January 21, 2013

Mrs. Carla M. Jordan
Casella Waste Services of Ontario, LLC
Ontario County Landfill
1879 State Routes 5 & 20
Stanley, New York 14561

Re: Chemung County Landfill June 2012 Radionuclide Monitoring Event

File: 574.129.001

Dear Mrs. Jordan:

This letter report summarizes our June 2012 Radionuclide Monitoring event, which was conducted in accordance with the Site EMP Appendix F – Additional Considerations for Radionuclide Sampling. Included as attachments to this letter are the following supporting documents:

- Attachment A – Pace Analytical Services, Inc. Report (3080294 & 3074978)
- Table 1 – Chemung County Landfill Radionuclide Leachate Data Results
- Table 2 - Chemung County Landfill Radionuclide Sediment Data Results

Barton & Loguidice, P.C. (B&L) conducted the required sampling on June 29, 2012. Samples of both filtered and non-filtered media were collected from the Cell IV primary leachate collection system and also a sediment sample was collected from the Leachate Lagoon. The samples were submitted to Pace Analytical Services, Inc. (Pace) located in Greensburg, Pennsylvania for the following analysis in accordance with the EMP:

- Radium-226 per EPA 903.1
- Radium-228 per EPA 904.0
- Total Uranium per EPA 908.0
- Gamma Spectrum per EPA 901.1

In addition to the methods required above, DEC requested additional Radium 226 and Radium 228 analysis by a separate method based on potential method limitations as Method 903.1 and 904.0 are intended for aqueous sample media. The separate methods yielded similar results and we recommend that future sediment samples be analyzed by the methods required in the EMP.

Included in Attachment A are the Pace analytical reports. Pace produced two separate reports: one report (3074978) includes the results of the Cell IV primary leachate and the other report (3080294) includes the results of the leachate lagoon sediment.

Included in the attached Table 1 are the results for each leachate monitoring location compared to relevant Nuclear Regulatory Commission (NRC) and DEC effluent and sewer discharge standards. Also included in Table 1 are historical data from the May 2010 sampling event for both the Cell I/II/III and Cell IV primary leachate monitoring locations. Although some of the methods utilized in the May 2010 event do not directly compare with the current requirement set forth by the EMP, this data is considered useful as a historical reference.

Isotopic uranium and isotopic thorium, which are only required to be conducted if special investigation is warranted, were completed during this monitoring event to allow comparison to the May 2010 event and to obtain a baseline dataset for the leachate lagoon sediment location.

The results indicate that radionuclide concentrations for the Cell IV primary leachate have remained generally consistent with historical data. More importantly, the results remain far below applicable effluent and sewer discharge criteria established by the federal Nuclear Regulatory Commission (NRC) and/or NYSDEC. As we conduct further radionuclide monitoring and gain more analytical data from the required monitoring network, we will be better able to assess the data for potential changes/trends over time.

Also included in the attached Table 2 are the results for the leachate lagoon sediment sample. This marks the initial event this location has been sampled. Without any historical data there is no data for comparison purposes.

Please contact me if you have any questions regarding this letter summary report.

Very truly yours,

BARTON & LOGUIDICE, P.C.

Michael R. Brother

Michael R. Brother
Senior Managing Hydrogeologist

MRB/akg
Attachments
cc: Mark Domagala, NYSDEC

Attachment A

Pace Analytical Services, Inc.

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

January 08, 2013

Mr. Brian J. McGrath
Barton & Loguidice
11 Centre Park, Suite 203
Rochester, NY 14614

RE: Project: Chemung County LF Rad Sample
Pace Project No.: 3074978

Dear Mr. McGrath:
Enclosed are the analytical results for sample(s) received by the laboratory on August 08, 2012. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Report reissued 1/9/13 at request of client to revise the Gamma Spec list to delete analytes.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jacquelyn Collins

jacquelyn.collins@pacelabs.com
Project Manager

Enclosures

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: Chemung County LF Rad Sample
Pace Project No.: 3074978

Pennsylvania Certification IDs
1638 Roseytown Rd Suites 2,3&4 Greensburg, PA 15601
ACLASS DOD-ELAP Accreditation #: ADE-1544
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/TNI Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana/TNI Certification #: LA080002
Louisiana/TNI Certification #: 4086
Maine Certification #: PA0091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nevada Certification
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188
Utah/TNI Certification #: ANTE
Virgin Island/PADEP Certification
Virginia Certification #: 00112
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia Certification #: 143
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

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Greensburg, PA 15601
(724)850-5600

SAMPLE SUMMARY

Project: Chemung County LF Rad Sample
Pace Project No.: 3074978

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3074978001	Chemung LFCell IV Leach Total	Water	06/29/12 12:15	08/08/12 09:30
3074978002	Chemung LFCell IV Leach Dissol	Water	06/29/12 12:15	08/08/12 09:30

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(724)850-5600

SAMPLE ANALYTE COUNT

Project: Chemung County LF Rad Sample
Pace Project No.: 3074978

Lab ID	Sample ID	Method	Analysts	Analytes Reported
3074978001	**Chemung LFCell IV Leach Total**	EPA 901.1m	AEH	2
		EPA 903.1	SLA	1
		EPA 904.0	MAW	1
		EPA 908.0	LAL	1
		HSL-300m	MBT	6
3074978002	**Chemung LFCell IV Leach Dissol.**	EPA 901.1m	AEH	2
		EPA 903.1	SLA	1
		EPA 904.0	MAW	1
		EPA 908.0	LAL	1
		HSL-300m	MBT	6

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Greensburg, PA 15601
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PROJECT NARRATIVE

Project: Chemung County LF Rad Sample
Pace Project No.: 3074978

Method: EPA 901.1m
Description: 901.1 Gamma Spec
Client: Barton & Loguidice
Date: January 08, 2013

General Information:
2 samples were analyzed for EPA 901.1m. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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Greensburg, PA 15601
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PROJECT NARRATIVE

Project: Chemung County LF Rad Sample
Pace Project No.: 3074978

Method: EPA 903.1
Description: 903.1 Radium 226
Client: Barton & Loguidice
Date: January 08, 2013

General Information:
2 samples were analyzed for EPA 903.1. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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Greensburg, PA 15601
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PROJECT NARRATIVE

Project: Chemung County LF Rad Sample
Pace Project No.: 3074978

Method: EPA 904.0
Description: 904.0 Radium 228
Client: Barton & Loguidice
Date: January 08, 2013

General Information:
2 samples were analyzed for EPA 904.0. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Chemung County LF Rad Sample
Pace Project No.: 3074978

Method: EPA 908.0
Description: 908.0 Total Uranium
Client: Barton & Loguidice
Date: January 08, 2013

General Information:
2 samples were analyzed for EPA 908.0. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Chemung County LF Rad Sample
Pace Project No.: 3074978

Method: **HSL-300m**
Description: HSL300(AS) Actinides
Client: Barton & Loguidice
Date: January 08, 2013

General Information:
2 samples were analyzed for HSL-300m. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: RADC/13627

N2: The lab does not hold TNI accreditation for this parameter.

- BLANK (Lab ID: 504351)
  - Thorium-228
  - Thorium-230
  - Thorium-232
  - Uranium-234
  - Uranium-235
  - Uranium-238
- Chemung LFCell IV Leach Dissol (Lab ID: 3074978002)
  - Thorium-228
  - Thorium-230
  - Thorium-232
  - Uranium-234
  - Uranium-235
  - Uranium-238
- Chemung LFCell IV Leach Total (Lab ID: 3074978001)
  - Thorium-228
  - Thorium-230
  - Thorium-232
  - Uranium-234
  - Uranium-235
  - Uranium-238

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Chemung County LF Rad Sample
Pace Project No.: 3074978

Sample: Chemung LFCell IV Leach Total **Lab ID: 3074978001** Collected: 06/29/12 12:15 Received: 08/08/12 09:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Cesium-137	EPA 901.1m	**-0.435 ± 3.35 (4.55)**	pCi/L	09/13/12 07:25	10045-97-3	
Uranium-235	EPA 901.1m	**-1.200 ± 47.0 (39.7)**	pCi/L	09/13/12 07:25	15117-96-1	
Radium-226	EPA 903.1	**1.04 ± 0.710 (0.916)**	pCi/L	08/31/12 13:58	13982-63-3	
Radium-228	EPA 904.0	**7.01 ± 4.92 (9.14)**	pCi/L	08/28/12 12:42	15262-20-1	
Total Uranium	EPA 908.0	**0.403 ± 2.75 (5.64)**	pCi/L	09/10/12 16:06	7440-61-1	
Thorium-228	HSL-300m	**1.012 ± 1.02 (2.33)**	pCi/L	11/01/12 14:33	14274-82-9	N2
Thorium-230	HSL-300m	**1.093 ± 0.669 (1.80)**	pCi/L	11/01/12 14:33	14269-63-7	N2
Thorium-232	HSL-300m	**-0.199 ± 0.455 (1.07)**	pCi/L	11/01/12 14:33	7440-29-1	N2
Uranium-234	HSL-300m	**0.285 ± 0.485 (0.855)**	pCi/L	11/01/12 14:27	13966-29-5	N2
Uranium-235	HSL-300m	**0.093 ± 0.424 (0.252)**	pCi/L	11/01/12 14:27	15117-96-1	N2
Uranium-238	HSL-300m	**0.000 ± 0.325 (0.524)**	pCi/L	11/01/12 14:27		N2

Sample: Chemung LFCell IV Leach Dissol **Lab ID: 3074978002** Collected: 06/29/12 12:15 Received: 08/08/12 09:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Cesium-137	EPA 901.1m	**0.085 ± 2.52 (4.56)**	pCi/L	09/13/12 08:27	10045-97-3	
Uranium-235	EPA 901.1m	**-4.530 ± 154 (38.4)**	pCi/L	09/13/12 08:27	15117-96-1	
Radium-226	EPA 903.1	**0.811 ± 0.654 (0.880)**	pCi/L	08/31/12 14:13	13982-63-3	
Radium-228	EPA 904.0	**4.91 ± 3.02 (5.45)**	pCi/L	08/28/12 12:42	15262-20-1	
Total Uranium	EPA 908.0	**3.88 ± 3.09 (5.08)**	pCi/L	09/10/12 16:06	7440-61-1	
Thorium-228	HSL-300m	**2.88 ± 2.08 (3.07)**	pCi/L	11/01/12 14:33	14274-82-9	N2
Thorium-230	HSL-300m	**0.605 ± 0.923 (1.59)**	pCi/L	11/01/12 14:33	14269-63-7	N2
Thorium-232	HSL-300m	**0.242 ± 0.672 (1.30)**	pCi/L	11/01/12 14:33	7440-29-1	N2
Uranium-234	HSL-300m	**2.25 ± 1.76 (2.46)**	pCi/L	11/01/12 14:27	13966-29-5	N2
Uranium-235	HSL-300m	**0.490 ± 1.12 (0.664)**	pCi/L	11/01/12 14:27	15117-96-1	N2
Uranium-238	HSL-300m	**0.563 ± 0.861 (0.508)**	pCi/L	11/01/12 14:27		N2

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: Chemung County LF Rad Sample
Pace Project No.: 3074978

QC Batch: RADC/12956
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Associated Lab Samples: 3074978001, 3074978002

METHOD BLANK: 478145
Matrix: Water
Associated Lab Samples: 3074978001, 3074978002

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-228	0.104 ± 0.471 (0.985)	pCi/L	08/28/12 12:49	

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: Chemung County LF Rad Sample
Pace Project No.: 3074978

QC Batch: RADC/12964
QC Batch Method: EPA 901.1m
Analysis Method: EPA 901.1m
Analysis Description: 901.1 Gamma Spec
Associated Lab Samples: 3074978001, 3074978002

METHOD BLANK: 478211
Matrix: Water
Associated Lab Samples: 3074978001, 3074978002

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Cesium-137	-0.071 ± 31.2 (4.93)	pCi/L	09/14/12 07:12	
Uranium-235	6.76 ± 9.45 (26.1)	pCi/L	09/14/12 07:12	

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: Chemung County LF Rad Sample
Pace Project No.: 3074978

QC Batch: RADC/13020
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Associated Lab Samples: 3074978001, 3074978002

METHOD BLANK: 480165
Matrix: Water
Associated Lab Samples: 3074978001, 3074978002

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-226	-0.214 ± 0.551 (0.912)	pCi/L	08/31/12 13:02	

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: Chemung County LF Rad Sample
Pace Project No.: 3074978

QC Batch: RADC/13070
QC Batch Method: EPA 908.0
Analysis Method: EPA 908.0
Analysis Description: 908.0 Total Uranium
Associated Lab Samples: 3074978001, 3074978002

METHOD BLANK: 481898
Matrix: Water
Associated Lab Samples: 3074978001, 3074978002

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Total Uranium	0.414 ± 0.330 (0.564)	pCi/L	09/11/12 07:15	

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Greensburg, PA 15601
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QUALITY CONTROL DATA

Project: Chemung County LF Rad Sample
Pace Project No.: 3074978

QC Batch: RADC/13627 Analysis Method: HSL-300m
QC Batch Method: HSL-300m Analysis Description: HSL300(AS) Actinides
Associated Lab Samples: 3074978001, 3074978002

METHOD BLANK: 504351 Matrix: Water
Associated Lab Samples: 3074978001, 3074978002

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Thorium-228	0.478 ± 0.175 (0.161)	pCi/L	11/01/12 14:33	N2
Thorium-230	0.071 ± 0.078 (0.122)	pCi/L	11/01/12 14:33	N2
Thorium-232	0.000 ± 0.046 (0.094)	pCi/L	11/01/12 14:33	N2
Uranium-234	0.063 ± 0.053 (0.071)	pCi/L	11/01/12 14:27	N2
Uranium-235	0.020 ± 0.045 (0.073)	pCi/L	11/01/12 14:27	N2
Uranium-238	0.053 ± 0.045 (0.056)	pCi/L	11/01/12 14:27	N2

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Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: Chemung County LF Rad Sample
Pace Project No.: 3074978

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty

(MDC) - Minimum Detectable Concentration

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

N2 The lab does not hold TNI accreditation for this parameter.

Pace Analytical
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1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

January 08, 2013

Mr. Brian J. McGrath
Barton & Loguidice
11 Centre Park, Suite 203
Rochester, NY 14614

RE: Project: Chemung County LF Rad Sample
Pace Project No.: 3080294

Dear Mr. McGrath:
Enclosed are the analytical results for sample(s) received by the laboratory between August 08, 2012 and August 17, 2012. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Report reissued 1/9/13 at request of client to revise the Gamma Spec list to delete analytes.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jacquelyn Collins

jacquelyn.collins@pacelabs.com
Project Manager

Enclosures

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: Chemung County LF Rad Sample
Pace Project No.: 3080294

Pennsylvania Certification IDs
1638 Roseytown Rd Suites 2,3&4 Greensburg, PA 15601
ACLASS DOD-ELAP Accreditation #: ADE-1544
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/TNI Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana/TNI Certification #: LA080002
Louisiana/TNI Certification #: 4086
Maine Certification #: PA0091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nevada Certification
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188
Utah/TNI Certification #: ANTE
Virgin Island/PADEP Certification
Virginia Certification #: 00112
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia Certification #: 143
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

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(724)850-5600

SAMPLE SUMMARY

Project: Chemung County LF Rad Sample
Pace Project No.: 3080294

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3074978003	Chemung LF Leachate Lagoon Sed	Solid	06/29/12 11:43	08/17/12 09:58
3074978004	Chemung LF Leachate Lagoon Sed	Water	06/29/12 11:43	08/08/12 11:13

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Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: Chemung County LF Rad Sample
Pace Project No.: 3080294

Lab ID	Sample ID	Method	Analysts	Analytes Reported
3074978003	**Chemung LF Leachate Lagoon Sed**	EPA 901.1m	AEH	4
		EPA 903.1m	SLA	1
		EPA 9320	MAW	1
		HSL-300m	LAL, MBT	6
3074978004	**Chemung LF Leachate Lagoon Sed**	EPA 908.0	LAL	1

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PROJECT NARRATIVE

Project: Chemung County LF Rad Sample
Pace Project No.: 3080294

Method: **EPA 901.1m**
Description: 901.1 Gamma Spec
Client: Barton & Loguidice
Date: January 08, 2013

General Information:
1 sample was analyzed for EPA 901.1m. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Chemung County LF Rad Sample
Pace Project No.: 3080294

Method: EPA 903.1m
Description: 903.1 Radium 226
Client: Barton & Loguidice
Date: January 08, 2013

General Information:
1 sample was analyzed for EPA 903.1m. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: RADC/13025

N2: The lab does not hold TNI accreditation for this parameter.

- BLANK (Lab ID: 480183)
  - Radium-226
- Chemung LF Leachate Lagoon Sed (Lab ID: 3074978003)
  - Radium-226

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PROJECT NARRATIVE

Project: Chemung County LF Rad Sample
Pace Project No.: 3080294

Method: EPA 908.0
Description: 908.0 Total Uranium
Client: Barton & Loguidice
Date: January 08, 2013

General Information:
1 sample was analyzed for EPA 908.0. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Chemung County LF Rad Sample
Pace Project No.: 3080294

Method: EPA 9320
Description: 9320 Radium 226
Client: Barton & Loguidice
Date: January 08, 2013

General Information:
1 sample was analyzed for EPA 9320. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Chemung County LF Rad Sample
Pace Project No.: 3080294

Method: **HSL-300m**
Description: HSL300(AS) Actinides
Client: Barton & Loguidice
Date: January 08, 2013

General Information:
1 sample was analyzed for HSL-300m. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: RADC/13063

N2: The lab does not hold TNI accreditation for this parameter.
- BLANK (Lab ID: 481877)
  - Uranium-234
  - Uranium-235
  - Uranium-238
- Chemung LF Leachate Lagoon Sed (Lab ID: 3074978003)
  - Uranium-234
  - Uranium-235
  - Uranium-238

QC Batch: RADC/13629

N2: The lab does not hold TNI accreditation for this parameter.
- BLANK (Lab ID: 504357)
  - Thorium-228
  - Thorium-230
  - Thorium-232
- Chemung LF Leachate Lagoon Sed (Lab ID: 3074978003)
  - Thorium-228
  - Thorium-230
  - Thorium-232

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Chemung County LF Rad Sample
Pace Project No.: 3080294

Sample: Chemung LF Leachate Lagoon Sed **Lab ID: 3074978003** Collected: 06/29/12 11:43 Received: 08/17/12 09:58 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Cesium-137	EPA 901.1m	**-0.005 ± 0.037 (0.063)**	pCi/g	09/13/12 09:55	10045-97-3	
Radium-226	EPA 901.1m	**2.41 ± 0.278 (0.133)**	pCi/g	09/13/12 09:55	13982-63-3	
Radium-228	EPA 901.1m	**2.69 ± 0.364 (0.197)**	pCi/g	09/13/12 09:55	15262-20-1	
Uranium-235	EPA 901.1m	**0.172 ± 0.0697 (0.0763)**	pCi/g	09/13/12 09:55	15117-96-1	
Radium-226	EPA 903.1m	**2.27 ± 0.782 (0.526)**	pCi/g	09/18/12 12:39	13982-63-3	N2
Radium-228	EPA 9320	**2.02 ± 0.718 (0.991)**	pCi/g	09/13/12 12:07	15262-20-1	
Thorium-228	HSL-300m	**1.12 ± 0.434 (0.324)**	pCi/g	11/02/12 12:44	14274-82-9	N2
Thorium-230	HSL-300m	**0.098 ± 0.120 (0.200)**	pCi/g	11/02/12 12:44	14269-63-7	N2
Thorium-232	HSL-300m	**0.300 ± 0.192 (0.081)**	pCi/g	11/02/12 12:44	7440-29-1	N2
Uranium-234	HSL-300m	**0.265 ± 0.132 (0.105)**	pCi/g	09/07/12 08:32	13966-29-5	N2
Uranium-235	HSL-300m	**0.027 ± 0.071 (0.121)**	pCi/g	09/07/12 08:32	15117-96-1	N2
Uranium-238	HSL-300m	**0.334 ± 0.151 (0.114)**	pCi/g	09/07/12 08:32		N2

Sample: Chemung LF Leachate Lagoon Sed **Lab ID: 3074978004** Collected: 06/29/12 11:43 Received: 08/08/12 11:13 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Total Uranium	EPA 908.0	**0.806 ± 0.388 (0.462)**	pCi/L	09/11/12 07:15	7440-61-1	

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QUALITY CONTROL DATA

Project: Chemung County LF Rad Sample
Pace Project No.: 3080294

QC Batch: RADC/12988 Analysis Method: EPA 901.1m
QC Batch Method: EPA 901.1m Analysis Description: 901.1 Gamma Spec
Associated Lab Samples: 3074978003

METHOD BLANK: 479126 Matrix: Solid
Associated Lab Samples: 3074978003

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Cesium-137	-0.011 ± 0.025 (0.043)	pCi/g	09/13/12 15:42	
Radium-226	0.0245 ± 0.0621 (0.116)	pCi/g	09/13/12 15:42	
Radium-228	-0.103 ± 1.18 (0.149)	pCi/g	09/13/12 15:42	
Uranium-235	0.00703 ± 0.0136 (0.0540)	pCi/g	09/13/12 15:42	

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QUALITY CONTROL DATA

Project: Chemung County LF Rad Sample
Pace Project No.: 3080294

QC Batch: RADC/13024
QC Batch Method: EPA 9320
Analysis Method: EPA 9320
Analysis Description: 9320 Radium 228
Associated Lab Samples: 3074978003

METHOD BLANK: 480180
Matrix: Solid
Associated Lab Samples: 3074978003

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-228	1.02 ± 0.614 (1.02)	pCi/g	09/13/12 12:11	

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QUALITY CONTROL DATA

Project: Chemung County LF Rad Sample
Pace Project No.: 3080294

QC Batch: RADC/13025
QC Batch Method: EPA 903.1m
Analysis Method: EPA 903.1m
Analysis Description: 903.1 Radium-226
Associated Lab Samples: 3074978003

METHOD BLANK: 480183
Matrix: Solid
Associated Lab Samples: 3074978003

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-226	0.288 ± 0.408 (0.691)	pCi/g	09/18/12 12:39	N2

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QUALITY CONTROL DATA

Project: Chemung County LF Rad Sample
Pace Project No.: 3080294

QC Batch: RADC/13063
QC Batch Method: HSL-300m
Analysis Method: HSL-300m
Analysis Description: HSL300(AS) Actinides
Associated Lab Samples: 3074978003

METHOD BLANK: 481877
Matrix: Solid
Associated Lab Samples: 3074978003

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Uranium-234	0.048 ± 0.054 (0.087)	pCi/g	09/07/12 08:32	N2
Uranium-235	0.011 ± 0.058 (0.083)	pCi/g	09/07/12 08:32	N2
Uranium-238	0.012 ± 0.045 (0.033)	pCi/g	09/07/12 08:32	N2

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QUALITY CONTROL DATA

Project: Chemung County LF Rad Sample
Pace Project No.: 3080294

QC Batch: RADC/13070
QC Batch Method: EPA 908.0
Analysis Method: EPA 908.0
Analysis Description: 908.0 Total Uranium
Associated Lab Samples: 3074978004

METHOD BLANK: 481898
Matrix: Water
Associated Lab Samples: 3074978004

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Total Uranium	0.414 ± 0.330 (0.564)	pCi/L	09/11/12 07:15	

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QUALIFIERS

Project: Chemung County LF Rad Sample
Pace Project No.: 3080294

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty

(MDC) - Minimum Detectable Concentration

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

N2 The lab does not hold TNI accreditation for this parameter.

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

1231606

Section A Required Client Information:

Company: Burton Lagunidice (BL)
Address: 11 Centex Park Suite 203
Rochester, NY 14614
Email To: bmcgrath@burtonandlagunidice.com
Phone: (585) 325-7190 Fax:
Requested Due Date/TAT: Standard

Section B Required Project Information:

Report To: Brian J. McGrath
Copy To:
Purchase Order No.:
Project Name: Chemung County LF Radionuclide sampling
Project Number: 574,129,001

Section C Invoice Information:

Attention: Same as Client Info
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY
☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☒ OTHER NYSDEC

Site Location STATE: NY

ITEM #	Section D Required Client Information — SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	Matrix Codes (MATRIX / CODE)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Radium 226 EPA 903.1	Radium 228 EPA 904.0	Total Uranium EPA 908.1	Gamma Spectrum 901.1	Radon 222 EPA 913.0	Radium 226 EPA 903.1	Radium 228 EPA 904.0	Total Uranium EPA 908.0	Gamma Spectrum 901.1	HASL 300	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
		Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT																	Requested Analysis Filtered (Y/N)	N	N	N	N		Y	Y	Y	Y			3074978
1	Chemung LF Cell IV Leachate	GW	WT	G			6/20/12	12:15	9°C	4			X							X	X	X	X		X	X	X			1	Extra Filtered bottles - Unpreserved 001
2	Chemung LF Cell IV Leachate - Pistol Creek	GW	WT	G			6/20/12	12:17	9°C	4			X												X	X	X	X		1	002
3	Chemung LF Leachate Lagoon Sediment	SL	SL	G			6/20/12	11:43	9°C	9	X									X	X	X	X					X			003
4																															
5																															
6																															
7																															
8																															
9																															
10																															
11																															
12																															

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Please contact Sediment Sample per 7/13/12 NYSDEC E-mail	Brian J. McGrath/B+L	6/20/12	17:15		6/8/12	0930	NO	N	Y 6/8/12	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Brian J. McGrath
SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): 6/20/12

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Sample Condition Upon Receipt

Pace Analytical

Client Name: Barton & Loguidice Project #

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other

Optional
Proj. Due Date:
Proj. Name:

Tracking #: 800796208493 800796208508

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other

Thermometer Used 5 6 7 Type of Ice: (Wet) Blue (None) ☐ Samples on ice, cooling process has begun

Cooler Temperature NA Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents:

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☐N/A	11. cannot det. if Filtered, Already Preserved
Sample Labels match COC:	☐Yes ☑No ☐N/A	12. 5L labels wet/wash off
-Includes date/time/ID/Analysis Matrix: WT/SL		
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☑No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☑No	Initial when completed: VEV Lot # of added preservative:
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: Date: 8/8/12

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical

												Item No.
									003	002	001	
									SL	W	W	Matrix Code
									G			Glass Jar (120 / 250 / 500 / 1L)
												Soil kit (2 SB, 1M, soil jar)
												Chemistry (250 / 500 / 1L)
												Organics (1L)
												Nutrient (250 / 500)
												Phenolics (250 ml)
												TOC (40 ml / 250 ml)
												TOX (250 ml)
												Total Metals
												Dissolved Metals preserved Y N
												O & G (1L)
												TPH (1L)
												VOA (40 ml 30 ml)
												Cyanide (250 ml)
												Sulfide (500 ml)
												Bacteria (120 ml)
												Wipes / swipe/ smear/ filter
										4	8	Radchem Nalgene (125 / 250 / 500 / 1L)
												Radchem Nalgene (1/2 gal. / 1 gal.L)
												Cubitainer (500 ml / 4L)
												Ziploc
												Other
												Other

Project Number:

Client Name: Boston Analytical

Table 1

Chemung County Landfill
Radionuclide Leachate Data Results

Table 1 - Chemung County Landfill Radionuclide Leachate Data Results

		Cesium 137 (pCi/L)	Qual.	*Total uncert.*	Radium 226 (pCi/L)	Qual.	*Total uncert.*	Radium 228 (pCi/L)	Qual.	*Total uncert.*	Uranium 234 (pCi/L)	Qual.	*Total uncert.*	Uranium 235 (pCi/L)	Qual.	*Total uncert.*	Uranium 235 (pCi/L)	Qual.	*Total uncert.*
NRC/DEC	effluent limit	1000			60			60			300			300			300		
NRC/DEC	sewer limit	10000			600			600			3000			3000			3000		
RL		20.0			1.00			1.0			1.00			1.00			1.00		
EPA Method		901.1			903.1			904.0			HSL-300			901.1			HSL-300		
Leachate Monitoring Location	**Total Vs. Filtered**																		
Cell I/II/III																			
13-May-10	Total	-		-	3.3		*1.8*	12.3		*7.2*	1.6	U	*1.3*	-		-	-0.22	U	*0.22*
31-Jan-12	Total	<20	U	*4.9*	1.72		*0.55*	1.4		*1.3*	-		-	-		-	-		-
31-Jan-12	Total - Dupe	0.07	U	*7.9*	-		-	-		-	-		-	-		-	-		-
31-Jan-12	Filtered	<20	U	*2.4*	1.59		*0.46*	1.76		*0.99*	-		-	-		-	-		-
Cell IV																			
13-May-10	Total	-		-	0.7	J	*0.22*	0.74	J	*0.42*	0.73	J	*0.28*	-		-	0.042	U	*0.085*
31-Jan-12	Total	1.1	U	*7.2*	2.43		*0.68*	1.8	U	*1.5*	-		-	-		-	-		-
31-Jan-12	Filtered	2.8	U	*8.0*	1.80		*0.48*	1.91		*0.94*	-		-	-		-	-		-
29-Jun-12	Total	-0.435		*3.35*	1.04		*0.71*	7.01		*4.92*	15.7		*281*	-1.2		*47*	0.093		*0.424*
29-Jun-12	Filtered	0.085		*2.52*	0.811		*0.654*	4.91		*3.02*	2.25		*1.76*	-4.53		*154*	0.490		*1.12*
Leachate Lagoon																			
31-Jan-12	Total	1	U	*6.0*	0.74		*0.21*	0.39	U	*0.46*	-		-	-		-	-		-
31-Jan-12	Total - Dupe	-		-	0.59		*0.2*	0.73	U	*0.57*	-		-	-		-	-		-
31-Jan-12	Filtered	-1.6	U	*7.0*	0.39		*0.16*	0.77		*0.5*	-		-	-		-	-		-

Notes:

Qual.	=	Qualifer
U	=	Result is less than detection limit
J	=	Lab estimated result
B	=	Lab estimated result; result is less than reporting limit
Total Uncert.	=	Total uncertainty (2 σ +/-)

Table 1 - Chemung County Landfill Radionuclide Leachate Data Results

		Uranium 238 (pCi/L)	Qual.	Total uncert.	Total Uranium pCi/L	Qual.	Total uncert.	Thorium 228 (pCi/L)	Qual.	Total uncert.	Thorium 230 (pCi/L)	Qual.	Total uncert.	Thorium 232 (pCi/L)	Qual.	Total uncert.
NRC/DEC	effluent limit	300			-			200			100			30		
NRC/DEC	sewer limit	3000			-			2000			1000			300		
RL		1.00			--			1.00			1.00			1.00		
EPA Method		HSL-300			908.0			HSL-300			HSL-300			HSL-300		
Leachate Monitoring Location	**Total Vs. Filtered**															
Cell I/II/III																
13-May-10	Total	0.33	U	*0.67*	-			0.18	U	*0.41*	0.68	U	*0.7*	0.0	U	*0.12*
31-Jan-12	Total	-		-	-1.34		3.73	-		-	-		-	-		-
31-Jan-12	Total - Dupe	-		-	-			-		-	-		-	-		-
31-Jan-12	Filtered	-		-	3.65		*3.52*	-		-	-		-	-		-
Cell IV																
13-May-10	Total	0.46	J	*0.22*	-			-0.008	U	*0.012*	0.081	J	*0.085*	0.0	U	*0.019*
31-Jan-12	Total	-		-	1.65		3.03	-		-	-		-	-		-
31-Jan-12	Filtered	-		-	-1.44		*3.43*	-		-	-		-	-		-
29-Jun-12	Total	0.000		*0.325*	0.403		*2.75*	1.012		*1.02*	1.093		*0.669*	-0.199		*0.455*
29-Jun-12	Filtered	0.563		*0.861*	3.88		3.09	2.88		*2.08*	0.605		*0.923*	0.242		*0.672*
Leachate Lagoon																
31-Jan-12	Total	-		-	1.34		3.08	-		-	-		-	-		-
31-Jan-12	Total - Dupe	-		-	-			-		-	-		-	-		-
31-Jan-12	Filtered	-		-	2.75		*3.47*	-		-	-		-	-		-

Notes:

Qual. = Qualifer
U = Result is less than detection limit
J = Lab estimated result
B = Lab estimated result; result is less than reporting limit
Total Uncert. = Total uncertainty (2 σ +/-)

Table 2

Chemung County Landfill
Radionuclide Sediment Data Results

Table 2 - Chemung County Landfill Radionuclide Sediment Data Results

	Bismuth 212 (pCi/g)	Qual.	Total uncert.	Bismuth 214 (pCi/g)	Qual.	Total uncert.	Cesium 137 (pCi/g)	Qual.	Total uncert.	Lead 212 (pCi/g)	Qual.	Total uncert.	Lead 214 (pCi/g)	Qual.	Total uncert.	Potassium 40 (pCi/g)	Qual.	Total uncert.
EPA Method	901.1			901.1			901.1			901.1			901.1			901.1		
Leachate Monitoring Location																		
Leachate Lagoon Sediment																		
29-Jun-12	2.11		*0.837*	2.23		*0.28*	-0.005		*0.037*	1.26		*0.163*	2.49		*0.303*	8.3		*1.18*

Notes:

Qual.	=	Qualifer
U	=	Result is less than detection limit
J	=	Lab estimated result
B	=	Lab estimated result; result is less than reporting limit
Total Uncert.	=	Total uncertainty (2 σ +/-)

Table 2 - Chemung County Landfill Radionuclide Sediment Data Results

	Radium 226 (pCi/g)	Qual.	*Total uncert.*	Radium 226 (pCi/g)	Qual.	*Total uncert.*	Radium 228 (pCi/g)	Qual.	*Total uncert.*	Radium 228 (pCi/g)	Qual.	*Total uncert.*	Uranium 234 (pCi/g)	Qual.	*Total uncert.*	Uranium 235 (pCi/g)	Qual.	*Total uncert.*	Uranium 235 (pCi/g)	Qual.	*Total uncert.*
EPA Method	903.1			901.1			904.0			901.1			HSL-300			901.1			HSL-300		
Leachate Monitoring Location																					
Leachate Lagoon Sediment 29-Jun-12	2.27		*0.782*	2.41		*0.278*	2.02		*0.718*	2.69		*0.364*	0.265		*0.132*	0.172		*0.0697*	0.027		*0.071*

Notes:

Qual. = Qualifer
U = Result is less than detection limit
J = Lab estimated result
B = Lab estimated result; result is less than reporting limit
Total Uncert. = Total uncertainty (2 σ +/-)

Table 2 - Chemung County Landfill Radionuclide Sediment Data Results

	Uranium 238 (pCi/g)	Qual.	*Total uncert.*	Thallium 208 (pCi/g)	Qual.	*Total uncert.*	Total Uranium (pCi/g)	Qual.	*Total uncert.*	Thorium 234 (pCi/g)	Qual.	*Total uncert.*	Thorium 228 (pCi/g)	Qual.	*Total uncert.*	Thorium 230 (pCi/g)	Qual.	*Total uncert.*	Thorium 232 (pCi/g)	Qual.	*Total uncert.*
EPA Method	HSL-300			901.1			908.0			901.1			HSL-300			HSL-300			HSL-300		
Leachate Monitoring Location																					
Leachate Lagoon Sediment																					
29-Jun-12	0.334		*0.151*	0.43		*0.0871*	0.806		0.388	0.388		*2.17*	1.12		*0.434*	0.098		*0.120*	0.300		*0.192*

Notes:

Qual. = Qualifer
U = Result is less than detection limit
J = Lab estimated result
B = Lab estimated result; result is less than reporting limit
Total Uncert. = Total uncertainty (2 σ +/-)