CONESTOGA-ROVERS
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July 6, 2012 Reference No. 050138

Mr. Robert Corcoran, P.E.
NYSDEC-DER
Remedial Bureau A, Section C
625 Broadway, 11th floor
Albany, NY 12233-7015
(Email: rkcorcor@gw.dec.state.ny.us)

Dear Mr. Corcoran

Re: Progress Report - June 2012
HWD Site, Farmingdale, NY

Enclosed please find an electronic copy of the June 2012 Progress Report for the HWD site in Farmingdale, NY. As requested in your February 28, 2011 email to Dean Sommer, Rod Sutch and me, the monthly reports are henceforth to be transmitted to all parties via email (no hard copies).

This document is being submitted on behalf of the HWD Group in fulfillment of the requirement of Article III of Order on Consent Index # W1-0728-05-07. In accordance with the Order on Consent, as modified by your February 28, 2011 email, additional electronic copies of this monthly report have been distributed to:

Steven Bates - NYSDOH (Email: smb02@health.state.ny.us)
Sharon McLelland - NYSDOH (Email: spm03@health.state.ny.us)
Alali M. Tamuno, Esq - NYSDEC (Email: amtamuno@gw.dec.state.ny.us)

Should you have any questions or comments, please do not hesitate to contact us.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Colleen Kraft

for: Jamie Puskas
JP/ck/27

Encl.
cc: Dean Sommer
John Uruskyj
Rod Sutch

HWD SITE
FARMINGDALE, NY
PROGRESS REPORT – June 2012

I Actions Taken In Compliance with Consent Order

- Submitted progress report for May 2012 to NYSDEC.
- Continued preparation of the Draft Final Engineering Report.
- Collected Post ISCO quarterly groundwater samples on June 27 and 28, 2012.

II Data Received

- Quarterly groundwater elevation data collected on June 27, 2012 are presented in Attachment A.
- Soil confirmatory sample laboratory reports and data validation report are presented in Attachment B.

III Work Plans and Reports Submitted to NYSDEC

- Submitted progress report for May 2012 to NYSDEC.

IV Actions Scheduled for Next Month

- Continue preparation of the Draft Final Engineering Report.

V Unresolved Delays and Corrective Actions

- None

VI Proposed Modifications to Work Plans

- No modifications to the work plans were proposed.

VII Citizen Participation Plan

- No Citizen Participation activities were undertaken or required during June 2012.

List of Attachments

Attachment A – 2010 – 2012 Groundwater Levels
Attachment B - Soil Confirmation Sampling Laboratory Reports and Data Validation Report.

TABLE 1

SAMPLE COLLECTION AND ANALYSIS SUMMARY
CONFIRMATORY SOIL SAMPLING EVENT
HAZARDOUS WASTE DISPOSAL SITE
FARMINGDALE, NEW YORK

Sample I.D.	*Location I.D.*	*Collection Date (mm/dd/yy)*	*Collection Time (hr:min)*	*Start Depth (ft bgs)*	*End Depth (ft bgs)*	*Analysis/Parameters*	*Comments*
						Volatile Organic Compounds	
SO-50138-051612-RR-001	SB-1C	5/16/2012	9:50	0	2	X	
SO-50138-051612-RR-002	SB-2C	5/16/2012	10:15	8.5	10.5	X	
SO-50138-051612-RR-003	SB-3C	5/16/2012	10:45	5	7	X	
SO-50138-051612-RR-004	SB-4C	5/16/2012	11:05	2	4	X	
SO-50138-051612-RR-005	SB-5C	5/16/2012	11:20	6	8	X	
SO-50138-051612-RR-006	SB-5C	5/16/2012	11:25	6	8	X	Field duplicate of SO-50138-051612-RR-005
SO-50138-051612-RR-007	SB-6C	5/16/2012	11:50	5	7	X	
SO-50138-051612-RR-008	SB-7C	5/16/2012	12:50	0	2	X	
SO-50138-051612-RR-009	SB-8C	5/16/2012	13:20	0	2	X	
SO-50138-051612-RR-010	SB-9C	5/16/2012	13:40	0	2	X	
SO-50138-051612-RR-011	SB-10C	5/16/2012	14:10	0	2	X	
SO-50138-051612-RR-012	SB-11C	5/16/2012	14:40	0	2	X	
SO-50138-051612-RR-013	SB-12C	5/16/2012	15:05	0	2	X	

Notes:
ft bgs Feet below ground surface.

TABLE 2

ANALYTICAL RESULTS SUMMARY
CONFIRMATORY SOIL SAMPLING EVENT
HAZARDOUS WASTE DISPOSAL SITE
FARMINGDALE, NEW YORK

Sample Location:		*SB-1C*	*SB-2C*	*SB-3C*	*SB-4C*	*SB-5C*
Sample ID:		*SO-50138-051612-RR-001*	*SO-50138-051612-RR-002*	*SO-50138-051612-RR-003*	*SO-50138-051612-RR-004*	*SO-50138-051612-RR-005*
Sample Date:		*5/16/2012*	*5/16/2012*	*5/16/2012*	*5/16/2012*	*5/16/2012*
Sample Depth:		*(0-2) ft bgs*	*(8.5-10.5) ft bgs*	*(5-7) ft bgs*	*(2-4) ft bgs*	*(6-8) ft bgs*
Parameters	***Units***					
Volatile Organic Compounds						
1,1,1-Trichloroethane	µg/kg	9 U	10 U	11 U	10 U	10 U
1,1,2,2-Tetrachloroethane	µg/kg	9 U	10 U	11 U	10 U	10 U
1,1,2-Trichloroethane	µg/kg	9 U	10 U	11 U	10 U	10 U
1,1-Dichloroethane	µg/kg	9 U	10 U	11 U	10 U	10 U
1,1-Dichloroethene	µg/kg	9 U	10 U	11 U	10 U	10 U
1,2,4-Trichlorobenzene	µg/kg	9 U	10 U	11 U	10 U	10 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	9 U	10 U	11 U	10 U	10 U
1,2-Dibromoethane (Ethylene dibromide)	µg/kg	9 U	10 U	11 U	10 U	10 U
1,2-Dichlorobenzene	µg/kg	9 U	10 U	11 U	10 U	10 U
1,2-Dichloroethane	µg/kg	9 U	10 U	11 U	10 U	10 U
1,2-Dichloropropane	µg/kg	9 U	10 U	11 U	10 U	10 U
1,3-Dichlorobenzene	µg/kg	9 U	10 U	11 U	10 U	10 U
1,4-Dichlorobenzene	µg/kg	9 U	10 U	11 U	10 U	10 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/kg	9 UJ	10 UJ	11 UJ	10 UJ	10 UJ
2-Hexanone	µg/kg	9 UJ	10 UJ	11 UJ	10 UJ	2 J
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/kg	9 UJ	10 UJ	11 UJ	10 UJ	10 UJ
Acetone	µg/kg	40 UJ	42 UJ	35 UJ	43 UJ	110 UJ
Benzene	µg/kg	9 U	10 U	11 U	10 U	10 U
Bromodichloromethane	µg/kg	9 U	10 U	11 U	10 U	10 U
Bromoform	µg/kg	9 U	10 U	11 U	10 U	10 U
Bromomethane (Methyl bromide)	µg/kg	9 U	10 U	11 U	10 U	10 U
Carbon disulfide	µg/kg	9 U	10 U	11 U	10 U	10 U
Carbon tetrachloride	µg/kg	9 U	10 U	11 U	10 U	10 U
Chlorobenzene	µg/kg	9 U	10 U	11 U	10 U	10 U
Chloroethane	µg/kg	9 U	10 U	11 U	10 U	10 U
Chloroform (Trichloromethane)	µg/kg	9 U	10 U	11 U	10 U	10 U
Chloromethane (Methyl chloride)	µg/kg	9 U	10 U	11 U	10 U	10 U
cis-1,2-Dichloroethene	µg/kg	9 U	10 U	11 U	10 U	10 U
cis-1,3-Dichloropropene	µg/kg	9 U	10 U	11 U	10 U	10 U
Cyclohexane	µg/kg	9 U	10 U	11 U	10 U	10 U
Dibromochloromethane	µg/kg	9 U	10 U	11 U	10 U	10 U
Dichlorodifluoromethane (CFC-12)	µg/kg	9 U	10 U	11 U	10 U	10 U
Ethylbenzene	µg/kg	9 U	10 U	11 U	10 U	10 U
Isopropyl benzene	µg/kg	9 U	10 U	11 U	10 U	10 U
Methyl acetate	µg/kg	9 UJ	10 UJ	11 UJ	10 UJ	10 UJ
Methyl cyclohexane	µg/kg	9 U	10 U	11 U	10 U	10 U
Methyl tert butyl ether (MTBE)	µg/kg	9 U	10 U	11 U	10 U	10 U
Methylene chloride	µg/kg	9 U	10 U	11 U	10 U	10 U
Styrene	µg/kg	9 U	10 U	11 U	10 U	10 U

TABLE 2

ANALYTICAL RESULTS SUMMARY
CONFIRMATORY SOIL SAMPLING EVENT
HAZARDOUS WASTE DISPOSAL SITE
FARMINGDALE, NEW YORK

Sample Location:		*SB-1C*	*SB-2C*	*SB-3C*	*SB-4C*	*SB-5C*
Sample ID:		*SO-50138-051612-RR-001*	*SO-50138-051612-RR-002*	*SO-50138-051612-RR-003*	*SO-50138-051612-RR-004*	*SO-50138-051612-RR-005*
Sample Date:		*5/16/2012*	*5/16/2012*	*5/16/2012*	*5/16/2012*	*5/16/2012*
Sample Depth:		*(0-2) ft bgs*	*(8.5-10.5) ft bgs*	*(5-7) ft bgs*	*(2-4) ft bgs*	*(6-8) ft bgs*
Parameters	***Units***					
Volatile Organic Compounds - Continued						
Tetrachloroethene	µg/kg	4 J	10 UJ	11 UJ	15 J	6 J
Toluene	µg/kg	3 J	10 U	11 U	10 U	10 U
trans-1,2-Dichloroethene	µg/kg	9 U	10 U	11 U	10 U	10 U
trans-1,3-Dichloropropene	µg/kg	9 U	10 U	11 U	10 U	10 U
Trichloroethene	µg/kg	9 U	10 U	11 U	11	10 U
Trichlorofluoromethane (CFC-11)	µg/kg	9 U	10 U	11 U	10 U	10 U
Trifluorotrichloroethane (Freon 113)	µg/kg	9 U	10 U	11 U	10 U	10 U
Vinyl chloride	µg/kg	9 U	10 U	11 U	10 U	10 U
Xylenes (total)	µg/kg	9 U	10 U	11 U	10 U	10 U
General Chemistry						
Percent moisture	%	8.0	2.8	3.3	3.0	3.4

Notes:
ft bgs - Feet below ground surface.
J - Estimated.
U - Not detected.
UJ - Not detected, estimated reporting limit.

TABLE 2

ANALYTICAL RESULTS SUMMARY
CONFIRMATORY SOIL SAMPLING EVENT
HAZARDOUS WASTE DISPOSAL SITE
FARMINGDALE, NEW YORK

Sample Location:		*SB-5C*	*SB-6C*	*SB-7C*	*SB-8C*	*SB-9C*
Sample ID:		*SO-50138-051612-RR-006*	*SO-50138-051612-RR-007*	*SO-50138-051612-RR-008*	*SO-50138-051612-RR-009*	*SO-50138-051612-RR-010*
Sample Date:		*5/16/2012*	*5/16/2012*	*5/16/2012*	*5/16/2012*	*5/16/2012*
Sample Depth:		*(6-8) ft bgs (Duplicate)*	*(5-7) ft bgs*	*(0-2) ft bgs*	*(0-2) ft bgs*	*(0-2) ft bgs*
Parameters	*Units*					
Volatile Organic Compounds						
1,1,1-Trichloroethane	µg/kg	10 U	9 U	2 J	9 U	9 U
1,1,2,2-Tetrachloroethane	µg/kg	10 U	9 U	10 U	9 U	9 U
1,1,2-Trichloroethane	µg/kg	10 U	9 U	10 U	9 U	9 U
1,1-Dichloroethane	µg/kg	10 U	9 U	10 U	9 U	9 U
1,1-Dichloroethene	µg/kg	10 U	9 U	10 U	9 U	9 U
1,2,4-Trichlorobenzene	µg/kg	10 U	9 U	10 U	9 U	9 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	10 U	9 U	10 U	9 U	9 U
1,2-Dibromoethane (Ethylene dibromide)	µg/kg	10 U	9 U	10 U	9 U	9 U
1,2-Dichlorobenzene	µg/kg	10 U	9 U	10 U	9 U	9 U
1,2-Dichloroethane	µg/kg	10 U	9 U	10 U	9 U	9 U
1,2-Dichloropropane	µg/kg	10 U	9 U	10 U	9 U	9 U
1,3-Dichlorobenzene	µg/kg	10 U	9 U	10 U	9 U	9 U
1,4-Dichlorobenzene	µg/kg	10 U	9 U	10 U	9 U	9 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/kg	10 UJ	9 UJ	10 UJ	9 UJ	9 UJ
2-Hexanone	µg/kg	2 J	9 UJ	10 UJ	9 UJ	9 UJ
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/kg	10 UJ	9 UJ	10 UJ	9 UJ	9 UJ
Acetone	µg/kg	110 UJ	34 UJ	36 UJ	77 UJ	33 UJ
Benzene	µg/kg	10 U	9 U	10 U	9 U	9 U
Bromodichloromethane	µg/kg	10 U	9 U	10 U	9 U	9 U
Bromoform	µg/kg	10 U	9 U	10 U	9 U	9 U
Bromomethane (Methyl bromide)	µg/kg	10 U	9 U	10 U	9 U	9 U
Carbon disulfide	µg/kg	10 U	9 U	10 U	9 U	9 U
Carbon tetrachloride	µg/kg	10 U	9 U	10 U	9 U	9 U
Chlorobenzene	µg/kg	10 U	9 U	10 U	9 U	9 U
Chloroethane	µg/kg	10 U	9 U	10 U	9 U	9 U
Chloroform (Trichloromethane)	µg/kg	10 U	9 U	10 U	9 U	9 U
Chloromethane (Methyl chloride)	µg/kg	10 U	9 U	10 U	9 U	9 U
cis-1,2-Dichloroethene	µg/kg	10 U	9 U	10 U	9 U	9 U
cis-1,3-Dichloropropene	µg/kg	10 U	9 U	10 U	9 U	9 U
Cyclohexane	µg/kg	10 U	9 U	10 U	9 U	9 U
Dibromochloromethane	µg/kg	10 U	9 U	10 U	9 U	9 U
Dichlorodifluoromethane (CFC-12)	µg/kg	10 U	9 U	10 U	9 U	9 U
Ethylbenzene	µg/kg	10 U	9 U	10 U	9 U	9 U
Isopropyl benzene	µg/kg	10 U	9 U	10 U	9 U	9 U
Methyl acetate	µg/kg	10 UJ	9 UJ	10 UJ	9 UJ	9 UJ
Methyl cyclohexane	µg/kg	10 U	9 U	10 U	9 U	9 U
Methyl tert butyl ether (MTBE)	µg/kg	10 U	9 U	10 U	9 U	9 U
Methylene chloride	µg/kg	10 U	9 U	10 U	1 J	9 U
Styrene	µg/kg	10 U	9 U	10 U	9 U	9 U

TABLE 2

ANALYTICAL RESULTS SUMMARY
CONFIRMATORY SOIL SAMPLING EVENT
HAZARDOUS WASTE DISPOSAL SITE
FARMINGDALE, NEW YORK

Sample Location:		*SB-5C*	*SB-6C*	*SB-7C*	*SB-8C*	*SB-9C*
Sample ID:		*SO-50138-051612-RR-006*	*SO-50138-051612-RR-007*	*SO-50138-051612-RR-008*	*SO-50138-051612-RR-009*	*SO-50138-051612-RR-010*
Sample Date:		*5/16/2012*	*5/16/2012*	*5/16/2012*	*5/16/2012*	*5/16/2012*
Sample Depth:		*(6-8) ft bgs (Duplicate)*	*(5-7) ft bgs*	*(0-2) ft bgs*	*(0-2) ft bgs*	*(0-2) ft bgs*
Parameters	*Units*					
Volatile Organic Compounds - Continued						
Tetrachloroethene	µg/kg	6 J	9 UJ	36 J	53 J	8 J
Toluene	µg/kg	10 U	9 U	3 J	1 J	9 U
trans-1,2-Dichloroethene	µg/kg	10 U	9 U	10 U	9 U	9 U
trans-1,3-Dichloropropene	µg/kg	10 U	9 U	10 U	9 U	9 U
Trichloroethene	µg/kg	10 U	9 U	11	7 J	2 J
Trichlorofluoromethane (CFC-11)	µg/kg	10 U	9 U	10 U	9 U	9 U
Trifluorotrichloroethane (Freon 113)	µg/kg	10 U	9 U	10 U	9 U	9 U
Vinyl chloride	µg/kg	10 U	9 U	10 U	9 U	9 U
Xylenes (total)	µg/kg	10 U	9 U	10 U	9 U	9 U
General Chemistry						
Percent moisture	%	3.8	2.9	6.7	6.7	4.1

Notes:
ft bgs - Feet below ground surface.
J - Estimated.
U - Not detected.
UJ - Not detected, estimated reporting limit.

TABLE 2

ANALYTICAL RESULTS SUMMARY
CONFIRMATORY SOIL SAMPLING EVENT
HAZARDOUS WASTE DISPOSAL SITE
FARMINGDALE, NEW YORK

Sample Location:		*SB-10C*	*SB-11C*	*SB-12C*
Sample ID:		*SO-50138-051612-RR-011*	*SO-50138-051612-RR-012*	*SO-50138-051612-RR-013*
Sample Date:		*5/16/2012*	*5/16/2012*	*5/16/2012*
Sample Depth:		*(0-2) ft bgs*	*(0-2) ft bgs*	*(0-2) ft bgs*
Parameters	***Units***			
Volatile Organic Compounds				
1,1,1-Trichloroethane	µg/kg	10 U	10 U	1 J
1,1,2,2-Tetrachloroethane	µg/kg	10 U	10 U	9 U
1,1,2-Trichloroethane	µg/kg	10 U	10 U	9 U
1,1-Dichloroethane	µg/kg	10 U	10 U	9 U
1,1-Dichloroethene	µg/kg	10 U	10 U	9 U
1,2,4-Trichlorobenzene	µg/kg	10 U	10 U	9 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	10 U	10 U	9 U
1,2-Dibromoethane (Ethylene dibromide)	µg/kg	10 U	10 U	9 U
1,2-Dichlorobenzene	µg/kg	10 U	10 U	9 U
1,2-Dichloroethane	µg/kg	10 U	10 U	9 U
1,2-Dichloropropane	µg/kg	10 U	10 U	9 U
1,3-Dichlorobenzene	µg/kg	10 U	10 U	9 U
1,4-Dichlorobenzene	µg/kg	10 U	10 U	9 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/kg	10 UJ	10 UJ	9 UJ
2-Hexanone	µg/kg	10 UJ	10 UJ	9 UJ
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/kg	10 UJ	10 UJ	9 UJ
Acetone	µg/kg	44 UJ	26 UJ	110 UJ
Benzene	µg/kg	10 U	10 U	9 U
Bromodichloromethane	µg/kg	10 U	10 U	9 U
Bromoform	µg/kg	10 U	10 U	9 U
Bromomethane (Methyl bromide)	µg/kg	10 U	10 U	9 U
Carbon disulfide	µg/kg	10 U	10 U	9 U
Carbon tetrachloride	µg/kg	10 U	10 U	9 U
Chlorobenzene	µg/kg	10 U	10 U	9 U
Chloroethane	µg/kg	10 U	10 U	9 U
Chloroform (Trichloromethane)	µg/kg	10 U	10 U	9 U
Chloromethane (Methyl chloride)	µg/kg	10 U	10 U	9 U
cis-1,2-Dichloroethene	µg/kg	2 J	10 U	9 U
cis-1,3-Dichloropropene	µg/kg	10 U	10 U	9 U
Cyclohexane	µg/kg	10 U	10 U	9 U
Dibromochloromethane	µg/kg	10 U	10 U	9 U
Dichlorodifluoromethane (CFC-12)	µg/kg	10 U	10 U	9 U
Ethylbenzene	µg/kg	10 U	10 U	9 U
Isopropyl benzene	µg/kg	10 U	10 U	9 U
Methyl acetate	µg/kg	10 UJ	10 UJ	9 UJ
Methyl cyclohexane	µg/kg	10 U	10 U	9 U
Methyl tert butyl ether (MTBE)	µg/kg	10 U	10 U	9 U
Methylene chloride	µg/kg	10 U	10 U	9 U
Styrene	µg/kg	10 U	10 U	9 UJ

TABLE 2

ANALYTICAL RESULTS SUMMARY
CONFIRMATORY SOIL SAMPLING EVENT
HAZARDOUS WASTE DISPOSAL SITE
FARMINGDALE, NEW YORK

Sample Location:		*SB-10C*	*SB-11C*	*SB-12C*
Sample ID:		*SO-50138-051612-RR-011*	*SO-50138-051612-RR-012*	*SO-50138-051612-RR-013*
Sample Date:		*5/16/2012*	*5/16/2012*	*5/16/2012*
Sample Depth:		*(0-2) ft bgs*	*(0-2) ft bgs*	*(0-2) ft bgs*
Parameters	***Units***			
Volatile Organic Compounds - Continued				
Tetrachloroethene	µg/kg	81 J	22 J	120 J
Toluene	µg/kg	3 J	2 J	9 U
trans-1,2-Dichloroethene	µg/kg	10 U	10 U	9 U
trans-1,3-Dichloropropene	µg/kg	10 U	10 U	9 U
Trichloroethene	µg/kg	12	4 J	6 J
Trichlorofluoromethane (CFC-11)	µg/kg	10 U	10 U	9 U
Trifluorotrichloroethane (Freon 113)	µg/kg	10 U	10 U	9 U
Vinyl chloride	µg/kg	10 U	10 U	9 U
Xylenes (total)	µg/kg	10 U	10 U	9 U
General Chemistry				
Percent moisture	%	8.1	5.9	10.3

Notes:
ft bgs - Feet below ground surface.
J - Estimated.
U - Not detected.
UJ - Not detected, estimated reporting limit.

TABLE 3

QUALIFIED SAMPLE RESULTS DUE TO OUTLYING CONTINUING CALIBRATION RESULTS
CONFIRMATORY SOIL SAMPLING EVENT
HAZARDOUS WASTE DISPOSAL SITE
FARMINGDALE, NEW YORK

Parameter	*Calibration Date*	*Compound*	*%D*	*Associated Sample ID*	*Qualified Sample Results*	*Units*
VOCs	5/18/12	2-Butanone (Methyl ethyl ketone) (MEK)	54	SO-50138-051612-RR-013	9 UJ	µg/kg
				SO-50138-051612-RR-001	9 UJ	µg/kg
				SO-50138-051612-RR-002	10 UJ	µg/kg
				SO-50138-051612-RR-003	11 UJ	µg/kg
				SO-50138-051612-RR-004	10 UJ	µg/kg
				SO-50138-051612-RR-005	10 UJ	µg/kg
				SO-50138-051612-RR-006	10 UJ	µg/kg
				SO-50138-051612-RR-007	9 UJ	µg/kg
				SO-50138-051612-RR-008	10 UJ	µg/kg
				SO-50138-051612-RR-009	9 UJ	µg/kg
				SO-50138-051612-RR-010	9 UJ	µg/kg
				SO-50138-051612-RR-011	10 UJ	µg/kg
				SO-50138-051612-RR-012	10 UJ	µg/kg
VOCs	5/18/12	2-Hexanone	33	SO-50138-051612-RR-013	9 UJ	µg/kg
				SO-50138-051612-RR-001	9 UJ	µg/kg
				SO-50138-051612-RR-002	10 UJ	µg/kg
				SO-50138-051612-RR-003	11 UJ	µg/kg
				SO-50138-051612-RR-004	10 UJ	µg/kg
				SO-50138-051612-RR-005	2 J	µg/kg
				SO-50138-051612-RR-006	2 J	µg/kg
				SO-50138-051612-RR-007	9 UJ	µg/kg
				SO-50138-051612-RR-008	10 UJ	µg/kg
				SO-50138-051612-RR-009	9 UJ	µg/kg
				SO-50138-051612-RR-010	9 UJ	µg/kg
				SO-50138-051612-RR-011	10 UJ	µg/kg
				SO-50138-051612-RR-012	10 UJ	µg/kg

TABLE 3

QUALIFIED SAMPLE RESULTS DUE TO OUTLYING CONTINUING CALIBRATION RESULTS
CONFIRMATORY SOIL SAMPLING EVENT
HAZARDOUS WASTE DISPOSAL SITE
FARMINGDALE, NEW YORK

Parameter	*Calibration Date*	*Compound*	*%D*	*Associated Sample ID*	*Qualified Sample Results*	*Units*
VOCs	5/18/12	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	27	SO-50138-051612-RR-013	9 UJ	µg/kg
				SO-50138-051612-RR-001	9 UJ	µg/kg
				SO-50138-051612-RR-002	10 UJ	µg/kg
				SO-50138-051612-RR-003	11 UJ	µg/kg
				SO-50138-051612-RR-004	10 UJ	µg/kg
				SO-50138-051612-RR-005	10 UJ	µg/kg
				SO-50138-051612-RR-006	10 UJ	µg/kg
				SO-50138-051612-RR-007	9 UJ	µg/kg
				SO-50138-051612-RR-008	10 UJ	µg/kg
				SO-50138-051612-RR-009	9 UJ	µg/kg
				SO-50138-051612-RR-010	9 UJ	µg/kg
				SO-50138-051612-RR-011	10 UJ	µg/kg
				SO-50138-051612-RR-012	10 UJ	µg/kg
VOCs	5/18/12	Acetone	44	SO-50138-051612-RR-013	110 UJ	µg/kg
				SO-50138-051612-RR-001	40 UJ	µg/kg
				SO-50138-051612-RR-002	42 UJ	µg/kg
				SO-50138-051612-RR-003	35 UJ	µg/kg
				SO-50138-051612-RR-004	43 UJ	µg/kg
				SO-50138-051612-RR-005	110 UJ	µg/kg
				SO-50138-051612-RR-006	110 UJ	µg/kg
				SO-50138-051612-RR-007	34 UJ	µg/kg
				SO-50138-051612-RR-008	36 UJ	µg/kg
				SO-50138-051612-RR-009	77 UJ	µg/kg
				SO-50138-051612-RR-010	33 UJ	µg/kg
				SO-50138-051612-RR-011	44 UJ	µg/kg
				SO-50138-051612-RR-012	26 UJ	µg/kg

TABLE 3

QUALIFIED SAMPLE RESULTS DUE TO OUTLYING CONTINUING CALIBRATION RESULTS
CONFIRMATORY SOIL SAMPLING EVENT
HAZARDOUS WASTE DISPOSAL SITE
FARMINGDALE, NEW YORK

Parameter	*Calibration Date*	*Compound*	*%D*	*Associated Sample ID*	*Qualified Sample Results*	*Units*
VOCs	5/18/12	Methyl acetate	33	SO-50138-051612-RR-013	9 UJ	µg/kg
				SO-50138-051612-RR-001	9 UJ	µg/kg
				SO-50138-051612-RR-002	10 UJ	µg/kg
				SO-50138-051612-RR-003	11 UJ	µg/kg
				SO-50138-051612-RR-004	10 UJ	µg/kg
				SO-50138-051612-RR-005	10 UJ	µg/kg
				SO-50138-051612-RR-006	10 UJ	µg/kg
				SO-50138-051612-RR-007	9 UJ	µg/kg
				SO-50138-051612-RR-008	10 UJ	µg/kg
				SO-50138-051612-RR-009	9 UJ	µg/kg
				SO-50138-051612-RR-010	9 UJ	µg/kg
				SO-50138-051612-RR-011	10 UJ	µg/kg
				SO-50138-051612-RR-012	10 UJ	µg/kg

Notes:
J Estimated.
VOCs Volatile organic compounds.
%D Percent difference.
UJ Not detected, estimated reporting limit.

TABLE 4

QUALIFIED SAMPLE RESULTS DUE TO ANALYTE CONCENTRATIONS IN THE METHOD BLANKS
CONFIRMATORY SOIL SAMPLING EVENT
HAZARDOUS WASTE DISPOSAL SITE
FARMINGDALE, NEW YORK

Parameter	*Analysis Date*	*Analyte*	*Blank Result*	*Sample ID*	*Qualified Sample Result*
VOCs	5/18/12	Acetone	96	SO-50138-051612-RR-013	110 UJ
				SO-50138-051612-RR-001	40 UJ
				SO-50138-051612-RR-002	42 UJ
				SO-50138-051612-RR-003	35 UJ
				SO-50138-051612-RR-004	43 UJ
				SO-50138-051612-RR-005	110 UJ
				SO-50138-051612-RR-006	110 UJ
				SO-50138-051612-RR-007	34 UJ
				SO-50138-051612-RR-008	36 UJ
				SO-50138-051612-RR-009	77 UJ
				SO-50138-051612-RR-010	33 UJ
				SO-50138-051612-RR-011	44 UJ
				SO-50138-051612-RR-012	26 UJ
VOCs	5/18/12	Chloroform	1	SO-50138-051612-RR-003	11 U
				SO-50138-051612-RR-005	10 U
				SO-50138-051612-RR-008	10 U
				SO-50138-051612-RR-010	9 U

Notes:
VOCs Volatile organic compounds.
U Not detected.
UJ Not detected, estimated reporting limit.

TABLE 5

QUALIFIED SAMPLE RESULTS DUE TO OUTLYING MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERIES
CONFIRMATORY SOIL SAMPLING EVENT
HAZARDOUS WASTE DISPOSAL SITE
FARMINGDALE, NEW YORK

Parameter	*Associated Sample ID*	*Analyte*	*MS Recovery (percent)*	*MSD Recovery (percent)*	*RPD*	*Control Limits*		*Qualified Sample Result*	*Units*
						Recovery (percent)	*RPD (percent)*		
VOCs	SO-50138-051612-RR-013	Styrene	70	66	6	79-128	20	9 UJ	µg/kg
VOCs	SO-50138-051612-RR-013	1,1,1-Trichloroethane	68	62	9	50-187	20	1 J	µg/kg
VOCs	SO-50138-051612-RR-013	Trichloroethene	67	69	3	78-128	20	6 J	µg/kg
VOCs	SO-50138-051612-RR-013	Tetrachloroethene	0	0	NA	78-127	20	120 J	µg/kg
VOCs	SO-50138-051612-RR-013	Acetone	0	0	NA	72-145	20	110 UJ	µg/kg

Notes:
J Estimated.
VOCs Volatile organic compounds.
MS Matrix spike.
MSD Matrix spike duplicate.
RPD Relative percent difference.
UJ Not detected, estimated reporting limit.

TABLE 6

QUALIFIED SAMPLE RESULTS DUE TO OUTLYING BLANK SPIKE RESULTS
CONFIRMATORY SOIL SAMPLING EVENT
HAZARDOUS WASTE DISPOSAL SITE
FARMINGDALE, NEW YORK

Parameter	*BS Date*	*Compound*	*% Rec*	*Acceptable Limits*	*Associated Sample ID*	*Qualified Sample Results*	*Units*
VOCs	5/18/12	2-Hexanone	122	76-119	SO-50138-051612-RR-005	2 J	µg/kg
		2-Hexanone			SO-50138-051612-RR-006	2 J	µg/kg
VOCs	5/18/12	Tetrachloroethene	76	79-128	SO-50138-051612-RR-013	120 J	µg/kg
		Tetrachloroethene			SO-50138-051612-RR-001	4 J	µg/kg
		Tetrachloroethene			SO-50138-051612-RR-002	10 UJ	µg/kg
		Tetrachloroethene			SO-50138-051612-RR-003	11 UJ	µg/kg
		Tetrachloroethene			SO-50138-051612-RR-004	15 J	µg/kg
		Tetrachloroethene			SO-50138-051612-RR-005	6 J	µg/kg
		Tetrachloroethene			SO-50138-051612-RR-006	6 J	µg/kg
		Tetrachloroethene			SO-50138-051612-RR-007	9 UJ	µg/kg
		Tetrachloroethene			SO-50138-051612-RR-008	36 J	µg/kg
		Tetrachloroethene			SO-50138-051612-RR-009	53 J	µg/kg
		Tetrachloroethene			SO-50138-051612-RR-010	8 J	µg/kg
		Tetrachloroethene			SO-50138-051612-RR-011	81 J	µg/kg
		Tetrachloroethene			SO-50138-051612-RR-012	22 J	µg/kg

Notes:
VOCs Volatile organic compounds.
J Estimated.
UJ Not detected, estimated reporting limit.

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MEMORANDUM

TO:	Jamie Puskas	REF. NO.:	050138
FROM:	Susan Scrocchi/adh/12	DATE:	June 13, 2012 Rev. July 6, 2012
C.C.:	Robert Medsger		**E-Mail and Hard Copy if Requested**

RE: Analytical Results and QA/QC Review
Confirmatory Soil Sampling Event
Hazardous Waste Disposal Site
Farmingdale, New York

INTRODUCTION

The following details a quality assessment and validation of the analytical data resulting from the May 2012 collection of soil samples from the Hazardous Waste Disposal Site in Farmingdale, New York. The sample summary detailing sample identification, sample location, quality control (QC) samples and analytical parameters is presented in Table 1. Sample analysis was completed at H2M Labs, Inc. (H2M), in Melville, New York. Samples were analyzed by method SW-846 8260[1]. A summary of the analytical results is presented in Table 2.

The QC criteria used to assess the data were established by the method and with the documents "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," United States Environmental Protection Agency (USEPA) 540/R-99/008, October 1999.

These guidelines are collectively referred to as "Guidelines" in this memorandum.

SAMPLE QUANTITATION

The laboratory reported detected concentrations of volatile organic compounds (VOCs) below the laboratory's practical quantitation limit (PQL)/report limit (RL) but above the laboratory's method detection limit (MDL). The laboratory flagged these sample concentrations with a "J." These concentrations should be qualified as estimated (J) values unless qualified otherwise in this memorandum.

[1] "Test Methods for Solid Waste Physical/Chemical Methods," SW-846, 3rd Edition, September 1986 (with all subsequent revisions).

SAMPLE PRESERVATION AND HOLDING TIMES

Sample holding time periods and preservation requirements are summarized in the analytical methods. All sample extractions and/or analyses were performed within the specified holding times.

All samples were properly preserved and cooled after collection.

GAS CHROMATOGRAPHY/MASS SPECTROMETER (GC/MS)
TUNING AND MASS CALIBRATION (INSTRUMENT PERFORMANCE CHECK) – VOCS

To ensure adequate mass resolution, identification, and to some degree, sensitivity, the performance of each GC/MS instrument was checked at the beginning of each 12-hour period using bromofluorobenzene (BFB). The resulting spectra must meet the criteria cited in the "Guidelines" before initiating an analysis sequence.

Instrument performance check data were reviewed. These tuning compounds were analyzed at the required frequency throughout the VOC analyses. The results of all instrument performance checks were within the acceptance criteria, indicating acceptable instrument performance.

GC/MS INITIAL CALIBRATION – VOCS

Initial calibration data are used to demonstrate that each instrument is capable of generating acceptable quantitative data. A five-point calibration curve containing all compounds of interest is analyzed to characterize instrument response for each over a specific concentration range.

Initial calibration criteria for organic analyses are evaluated against the following criteria:

i) Must meet a minimum mean relative response factor (RRF) of 0.05

ii) The percent relative standard deviation (%RSD) values must not exceed 30.0 percent or a minimum coefficient of determination (R^2) of 0.99 if quadratic equation calibration curves are used

Calibration standards were analyzed at the required frequency, and the results met the above criteria for sensitivity and linearity.

GC/MS CONTINUING CALIBRATION – VOCS

To ensure that each instrument was capable of producing acceptable quantitative data over the analysis period, continuing calibration standards must be analyzed every 12 hours (24 hours for TO-15). The following criteria are employed to evaluate the continuing calibration data:

i) Must meet a minimum mean RRF of 0.05

ii) The percent difference (%D) between the mean initial calibration RRF and the continuing calibration RRF must not exceed 25 percent

iii) The percent drift between the true value and the continuing calibration value must not exceed 25 percent

Calibration standards were analyzed at the required frequency, and all the results met the above criteria for instrument sensitivity. All analytes met the linearity criteria with the exceptions presented in Table 3.

METHOD BLANK SAMPLES

Method blank samples are prepared from a purified sample matrix and are processed concurrently with investigative samples to assess the presence and the magnitude of sample contamination introduced during sample analysis. Method blank samples are analyzed at a minimum frequency of one per analytical batch, and target analytes should be non-detect.

Method blanks were analyzed at the recommended frequency, and the results were non-detect with the exception of chloroform and acetone present at low levels. All associated sample results with similar concentrations were qualified as non-detect (see Table 4).

SURROGATE COMPOUNDS

Individual sample performance for organic analyses was monitored by assessing the results of surrogate compound percent recoveries. Surrogate percent recoveries are reviewed against the laboratory developed control limits provided in the analytical report.

All surrogate recoveries met the method criteria, demonstrating acceptable analytical efficiency for these analyses.

INTERNAL STANDARD (IS) SUMMARIES

To correct for variability in the GC/MS response and sensitivity, IS compounds are added to all samples. All results are calculated as a ratio of the compound and associated IS response. Overall instrument stability and performance for VOC analyses were monitored using IS peak area and retention time (RT) data. The IS peak areas and RTs of the samples are required to meet the following criteria:

i) IS area counts must not vary by more than a factor of two (-50 percent to +100 percent) from the associated continuing calibration standard IS area counts

ii) The RT of the IS must not vary by more than plus or minus 30 seconds from the associated continuing calibration standard

A review of the internal standard data showed that the IS area counts and RT data were within the acceptance criteria for all samples.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) ANALYSES

To assess the long-term accuracy and precision of the analytical methods on various matrices, MS/MSD percent recoveries and relative percent differences (RPD) of the concentrations were determined. The organic MS/MSD percent recovery and RPD control limits are established by the laboratory.

A MS/MSD was performed on sample SO-50138-051612-RR-013. All recoveries were acceptable indicating good analytical accuracy and precision with the exception of some low recoveries. The sample results for these compounds were qualified as estimated (see Table 5).

LABORATORY CONTROL SAMPLE (LCS)

The LCS analysis serves as a monitor of the overall performance in all steps of the sample analysis and is analyzed with each sample batch. The LCS percent recoveries were evaluated against method and laboratory established control limits. Some LCS analyses were performed in duplicate to monitor laboratory precision.

All LCS percent recoveries were within the laboratory control limits indicating good analytical accuracy with the following exceptions:

i) A high recovery was observed. All associated positive sample results were qualified as estimated, and all non-detect results would not have been impacted by the implied high bias.

ii) A low recovery was observed. All associated sample results were qualified as estimated.

A summary of qualified sample results is presented in Table 6.

FIELD QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

The field QA/QC consisted of one field duplicate set.

Field Duplicates

One set of field duplicates were submitted with this sample batch. All sample results outside estimated ranges of detection showed acceptable sampling and analytical precision.

TARGET COMPOUND IDENTIFICATION

To minimize erroneous compound identification during organic analyses, qualitative criteria including compound RT and mass spectra (if applicable) were evaluated according to identification criteria established by the methods. The organic compounds reported adhered to the specified identification criteria.

TARGET COMPOUND QUANTITATION

The reported quantitation results and detection limits were checked to ensure results reported were accurate. No discrepancies were found between the raw data and the sample results reported by the laboratory.

SYSTEM PERFORMANCE

System performance between various quality control checks was evaluated to monitor for changes that may have caused the degradation of data quality. No technical problems or chromatographic anomalies were observed, which would require qualification of the data.

OVERALL ASSESSMENT

The data were found to exhibit acceptable levels of accuracy and precision, based on the provided information, and may be used with the qualifications noted herein.