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September 19, 2017

Mr. Dale Alme FoamTech Insulation 2259 County Trunk A Stoughton, WI 53589



#### WASTE MANAGEMENT

Closed Sites Management Group W124N9355 Boundary Road Menomonee Falls, WI 53051 262 253 8626 262 255 3798 Fax

Dear Mr. Alme:

As required by the Unilateral Administrative Order for clean-up of the Hagen Farm Landfill, Waste Management of Wisconsin, Inc. (WMWI) samples the well (PW02) at the above referenced facility on an annual basis. This letter transmits the analytical data for that water supply well, which was sampled on August 28, 2017. Analytical results for water samples collected from the well are also sent to the United States Environmental Protection Agency (USEPA) and the Wisconsin Department of Natural Resources (WDNR) for review.

A brief review of the recent laboratory results for water samples collected from that well indicates the water quality is typical of groundwater in the area, and does not indicate any affect from the Hagen Farm Landfill. Nitrate-nitrite was present in the sample at a concentration consistent with previous samples and is generally associated with, or related to, farming activities. The concentration is also consistent with the results from analysis of a number of other samples throughout this area, and is above state and federal drinking water criteria.

I would recommend that you contact Ms. Sheila Sullivan from the USEPA if you would like any additional information regarding this correspondence. Ms. Sullivan is USEPA's representative for the Hagen Farm Landfill and provides regulatory oversight at the site. Ms. Sullivan's telephone number is (312) 886-5251.

Thank you for your cooperation.

Sincerely, Waste Management of Wisconsin, Inc.

Michael L. Peterson

Michael L. Peterson, P.E. District Manager – Closed Sites Management Group

cc: Sheila Sullivan, USEPA Gary Edelstein, WDNR

## **Definitions/Glossary**

### Client: Waste Management Project/Site: Hagen Farms - Groundwater

### TestAmerica Job ID: 480-123334-1

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Qualifiers	
GC/MS VOA	
Qualifier	Qualifier Description
1	Reported value was between the limit of detection and the limit of quantitation.
Metals	
Qualifier	Qualifier Description
8	Compound was found in the blank and sample.
J	Reported value was between the limit of detection and the limit of quantitation.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
General Che	mistry
Qualifier	Qualifier Description
J	Reported value was between the limit of detection and the limit of quantitation.
*	LCS or LCSD is outside acceptance limits.
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4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not
	applicable.
F1	MS and/or MSD Recovery is outside acceptance limits.
В	Compound was found in the blank and sample.

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## Glossary

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Abbreviation	These commonly used abbreviations may or may not be present in this report.
Π	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client: Waste Management Project/Site: Hagen Farms - Groundwater

### Job ID: 480-123334-1

### Laboratory: TestAmerica Buffalo

Narrative

Job Narrative 480-123334-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 8/29/2017 1:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 3.3° C and 3.9° C.

### GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### HPLC/IC

Method(s) 300.0: The following sample was diluted to bring the concentration of target analytes within the calibration range: PW03 (480-123334-2). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

Method(s) 6010C: The Method Blank for preparation batch 480-374525 and analytical batch 480-374754 contained Total Manganese above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples PW02 (480-123334-1), PW03 (480-123334-2), PW04 (480-123334-3), PW05 (480-123334-4) and PW09 (480-123334-5) was not performed.

Method(s) 6010C: The total Zinc results reported for the following sample do not concur with results previously reported for this site: PW04 (480-123334-3). Reanalysis was performed, and the result(s) confirmed.

Method(s) 6010C: The total Calcium, and Potassium results reported for the following sample do not concur with results previously reported for this site: PW09 (480-123334-5). Reanalysis was performed, and the result(s) confirmed.

Method(s) 6020A: The total Arsenic results reported for the following samples do not concur with results previously reported for this site: PW02 (480-123334-1) and PW09 (480-123334-5). Reanalysis was performed, and the result(s) confirmed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### **General Chemistry**

Method(s) 335.4, 9012B, SM 4500 CN E: The laboratory control sample (LCS) for preparation batch 480-375031 and analytical batch 480-375242 recovered outside control limits for the following analytes: Cyanide. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.PW02 (480-123334-1), PW03 (480-123334-2), PW04 (480-123334-3), PW05 (480-123334-4) and PW09 (480-123334-5)

Method(s) 353.2: The results reported for the following sample do not concur with results previously reported for this site: PW09 (480-123334-5). Reanalysis was performed, and the result(s) confirmed.

Method(s) SM 4500 P E: The results reported for the following samples do not concur with results previously reported for this site: PW02 (480-123334-1) and PW04 (480-123334-3). Reanalysis was performed, and results greater than historically reported were confirmed.

Method(s) SM 4500 P E: The method blank for analytical batch 480-374719 contained Total Phosphorus above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed. PW05 (480-123334-4)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TestAmerica Job ID: 480-123334-1



Client: Waste Management Project/Site: Hagen Farms - Groundwater

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TestAmerica Job ID: 480-123334-1

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ate Collected: 08/28/17 11:0			-		mpio	ID: 480-123 Matrix		
ate Received: 08/29/17 13:0 Method: 8260C SIM - Volatil	· · · · · · · · · · · · · · · · · · ·	GC/MS)	··					
Analyte Vinyl chloride	Result Qualifier	RL 0.020	LOQ 0.013	0.0040	Unit	D	Analyzed 08/31/17 13:11	Dil Fa
Surrogate			0.070	0.0040	-			
TBA-d9 (Surr)		Limits			Prep	ared	Analyzed	Dil Fa
Dibromofluoromethane (Surr)	102	50 - 150 50 - 150					08/31/17 13:11	
sistementerentenane (Gan)	102	50-150					08/31/17 13:11	
Method: 8260C - Volatile Org Analyte	ganic Compounds by GC Result Qualifier	/ <b>MS</b> RL	100	1.00	[]	-	A secolar d	<b>D</b>
1,1,1-Trichloroethane	ND	1.0	LOQ 2.7		Unit ug/L	<b>D</b>	Analyzed	Dil Fa
1,1,2,2-Tetrachloroethane	ND	1.0	0.70		-		09/02/17 01:05	
1,1,2-Trichloroethane	ND	1.0	0.70		ug/L		09/02/17 01:05	
1,1-Dichloroethane	ND	1.0			ug/L		09/02/17 01:05	
1.1-Dichloroethene	ND	1.0	1.3		ug/L		09/02/17 01:05	
1,2,4-Trichlorobenzene	ND		0.97		ug/L		09/02/17 01:05	
,2-Dibromo-3-Chloropropane		1.0	1.4		ug/L		09/02/17 01:05	
,2-Dibromoethane (EDB)	ND	1.0	1.3		ug/L		09/02/17 01:05	
.2-Dichlorobenzene	ND	1.0	2.4		ug/L		09/02/17 01:05	
1,2-Dichlorobenzene	ND	1.0	2.6	0.79	*		09/02/17 01:05	
	ND	1.0	0,70	0.21			09/02/17 01:05	
2-Dichloropropane	ND	1.0	2.4		ug/L		09/02/17 01:05	
,3-Dichlorobenzene	ND	1.0	2.6		ug/L		09/02/17 01:05	
,4-Dichlorobenzene	ND	1.0	2.8		ug/L		09/02/17 01:05	
2-Butanone (MEK)	ND	10	4.4		ug/L		09/02/17 01:05	
2-Hexanone	ND	5.0	4.1	1.2	ug/L		09/02/17 01:05	
-Methyl-2-pentanone (MIBK)	ND	5.0	7.0	2.1	ug/L		09/02/17 01:05	
Acetone	ND	10	10	3.0	-		09/02/17 01:05	
Benzene	ND	1.0	1.4	0.41	ug/L		09/02/17 01:05	
Bromodichloromethane	ND	1.0	1.3	0.39	ug/L		09/02/17 01:05	
Bromoform	ND	1.0	0.87	0.26	ug/L		09/02/17 01:05	
Bromomethane	ND	1.0	2.3	0.69	ug/L		09/02/17 01:05	
Carbon disulfide	ND	1.0	0.63	0.19	ug/L		09/02/17 01:05	
Carbon tetrachloride	ND	1.0	0.90	0.27	ug/L		09/02/17 01:05	
Chlorobenzene	ND	1.0	2.5	0.75	ug/L		09/02/17 01:05	
Chloroethane	ND	1.0	1.1		ug/L		09/02/17 01:05	
Chloroform	ND	1.0	1.1	0.34	ug/L		09/02/17 01:05	
Chloromethane	ND	1.0	1.2	0.35	ug/L		09/02/17 01:05	
cis-1,2-Dichloroethene	ND	1.0	2.7		ug/L		09/02/17 01:05	
sis-1,3-Dichloropropene	ND	1.0	1.2		ug/L		09/02/17 01:05	
Dibromochloromethane	ND	1.0	1,1		ug/L		09/02/17 01:05	
Dibromomethane	ND	1.0	1.4		ug/L		09/02/17 01:05	
Dichlorodifluoromethane	ND	1.0	2.3		ug/L		09/02/17 01:05	
Ethylbenzene	ND	1.0	2.5		ug/L		09/02/17 01:05	
Methylene Chloride	ND	1.0	1.5		ug/L		09/02/17 01:05	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	0,53		ug/L		09/02/17 01:05	
Naphthalene	ND	1.0	1.4		ug/L		09/02/17 01:05	
Styrene	ND	1.0	2.4		ug/L		09/02/17 01:05	
Tetrachloroethene	ND	1.0	1.2		ug/L		09/02/17 01:05	
Tetrahydrofuran	ND	5.0	4.2		ug/L		09/02/17 01:05	
Toluene	ND	1.0	1.7		ug/L		09/02/17 01:05	
rans-1,2-Dichloroethene	ND	1.0	3.0		ug/L		09/02/17 01:05	
	112	1.0	0.0	0.00	ապուս		00/04/17/01.00	

TestAmerica Buffalo

9/12/2017

TestAmerica Job ID: 480-123334-1

Client: Waste Management
Project/Site: Hagen Farms - Groundwater

## **Client Sample ID: PW02**

Date Collected: 08/28/17 11:00 Date Received: 08/29/17 13:00

### Lab Sample ID: 480-123334-1 Matrix: Water

Method: 8260C - Volatile Organ	-	Qualifier	RL	LOQ	LOD	Unit	D	Analyzed	Dil Fa
richloroethene	ND		1.0	1.5	0.46	ug/L		09/02/17 01:05	
richlorofluoromethane	ND		1.0	2.9	0.88	ug/L		09/02/17 01:05	
finyl chloride	ND		1.0	3.0		ug/L		09/02/17 01:05	
ylenes. Total	ND		2.0	2.2	0.66	ug/L		09/02/17 01:05	
Surrogate	%Recovery Qu	alifier	Limits			Pr	epared	Analyzed	Dil Fa
,2-Dichloroethane-d4 (Surr)	100		77 - 120					09/02/17 01:05	
-Bromofluorobenzene (Surr)	98		73 - 120					09/02/17 01:05	
oluene-d8 (Surr)	97		80 - 120					09/02/17 01:05	
/lethod: 6010C - Metals (ICP)									
nalyte	Result	Qualifier	RL	LOQ	LOD	Unit	D	Analyzed	Dil Fa
luminum	ND		80.0	200	60,0	ug/L		08/30/17 20:10	
arium	42.1		6.0	2.3	0,70	ug/L		08/30/17 20:10	
alcium	80.6		5.0	0.33	0.10	mg/L		08/30/17 20:10	
hromium	ND		5.0	3,3	1.0	ug/L		08/30/17 20:10	
obalt	ND		6.0	2.1	0.63	ug/L		08/30/17 20:10	
opper	16.1		25.0	5.3	1.6	ug/L		08/30/17 20:10	
on	0.098		0.10	0.064	0.019	mg/L		08/30/17 20:10	
lagnesium	42.2		5.0	0.14	0.043	mg/L		08/30/17 20:10	
anganese	1.6	в	3.0	1,3	0.40	ug/L		08/30/17 20:10	
ickel	ND		4.0	4,2		ug/L		08/30/17 20:10	
otassium	1.0		5.0	0.33	0.10			08/30/17 20:10	
ilver	ND		3.0	5.7	1.7	ug/L		08/30/17 20:10	
odium	7.8		5.0	1.1		mg/L		08/30/17 20:10	
'anadium	ND		5.0	5.0	1.5			08/30/17 20:10	
linc	114		4.0	5.0		ug/L		08/30/17 20:10	
Method: 6020A - Metals (ICP/N	1S)								
Inalyte		Qualifier	RL	LOQ	LOD	Unit	D	Analyzed	Dil F
Antimony	ND		0.50	1.2	0.35	ug/L		08/31/17 14:39	
Arsenic	ND		2.0	0.90		ug/L		08/31/17 14:39	
Beryllium	ND		0.20	0.10	0.030	ug/L		08/31/17 14:39	
admium	ND		0.20	0.24	0.071	-		08/31/17 14:39	
Selenium	0.64	з	5.0	1.5		ug/L		08/31/17 14:39	
hallium	ND	_	0.20	0.063	0,019	-		08/31/17 14:39	
Method: 7470A - Mercury (CV/	4A)								
Analyte		Qualifier	RL	LOQ	LOD	Unit	D	Analyzed	Dil F
Mercury	ND		0.20	0.40	0.12	ug/L		08/30/17 14:41	
/lethod: SM 2340B - Total Har	dness (as CaC	CO3) by c	alculation						
Analyte		Qualifier	RL	LOQ		Unit	D	Analyzed	Dil F
Calcium and Magnesium Hardness	375		0.50	0.33	0.10	mg/L		09/07/17 14:01	
General Chemistry									-
Analyte		Qualifier	RL _	LOQ		Unit	D		Dill
Chloride	23,8		0.50	0.94		mg/L		09/05/17 12:51	
Sulfate	28.8		2.0	1.2		mg/L		09/05/17 12:51	
Alkalinity, Total	309		50.0	66.7	20.0	mg/L		08/31/17 18:15	

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Client: Waste Management Project/Site: Hagen Farms - Groundwater

TestAmerica Job ID: 480-123334-1

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Client Sample ID: PW02 Date Collected: 08/28/17 11:00 Date Received: 08/29/17 13:00					L	ab Samp	ole	ID: 480-123 Matrix:	
General Chemistry (Continued) Analyte	Result	Qualifier	RL	LÕQ	LOD	Unit	D	Analyzed	Dil Fac
Ammonia (as N)	0.11	J	0.20	0.33	0.10	mg/L		08/31/17 15:42	1
Total Kjeldahl Nitrogen	ND		0.20	0.50	0.15	mg/L as N		08/31/17 07:46	1
Nitrate Nitrite as N	10.4		0.25	0.33	0.10	mg/L as N		08/30/17 13:49	5
Chemical Oxygen Demand	ND		10.0	16.7	5,0	mg/L		08/29/17 18:27	1
Total Dissolved Solids	449		10.0	13.3	4.0	mg/L		08/30/17 16:32	1
Total Suspended Solids	ND		2,0	6.7	2.0	mg/L		08/30/17 05:10	1
Phosphorus, Total	0.028		0.20	0.016	0.0050	mg/L as P		08/31/17 16:15	1
Method: Field Sampling - Field S	Sampling								
Analyte	Result	Qualifier	RL	LOQ	LOD	Unit	D	Analyzed	Dil Fac
Color	No					NONE		08/28/17 12:00	1
Dissolved Oxygen, Field	3.1					mg/L		08/28/17 12:00	1
Field EH/ORP	34					millivolts		08/28/17 12:00	1
Odor	No					NONE		08/28/17 12:00	1
pH, Field	7.21					SU		08/28/17 12:00	1
Specific Conductance, Field	733					umhos/cm		08/28/17 12:00	1
Temperature, Field (C)	17.3					Degrees C		08/28/17 12:00	1
Turbidity, Field	No					NONE		08/28/17 12:00	1

9/12/2017



September 19, 2017

Mr. and Mrs. Scott Harried 2362 County Trunk A Stoughton, WI 53589

Dear Mr. and Mrs. Harried:

As required by the Unilateral Administrative Order for clean-up of the Hagen Farm Landfill, Waste Management of Wisconsin, Inc. (WMWI) samples your well (PW05) on an annual basis. This letter transmits the analytical data for your water supply well, which was sampled on August 28, 2017. Analytical results for water samples collected from the well are also sent to the United States Environmental Protection Agency (USEPA) and the Wisconsin Department of Natural Resources (WDNR) for review.

A brief review of the recent laboratory results for water samples collected from your well indicates the water quality is typical of groundwater in the area, and does not indicate any affect from the Hagen Farm Landfill.

I would recommend that you contact Ms. Sheila Sullivan from the USEPA if you would like any additional information regarding this correspondence. Ms. Sullivan is USEPA's representative for the Hagen Farm Landfill and provides regulatory oversight at the site. Ms. Sullivan's telephone number is (312) 886-5251.

Thank you for your cooperation.

Sincerely, Waste Management of Wisconsin, Inc.

Michael L. Peterson

Michael L. Peterson, P.E. District Manager – Closed Sites Management Group

cc: Sheila Sullivan, USEPA Gary Edelstein, WDNR WASTE MANAGEMENT

Closed Sites Management Group W124N9355 Boundary Road Menomonee Falls, WI 53051 262 253 8626 262 255 3798 Fax

## **Definitions/Glossary**

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# Client: Waste Management Project/Site: Hagen Farms - Groundwater

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### TestAmerica Job ID: 480-123334-1

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## Qualifiers

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%R	Percent Recovery
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### Client: Waste Management Project/Site: Hagen Farms - Groundwater

### Job ID: 480-123334-1

### Laboratory: TestAmerica Buffalo

### Narrative

Job Narrative 480-123334-1

### Comments

No additional comments.

### Receipt

The samples were received on 8/29/2017 1:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 3.3° C and 3.9° C.

### GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

### HPLC/IC

Method(s) 300.0: The following sample was diluted to bring the concentration of target analytes within the calibration range: PW03 (480-123334-2). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### Metals

Method(s) 6010C: The Method Blank for preparation batch 480-374525 and analytical batch 480-374754 contained Total Manganese above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples PW02 (480-123334-1), PW03 (480-123334-2), PW04 (480-123334-3), PW05 (480-123334-4) and PW09 (480-123334-5) was not performed.

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Method(s) 6010C: The total Calcium, and Potassium results reported for the following sample do not concur with results previously reported for this site: PW09 (480-123334-5). Reanalysis was performed, and the result(s) confirmed.

Method(s) 6020A: The total Arsenic results reported for the following samples do not concur with results previously reported for this site: PW02 (480-123334-1) and PW09 (480-123334-5). Reanalysis was performed, and the result(s) confirmed.

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Method(s) 335.4, 9012B, SM 4500 CN E: The laboratory control sample (LCS) for preparation batch 480-375031 and analytical batch 480-375242 recovered outside control limits for the following analytes: Cyanide. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.PW02 (480-123334-1), PW03 (480-123334-2), PW04 (480-123334-3), PW05 (480-123334-4) and PW09 (480-123334-5)

Method(s) 353.2: The results reported for the following sample do not concur with results previously reported for this site: PW09 (480-123334-5). Reanalysis was performed, and the result(s) confirmed.

Method(s) SM 4500 P E: The results reported for the following samples do not concur with results previously reported for this site: PW02 (480-123334-1) and PW04 (480-123334-3). Reanalysis was performed, and results greater than historically reported were confirmed.

Method(s) SM 4500 P E: The method blank for analytical batch 480-374719 contained Total Phosphorus above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed. PW05 (480-123334-4)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TestAmerica Job ID: 480-123334-1

Client: Waste Management
Project/Site: Hagen Farms - Groundwater

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lient Sample ID: PW05 ate Collected: 08/28/17 11:3 ate Received: 08/29/17 13:0	30			L	.ab Sa	mple	ID: 480-123334-4 Matrix: Wate			
Method: 8260C SIM - Volati			· · · · ·	• • • • • • • • • • • • • • • • • • • •						
Analyte	Result Qualifier	RL	LOQ	LOD	Unit	D	Analyzed	Dil Fa		
Vinyl chloride	ND	0.020	0.013	0.0040			08/31/17 14:24			
Surrogate	%Recovery Qualifier	Limits			Prei	ared	Analyzed	Dil Fa		
TBA-d9 (Surr)	83	50 150			1107		08/31/17 14:24			
Dibromofluoromethane (Surr)	102	50 - 150					08/31/17 14:24			
Method: 8260C - Volatile O Analyte	rganic Compounds by G Result Qualifier	C/MS RL	LOQ	LOD	Unit		Applyred	Dito		
1,1,1-Trichloroethane	ND ND		2.7		ug/L	D	Analyzed	Dil Fa		
1,1,2,2-Tetrachloroethane	ND	1.0					09/02/17 02:14			
1,1,2-Trichloroethane	ND	1.0	0.70		ug/L		09/02/17 02:14			
1,1-Dichloroethane	ND	1.0	0.77	0.23	-		09/02/17 02:14			
1,1-Dichloroethene	ND	1.0	1.3		ug/L		09/02/17 02:14			
1,2,4-Trichlorobenzene	ND	1.0	0.97		ug/L		09/02/17 02:14			
1,2-Dibromo-3-Chloropropane	ND	1,0	1.4		ug/L		09/02/17 02:14			
1,2-Dibromoethane (EDB)	ND		1.3		ug/L		09/02/17 02:14			
1,2-Dichlorobenzene	ND	1.0	2.4		ug/L		09/02/17 02:14			
1,2-Dichloroethane		1.0	2.6	0.79	-		09/02/17 02:14			
1,2-Dichloropropane	ND	1.0	0.70	0.21	+		09/02/17 02:14			
	ND	1.0	2,4		ug/L		09/02/17 02:14			
1,3-Dichlorobenzene	ND	1.0	2.6		ug/L		09/02/17 02:14			
1,4-Dichlorobenzene	ND	1,0	2.8		ug/L		09/02/17 02:14			
2-Butanone (MEK)	ND	10	4.4		ug/L		09/02/17 02:14			
2-Hexanone	ND	5.0	4.1		ug/L		09/02/17 02:14			
4-Methyl-2-pentanone (MIBK)	ND	5.0	7,0	2.1	ug/L		09/02/17 02:14			
Acetone	ND	10	10	3.0	ug/L		09/02/17 02:14			
Benzene	ND	1.0	1.4	0.41	ug/L		09/02/17 02:14			
Bromodichloromethane	ND	1.0	1.3	0,39	-		09/02/17 02:14			
Bromoform	ND	1.0	0.87	0.26	ug/L		09/02/17 02:14			
Bromomethane	ND	1.0	2.3	0.69	ug/L		09/02/17 02:14			
Carbon disulfide	ND	1.0	0.63	0.19	ug/L		09/02/17 02:14			
Carbon tetrachloride	ND	1.0	0.90	0.27	ug/L		09/02/17 02:14			
Chlorobenzene	ND	1.0	2.5	0.75	ug/L		09/02/17 02:14			
Chloroethane	ND	1.0	1.1	0.32	ug/L		09/02/17 02:14			
Chloroform	ND	1.0	1.1	0.34	ug/L		09/02/17 02:14			
Chloromethane	ND	1.0	1.2	0.35	ug/L		09/02/17 02:14			
cis-1,2-Dichloroethene	ND	1.0	2.7	0.81	ug/L		09/02/17 02:14			
cis-1,3-Dichloropropene	ND	1.0	1.2	0.36	ug/L		09/02/17 02:14			
Dibromochloromethane	ND	1.0	1.1	0.32	ug/L		09/02/17 02:14			
Dibromomethane	ND	1.0	1.4	0.41	ug/L		09/02/17 02:14			
Dichlorodifluoromethane	ND	1.0	2.3	0.68	ug/L		09/02/17 02:14			
Ethylbenzene	ND	1.0	2.5	0.74	ug/L		09/02/17 02:14			
Methylene Chloride	ND	1.0	1.5	0.44	ug/L		09/02/17 02:14			
Methyl-t-Butyl Ether (MTBE)	ND	1.0	0.53	0.16	ug/L		09/02/17 02:14			
Naphthalene	ND	1.0	1.4	0.43	ug/L		09/02/17 02:14			
Styrene	ND	1.0	2.4	0.73	ug/L		09/02/17 02:14			
Tetrachloroethene	ND	1.0	1,2		ug/L		09/02/17 02:14			
Tetrahydrofuran	ND	5.0	4.2		ug/L		09/02/17 02:14			
Toluene	ND	1.0	1.7		ug/L		09/02/17 02:14			
trans-1,2-Dichloroethene	ND	1.0	3.0		ug/L		09/02/17 02:14			
trans-1,3-Dichloropropene	ND	1.0	1,2	0.37	-		09/02/17 02:14			

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Client: Waste Management Project/Site: Hagen Farms - Groundwater

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TestAmerica Job ID: 480-123334-1

Client Sample ID: PW05 pate Collected: 08/28/17 11:3 pate Received: 08/29/17 13:0					L	ad Sai	mpie	ID: 480-123 Matrix:	
Method: 8260C - Volatile Or			/MS (Continue						
Analyte		Qualifier		LOQ	LOD		D	Analyzed	Dil Fa
Trichloroethene	ND		1.0	1.5	0.46	*		09/02/17 02:14	
Trichlorofluoromethane	ND		1.0	2.9	0.88	-		09/02/17 02:14	
Vinyl chloride	ND		1.0	3.0	0.90			09/02/17 02:14	
Xylenes, Total	ND		2.0	2.2	0.66	ug/L		09/02/17 02:14	
Surrogate	%Recovery Qu	alifier	Limits			Prep	ared	Analyzed	Dil F
1,2-Dichloroethane-d4 (Surr)	101		77 - 120					09/02/17 02:14	
4-Bromofluorobenzene (Surr)	96		73 - 120					09/02/17 02:14	
Toluene-d8 (Surr)	98		80 - 120					09/02/17 02:14	
Method: 6010C - Metals (ICI	•								
Analyte		Qualifier	RL	LOQ	LOD		<u>D</u>	Analyzed	DilF
Aluminum	ND		80.0	200	60.0	-		08/30/17 20:35	
Barium	22.6		6.0	2.3	0.70	-		08/30/17 20:35	
	64.1		5.0	0.33		mg/L		08/30/17 20:35	
Chromium	ND		5.0	3.3		ug/L		08/30/17 20:35	
Cobalt	ND		6.0	2.1	0.63			08/30/17 20:35	
Copper	3.4		25.0	5.3		ug/L		08/30/17 20:35	
Iron	0.051	J	0.10	0.064	0.019	-		08/30/17 20:35	
Magnesium	35.9		5.0	0.14	0.043	-		08/30/17 20:35	
Manganese	1.3 ND	в	3.0	1.3		ug/L		08/30/17 20:35	
Nickel			4.0	4.2		ug/L		08/30/17 20:35	
Potassium	1.3 ND		5.0	0.33		mg/L		08/30/17 20:35	
Silver			3.0	5.7		ug/L		08/30/17 20:35	
Sodium	2.6 ND		5.0	1.1 ೯.0		mg/L		08/30/17 20:35	
Vanadium Zin -			5.0	5.0		ug/L		08/30/17 20:35 08/30/17 20:35	
Zinc	16.3		4.0	5.0	1.5	ug/L		06/30/17 20.33	
Method: 6020A - Metals (IC					1.00		-		<b>.</b>
Analyte	Result ND	Qualifier		LOQ 1,2		Unit	D	Analyzed 08/31/17 14:55	DilF
Antimony Arsenic	ND		0.50 2.0	0.90		ug/L ug/L		08/31/17 14:55	
	ND		0.20	0.90	0.030				
Beryllium Cadmium	ND		0.20	0.10	0.030			08/31/17 14:55 08/31/17 14:55	
Selenium	1.1		5.0	0.24 1.5		ug/L ug/L		08/31/17 14:55	
Thallium	ND	5	0.20	0.063	0.019			08/31/17 14:55	
: Method: 7470A - Mercury ((	CVAA)								
Analyte	•	Qualifier	RL	LOQ	LOD	Unit	D	Analyzed	Dil F
Mercury	ND		0.20	0.40	0.12	ug/L		08/30/17 14:47	
Method: SM 2340B - Total I Analyte		CO3) by ( Qualifier	calculation RL	LOQ	מסו	Unit	D	Analyzed	D(I F
Calcium and Magnesium Hardn			0.50	0,33		mg/L	<b>Ľ</b>	09/07/17 14:01	
General Chemistry									
Analyte	Result	Qualifier	RL	LOQ	LOD	Unit	D	Analyzed	Dil F
Chloride	3.3		0.50	0.94		mg/L		09/05/17 13:15	
Sulfate	20.6		2.0	1.2		mg/L		09/05/17 13:15	
Alkalinity, Total	313		50.0	66.7	20.0	mg/L		08/31/17 17:17	
Total Cyanide	ND	*	0.020	0.017	0,0050	-		09/05/17 11:50	

TestAmerica Buffalo

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TestAmerica Job ID: 480-123334-1

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Client: Waste Management Project/Site: Hagen Farms - Groundwater

### Client Sample ID: PW05 Date Collected: 08/28/17 11:30

### Lab Sample ID: 480-123334-4 Matrix: Water

General Chemistry (Continued Analyte	/	Qualifier	RL	LOQ	ιön	Unit	D	Analyzed	Dil Fac
Ammonia (as N)	0.19		0.20	0.33		mg/L		08/31/17 15:44	1
Total Kjeldahl Nitrogen	ND		0.20	0.50		mg/L as N		08/31/17 07:46	1
Nitrate Nitrite as N	1.1		0.050	0.067	0,020	mg/L as N		08/30/17 13:08	1
Chemical Oxygen Demand	ND		10.0	16.7	5.0	mg/L		08/29/17 18:27	1
Total Dissolved Solids	310		10.0	13,3	4.0	mg/L		08/31/17 23:07	1
Total Suspended Solids	ND		2.0	6,7	2.0	mg/L		08/30/17 05:10	1
Phosphorus, Total	0.013	JB	0.20	0.016	0.0050	mg/L as P		08/30/17 20:20	1
Mothod: Field Compling - Field	Compling								
	• •	0	5	100	1.00		_	A . A . I	<b>5</b> 4 <b>F</b>
Analyte	Result	Qualifier	RL _	LOQ	LOD	Unit	D	Analyzed	Dil Fac
Analyte Color	Result No	Qualifier	RL _	LOQ	LOD	NONE	D	08/28/17 12:30	Dil Fac
Analyte Color Dissolved Oxygen, Field	Result No 3.1	Qualifier	RL	LOQ	LOD	NONE mg/L	<u>D</u>	08/28/17 12:30 08/28/17 12:30	Dil Fac 1 1
Analyte Color Dissolved Oxygen, Field	Result No	Qualifier	RL _	LOQ	LOD	NONE mg/L millivolts	D	08/28/17 12:30 08/28/17 12:30 08/28/17 12:30	Dil Fac 1 1 1
Analyte Color Dissolved Oxygen, Field Field EH/ORP	Result No 3.1	Qualifier	RL	LOQ	LOD	NONE mg/L	<u>D</u>	08/28/17 12:30 08/28/17 12:30	Dil Fac 1 1 1 1
Analyte Color Dissolved Oxygen, Field Field EH/ORP	Result No 3.1 99	Qualifier	<u></u>	LOQ	LOD	NONE mg/L millivolts	D	08/28/17 12:30 08/28/17 12:30 08/28/17 12:30	Dil Fac 1 1 1 1 1
Analyte Color Dissolved Oxygen, Field Field EH/ORP Odor	Result No 3.1 99 No	Qualifier	<u></u>	LOQ	LOD	NONE mg/L millivolts NONE	<u>D</u>	08/28/17 12:30 08/28/17 12:30 08/28/17 12:30 08/28/17 12:30	Dil Fac 1 1 1 1 1 1
• •	Result No 3.1 99 No 7.38		<u></u>	LOQ	LOD	NONE mg/L millivolts NONE SU	<u>D</u>	08/28/17 12:30 08/28/17 12:30 08/28/17 12:30 08/28/17 12:30 08/28/17 12:30	Dil Fac 1 1 1 1 1 1 1



September 19, 2017

Stoughton Conservation Club 984 Collins Road Stoughton, WI 53589

To whom it may concern:

As required by the Unilateral Administrative Order for clean-up of the Hagen Farm Landfill, Waste Management of Wisconsin, Inc. (WMWI) samples the well at the above referenced facility (PW09) on an annual basis. This letter transmits the analytical data for that water supply well, which was sampled on August 28, 2017. Analytical results for water samples collected from the well are also sent to the United States Environmental Protection Agency (USEPA) and the Wisconsin Department of Natural Resources (WDNR) for review.

A brief review of the recent laboratory results for water samples collected from that well indicates the water quality is typical of groundwater in the area, and does not indicate any affect from the Hagen Farm Landfill. Nitrate-nitrite was present in the sample at a concentration consistent with previous samples and is generally associated with, or related to, farming activities. The concentration is also consistent with the results from analysis of a number of other samples throughout this area, and is above the State of Wisconsin drinking water criteria.

I would recommend that you contact Ms. Sheila Sullivan from the USEPA if you would like any additional information regarding this correspondence. Ms. Sullivan is USEPA's representative for the Hagen Farm Landfill and provides regulatory oversight at the site. Ms. Sullivan's telephone number is (312) 886-5251.

Thank you for your cooperation.

Sincerely, Waste Management of Wisconsin, Inc.

Michael L. Peterson

Michael L. Peterson, P.E. District Manager – Closed Sites Management Group

cc: Sheila Sullivan, USEPA Gary Edelstein, WDNR

### WASTE MANAGEMENT

Closed Sites Management Group W124N9355 Boundary Road Menomonee Falls, WI 53051 262 253 8626 262 255 3798 Fax

## **Definitions/Glossary**

### Client: Waste Management Project/Site: Hagen Farms - Groundwater

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### Qualifiers

### GC/MS VOA Qualifier Description

J	Reported value was between the limit of detection and the limit of quantitation.
Metals	
Qualifier	Qualifier Description
В	Compound was found in the blank and sample.
J	Reported value was between the limit of detection and the limit of quantitation.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
General C	hemistry
Qualifier	Qualifier Description
J	Reported value was between the limit of detection and the limit of quantitation.
•	LCS or LCSD is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E1	MS and/or MSD Recovery is outside acceptance limits

. .....

- F1 MS and/or MSD Recovery is outside acceptance limits.
- B Compound was found in the blank and sample.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
D	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

### Client: Waste Management Project/Site: Hagen Farms - Groundwater

### Job ID: 480-123334-1

### Laboratory: TestAmerica Buffalo

#### Narrative

Job Narrative 480-123334-1

### Comments

No additional comments.

#### Receipt

The samples were received on 8/29/2017 1:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 3.3° C and 3.9° C.

### GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

### HPLC/IC

Method(s) 300.0: The following sample was diluted to bring the concentration of target analytes within the calibration range: PW03 (480-123334-2). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

Method(s) 6010C: The Method Blank for preparation batch 480-374525 and analytical batch 480-374754 contained Total Manganese above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples PW02 (480-123334-1), PW03 (480-123334-2), PW04 (480-123334-3), PW05 (480-123334-4) and PW09 (480-123334-5) was not performed.

Method(s) 6010C: The total Zinc results reported for the following sample do not concur with results previously reported for this site: PW04 (480-123334-3). Reanalysis was performed, and the result(s) confirmed.

Method(s) 6010C: The total Calcium, and Potassium results reported for the following sample do not concur with results previously reported for this site: PW09 (480-123334-5). Reanalysis was performed, and the result(s) confirmed.

Method(s) 6020A: The total Arsenic results reported for the following samples do not concur with results previously reported for this site: PW02 (480-123334-1) and PW09 (480-123334-5). Reanalysis was performed, and the result(s) confirmed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### **General Chemistry**

Method(s) 335.4, 9012B, SM 4500 CN E: The laboratory control sample (LCS) for preparation batch 480-375031 and analytical batch 480-375242 recovered outside control limits for the following analytes: Cyanide. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.PW02 (480-123334-1), PW03 (480-123334-2), PW04 (480-123334-3), PW05 (480-123334-4) and PW09 (480-123334-5)

Method(s) 353.2: The results reported for the following sample do not concur with results previously reported for this site: PW09 (480-123334-5). Reanalysis was performed, and the result(s) confirmed.

Method(s) SM 4500 P E: The results reported for the following samples do not concur with results previously reported for this site: PW02 (480-123334-1) and PW04 (480-123334-3). Reanalysis was performed, and results greater than historically reported were confirmed.

Method(s) SM 4500 P E: The method blank for analytical batch 480-374719 contained Total Phosphorus above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed. PW05 (480-123334-4)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TestAmerica Job ID: 480-123334-1

Client: Waste Management
Project/Site: Hagen Farms - Groundwater

Client Sample ID: PW09 Date Collected: 08/28/17 11:45 Date Received: 08/29/17 13:00						Lab Sample ID: 480-123334- Matrix: Wate							
Method: 8260C SIM - Volati	le Organic Compounds ((												
Analyte Vinyl chloride	Result Qualifier	RL	LOQ	LOD		D	Analyzed	Dil Fa					
Vinyi chionde	ND	0.020	0.013	0.0040	ug/L		08/31/17 14:49						
Surrogate	%Recovery Qualifier	Limits			Pror	ared	Analyzed	Dil Fa					
TBA-d9 (Surr)	84	50 - 150			Lich		08/31/17 14:49	DITA					
Dibromofluoromethane (Surr)	102	50 - 150					08/31/17 14:49						
Method: 8260C - Volatile Or Analyte	rganic Compounds by GC Result Qualifier					_		_					
1,1,1-Trichloroethane	ND ND	RL	LOQ	LOD		<b>D</b>	Analyzed	Dil Fae					
1,1,2,2-Tetrachloroethane		1.0	2.7	0.82	•		09/02/17 02:37						
1,1,2-Trichloroethane	ND	1.0	0.70	0.21	-		09/02/17 02:37						
1,1-Dichloroethane	ND	1.0	0,77	0.23	•		09/02/17 02:37						
1, 1-Dichloroethene	ND	1.0	1.3	0.38	*		09/02/17 02:37						
1,2,4-Trichlorobenzene	ND ND	1.0	0.97	0.29			09/02/17 02:37						
1,2-Dibromo-3-Chloropropane		1.0	1.4	0.41	-		09/02/17 02:37						
1,2-Dibromoethane (EDB)	ND ND	1.0	1.3	0.39	-		09/02/17 02:37						
1,2-Dichlorobenzene	ND	1.0	2.4	0.73	•		09/02/17 02:37						
1,2-Dichloroethane	ND	1.0	2.6	0.79	-		09/02/17 02:37						
1,2-Dichloropropane	ND	1.0	0.70	0.21	-		09/02/17 02:37						
1,3-Dichlorobenzene	ND	1.0	2.4	0.72	-		09/02/17 02:37						
1,4-Dichlorobenzene	ND	1.0	2.6	0.78	-		09/02/17 02:37						
2-Butanone (MEK)	ND	1.0	2.8	0.84	-		09/02/17 02:37						
2-Hexanone (MER)	ND	10	4.4		ug/L		09/02/17 02:37						
4-Methyl-2-pentanone (MIBK)	ND	5.0	4.1		ug/L		09/02/17 02:37	-					
Acetone		5.0	7.0		ug/L		09/02/17 02:37						
Benzene	3.0 J ND	10	10		ug/L		09/02/17 02:37						
Bromodichloromethane		1.0	1.4	0.41	-		09/02/17 02:37						
Bromoform	ND	1.0	1.3	0.39	•		09/02/17 02:37	1					
Bromomethane	ND	1.0	0.87	0.26	+		09/02/17 02:37						
Carbon disulfide	ND	1.0	2.3	0.69	-		09/02/17 02:37						
Carbon tetrachloride	ND	1.0	0.63	0.19	-		09/02/17 02:37	1					
Chlorobenzene	ND	1.0	0.90	0.27			09/02/17 02:37	1					
Chloroethane	ND	1.0	2.5	0.75	•		09/02/17 02:37						
Chloroform	ND	1.0	1.1	0.32	-		09/02/17 02:37	-					
Chloromethane	ND ND	1.0	1.1	0.34			09/02/17 02:37	1					
cis-1,2-Dichloroethene		1.0	1.2	0.35	-		09/02/17 02:37	1					
cis-1,3-Dichloropropene	ND	1.0	2.7	0.81	-		09/02/17 02:37	-					
Dibromochloromethane	ND	1.0	1.2	0.36	-		09/02/17 02:37	1					
Dibromocniorometnarie	ND	1.0	1,1	0.32	-		09/02/17 02:37	1					
Dichlorodifluoromethane	ND	1.0	1.4	0.41	-		09/02/17 02:37	1					
Ethylbenzene	ND	1.0	2.3	0.68	-		09/02/17 02:37	1					
Eurypenzene Methylene Chloride	ND	1.0	2.5	0.74	-		09/02/17 02:37	1					
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.5	0.44	-		09/02/17 02:37	1					
Naphthalene	ND ND	1.0	0,53	0,16	-		09/02/17 02:37						
Styrene		1.0	1.4	0.43	•		09/02/17 02:37	1					
Tetrachloroethene	ND	1.0	2.4	0.73	+		09/02/17 02:37	1					
Tetrahydrofuran	ND	1.0	1.2	0.36	-		09/02/17 02:37	-					
Toluene	ND	5.0	4.2		ug/L		09/02/17 02:37	1					
trans-1,2-Dichloroethene	ND	1.0	1.7	0.51	-		09/02/17 02:37	1					
trans-1,3-Dichloropropene	ND	1.0	3.0	0.90	ug/L		09/02/17 02:37						

 $(y) \in \mathbb{R}^{n} \setminus Y$ 

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ilient: Waste Management roject/Site: Hagen Farms - Gr	oundwater							lob ID: 480-12						
Client Sample ID: PW09 Date Collected: 08/28/17 11:45 Date Received: 08/29/17 13:00							Lab Sample ID: 480-123334- Matrix: Wate							
Method: 8260C - Volatile Org		ds by GC Qualifier	/MS (Continue RL	ed) LOQ	LOD	linit	D	Analyzed	Dil Fa					
Trichloroethene	ND	guunnei	1.0	1.5	0.46			09/02/17 02:37						
Trichlorofluoromethane	ND		1.0	2,9	0.88			09/02/17 02:37						
/inyl chloride	ND		1,0	3.0	0.90			09/02/17 02:37						
(ylenes, Total	ND		2.0	2.2	0.66	-		09/02/17 02:37						
Surrogate	%Recovery Qu	ıalifier	Limits			Prep	oared	Analyzed	Dil F					
,2-Dichloroethane-d4 (Surr)	104		77 - 120			······		09/02/17 02:37						
I-Bromofluorobenzene (Surr)	96		73 - 120					09/02/17 02:37						
Toluene-d8 (Surr)	100		80 - 120					09/02/17 02:37						
Method: 6010C - Metals (ICF	<sup>&gt;</sup> )													
Analyte		Qualifier	RL	LOQ	LOD	Unit	D	Analyzed	Dil Fa					
Aluminum	ND		80,0	200	60.0	ug/L	······	08/30/17 20:39						
3arium -	ND		6.0	2,3	0.70	ug/L		08/30/17 20:39						
Calcium	0.11	J	5.0	0.33	0.10	mg/L		08/30/17 20:39						
Chromium	ND		5,0	3.3	1.0	ug/L		08/30/17 20:39						
Cobalt	ND		6.0	2.1	0.63	ug/L		08/30/17 20:39						
Copper	36.1		25.0	5,3	1,6	ug/L		08/30/17 20:39						
ron	0.029	J	0.10	0.064	0.019	mg/L		08/30/17 20:39						
Magnesium	0.12	J	5.0	0.14	0.043	mg/L		08/30/17 20:39						
Manganese	0.96	JB	3.0	1.3	0.40	ug/L		08/30/17 20:39						
Nickel	ND		4.0	4.2	1.3	ug/L		08/30/17 20:39						
Potassium	ND		5.0	0.33	0.10	mg/L		08/30/17 20:39						
Silver	ND		3.0	5.7	1.7	ug/L		08/30/17 20:39						
Sodium	175		5.0	1,1	0.32	mg/L		08/30/17 20:39						
Vanadium	ND		5.0	5.0	1.5	ug/L		08/30/17 20:39						
Zinc	3.5	J	4.0	5.0	1.5	ug/L		08/30/17 20:39						
Method: 6020A - Metals (ICI	P/MS)													
Analyte		Qualifier	RL	LOQ	LOD	Unit	D	Analyzed	Dil F					
Antimony	ND		0.50	1.2		ug/L	_	08/31/17 15:01						
Arsenic	0.32	J	2.0	0.90		ug/L		08/31/17 15:01						
Beryllium	ND		0.20	0.10	0.030			08/31/17 15:01						
Cadmium	ND		0.20	0.24	0.071	-		08/31/17 15:01						
Selenium	0.78	J	5.0	1.5		ug/L		08/31/17 15:01						
Thallium	ND		0.20	0.063	0.019	ug/L		08/31/17 15:01						
Method: 7470A - Mercury (C		Qualifia	DI.	100	1.05	ا ا	-	A some base of all	<b>D</b> 11 <b>m</b>					
Analyte	Result ND	Qualifier		LOQ 0.40			D		DilF					
Mercury	UN		0.20	0.40	U.12	ug/L		08/30/17 14:49						
Method: SM 2340B - Total H Analyte		CO3) by o Qualifier	calculation <sub>RL</sub>	LOQ	LOD	Unit	D	Analyzed	Dil F					
Calcium and Magnesium Hardne			0.50	0.33		mg/L		09/07/17 14:01						
General Chemistry														
Analyte	Result	Qualifier	RL	LOQ	LOD	Unit	D	Analyzed	Dil F					
Chloride	21.8		0.50	0.94		mg/L		09/05/17 13:23						
Sulfate	23.2		2.0	1.2		mg/L		09/08/17 11:12						
Alkalinity, Total	357		50.0	66.7		mg/L		08/31/17 17:17						
Total Cyanide	ND		0.020	0.017		mg/L		09/05/17 11:52						

 $(r_{1}, \ldots, r_{n}) \in \mathbb{R}^{n}$ 

Client: Waste Management Project/Site: Hagen Farms - Groundwater

TestAmerica Job ID: 480-123334-1

Client Sample ID: PW09         Lab Sample ID: 480-1233           Date Collected: 08/28/17 11:45         Matrix: V           Date Received: 08/29/17 13:00         Matrix: V									
General Chemistry (Continued) Analyte		Qualifier	RL	LOQ	LOD	Unit	Ð	Analyzed	Dil Fac
Ammonia (as N)	0.16	J	0.20	0.33	0.10	mg/L		08/31/17 15:47	1
Total Kjeldahl Nitrogen	ND		0.20	0.50	0.15	mg/L as N		08/31/17 08:32	1
Nitrate Nitrite as N	6.1		0.25	0.33	0.10	mg/L as N		08/31/17 11:51	5
Chemical Oxygen Demand	ND		10.0	16,7	5.0	mg/L		08/29/17 18:27	1
Total Dissolved Solids	453		10.0	13.3	4.0	mg/L		08/31/17 23:07	1
Total Suspended Solids	ND		2.0	6.7	2.0	mg/L		08/30/17 05:10	1
Phosphorus, Total	0.015	J	0.20	0.016	0.0050	mg/L as P		08/30/17 10:40	1
Method: Field Sampling - Field	Sampling								
Analyte		Qualifier	RL	LOQ	LOD	Unit	D	Analyzed	Dil Fac
Color	No					NONE		08/28/17 12:45	1
Dissolved Oxygen, Field	5.6					mg/L		08/28/17 12:45	1
Field EH/ORP	81					millivolts		08/28/17 12:45	1
Odor	No					NONE		08/28/17 12:45	1
pH, Field	7.47					SU		08/28/17 12:45	1
Specific Conductance, Field	730					umhos/cm		08/28/17 12:45	1
Temperature, Field (C)	14.9					Degrees C		08/28/17 12:45	1
Turbidity, Field	No					NONE		08/28/17 12:45	1

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TestAmerica Buffalo

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September 19, 2017

Mr. R. Gullickson 1036 Collins Road Stoughton, WI 53589

Dear Mr. Gullickson:

As required by the Unilateral Administrative Order for clean-up of the Hagen Farm Landfill, Waste Management of Wisconsin, Inc. (WMWI) samples your well (PW04) on an annual basis. This letter transmits the analytical data for your water supply well, which was sampled on August 28, 2017. Analytical results for water samples collected from the well are also sent to the United States Environmental Protection Agency (USEPA) and the Wisconsin Department of Natural Resources (WDNR) for review.

A brief review of the recent laboratory results for water samples collected from your well indicates the water quality is typical of groundwater in the area, and does not indicate any affect from the Hagen Farm Landfill. Nitrate-nitrite was present in the sample at a concentration consistent with previous samples and is generally associated with, or related to, farming activities. The concentration is also consistent with the results from analysis of a number of other samples throughout this area and is above state and federal drinking water criteria. Iron is also present in the sample, and groundwater throughout this area, at concentrations consistent with historical data and above the State of Wisconsin groundwater criteria. The presence of this element at the identified concentrations may cause staining and taste concerns.

I would recommend that you contact Ms. Sheila Sullivan from the USEPA if you would like any additional information regarding this correspondence. Ms. Sullivan is USEPA's representative for the Hagen Farm Landfill and provides regulatory oversight at the site. Ms. Sullivan's telephone number is (312) 886-5251.

Thank you for your cooperation.

Sincerely, Waste Management of Wisconsin, Inc.

Michael L. Peterson

Michael L. Peterson, P.E. District Manager – Closed Sites Management Group

cc: Sheila Sullivan, USEPA Gary Edelstein, WDNR WASTE MANAGEMENT

Closed Sites Management Group W124N9355 Boundary Road Menomonee Falls, WI 53051 262 253 8626 262 255 3798 Fax

## **Definitions/Glossary**

### Client: Waste Management Project/Site: Hagen Farms - Groundwater

### TestAmerica Job ID: 480-123334-1

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## Qualifiers

 $\{f^{i_1}\}_{i_1 \in \mathcal{V}}$ 

GC/MS VO	A
Qualifier	Qualifier Description
1	Reported value was between the limit of detection and the limit of quantitation.
Metals	
Qualifier	Qualifier Description
В	Compound was found in the blank and sample.
J	Reported value was between the limit of detection and the limit of quantitation.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
General C	hemistry
Qualifier	Qualifier Description
J	Reported value was between the limit of detection and the limit of quantitation.
*	LCS or LCSD is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD Recovery is outside acceptance limits.
в	Compound was found in the blank and sample

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B Compound was found in the blank and sample.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL.	Method Detection Limit
ML.	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client: Waste Management Project/Site: Hagen Farms - Groundwater

### Job ID: 480-123334-1

### Laboratory: TestAmerica Buffalo

### Narrative

Job Narrative 480-123334-1

### Comments

No additional comments.

#### Receipt

The samples were received on 8/29/2017 1:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 3.3° C and 3.9° C.

### GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### HPLC/IC

Method(s) 300.0: The following sample was diluted to bring the concentration of target analytes within the calibration range: PW03 (480-123334-2). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

Method(s) 6010C: The Method Blank for preparation batch 480-374525 and analytical batch 480-374754 contained Total Manganese above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples PW02 (480-123334-1), PW03 (480-123334-2), PW04 (480-123334-3), PW05 (480-123334-4) and PW09 (480-123334-5) was not performed.

Method(s) 6010C: The total Zinc results reported for the following sample do not concur with results previously reported for this site: PW04 (480-123334-3), Reanalysis was performed, and the result(s) confirmed.

Method(s) 6010C: The total Calcium, and Potassium results reported for the following sample do not concur with results previously reported for this site: PW09 (480-123334-5). Reanalysis was performed, and the result(s) confirmed.

Method(s) 6020A: The total Arsenic results reported for the following samples do not concur with results previously reported for this site: PW02 (480-123334-1) and PW09 (480-123334-5). Reanalysis was performed, and the result(s) confirmed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### **General Chemistry**

Method(s) 335.4, 9012B, SM 4500 CN E: The laboratory control sample (LCS) for preparation batch 480-375031 and analytical batch 480-375242 recovered outside control limits for the following analytes: Cyanide. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.PW02 (480-123334-1), PW03 (480-123334-2), PW04 (480-123334-3), PW05 (480-123334-4) and PW09 (480-123334-5)

Method(s) 353.2: The results reported for the following sample do not concur with results previously reported for this site: PW09 (480-123334-5). Reanalysis was performed, and the result(s) confirmed.

Method(s) SM 4500 P E: The results reported for the following samples do not concur with results previously reported for this site: PW02 (480-123334-1) and PW04 (480-123334-3). Reanalysis was performed, and results greater than historically reported were confirmed.

Method(s) SM 4500 P E: The method blank for analytical batch 480-374719 contained Total Phosphorus above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed. PW05 (480-123334-4)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TestAmerica Job ID: 480-123334-1

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Client: Waste Management Project/Site: Hagen Farms - Groundwater

TestAmerica Job ID: 480-123334-1

Client Sample ID: PW04 Lab Sample ID: 48 Date Collected: 08/28/17 12:30 Date Received: 08/29/17 13:00											
Method: 8260C SIM - Volatile Organic Compounds (GC/MS)											
Vinyl chloride	Result Qualifier					D		Dil Fa			
viriyi chionde	NU	0.020	0.013	0.0040	ug/L		08/31/17 14:00				
Surrogate	%Recovery Qualifier	Limits			Pre	pared	Analyzed	Dil Fa			
TBA-d9 (Surr)	87	50 - 150					08/31/17 14:00				
Dibromofluoromethane (Surr)	104	50 - 150					08/31/17 14:00				
Method: 8260C - Volatile Or Analyte	rganic Compounds by GC Result Qualifier	C/MS RL	100		1 3 14		Augusta d				
1,1,1-Trichloroethane			LOQ 		Unit ug/L	D	Analyzed 09/02/17 01:51	Dil Fa			
1,1,2,2-Tetrachloroethane	ND	1.0	0.70								
1,1,2-Trichloroethane	ND	1.0			ug/L		09/02/17 01:51				
1.1-Dichloroethane	ND	1.0	0.77		ug/L		09/02/17 01:51				
1.1-Dichloroethene	ND	1.0	1.3 0.97		ug/L		09/02/17 01:51				
1,2,4-Trichlorobenzene	ND	1.0			ug/L		09/02/17 01:51				
1,2-Dibromo-3-Chloropropane	ND	1.0	1.4		ug/L		09/02/17 01:51				
1,2-Dibromoethane (EDB)	ND	1.0	1.3		ug/L		09/02/17 01:51				
1,2-Dichlorobenzene	ND	1.0	2.4		ug/L		09/02/17 01:51				
1,2-Dichloroethane	ND	1.0	2.6		ug/L		09/02/17 01:51				
1,2-Dichloropropane	ND	1.0	0.70		ug/L		09/02/17 01:51				
1,3-Dichlorobenzene	ND	1.0	2.4		ug/L		09/02/17 01:51				
1,4-Dichlorobenzene	ND		2.6		ug/L		09/02/17 01:51				
2-Butanone (MEK)	ND	1.0 10	2.8		ug/L		09/02/17 01:51				
2-Hexanone (MERC)	ND	5.0	4.4		ug/L		09/02/17 01:51				
1-Methyl-2-pentanone (MIBK)	ND	5.0 5.0	4.1		ug/L		09/02/17 01:51				
Acetone	ND		7.0	2.1	•		09/02/17 01:51				
Benzene	ND	10	10		ug/L		09/02/17 01:51				
Bromodichloromethane	ND	1.0	1.4		ug/L		09/02/17 01:51				
Bromoform		1.0	1.3		ug/L.		09/02/17 01:51				
Bromomethane	ND ND	1.0	0.87		ug/L		09/02/17 01:51				
Carbon disulfide	ND	1.0	2.3		ug/L		09/02/17 01:51				
Carbon tetrachloride	ND	1.0	0.63		ug/L		09/02/17 01:51				
Chlorobenzene	ND	1.0	0.90		ug/L		09/02/17 01:51				
Chloroethane	ND	1.0	2.5		ug/L		09/02/17 01:51				
Chloroform	ND	1.0	1.1		ug/L		09/02/17 01:51				
Chloromethane	ND	1.0	1.1		ug/L		09/02/17 01:51				
cis-1,2-Dichloroethene		1.0	1.2		ug/L		09/02/17 01:51				
cis-1,3-Dichloropropene	ND	1.0	2.7		ug/L		09/02/17 01:51				
Dibromochloromethane	ND ND	1.0	1.2		ug/L		09/02/17 01:51				
Dibromomethane	ND	1.0	1.1		ug/L		09/02/17 01:51				
Dichlorodifluoromethane		1.0	1.4		ug/L		09/02/17 01:51				
Ethylbenzene	ND ND	1.0	2.3		ug/L		09/02/17 01:51				
Methylene Chloride		1.0	2.5		ug/L		09/02/17 01:51				
Methyl-t-Butyl Ether (MTBE)	ND ND	1.0	1.5		ug/L		09/02/17 01:51				
Naphthalene		1.0	0.53		ug/L		09/02/17 01:51				
Styrene	ND	1.0	1.4		ug/L		09/02/17 01:51				
Styrene Tetrachloroethene	ND	1.0	2.4		ug/L		09/02/17 01:51				
	ND	1.0	1.2		ug/L		09/02/17 01:51				
Tetrahydrofuran Teluene	ND	5.0	4.2		ug/L		09/02/17 01:51				
Toluene	ND	1.0	1.7		ug/L		09/02/17 01:51				
trans-1,2-Dichloroethene	ND	1.0	3,0		ug/L		09/02/17 01:51				
trans-1,3-Dichloropropene	ND	1.0	1.2	0.37	ug/L		09/02/17 01:51				

TestAmerica Job ID: 480-123334-1

Client: Waste Management
Project/Site: Hagen Farms - Groundwater

### Client Sample ID: PW04 Date Collected: 08/28/17 12:30 Date Received: 08/29/17 13:00

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### Lab Sample ID: 480-123334-3 Matrix: Water

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Method: 8260C - Volatile Orgar Analyte		Qualifier	RL	LOQ	LOD	Unit	D	Analyzed	Dil Fac
richloroethene	ND		1.0	1,5	0.46	ug/L		09/02/17 01:51	1
richlorofluoromethane	ND		1.0	2.9	0.88	ug/L		09/02/17 01:51	1
/inyl chloride	ND		1.0	3.0	0.90	ug/L		09/02/17 01:51	1
(ylenes, Total	ND		2.0	2.2	0.66	ug/L		09/02/17 01:51	1
Surrogate	%Recovery Qu	ıalifier	Limits			Prep	ared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		77 - 120					09/02/17 01:51	
I-Bromofluorobenzene (Surr)	96		73 - 120					09/02/17 01:51	
Toluene-d8 (Surr)	98		80 - 120					09/02/17 01:51	
Method: 6010C - Metals (ICP)									
Analyte		Qualifier	RL	LOQ	LOD		D	Analyzed	Dil Fa
Aluminum	NÐ		80.0	200	60.0	-		08/30/17 20:31	
Barium	33.6		6.0	2,3		ug/L		08/30/17 20:31	
Calcium	81.3		5.0	0.33		mg/L		08/30/17 20:31	
Chromium	1.0	J	5.0	3.3		ug/L		08/30/17 20:31	
Cobalt	ND		6.0	2.1	0.63	ug/L		08/30/17 20:31	
Copper	10.5		25.0	5.3	1.6	ug/L		08/30/17 20:31	
fon	0.17		0.10	0.064	0.019	mg/L		08/30/17 20:31	
Magnesium	43.5		5.0	0.14	0.043	mg/L		08/30/17 20:31	
Wanganese	1.2	JВ	3.0	1.3	0.40	ug/L		08/30/17 20:31	
Nickel	ND		4.0	4.2	1.3	ug/L		08/30/17 20:31	
Potassium	1.1		5.0	0.33	0.10	mg/L		08/30/17 20:31	
Silver	ND		3.0	5.7	1.7	ug/L		08/30/17 20:31	
Sodium	7.3		5.0	1,1	0.32	mg/L		08/30/17 20:31	
Vanadium	ND		5.0	5.0	1.5	ug/L		08/30/17 20:31	
Zinc	69,9		4.0	5.0	1.5	ug/L		08/30/17 20:31	
Method: 6020A - Metals (ICP/M	IS)								
Analyte	Result	Qualifier	RL	LOQ	LOD	Unit	D	Analyzed	Dil Fa
Antimony	ND		0.50	1.2	0.35	ug/L		08/31/17 14:50	
Arsenic	0.27	J	2.0	0.90	0.27	ug/L		08/31/17 14:50	
Beryllium	ND		0.20	0.10	0.030	ug/L		08/31/17 14:50	
Cadmium	ND		0.20	0.24	0.071	ug/L		08/31/17 14:50	
Selenium	0.62	J	5.0	1.5	0.44	ug/L		08/31/17 14:50	
Thallium	ND		0.20	0.063	0.019	ug/L		08/31/17 14:50	
Method: 7470A - Mercury (CV/	•								
Analyte		Qualifier	RL	LOQ		Unit	D	-	Díl Fa
Mercury	NÐ		0.20	0.40	0.12	ug/L		08/30/17 14:45	
Method: SM 2340B - Total Har Analyte		CO3) by ( Qualifier	calculation <sub>RL</sub>	LOQ	LOD	Unit	D	Analyzed	Dil Fa
Calcium and Magnesium Hardness	382		0.50	0.33		mg/L	=	09/07/17 14:01	
General Chemistry									
Analyte	Result	Qualifier	RL	LOQ	LOD	Unit	D	Analyzed	Dil Fa
Chloride	22.4		0.50	0.94	0.28	mg/L		09/05/17 13:07	
Sulfate	30.2		2.0	1.2		mg/L		09/05/17 13:07	
Alkalinity, Total	331		50.0	66.7		mg/L		08/31/17 17:26	
						-			

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Client: Waste Management Project/Site: Hagen Farms - Groundwater

lient Sample ID: PW04 Lab Sample ID: 480-123334-3 ate Collected: 08/28/17 12:30 Matrix: Wate ate Received: 08/29/17 13:00										
General Chemistry (Continued) Analyte		Qualifier	RL	LOQ	LOD	Unit	D	Analyzed	Dil Fac	
Ammonia (as N)	0.17	J	0.20	0.33	0,10	mg/L		08/31/17 15:44		
Total Kjeldahl Nitrogen	ND		0.20	0.50	0.15	mg/L as N		09/06/17 09:29		
Nitrate Nitrite as N	11.3		0.25	0.33	0.10	mg/L as N		08/30/17 13:51	Ę	
Chemical Oxygen Demand	ND		10.0	16.7	5.0	mg/L		08/29/17 18:27		
Total Dissolved Solids	454		10.0	13.3	4.0	mg/L		08/30/17 16:32	4	
Total Suspended Solids	ND		2,0	6.7	2,0	mg/L		08/30/17 05:10		
Phosphorus, Total	0.026		0.20	0.016	0.0050	mg/L as P		08/31/17 16:15		
Method: Field Sampling - Field	Sampling									
Analyte		Qualifier	RL	LOQ	LOD	Unit	D	Analyzed	Dil Fa	
Color	No					NONE		08/28/17 13:30		
Dissolved Oxygen, Field	3.6					mg/L		08/28/17 13:30		
Field EH/ORP	43					millivolts		08/28/17 13:30		
Odor	No					NONE		08/28/17 13:30		
pH, Field	7.17					SU		08/28/17 13:30		
Specific Conductance, Field	738					umhos/cm		08/28/17 13:30		
Temperature, Field (C)	16.9					Degrees C		08/28/17 13:30		
Turbidity, Field	No					NONE		08/28/17 13:30		

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TestAmerica Buffalo

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September 19, 2017

Mr. Greg Sundby Safety and Health Manager Wingra Redi-Mix, Inc. P.O. Box 44284 Madison, WI 53744-4284

Dear Mr. Sundby:

As required by the Unilateral Administrative Order for clean-up of the Hagen Farm Landfill, Waste Management of Wisconsin, Inc. (WMWI) samples the well (PW03) at the above referenced facility on an annual basis. This letter transmits the analytical data for that water supply well, which was sampled on August 28, 2017. Analytical results for water samples collected from the well are also sent to the United States Environmental Protection Agency (USEPA) and the Wisconsin Department of Natural Resources (WDNR) for review.

A brief review of the recent laboratory results for water samples collected from that well indicates the water quality is typical of groundwater in the area, and does not indicate any adverse effect from the Hagen Farm Landfill. Iron and manganese are present in the sample, and groundwater throughout this area, at concentrations consistent with historical data and above the State of Wisconsin groundwater criteria. The presence of these elements at the identified concentrations may cause staining and taste concerns.

I would recommend that you contact Ms. Sheila Sullivan from the USEPA if you would like any additional information regarding this correspondence. Ms. Sullivan is USEPA's representative for the Hagen Farm Landfill and provides regulatory oversight at the site. Ms. Sullivan's telephone number is (312) 886-5251.

Thank you for your cooperation.

Sincerely, Waste Management of Wisconsin, Inc.

Michael L. Peterson

Michael L. Peterson, P.E. District Manager – Closed Sites Management Group

cc: Sheila Sullivan, USEPA Gary Edelstein, WDNR WASTE MANAGEMENT

Closed Sites Management Group W124N9355 Boundary Road Menomonee Falls, WI 53051 262 253 8626 262 255 3798 Fax

## **Definitions/Glossary**

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### Client: Waste Management Project/Site: Hagen Farms - Groundwater

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## Qualifiers

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GC/MS VO	A
Qualifier	Qualifier Description
J	Reported value was between the limit of detection and the limit of quantitation.
Metals	
Qualifier	Qualifier Description
В	Compound was found in the blank and sample.
J	Reported value was between the limit of detection and the limit of quantitation.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
General C	lemistry
Qualifier	Qualifier Description
J	Reported value was between the limit of detection and the limit of quantitation.
•	LCS or LCSD is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD Recovery is outside acceptance limits.
R	Compound was found in the blank and sample

B Compound was found in the blank and sample.

## Glossary

	umn to designate that the result is reported on a dry weight basis
%R Percent Recovery	
CFL Contains Free Liquid	
CNF Contains No Free Liqui	d
DER Duplicate Error Ratio (r	ormalized absolute difference)
Dil Fac Dilution Factor	
DL Detection Limit (DoD/D	OE)
DL, RA, RE, IN Indicates a Dilution, Re	-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC Decision Level Concer	tration (Radiochemistry)
EDL Estimated Detection Li	nit (Dioxin)
LOD Limit of Detection (Dol	/DOE)
LOQ Limit of Quantitation (D	oD/DOE)
MDA Minimum Detectable A	ctivity (Radiochemistry)
MDC Minimum Detectable C	oncentration (Radiochemistry)
MDL Method Detection Limi	
ML Minimum Level (Dioxin	
NC Not Calculated	
ND Not Detected at the re	porting limit (or MDL or EDL if shown)
PQL Practical Quantitation	limit
QC Quality Control	
RER Relative Error Ratio (R	adiochemistry)
RL Reporting Limit or Req	uested Limit (Radiochemistry)
RPD Relative Percent Differ	ence, a measure of the relative difference between two points
TEF Toxicity Equivalent Fa	stor (Dioxin)
TEQ Toxicity Equivalent Qu	otient (Dioxin)

### Client: Waste Management Project/Site: Hagen Farms - Groundwater

### Job ID: 480-123334-1

### Laboratory: TestAmerica Buffalo

#### Narrative

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Job Narrative 480-123334-1

### Comments

No additional comments.

#### Receipt

The samples were received on 8/29/2017 1:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 3.3° C and 3.9° C.

### GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

### HPLC/IC

Method(s) 300.0: The following sample was diluted to bring the concentration of target analytes within the calibration range: PW03 (480-123334-2). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

Method(s) 6010C: The Method Blank for preparation batch 480-374525 and analytical batch 480-374754 contained Total Manganese above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples PW02 (480-123334-1), PW03 (480-123334-2), PW04 (480-123334-3), PW05 (480-123334-4) and PW09 (480-123334-5) was not performed.

Method(s) 6010C: The total Zinc results reported for the following sample do not concur with results previously reported for this site: PW04 (480-123334-3). Reanalysis was performed, and the result(s) confirmed.

Method(s) 6010C: The total Calcium, and Potassium results reported for the following sample do not concur with results previously reported for this site: PW09 (480-123334-5). Reanalysis was performed, and the result(s) confirmed.

Method(s) 6020A: The total Arsenic results reported for the following samples do not concur with results previously reported for this site: PW02 (480-123334-1) and PW09 (480-123334-5). Reanalysis was performed, and the result(s) confirmed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### **General Chemistry**

Method(s) 335.4, 9012B, SM 4500 CN E: The laboratory control sample (LCS) for preparation batch 480-375031 and analytical batch 480-375242 recovered outside control limits for the following analytes: Cyanide. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.PW02 (480-123334-1), PW03 (480-123334-2), PW04 (480-123334-3), PW05 (480-123334-4) and PW09 (480-123334-5)

Method(s) 353.2: The results reported for the following sample do not concur with results previously reported for this site: PW09 (480-123334-5). Reanalysis was performed, and the result(s) confirmed.

Method(s) SM 4500 P E: The results reported for the following samples do not concur with results previously reported for this site: PW02 (480-123334-1) and PW04 (480-123334-3). Reanalysis was performed, and results greater than historically reported were confirmed.

Method(s) SM 4500 P E: The method blank for analytical batch 480-374719 contained Total Phosphorus above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed. PW05 (480-123334-4)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TestAmerica Job ID: 480-123334-1

Client: Waste Management								
Project/Site: Hagen Farms - Groundwater								

Tetrachloroethene

trans-1.2-Dichloroethene

trans-1,3-Dichloropropene

Tetrahydrofuran

Toluene

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#### **Client Sample ID: PW03** Lab Sample ID: 480-123334-2 Date Collected: 08/28/17 11:15 Matrix: Water Date Received: 08/29/17 13:00 Method: 8260C SIM - Volatile Organic Compounds (GC/MS) Analyte **Result Qualifier** RL LOQ LOD Unit D Analyzed Díl Fac Vinyl chloride ND 0.013 0.020 0.0040 ug/L 08/31/17 13:36 1 Surrogate %Recovery Qualifier Limits Analyzed Prepared Dil Fac TBA-d9 (Surr) 89 50 - 150 08/31/17 13:36 1 Dibromofluoromethane (Surr) 100 50 - 150 08/31/17 13:36 1 Method: 8260C - Volatile Organic Compounds by GC/MS Analyte **Result Qualifier** RL LOQ LOD Unit D Analyzed Dil Fac 1,1,1-Trichloroethane ND 1.0 2.7 0.82 ug/L 09/02/17 01:28 1,1,2,2-Tetrachloroethane ND 1.0 0.70 0.21 ug/L 09/02/17 01:28 1 1,1,2-Trichloroethane ND 1.0 0.77 0.23 ug/L 09/02/17 01:28 1 1.1-Dichloroethane ND 1.0 1.3 0.38 ug/L 09/02/17 01:28 1 1,1-Dichloroethene ND 1.0 0,97 0.29 ug/L 09/02/17 01:28 1 1,2,4-Trichlorobenzene ND 1.0 1.4 0.41 ug/L 09/02/17 01:28 1 1,2-Dibromo-3-Chloropropane ND 1.0 1.3 0.39 ug/L 09/02/17 01:28 1 1,2-Dibromoethane (EDB) ND 1.0 24 0.73 ug/L 09/02/17 01:28 1 1,2-Dichlorobenzene ND 1.0 2.6 0.79 ug/L 09/02/17 01:28 1 1,2-Dichloroethane ND 1.0 0.70 0.21 ug/L 09/02/17 01:28 1 1.2-Dichloropropane ND 1.0 2.4 0.72 ug/L 09/02/17 01:28 1 1.3-Dichlorobenzene ND 1.0 2.6 0.78 ug/L 09/02/17 01:28 1 1,4-Dichlorobenzene ND 1.0 28 0.84 ug/L 09/02/17 01:28 1 2-Butanone (MEK) ND 10 4.4 1.3 ug/L 09/02/17 01:28 1 2-Hexanone ND 5.0 4.1 1.2 ug/L 09/02/17 01:28 1 4-Methyl-2-pentanone (MIBK) ND 5.0 7.0 2.1 ug/L 09/02/17 01:28 1 Acetone ND 10 10 3.0 ug/L 09/02/17 01:28 1 Benzene ND 1.0 14 0.41 ug/L 09/02/17 01:28 1 Bromodichloromethane ND 1,0 1.3 0.39 ug/L 09/02/17 01:28 1 Bromoform ND 1.0 0.87 0.26 ug/L 09/02/17 01:28 1 Bromomethane ND 1.0 2.3 0.69 ug/L 09/02/17 01:28 1 Carbon disulfide ND 1.0 0,63 0.19 ug/L 09/02/17 01:28 1 Carbon tetrachloride ND 1.0 0.90 0.27 ug/L 09/02/17 01:28 1 Chlorobenzene ND 1.0 2.5 0.75 ug/L 09/02/17 01:28 1 Chloroethane ND 1.0 1.1 0.32 ug/L 09/02/17 01:28 1 Chloroform ND 1.0 1,1 0.34 ug/L 09/02/17 01:28 1 Chloromethane ND 1.0 1.2 0.35 ug/L 09/02/17 01:28 1 cis-1,2-Dichloroethene ND 1.0 2.7 0.81 ug/L 09/02/17 01:28 1 cis-1,3-Dichloropropene ND 1.0 1.2 0.36 ug/L 09/02/17 01:28 1 Dibromochloromethane ND 1.0 1.1 0.32 ug/L 09/02/17 01:28 1 Dibromomethane ND 1.0 1.4 0.41 ug/L 09/02/17 01:28 1 Dichlorodifluoromethane ND 1.0 2.3 0.68 ua/L 09/02/17 01:28 1 Ethylbenzene ND 1.0 2.5 0.74 ug/L 09/02/17 01:28 1 Methylene Chloride ND 1.0 1.5 0.44 ug/L 09/02/17 01:28 1 Methyl-t-Butyl Ether (MTBE) ND 1.0 0.53 0.16 ug/L 09/02/17 01:28 1 Naphthalene ND 0.43 ug/L 1.0 1.4 09/02/17 01:28 1 Styrene ND 1.0 2.4 0.73 ug/L 09/02/17 01:28 1

TestAmerica Buffalo

09/02/17 01:28

09/02/17 01:28

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09/02/17 01:28

09/02/17 01:28

1.0

5.0

1.0

1.0

1,0

1.2

4.2

1.7

3.0

1.2

0.36 ug/L

0.51 ug/L

0.90 ug/L

0.37 ug/L

1.3 ug/L

ND

ND

NΠ

ND

ND

1

1

1

1

1

Client: Waste Management
Project/Site: Hagen Farms - Groundwater

## Client Sample ID: PW03

1. SH 1

### Date Collected: 08/28/17 11:15 Date Received: 08/29/17 13:00

### Lab Sample ID: 480-123334-2 Matrix: Water

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lethod: 8260C - Volatile Organ nalyte		Qualifier	RL	LOQ	LOD	Unit	D	Analyzed	Dil Fa
richloroethene	ND		1.0	1.5	0.46			09/02/17 01:28	
richlorofluoromethane	ND		1.0	2,9	0.88	-		09/02/17 01:28	
inyl chloride	ND		1.0	3.0	0.90	_		09/02/17 01:28	
ylenes, Total	ND		2.0	2.2	0.66	-		09/02/17 01:28	
	ne.		2.0	<i></i>	0.00	ug/c		OUIDENT? OTLEO	
urrogate	%Recovery Qu	alifier	Limits			Prep	ared	Analyzed	Dil F
,2-Dichloroethane-d4 (Surr)	102		77 - 120					09/02/17 01:28	
-Bromofluorobenzene (Surr)	93		73 - 120					09/02/17 01:28	
oluene-d8 (Surr)	98		80 - 120					09/02/17 01:28	
Aethod: 6010C - Metals (ICP)	~ U	•	5						o
nalyte		Qualifier	RL	LOQ	LOD		D	Analyzed	Dil F
luminum	ND		80.0	200	60.0			08/30/17 20:28	
Barium	39.9		6.0	2.3	0.70	-		08/30/17 20:28	
alcium	87.6		5.0	0.33		mg/L		08/30/17 20:28	
hromium	ND		5.0	3.3		ug/L		08/30/17 20:28	
obalt	ND		6.0	2.1		ug/L		08/30/17 20:28	
opper	ND		25.0	5.3	1.6	ug/L		08/30/17 20:28	
on	0.34		0.10	0.064	0.019	mg/L		08/30/17 20:28	
fagnesium	40.2		5.0	0.14	0.043	mg/L		08/30/17 20:28	
langanese	117	в	3.0	1.3	0.40	ug/L		08/30/17 20:28	
lickel	2.4	J	4.0	4,2	1.3	ug/L		08/30/17 20:28	
otassium	1.6		5.0	0.33	0.10	mg/L		08/30/17 20:28	
liver	ND		3.0	5.7	1.7	ug/L		08/30/17 20:28	
odium	51.2		5.0	1.1		mg/L		08/30/17 20:28	
/anadium	ND		5.0	5.0		ug/L		08/30/17 20:28	
linc	76.6		4.0	5.0		ug/L		08/30/17 20:28	
Method: 6020A - Metals (ICP/M		0		100		11.11	-	•	0.11
Analyte		Qualifier		LOQ		Unit	D		Dil I
Antimony	ND		0.50	1.2		ug/L		08/31/17 14:44	
Arsenic	ND		2.0	0.90		ug/L		09/05/17 13:15	
Beryllium	ND		0.20	0.10	0.030	-		08/31/17 14:44	
Cadmium	ND		0.20	0.24	0.071	ug/L		08/31/17 14:44	
Selenium	ND		5.0	1.5	0.44	ug/L		09/05/17 13:15	
Fhallium	ND		0.20	0.063	0.019	ug/L		08/31/17 14:44	
Method: 7470A - Mercury (CVA	۸)								
Analyte		Qualifier	RL	LOQ	LOD	Unit	D	Analyzed	Dil F
Mercury	ND		0.20	0.40		ug/L		08/30/17 14:43	
-						-			
Method: SM 2340B - Total Hard	iness (as Ca	CO3) by o	calculation						
Analyte	Result	Qualifier	RL	LOQ		Unit	D	-	Dill
Calcium and Magnesium Hardness	384		0.50	0.33	0.10	mg/L		09/07/17 14:01	
General Chemistry									
Analyte	Result	Qualifier	RL	LOQ	LOD	Unit	D	Analyzed	Dil I
Chloride	93.3		2.5	4.7		mg/L		09/05/17 12:59	
Sulfate	14.7		10.0	5.8		mg/L		09/05/17 12:59	
						-			
Alkalinity, Total	358		50.0	66.7	20.0	mg/L		08/31/17 17:26	

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Client: Waste Management

Project/Site: Hagen Farms - Groundwater

TestAmerica Job ID: 480-123334-1

Client Sample ID: PW03 Lab Sample ID: 480-123334-2 Date Collected: 08/28/17 11:15 Matrix: Water Date Received: 08/29/17 13:00										
General Chemistry (Continued) Analyte		Qualifier	RL	LOQ	LOD	Unit	D	Analyzed	Dil Fac	
Ammonia (as N)	0.14	J	0.20	0.33	0.10	mg/L		08/31/17 15:43	1	
Total Kjeldahl Nitrogen	ND		0,20	0.50	0.15	mg/L as N		09/11/17 11:21	1	
Nitrate Nitrite as N	0.025	J	0,050	0.067	0.020	mg/L as N		08/30/17 13:06	1	
Chemical Oxygen Demand	ND		10.0	16.7	5.0	mg/L		08/29/17 18:27	1	
Fotal Dissolved Solids	527		10.0	13.3	4.0	mg/L		08/30/17 16:32	1	
Fotal Suspended Solids	2.8	J	2.0	6,7	2.0	mg/L		08/30/17 20:22	1	
Phosphorus, Total	ND		0.20	0.016	0.0050	mg/L as P		08/30/17 20:20	1	
Method: Field Sampling - Field	Sampling									
Analyte	• •	Qualifier	RL	LOQ	LOD	Unit	D	Analyzed	Dil Fac	
Color	No					NONE		08/28/17 12:15	1	
Dissolved Oxygen, Field	0.9					mg/L		08/28/17 12:15	1	
Field EH/ORP	21					millivolts		08/28/17 12:15	1	
Odor	No					NONE		08/28/17 12:15	1	
pH, Field	7.03					SU		08/28/17 12:15	1	
Specific Conductance, Field	928					umhos/cm		08/28/17 12:15	1	
Temperature, Field (C)	17.5					Degrees C		08/28/17 12:15	1	
Turbidity, Field	No					NONE		08/28/17 12:15	1	

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