000 gallons

Emission Source/Control: SPIP2 - Process

Item 20.3(From Mod 0):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 1-AQWTP
Process: TRE Source Classification Code: 5-03-008-99
Process Description:
Process TRE includes emissions from sources located within the Aqueous Waste Treatment Plant. Full treatment train includes neutralization/metals precipitation, filtration to remove solids (FLTPR), biological treatment to reduce organics, and treatment by granular activated carbon (GAC). When old landfill leachate is processed, storage and treatment tanks (AQTNK) and the biotowers (BIOTW) are vented to carbon canisters (CARB2). When waste acids are neutralized, the tanks may be vented to the caustic scrubber (SCRUB). No carbon canisters are present on the GAC or treated effluent tanks or the facultative ponds (PONDS).

Emission Source/Control: CARB2 - Control
Control Type: ACTIVATED CARBON ADSORPTION

Emission Source/Control: SCRUB - Control
Control Type: GAS SCRUBBER (GENERAL, NOT CLASSIFIED)

Emission Source/Control: AQTNK - Process

Emission Source/Control: BIOTW - Process

Emission Source/Control: FLTPR - Process

Emission Source/Control: PONDS - Process

Item 20.4(From Mod 0):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 1-BOILR
Process: HTR Source Classification Code: 1-02-005-02
Process Description:
Process HTR includes three (3) distillate oil fired boilers subject to 40CFR63 Subpart JJJJJJ-National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources. The three existing boilers include:

5.23 MMBtu/hr Cleaver Brooks Model CB-101-125 (BLR02)
14.7 MMBtu/hr North American Model 7410 (BLR01)
0.101 MMBtu/hr Fulton Model CB-030 (BLR03)

Emission Source/Control: BLR01 - Combustion
Design Capacity: 14.7 million Btu per hour

Emission Source/Control: BLR02 - Combustion
Design Capacity: 5.23 million Btu per hour

Emission Source/Control: BLR03 - Combustion
Design Capacity: 1 million Btu per hour

Item 20.5(From Mod 0):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 1-FRPMP
Process: PMP Source Classification Code: 2-02-001-07
Process Description:
Process PMP includes the fire pump for supplying water from the water storage tank to the sprinkler system in the drum warehouse. The fire pump is applicable to 40CFR63 Subpart ZZZZ-National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

Emission Source/Control: FRPMP - Combustion
Design Capacity: 187 brake horsepower

Item 20.6(From Mod 0):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 1-LEACH
Process: LE1 Source Classification Code: 5-03-008-99
Process Description:

Process LE1 includes emissions from the collection, handling and storage of leachate from older landfills, SLF 1-6, SLF-7, SLF-10, and SLF-11. The storage tanks (LTNK1) for these units utilize carbon canisters (CARB1) for controlling air emissions due to the higher level of organics in the leachate. Also, included in this process are the emissions from the landfill standpipes (SPIP1). The standpipes (SPIP1) do not use carbon canisters.

Emission Source/Control: CARB1 - Control
Control Type: ACTIVATED CARBON ADSORPTION

Emission Source/Control: LTNK1 - Process

Emission Source/Control: SPIP1 - Process

Item 20.7(From Mod 0):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 1-STABL
Process: STB Source Classification Code: 5-03-008-99
Process Description:

Process STB includes emissions from the stabilization facility. Stabilization includes the treatment of metals with cement kiln dust (CKD) or other similar material to change the metals into a less soluble, less toxic form prior to landfill disposal. Emission sources include the stabilization tanks (STBTK) and two (2) baghouses (BGH01 & BGH02) used to control CKD and waste dust emissions during transfer and mixing.

Emission Source/Control: BGH01 - Control
Control Type: FABRIC FILTER

Emission Source/Control: BGH02 - Control
Control Type: FABRIC FILTER

Emission Source/Control: STBTK - Process