



November 21, 2017

Cynthia A. Whitfield, P.E., Environmental Engineer
NYS Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau A, Section B
625 Broadway, 11th Floor
Albany, New York 12233-7015

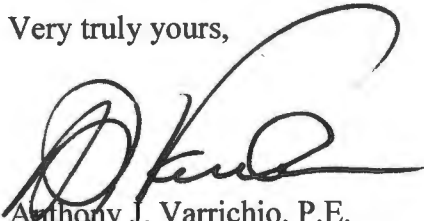
**Re: Town of Islip
Blydenburgh Road Landfill Post Closure Monitoring**

Dear Ms. Whitfield:

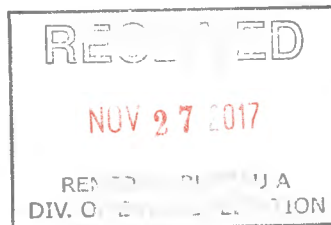
We are submitting the 2017 1st bi-annual Hauppauge Blydenburgh Road Landfill Post Closure Monitoring Report. The Post Closure Groundwater Monitoring Program Quarterly Sampling Results will continue to be forwarded to the respective agencies.

If you have any questions, do not hesitate to contact me at (631) 224-5645.

Very truly yours,



Anthony J. Varrichio, P.E.
Chief Engineer



AJV:vl

Enclosure

cc: James Heil, President
Greg Hancock, Deputy Commissioner
Robert Schneck, Region 1 Stony Brook, NYSDEC – w/encl.
Mark E. Dannenberg, USEPA, Region 2 – w/encl.
Eric Lenio, NYSDEC, Region 1, Stony Brook – w/encl.
File



COPY

MEMO

TO: Anthony J. Varrichio, P.E., Chief Engineer
FROM: Fazil Rahaman, Acting Ground Water Treatment Plant Operator
DATE: August 9, 2017
RE: **Blydenburgh Rd. L.F. 2017 1st Half Semi-Annual Post Closure
Monitoring and Maintenance Report**

Attached is the 2017, 1st Half Semi-Annual Post Closure Monitoring and Maintenance Report for the M.S.W. Landfill, Ash Monofill, and Groundwater Remediation Facility for your review and comments.

CC: James Jahnke, Sanitation Site Crew Leader

2017, 1st Half

**POST CLOSURE MONITORING AND MAINTENANCE REPORT
FOR THE BLYDENBURGH ROAD M.S.W. LANDFILL
FORMER ASH MONOFILL
AND GROUNDWATER REMEDIATION**

TABLE of CONTENTS

PART I

Blydenburgh Road M.S.W. Landfill
And Former
Ash Monofill Inspection Report Tables

PART II

Groundwater Remediation Facility
Related Documents

PART III

Blydenburgh Road M.S.W. Landfill
And Former
Ash Monofill
Gas Monitoring Reports

From January 2017 through June 2017

Prepared by: F.P.M. Group – Town Consultant

PART IV

Blydenburgh Road Landfill Complex
Groundwater Monitoring Report Summaries
March 15th, August 1st 2017

Prepared by: Dvirka & Bartilucci Town – Consultant

PART I

BLYDENBURGH ROAD M.S.W. LANDFILL

AND FORMER

ASH MONOFILL INSPECTION REPORT

TABLES

Table 2
Islip Resource Recovery Agency
Blydenburgh Road Landfill Complex
FIELD INSPECTION FORM NO. 1 FOR
MSW LANDFILL/ ASH MONOFILL COVERS AND SURFACE WATER MANAGEMENT SYSTEM

DATE: 6/9, 6/12/17

WEATHER: Sunny, Sunny.

INSPECTOR(S): Fazil Rahaman

INSPECTION (Check One): QUARTERLY SEMI-ANNUAL OTHER _____

| ITEM | ADEQUATE (or YES) | NEEDS ATTENTION (or NO) | COMMENTS/ REMARKS <small>(Note if repair/maintenance is recommended and describe its location/extent)</small> |
|--|---|---|--|
| 1.0 MSW AND ASH MONOFILL COVER | | <i>See Notes 1 and 2</i> | |
| 1.1 Muncipal Solid Waste (MSW) Landfill | | | |
| General Condition of Vegetated Cover | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| General Condition of Conc. Revetment | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Re: Section 1.2 |
| Evidence of Rodents/Animal Burrows | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | |
| Evidence of Local Distressed Vegetation | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | |
| Start of Woody Vegetation (Trees) | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | |
| General Condition of Roads on Cover | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Evidence of Local Settlement | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | |
| Evidence of Leachate Seeps | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | |
| - breaks or cracks in cover | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Not inspected, Due to obvious reasons. |
| - excessive erosion | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | |
| - odors | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | |
| (Other – Describe to right) | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| 1.2 Revetment Mat on MSW Landfill | | | |
| Eastern Sideslope | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Movement all mat location`s, Will be addressed in closure of C&D. |
| Southern Sideslope | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Movement all mat location`s, Same. |
| Western Sideslope | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | Minimal movement all mat location`s, Same. |
| 1.3 Ash Monofill | | | |
| General Condition of Vegetated Cover | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Solar farm occupies approximately 15,000 sq. ft.. |
| Evidence of Rodents/Animal Burrows | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | |
| Evidence of Distressed Vegetation | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | |

Table 2
Islip Resource Recovery Agency
Blydenburgh Road Landfill Complex
FIELD INSPECTION FORM NO. 1 FOR
MSW LANDFILL/ ASH MONOFILL COVERS AND SURFACE WATER MANAGEMENT SYSTEM

| ITEM | ADEQUATE (or YES) | NEEDS ATTENTION (or NO) | COMMENTS/ REMARKS <small>(Note if repair/maintenance is recommended and describe its location/extent)</small> |
|--|---|---|--|
| 1.0 MSW AND ASH MONOFILL COVER (Cont'd) | | | |
| 1.3 Ash Monofill (Cont'd) | | | |
| Start of Woody Vegetation (Trees) | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | |
| General Condition of Roads on Cover | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Evidence of Local Settlement | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | |
| Evidence of Leachate Seeps | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | |
| - breaks or cracks in cover | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| - excessive erosion | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | |
| - odors | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | |
| (Other – Describe to right) | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| | | | Not inspected, Due to obvious reasons. |
| 2.0 OPEN CHANNELS | | | |
| 2.1 Diversion Swales | | | |
| 1-A | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Excess vegetation/settlement/Subsidence. |
| 1-B | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Excess vegetation/settlement/Subsidence. |
| 2-A | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Excess vegetation/settlement/Subsidence. |
| 2-B | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Excess vegetation/settlement/Subsidence. |
| 2-C | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Excess vegetation/settlement/Subsidence. |
| 2-D | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Excess vegetation/settlement/Subsidence. |
| 3-A | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Excess vegetation/settlement/Subsidence. |
| 3-B | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Excess vegetation/settlement/Subsidence. |
| 3-C | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Excess vegetation/settlement/Subsidence. |
| 3-D | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Excess vegetation/settlement/Subsidence. |
| 3-E | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Excess vegetation/settlement/Subsidence. |
| 3-F | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Excess vegetation/settlement/Subsidence. |

See Note 3

Table 2
 Islip Resource Recovery Agency
 Blydenburgh Road Landfill Complex
 FIELD INSPECTION FORM NO. 1 FOR
 MSW LANDFILL/ ASH MONOFILL COVERS AND SURFACE WATER MANAGEMENT SYSTEM

| ITEM | ADEQUATE (or YES) | NEEDS ATTENTION (or NO) | COMMENTS/ REMARKS <small>(Note if repair/maintenance is recommended and describe its location/extent)</small> |
|--------------------------------------|---|---|--|
| 2.0 OPEN CHANNELS (Cont'd) | | | |
| 2.1 Diversion Swales (Cont'd) | | | |
| 4-A | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Excess vegetation/settlement/Subsidence. |
| 4-B | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Excess vegetation/settlement/Subsidence. |
| 4-C | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Excess vegetation/settlement/Subsidence. |
| 4-D | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Excess vegetation/settlement/Subsidence. |
| 5-A | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Excess vegetation/settlement/Subsidence. |
| 5-B | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Excess vegetation/settlement/Subsidence. |
| AF-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Excess vegetation/settlement/Subsidence. |
| AR-2 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Excess vegetation/settlement/Subsidence. |
| AF-3 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Excess vegetation/settlement/Subsidence. |
| 2.2 Down Chutes | | | |
| No. 1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Erosion, Will be addressed in closure of C&D, 2 Photo attached. |
| No. 2 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| No. 3 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| No. 4 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| No. 5 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| 2.3 Perimeter Channels | | | |
| P-1 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| P-2 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| P-3 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| P-4 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| P-5 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Cracking/spalling, etc. just north of downchute #1, Photo attached. |
| MR-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Cracking/spalling, etc. Will be addressed in closure of C&D, Photo att |

Table 2
Islip Resource Recovery Agency
Blydenburgh Road Landfill Complex
FIELD INSPECTION FORM NO. 1 FOR
MSW LANDFILL/ ASH MONOFILL COVERS AND SURFACE WATER MANAGEMENT SYSTEM

| ITEM | ADEQUATE (or YES) | NEEDS ATTENTION (or NO) | COMMENTS/ REMARKS <small>(Note if repair/maintenance is recommended and describe its location/extent)</small> |
|--|---|---|--|
| 3.0 CONTROL STRUCTURES | | | |
| | <i>See Note 4</i> | | |
| 3.1 Energy Dissipation Structure No. 1 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| 3.2 Energy Dissipation Structure No. 2 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| 3.3 Stilling Structure No. 1 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| 3.4 Stilling Structure No. 2 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| 3.5 Stilling Structure No. 3 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| 4.0 CULVERTS (Above-grade inspection) | | | |
| | <i>See Note 5</i> | | |
| 4.1 81-in. x 59-in. CMP (Access Way) | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| 4.2 42-in. -dia. CMP (Access Way & MH) | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| 4.3 24-in.-dia. PE Pipe (Headwall) | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| 4.4 30-in.-dia. CMP @ Down Chute No. 5 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Back pitched -Will be addressed in closure of C&D. |
| 5.0 RECHARGE BASINS AND APPURTENANCES | | | |
| | <i>See Note 6</i> | | |
| 5.1 Recharge Basin No. 1 3 | | | |
| 81-in. x 59-in. CMP Outfall | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Sheet Piles | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Not inspected, covered with vegetation. |
| 18-in.-dia. CMP Outfall | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| 4-in.-dia. PVC Pipe Outfall | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Basin No. 1 Sideslopes | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Basin No. 1 Bottom | ADEQUATE <input type="checkbox"/> YES <input checked="" type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Under water. |

Table 2
Islip Resource Recovery Agency
Blydenburgh Road Landfill Complex
FIELD INSPECTION FORM NO. 1 FOR
MSW LANDFILL/ ASH MONOFILL COVERS AND SURFACE WATER MANAGEMENT SYSTEM

| ITEM | ADEQUATE (or YES) | NEEDS ATTENTION (or NO) | COMMENTS/ REMARKS <small>(Note if repair/maintenance is recommended and describe its location/extent)</small> |
|---|---|---|--|
| 5.0 RECHARGE BASINS AND APPURTENANCES (CONT'D) | | | |
| 5.2 Recharge Basin No. 2 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | ----- |
| 42-in.-dia CMP Outfall | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Diversion Swale AR-2 Outfall | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Excess vegetation/settlement. |
| Diversion Swale AF-3 Outfall | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Excess vegetation/settlement. |
| Basin No. 2 Sideslopes | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Excess woody vegetation. |
| Basin No. 2 Bottom | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Excess woody vegetation. |

COMMENTS:

NOTES:

- 1) Use this inspection form along with Figure 4 – Landfill Cover and Surface Water Management System Plan by Golder Associates.
- 2) Relating to item 1.0 – Landfill and Monofill Covers, an example of local distressed vegetation is grass having a brown or black color, and characteristics typical of a leachate seep are a dark orangish/brown/black liquid or stain possibly with a strong odor.
- 3) Conditions/features to be alert for and possibly noted relating to Item 2.0 – Open Channels: general condition, flow capability, settlement/subsidence, erosion, blockages/debris, excess vegetation, animal burrowing, etc.
- 4) Conditions/features to be alert for and possibly noted relating to Item 3.0 – Control Structures: general condition, flow capability, settlement/subsidence, blockages/debris, structural integrity, cracking/spalling, etc.
- 5) Conditions/features to be alert for and possibly noted relating to Item 4.0 – Culverts (Above-grade inspection): condition of exterior of access way/manhole structures, condition of culvert barrel at inlet and outlet, etc.
- 6) Conditions/features to be alert for and possibly noted relating to Item 5.0 – Recharge Basins and Appurtenances: general condition, storage capability, sliding/soughing of sideslopes, animal burrowing, sediment accumulation, integrity of outfall structures, undermining of culvert barrel, etc.

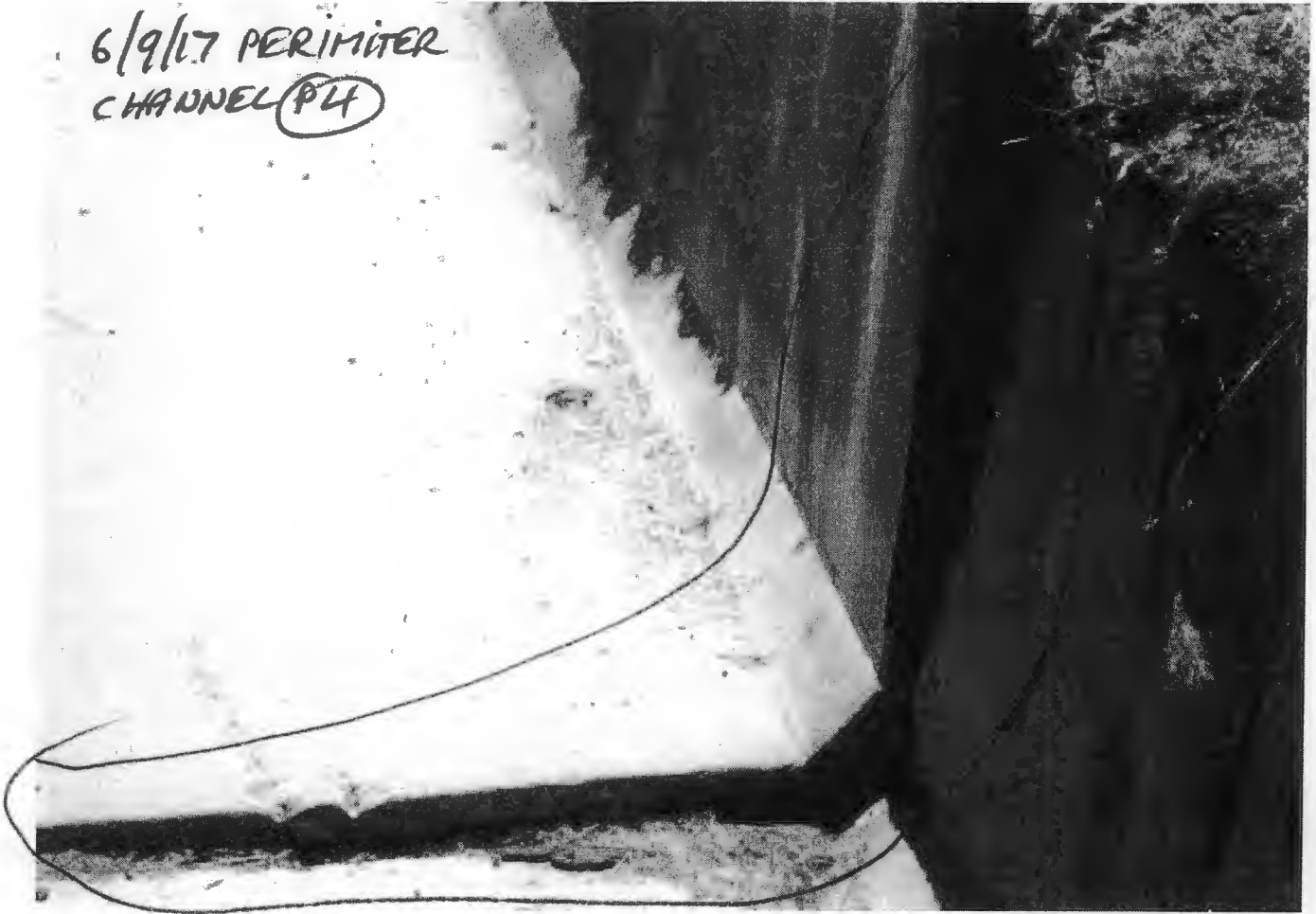
6/9/17 DOWN CHUTE (#1)



DOWN CHUTE #1



6/9/17 PERIMETER
CHANNEL (P4)



6/9/17 PERIMETER
CHANNEL (P5)



Table 3
Islip Resource Recovery Agency
Blydenburgh Road Landfill Complex

FIELD INSPECTION FORM NO. 2 FOR WEEKLY FIELD INSPECTION
OF LEACHATE MANAGEMENT SYSTEM

DATE: 7/11/17

WEATHER: Sunny.

INSPECTOR(S): Fazil Rahaman

INSPECTION (Check One): QUARTERLY SEMI-ANNUAL OTHER

| ITEM | ADEQUATE (or YES) | NEEDS ATTENTION (or NO) | COMMENTS/ REMARKS <small>(Note if repair/maintenance is recommended and describe its location/extent)</small> |
|---|---|---|--|
| 1.0 SOUTHERN PUMP MANHOLE | | | |
| Air Receiver Pressure - PSIG | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | ----- |
| Air Compressor Intake Filter Condition | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | ----- |
| Air Compressor Coolant/ Oil Level | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | ----- |
| Air Compressor Condensate Drainage | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | ----- |
| Air Ejector Air Supply Filter Condition | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | ----- |
| Air Ejector Air Supply Pressure – PSIG | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | ----- |
| Air Ejector Pump Operation | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | ----- |
| Comments | | | Based upon engineering consulting firm, investigation and report dated 6/30/03 Attached. The use of this system has been determined unnecessary. |
| 2.0 LEACHATE STORAGE TANKS | | | |
| Leachate Storage Tank No. 1 Level/Condition | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | 4 Feet. |
| Leachate Storage Tank No. 2 Level/Condition | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | 4 Feet. |
| Leachate Storage Tank No. 3 Level/Condition | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | 4 Feet. |
| Leachate Storage Tank No. 4 Level/Condition | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | 4 Feet. |
| Cathodic Protection System Operation | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Not inspected. Due to product containment. |
| Liquid Present in Containment Area | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | |
| Liquid Level in Sump Manhole | ADEQUATE <input type="checkbox"/> YES <input checked="" type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | On going monitoring/pump out. |
| Liquid Level in Pump Station | ADEQUATE <input type="checkbox"/> YES <input checked="" type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | On going monitoring/pump out. |
| Comments | | | ----- |

Table 3
Islip Resource Recovery Agency
Blydenburgh Road Landfill Complex

FIELD INSPECTION FORM NO. 2 FOR WEEKLY FIELD INSPECTION
OF LEACHATE MANAGEMENT SYSTEM

| ITEM | ADEQUATE (or YES) | NEEDS ATTENTION (or NO) | COMMENTS/ REMARKS <small>(Note if repair/maintenance is recommended and describe its location/extent)</small> |
|---|---|---|--|
| 3.0 PUMP STATION MANHOLE NO. 1 – CONTROL PANEL | | | |
| Pump No. 1 Operating Hours | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | New Meter (62.0 hrs.), Previous Meter (11,955 hrs). |
| Pump No. 1 Instantaneous Flow Rate - GPM | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | 311 GPM |
| Pump No. 2 Operating Hours | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | 11,369 hrs. |
| Pump No. 2 Instantaneous Flow Rate - GPM | ADEQUATE <input type="checkbox"/> YES <input checked="" type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | 175 GPM. |
| Alarm Conditions | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | |
| Seal Leak Continuity Test | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Not working. |
| Lamp Light Test | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Pump Served by Generator | ADEQUATE <input type="checkbox"/> YES <input checked="" type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Pump #2 (lag) served by generator, Pump #1 (lead) not served. |
| Flow Meter Totalizer Reading - Gallons | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | 12,754,805 gal. |
| Comments | | | |
| 4.0 SUMP PUMP – CONTROL PANEL | | | |
| Pump Operating Hours | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | 10,801 hrs. |
| Alarm Condition | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | |
| Seal Leak Continuity Test | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Not working. |
| Lamp Light Test | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Comments | | | Sump pump, pumping up riser concerns REPAIRED. |

Table 3

Islip Resource Recovery Agency
 Blydenburgh Road Landfill Complex

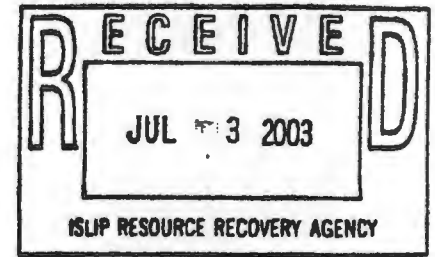
FIELD INSPECTION FORM NO. 2 FOR WEEKLY FIELD INSPECTION
 OF LEACHATE MANAGEMENT SYSTEM

| ITEM | ADEQUATE (or YES) | NEEDS ATTENTION (or NO) | COMMENTS/ REMARKS <small>(Note if repair/maintenance is recommended and describe its location/extent)</small> |
|--------------------------------------|---|--|--|
| 5.0 EMERGENCY GENERATOR | | | |
| Generator Oil Level | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Generator Coolant Level | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Battery Charge | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Diesel Fuel Oil Level | ADEQUATE <input type="checkbox"/> YES <input checked="" type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | 1/3 full. |
| Operating Test Checks: | ADEQUATE <input type="checkbox"/> YES <input checked="" type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Start-Up Performance | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Generator Oil Pressure | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | 49 PSI. |
| Generator Motor Temperature | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | 190 Degree Fahrenheit, (RAN FOR 30 MINUTES). |
| Generator Voltage (underload) | ADEQUATE <input type="checkbox"/> YES <input checked="" type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | 245 Volts. |
| Generator Amperage (underload) | ADEQUATE <input type="checkbox"/> YES <input checked="" type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | 12 Amps. |
| Generator Hertz (underload) | ADEQUATE <input type="checkbox"/> YES <input checked="" type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | 59 Herts. |
| Comments | Generator operable in hand mode ONLY. TRANSFER SWITCH INOPERABLE. (Craig D., Landfill Personell Present for inspection). | | |
| 6.0 ASH MONOFILL PUMP STATION | | | |
| Leachate Level | ADEQUATE <input type="checkbox"/> YES <input checked="" type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Comments | Ash Collection Chamber Readings January through June 2017 Attached. Prepared by Jim J L.F. Site crew leader, being monitored and pumped. | | |



**Dvirka
and
Bartilucci**
CONSULTING ENGINEERS

330 Crossways Park Drive, Woodbury, New York, 11797-2015
516-364-9890 • 718-460-3634 • Fax: 516-364-9045
e-mail: db-eng@worldnet.att.net



June 30, 2003

Principals

Nicholas J. Bartilucci, P.E.
President

Henry J. Chiappa, P.E.
Executive Vice President

Thomas F. Maher, P.E.
Vice President

Robert T. Burns, P.E.
Vice President

Richard M. Walks
Vice President

Steven A. Fangmann, P.E.
Vice President

Theodore S. Pyler, Jr.
Vice President

Senior Associates

Anthony O. Conetta, P.E.

Dennis F. Koshier, P.E.

Joseph H. Marturano

John A. Miranda, P.E.

Kenneth J. Pritchard, P.E.

Brian M. Veth, P.E.

Associates

Joseph F. Baader

Garrett M. Byrnes, P.E.

Rudolph F. Cannavale

Joseph A. Fioraliso, P.E.

Thomas P. Fox, P.G.

Gerald Gould, C.P.G.

William D. Merkin, P.E.

Michael Neuberger, P.E.

Edward J. Reilly

Charles J. Wachsmuth, P.E.

Kenneth P. Wenz, Jr., C.P.G.

Paul DiMaria, Chief Engineer
Islip Resource Recovery Agency
401 Main Street
Islip, NY 11751

Re: Blydenburgh Road Landfill Complex
MSW Section 2 Landfill
Leachate Chambers
D&B No. 1222-VII

Dear Mr. DiMaria:

This letter report is intended to document our findings and recommendations relative to our examination of three leachate chambers associated with the MSW Section 2 Landfill at the Blydenburgh Road Landfill Complex.

The MSW Section 2 Landfill area is a 16-acre portion of the overall MSW Landfill. The Section 2 area is located at the southern end of the MSW Landfill and abuts the northern edge of the Cleanfill Phase 1 Landfill area. The Section 2 area is a lined landfill and was constructed in the early to mid 1980s. The Section 2 area is reported to have been constructed with a PVC sideslope and two PVC bottom liners, as well as provisions for leachate collection (primary) and leachate detection (secondary) systems. The Section 2 area was constructed as an excavation on the order of 100 feet deep. The leachate collection and leachate detection systems are located at the base of the excavation.

Access to the leachate collection and detection systems is provided by way of precast concrete chimneys which were assembled in sections to keep pace with the landfilling of waste. There are three chimneys located on the southern slope of the capped Section 2 area. For the purpose of this report, the three structures will be referred to as the east structure, the middle structure and the west structure. The correlation between each of these structures and their relation to the leachate collection and/or leachate detection systems has not been fully established. The location of each structure is depicted on Figure 1 attached.

Dvirka and Bartilucci
CONSULTING ENGINEERS

Paul DiMaria, Chief Engineer
Islip Resource Recovery Agency
June 30, 2003

Page 2

It appears that the Town utilized these structures at various times through the operating period of Section 2 to remove leachate. In February 1988, the Town performed a video examination of the east structure. The video camera was passed from the top of the structure to the bottom. This 1988 examination documented that horizontal misalignment of the precast rings was being experienced to a degree sufficient to impede the movement of the camera down the shaft. Images at the bottom of the shaft depicted the entrance of the leachate piping into the structure.

Following the capping/closure of the MSW Landfill in 1993, the Town made use of the east chimney to remove leachate. At that time, it was noted that the chimney was not straight and plumb and it was difficult to install pumping equipment to the bottom of the chimney to access the leachate system. In order to facilitate the installation of pumping equipment to the bottom of the chimney, the Town had a 6-inch diameter steel riser pipe installed in 1994. This riser pipe provided a conduit to facilitate the installation of a pneumatic bladder pump to the base of the chimney. This pumping system was utilized from March 1994 through early October 1994, after which its use was discontinued and the pump was removed.

In December 1997, the Town had high-density polyethylene (HDPE) geomembrane covers installed over the exposed tops of each chimney to mitigate the release of steam and odors from the chimney structures. These covers were fusion welded to the HDPE geomembrane landfill capping system.

Dvirka and Bartilucci Consulting Engineers (D&B) was requested to perform an examination of each of the three leachate structures and an assessment of the opportunity and/or the need for the Town to reinstitute leachate pumping from the capped and closed Section 2 area.

D&B retained the services of Pengat Technical Inspections to perform a video inspection of each of the three structures, as well as the 6-inch steel riser pipe located in the east structure. In order to access each structure, the HDPE liner covering was cut in select areas. The east and west structures were found to have openings in the top slab which would allow the video camera to be inserted into the structure. The east structure top slab has a 14-inch diameter opening which was covered by a loose piece of steel plate. The west structure top slab has a 24-inch square aluminum hatch. Each of the three structures has a 4-inch PVC vent pipe which penetrates the top slab and is connected to an odor control device. The middle structure did not have an opening in the top slab other than the vent pipe penetration. An 8-inch diameter penetration was core drilled into the side of the middle structure to provide access to the interior of the structure. After the inspection, the core drilled hole was sealed with an expanding plumber's plug.

The video inspection was performed by lowering the camera into the structure by its power/video cable. The location of the three structures in mid-slope, and the lack of an access road, prevented the support van from getting closer than approximately 200 feet to any of the structures.

Dvirka and Bartilucci

CONSULTING ENGINEERS

Paul DiMaria, Chief Engineer
Islip Resource Recovery Agency
June 30, 2003

Page 3

Consequently, the video camera was raised and lowered by hand, with 200 feet of slack cable draped across the ground surface from the van. This arrangement compromised the accuracy of the counter used to measure the length of cable and the corresponding position of the camera. Therefore, the depth measurements depicted on the videotapes should be considered as gross approximations and may not be representative, especially at times when the camera is raised and lowered by hand without adjusting the slack in the cable from the van.

Enclosed are copies of the videotapes generated during the inspections conducted on October 10, 11, 15 and 24, 2002. In general, you will find that the visual image is somewhat poor due to the high moisture content in the structures which promotes condensation on the camera lens. Typically, the condensation problem is observed in the upper reaches of the structure. In addition, you will find that the images are difficult to decipher because there is no fixed point of reference. The camera utilized for these examinations made use of a pan and tilt head which allows the lens to scan left to right and up and down. Given that the camera is suspended from a cable, the camera assembly is free to rotate, which forfeits all opportunity to maintain a reference, such as north. The combination of these movements makes it difficult to establish the perspective of the viewed image. This is further complicated by the lack of an audio narration which was provided in the field but, for some reason, was not recorded on the tapes.

The video inspection of each structure was further complicated by the method utilized to construct each chimney or shaft. As noted, the height of each structure was advanced as the landfilling of MSW progressed around it. The precast concrete sections used to assemble the structures were fabricated with butt or flat ends so that the new section being placed would sit on the top of the lower section without any mechanical means to lock the sections in alignment. Over time, the natural settlement and shifting of the MSW waste mass would impose lateral forces on the assembly and cause the sections to shift at their intersections, resulting in a shaft which is neither straight or plumb. Given the limitations of the video inspection process, the magnitude of misalignment cannot be readily estimated but can be inferred by the observed movement of the camera across the cross section of the shaft. Individual joints can be observed in the video and the degree of shift can be visually estimated, however, the cumulative effect and the plane or direction of deflection is not as apparent.

The following shall serve to provide our interpretation of the condition of each of the structures based upon the enclosed videotapes, as well as our observations during the video inspection.

East Structure

The east structure is approximately 8 feet in diameter. The top slab of the structure is approximately 6 feet above the finished grade of the landfill capping system.

Paul DiMaria, Chief Engineer
Islip Resource Recovery Agency
June 30, 2003

The east structure was first videotaped in February 1988, prior to the installation of the 6-inch steel "well shaft" within the structure. The 1988 inspection documented that the structure was not plumb or in true alignment as evidenced by the joint displacements and the migration of the camera across the width of the structure. The camera was advanced to the bottom (water level) of the structure at a reported depth of 147.5 feet (153.5 feet as shown on the tape less 6 feet to adjust for zero). The narrative states that a tape measure was used to sound the structure to approximately 180 feet, however, this statement should be suspect given the likelihood that a tape measure may adhere to the moist or wet walls of the structure and not give a true feel for the bottom of the structure. The inlet pipe was perceived to occur at a depth of 140 feet (146 feet less 6 feet). The depth of the liquid at the bottom of the structure was not determined. The 1988 examination was performed with a camera without pan and tilt, so the view is limited when the camera hugs the walls of the structure and the view is straight down.

The 1988 examination clearly documents that the structure had experienced shifting at a number of joints but access to the bottom of the structure with a flexible device was possible, though with difficulty.

The 1988 examination did not reveal any pumping equipment or other devices in the structure.

Following the capping/closure of the MSW landfill, the Town had a 6-inch steel pipe installed in the east structure to serve as a conduit or well shaft to facilitate the installation of pumping equipment to the bottom of the structure. The Town utilized this well shaft to install a pneumatic diaphragm pump which was operated from March 1994 through early October 1994. Records indicate that a total of 910,000 gallons of leachate was removed in this period. It is also reported that one precast ring was removed resulting in the top slab being lowered by approximately 8 feet.

The October 2002 examination of the east structure included both the interior of the 8-foot diameter structure and the 6-inch diameter steel "well shaft" within the structure.

The camera was inserted into the top of the steel pipe and was able to be advanced to the bottom of the pipe at a depth of approximately 139 feet. The "well shaft" is constructed with threaded and coupled sections of pipe and the bottom section is constructed with a wire wrapped screen. The interior of the pipe and screen shows significant signs of corrosion throughout the entire length and material is observed to flake off due to the action of the camera. There is no apparent failure of the pipe or screen and it appears capable of performing its intended function. The screened interval is estimated to be about 5 feet in length. The water level in the screened interval was found to be of nominal depth. The depth of liquid in the screened interval is consistent with the depth of liquid which was observed subsequently in the structure, therefore, the liquid in the "well shaft" is reflective of the liquid in the structure.

Paul DiMaria, Chief Engineer
Islip Resource Recovery Agency
June 30, 2003

Following the video examination of the "well shaft," the interior of the east structure was inspected. The east structure was confirmed to being constructed of precast ring of a uniform diameter. As in 1988, the joints between rings were found to be shifted out of alignment by as much as the wall thickness of the rings.

The well shaft is readily visible throughout the depth of the structure and it is noted that the well shaft is not secured in any fashion to the precast concrete structure. There was no obvious deformation of the well shaft (interior view or exterior view), yet the shaft is found to meander across the width of the structure. This condition serves to document the misalignment of the assembled precast structure. The well shaft was observed to have significant corrosion on the exterior of the steel pipe to the point where layers or laminations were noted to be peeling off. From the exterior (interior of the structure), the screened interval at the base of the steel "well shaft" is not recognizable as a screen section (the screen is recognizable from the inside of the pipe). The "well shaft" is seen to rest on the bottom slab of the structure.

The camera was able to be passed from the top of the structure to the base at a depth of approximately 130 feet (137 feet less 7 feet to adjust for zero). Given the constraints involved in the cable measurements, the depths suggested by the "well shaft" (139 feet) and the depth suggested by the structure (130 feet) are considered to be equal for the purpose of this discussion. Attempts were made to measure the depth of the structure with a tape measure while the camera was at the bottom of the structure to allow visual confirmation of when the tape was on the bottom. These attempts were not successful. The weighted tape measure was not able to reach the bottom, but instead became caught on the ledges created by the misaligned precast sections.

The camera experienced similar difficulties, often become lodged between the "well shaft" and the wall of the structure.

The interior of the eastern structure appears to be competent with no apparent structural failures. As noted above, the camera was advanced to the bottom of the structure where the bottom of the "well shaft" could be observed, as well as the inlet pipe to the structure.

There was no discernable flow of liquid into the east structure and the depth of liquid accumulated in the base of the structure was nominal. The minimal amount of liquid in the base of the structure would not warrant its removal and would not accommodate the operation of a pump, if so desired.

Dvirka and Bartilucci

CONSULTING ENGINEERS

Paul DiMaria, Chief Engineer
Islip Resource Recovery Agency
June 30, 2003

Page 6

It had been reported that the Town discontinued the operation of the diaphragm pump and ultimately removed it because it was concluded that there was no leachate to be pumped. The October 2002 video inspection confirms this conclusion.

West Structure

The west structure is approximately 4 feet in diameter. The top slab of the structure is approximately 9 feet 6 inches above the finished grade of the capping system.

The west structure was video inspected on October 15, 2002, by lowering the camera through the 4-inch vent penetration of the top slab. The aluminum hatch was not operable at the time. Subsequent efforts were able to dislodge a piece of debris from the lock mechanism, allowing the hatch to be opened.

The inspection documented that the west structure is constructed of 4-foot diameter rings throughout the depth of the inspection and that misalignment of the rings has occurred. It should be noted that the text message on the video tape incorrectly identifies the structure as the "east" manhole with a diameter of 8 feet and a date of June 12, 1996.

The video inspection of the west structure reveals that this structure was utilized as a pumping structure at some time during the operation of Section 2, as evidenced by the myriad of cables (wire rope), wires, hoses and what appears to be a length of slotted PVC screen. The nature of these materials would suggest that a pump and its associated appurtenances were utilized at one time, are now abandoned in place and now constitute debris. The haphazard arrangement of this debris in the structure severely inhibited the ability to advance the camera. The debris was encountered in varying degrees from the very top of the structure down to a depth of approximately 71 feet, with more debris being present in the lower portions of the structure.

At a depth of 71 feet, it appears that there is an intermediate slab with a square opening and may include a hatch cover. Several cables and wires are present at this depth. Efforts to advance the camera through the slab opening were not successful due to debris and the misalignment of the structure above. Given these limiting conditions, the overall depth of the structure could not be ascertained. The limitations of positioning the camera prevented a direct view from above the slab opening to assess the remaining depth of the structure.

At first glance, the intermediate slab in the structure would suggest that the slab defines the top of a manhole section which would serve as a wet well. If this were the case, it could then be assumed that the remaining depth of the structure might be on the order of 10 to 15 feet, for an overall depth of 85 to 90 feet. However, records suggest that the structure should be more on the order of 150 feet deep. The inability to access the lower reaches of this structure precludes

Paul DiMaria, Chief Engineer
Islip Resource Recovery Agency
June 30, 2003

Page 7

gaining further insight into the function of the debris which has been abandoned in place or the overall depth of the structure.

In light of these conditions, the west structure does not offer the Town a useful option to leachate management, should there be any leachate present.

Middle Structure

The middle structure is approximately 8 feet in diameter and there was no existing penetration of the top slab other than the 4-inch vent penetration. On October 15, 2002, the first attempt to video inspect the structure was made by inserting the camera through the vent penetration of the top slab. A second attempt to video inspect the structure was performed on October 24, 2002, after an 8-inch hole was core drilled through the sidewall of the structure. The sidewall penetration provided the field personnel more flexibility in trying to adjust the position of the camera relative to the cross section of the structure. The tape of the October 24, 2002 inspection of the middle structure includes the narrative provided during the inspection.

The upper portions of the middle structure were found to consist of a series of rings 8 feet in diameter down to a depth of approximately 18 to 22 feet. The October 15, 2002 inspection tape suggests this depth is approximately 23 feet, given the difference in elevation between the top slab and the sidewall penetration. At this level, the structure reduces in size to a series of rings approximately 4 feet in diameter. The transition from 8 feet to 4 feet is abrupt and appears that the first 8-foot ring was set roughly concentric to the last 4-foot ring. A corrugated hose roughly 4 to 6 inches in diameter was found abandoned in place in the area of the transition.

The entrance to the 4-foot rings was found to be oriented at a dramatic angle off the vertical, as if the 4-foot stack had fallen over onto an incline or slope. It appears that the 8-foot rings were then set above the point where the 4-foot rings came to rest.

Given the offset angle of the 4-foot rings from the 8-foot rings, the camera was not able to enter the 4-foot stack, but merely cross through the mouth of the 4-foot stack. Visually, the degree of inclination in the 4-foot sections is not fully apparent until one realizes that the layer of soft, granular soil which covers the lower portion of the 4-foot barrel can only exist at an inclination closer to horizontal than vertical. The visual image is further confused by the presence of manhole rings in the 4-foot rings, which would normally describe a vertical axis. The lateral view of the camera into the mouth of the 4-foot stack suggests that these rings are joined by tongue and groove manhole joints and that at least three sections can be observed to maintain their relative alignment. However, given the circumstances, it is unlikely that there is continuity of the series of 4-foot rings or that they lead to their intended origin. It is assumed that the overall depth of the middle structure would be commensurate with the east structure and that

Paul DiMaria, Chief Engineer
Islip Resource Recovery Agency
June 30, 2003

Page 8

approximately 100 feet of structure could not be accessed or confirmed due to the existing conditions.

Conclusions and Recommendations

The examination of the three leachate structures reveals that the east structure and the associated 6-inch steel well shaft appear to be sufficiently competent to provide a means to install a leachate pump, should the need exist. The east structure was utilized in the past for this purpose and provided service up until the flow of leachate was perceived to cease. The video examination of the east structure confirms that there is no appreciable accumulation of leachate and, therefore, no opportunity to remove leachate by these means. The span of eight years from the last pumping operation to the current inspection offered more than ample time for leachate to accumulate in this structure. At this point in time, it can be assumed that, absent unforeseen circumstances, the future opportunities to remove leachate via the east structure will not change. Therefore, no remedial action to this structure is suggested.

The west structure was found to be compromised by the assorted debris which has been abandoned in place. This condition precluded a complete examination of the structure and leaves in question whether this structure could be used for the removal of leachate should any exist. Given that no leachate was found at the base of the east structure after a period of eight years, it is unlikely that materially different conditions would be found at the base of the west structure, assuming that it provides a second means of access to the same leachate collection system. Therefore, no remedial action is suggested for this structure.

The middle structure was found to be totally compromised, with no practical means of accessing the underlying leachate chamber for which the middle structure was assembled. Given these circumstances, no remedial action appears practical. The gross misalignment observed in this structure negates any possibility of locating the underlying structure.

In light of the various conditions of the three leachate structures, it appears that the overriding issue is that no leachate was found. Therefore, any attempts to reinstall a viable leachate pumping system in one of these structures would be without merit.

Given this no action alternative, the Town should make repairs to the high density polyethylene covers which were constructed and have suffered some damage due to the elements, in order to lessen the nuisance potential of these structures as a source of odors.

We trust these findings are sufficient for your needs.

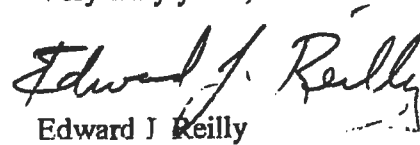
Dvirka and Bartilucci
CONSULTING ENGINEERS

Paul DiMaria, Chief Engineer
Islip Resource Recovery Agency
June 30, 2003

Page 9

Should you have any questions or comments regarding this matter, please feel free to contact this office.

Very truly yours,


Edward J Reilly

EJR/abc

Enclosures

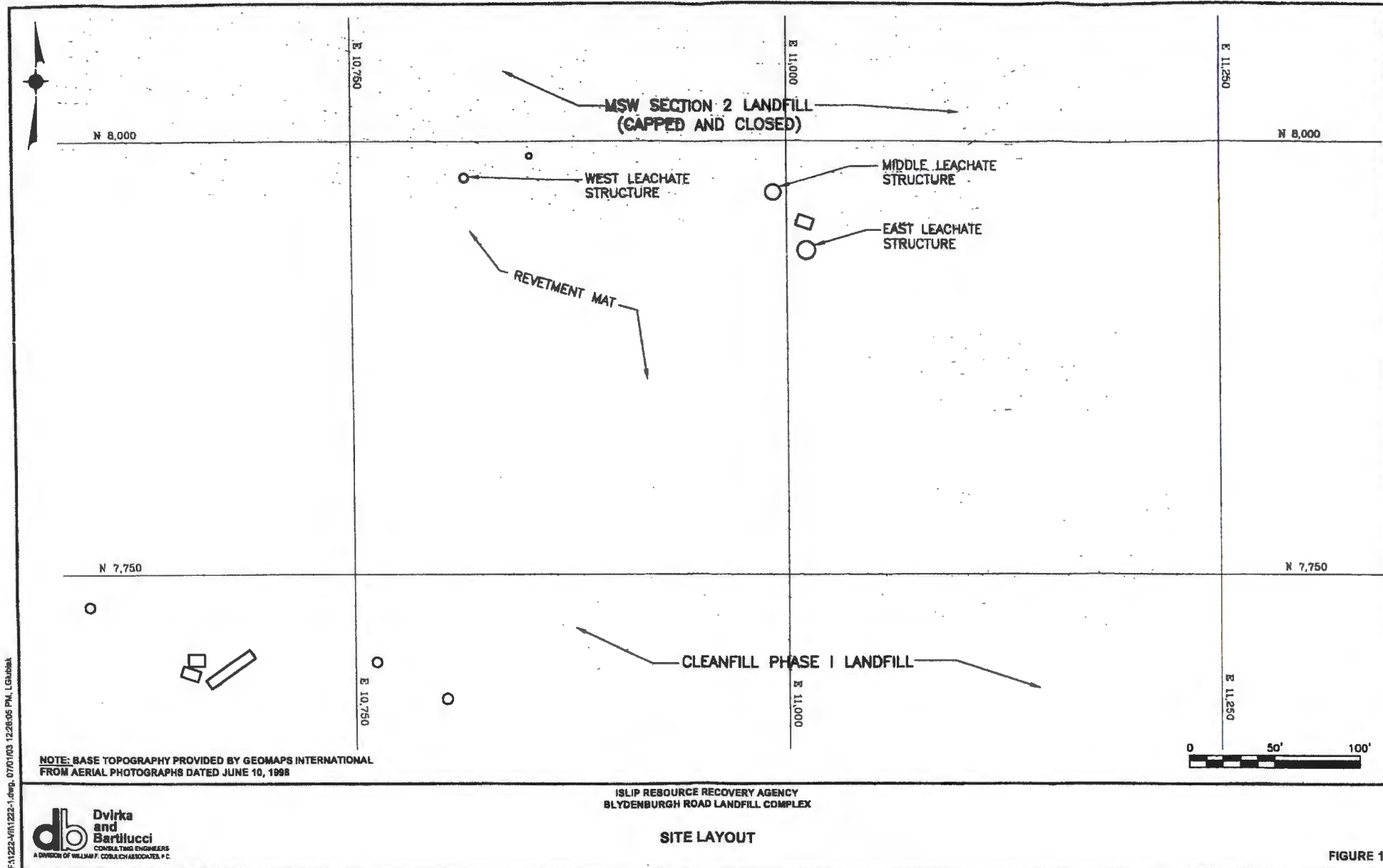
cc: W. Nagel

R. Burns

◆1222\EJR05143PD.DOC(R05)

7/8/03

Note : No action to be taken by operation personnel.
with landfill settlement the protruding ring
should be removed



F:\1225-JUN1225-1.dwg, 07/01/03 12:28:06 PM, LCG:abak

NOTE: BASE TOPOGRAPHY PROVIDED BY GEOMAPS INTERNATIONAL FROM AERIAL PHOTOGRAPHS DATED JUNE 10, 1998

db Dvirka and Bartilucci
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. CORLETT ASSOCIATES, P.C.

ISLIP RESOURCE RECOVERY AGENCY
BLYDENBURGH ROAD LANDFILL COMPLEX

SITE LAYOUT

FIGURE 1

Ash Mono Fill
Collection Chamber Readings
Month of January, 2017

| <i>January</i> | | <i>Feet Measured</i> | <i>Action Taken</i> | <i>Comments</i> |
|------------------|-----------|--------------------------|-------------------------|-----------------|
| <i>Sunday</i> | <i>1</i> | <i>na</i> | | |
| <i>Monday</i> | <i>2</i> | <i>na</i> | | |
| <i>Tuesday</i> | <i>3</i> | <i>3'10"</i> | <i>pumped</i> | |
| <i>Wednesday</i> | <i>4</i> | <i>3'3"</i> | | |
| <i>Thursday</i> | <i>5</i> | <i>3'6"</i> | | |
| <i>Friday</i> | <i>6</i> | <i>4'</i> | | |
| <i>Saturday</i> | <i>7</i> | <i>na</i> | | |
| <i>Sunday</i> | <i>8</i> | <i>na</i> | | |
| <i>Monday</i> | <i>9</i> | <i>3'7"</i> | | |
| <i>Tuesday</i> | <i>10</i> | <i>3'8"</i> | | |
| <i>Wednesday</i> | <i>11</i> | <i>3'8"</i> | | |
| <i>Thursday</i> | <i>12</i> | <i>3'10"</i> | | |
| <i>Friday</i> | <i>13</i> | <i>3'9"</i> | | |
| <i>Saturday</i> | <i>14</i> | <i>na</i> | | |
| <i>Sunday</i> | <i>15</i> | <i>na</i> | | |
| <i>Monday</i> | <i>16</i> | <i>na</i> | | |
| <i>Tuesday</i> | <i>17</i> | <i>3'7"</i> | <i>pumped</i> | |
| <i>Wednesday</i> | <i>18</i> | <i>2'10"</i> | | |
| <i>Thursday</i> | <i>19</i> | <i>3'7"</i> | | |
| <i>Friday</i> | <i>20</i> | <i>3'8"</i> | | |
| <i>Saturday</i> | <i>21</i> | <i>na</i> | | |
| <i>Sunday</i> | <i>22</i> | <i>na</i> | | |
| <i>Monday</i> | <i>23</i> | <i>3'7"</i> | | |
| <i>Tuesday</i> | <i>24</i> | <i>na</i> | | |
| <i>Wednesday</i> | <i>25</i> | <i>3'10"</i> | | |
| <i>Thursday</i> | <i>26</i> | <i>3'10"</i> | <i>pumped</i> | |
| <i>Friday</i> | <i>27</i> | <i>3'4"</i> | | |
| <i>Saturday</i> | <i>28</i> | <i>na</i> | | |
| <i>Sunday</i> | <i>29</i> | <i>na</i> | | |
| <i>Monday</i> | <i>30</i> | <i>3'9"</i> | | |
| <i>Tuesday</i> | <i>31</i> | <i>3'9"</i> | | |

MSW South Slope Pump Chamber

Date: 12-Jan-17
Level: 22"

Ash Mono Fill
Collection Chamber Readings
Month of February, 2017

| <i>February</i> | | <i>Feet Measured</i> | <i>Action Taken</i> | <i>Comments</i> |
|------------------|-----------|--------------------------|-------------------------|-----------------|
| <i>Wednesday</i> | <i>1</i> | <i>4'4"</i> | <i>pumped</i> | |
| <i>Thursday</i> | <i>2</i> | <i>3'1"</i> | | |
| <i>Friday</i> | <i>3</i> | <i>3'4"</i> | | |
| <i>Saturday</i> | <i>4</i> | <i>na</i> | | |
| <i>Sunday</i> | <i>5</i> | <i>na</i> | | |
| <i>Monday</i> | <i>6</i> | <i>3'5"</i> | | |
| <i>Tuesday</i> | <i>7</i> | <i>3'5"</i> | | |
| <i>Wednesday</i> | <i>8</i> | <i>3'7"</i> | | |
| <i>Thursday</i> | <i>9</i> | <i>na</i> | | |
| <i>Friday</i> | <i>10</i> | <i>na</i> | | |
| <i>Saturday</i> | <i>11</i> | <i>na</i> | | |
| <i>Sunday</i> | <i>12</i> | <i>na</i> | | |
| <i>Monday</i> | <i>13</i> | <i>4'4"</i> | | |
| <i>Tuesday</i> | <i>14</i> | <i>4'5"</i> | | |
| <i>Wednesday</i> | <i>15</i> | <i>4'5"</i> | | |
| <i>Thursday</i> | <i>16</i> | <i>4'5"</i> | | |
| <i>Friday</i> | <i>17</i> | <i>4'5"</i> | | |
| <i>Saturday</i> | <i>18</i> | <i>na</i> | | |
| <i>Sunday</i> | <i>19</i> | <i>na</i> | | |
| <i>Monday</i> | <i>20</i> | <i>na</i> | | |
| <i>Tuesday</i> | <i>21</i> | <i>3'11"</i> | | |
| <i>Wednesday</i> | <i>22</i> | <i>4'</i> | | |
| <i>Thursday</i> | <i>23</i> | <i>3'10"</i> | | |
| <i>Friday</i> | <i>24</i> | <i>4'</i> | | |
| <i>Saturday</i> | <i>25</i> | <i>na</i> | | |
| <i>Sunday</i> | <i>26</i> | <i>na</i> | | |
| <i>Monday</i> | <i>27</i> | <i>3'11"</i> | | |
| <i>Tuesday</i> | <i>28</i> | <i>4'4"</i> | <i>pumped</i> | |

MSW South Slope Pump Chamber

Date: 2-Feb-17
Level: 26"

Ash Mono Fill
Collection Chamber Readings
Month of March, 2017

| <i>March</i> | | <i>Feet Measured</i> | <i>Action Taken</i> | <i>Comments</i> |
|------------------|-----------|--------------------------|-------------------------|-----------------|
| <i>Wednesday</i> | <i>1</i> | <i>4'2"</i> | <i>pumped</i> | |
| <i>Thursday</i> | <i>2</i> | <i>3'8"</i> | | |
| <i>Friday</i> | <i>3</i> | <i>3'7"</i> | | |
| <i>Saturday</i> | <i>4</i> | <i>na</i> | | |
| <i>Sunday</i> | <i>5</i> | <i>na</i> | | |
| <i>Monday</i> | <i>6</i> | <i>4'</i> | <i>pumped</i> | |
| <i>Tuesday</i> | <i>7</i> | <i>3'3"</i> | | |
| <i>Wednesday</i> | <i>8</i> | <i>3'6"</i> | <i>pumped</i> | |
| <i>Thursday</i> | <i>9</i> | <i>2'11"</i> | | |
| <i>Friday</i> | <i>10</i> | <i>3'3"</i> | | |
| <i>Saturday</i> | <i>11</i> | <i>na</i> | | |
| <i>Sunday</i> | <i>12</i> | <i>na</i> | | |
| <i>Monday</i> | <i>13</i> | <i>3'6"</i> | | |
| <i>Tuesday</i> | <i>14</i> | <i>na</i> | | |
| <i>Wednesday</i> | <i>15</i> | <i>na</i> | | |
| <i>Thursday</i> | <i>16</i> | <i>na</i> | | |
| <i>Friday</i> | <i>17</i> | <i>na</i> | | |
| <i>Saturday</i> | <i>18</i> | <i>na</i> | | |
| <i>Sunday</i> | <i>19</i> | <i>na</i> | | |
| <i>Monday</i> | <i>20</i> | <i>4'</i> | | |
| <i>Tuesday</i> | <i>21</i> | <i>3'10"</i> | | |
| <i>Wednesday</i> | <i>22</i> | <i>3'11"</i> | | |
| <i>Thursday</i> | <i>23</i> | <i>3'9"</i> | | |
| <i>Friday</i> | <i>24</i> | <i>3'11"</i> | | |
| <i>Saturday</i> | <i>25</i> | <i>na</i> | | |
| <i>Sunday</i> | <i>26</i> | <i>na</i> | | |
| <i>Monday</i> | <i>27</i> | <i>na</i> | | |
| <i>Tuesday</i> | <i>28</i> | <i>na</i> | | |
| <i>Wednesday</i> | <i>29</i> | <i>4'</i> | | |
| <i>Thursday</i> | <i>30</i> | <i>4'</i> | | |
| <i>Friday</i> | <i>31</i> | <i>4'</i> | <i>pumped</i> | |

MSW South Slope Pump Chamber

Date: 3-Mar-17
Level: 31"

Ash Mono Fill
Collection Chamber Readings
Month of April, 2017

| <i>April</i> | | <i>Feet Measured</i> | <i>Action Taken</i> | <i>Comments</i> |
|------------------|-----------|----------------------|---------------------|-----------------|
| <i>Saturday</i> | <i>1</i> | <i>na</i> | | |
| <i>Sunday</i> | <i>2</i> | <i>na</i> | | |
| <i>Monday</i> | <i>3</i> | <i>4'2"</i> | <i>pumped</i> | |
| <i>Tuesday</i> | <i>4</i> | <i>na</i> | | |
| <i>Wednesday</i> | <i>5</i> | <i>4'</i> | | |
| <i>Thursday</i> | <i>6</i> | <i>4'3"</i> | <i>pumped</i> | |
| <i>Friday</i> | <i>7</i> | <i>4'</i> | <i>pumped</i> | |
| <i>Saturday</i> | <i>8</i> | <i>na</i> | | |
| <i>Sunday</i> | <i>9</i> | <i>na</i> | | |
| <i>Monday</i> | <i>10</i> | <i>4'</i> | | |
| <i>Tuesday</i> | <i>11</i> | <i>3'1"</i> | | |
| <i>Wednesday</i> | <i>12</i> | <i>3'3"</i> | | |
| <i>Thursday</i> | <i>13</i> | <i>3'7"</i> | | |
| <i>Friday</i> | <i>14</i> | <i>1'6"</i> | | |
| <i>Saturday</i> | <i>15</i> | <i>na</i> | | |
| <i>Sunday</i> | <i>16</i> | <i>na</i> | | |
| <i>Monday</i> | <i>17</i> | <i>4'4"</i> | <i>pumped</i> | |
| <i>Tuesday</i> | <i>18</i> | <i>3'10"</i> | <i>pumped</i> | |
| <i>Wednesday</i> | <i>19</i> | <i>3'6"</i> | <i>pumped</i> | |
| <i>Thursday</i> | <i>20</i> | <i>na</i> | | |
| <i>Friday</i> | <i>21</i> | <i>3'9"</i> | | |
| <i>Saturday</i> | <i>22</i> | <i>na</i> | | |
| <i>Sunday</i> | <i>23</i> | <i>na</i> | | |
| <i>Monday</i> | <i>24</i> | <i>1'8"</i> | <i>pumped</i> | |
| <i>Tuesday</i> | <i>25</i> | <i>4'</i> | | |
| <i>Wednesday</i> | <i>26</i> | <i>4'</i> | <i>pumped</i> | |
| <i>Thursday</i> | <i>27</i> | <i>3'5"</i> | | |
| <i>Friday</i> | <i>28</i> | <i>3'6"</i> | | |
| <i>Saturday</i> | <i>29</i> | <i>na</i> | | |
| <i>Sunday</i> | <i>30</i> | <i>na</i> | | |

MSW South Slope Pump Chamber

Date: 3-Apr-17
Level: 31"

Ash Mono Fill
Collection Chamber Readings
Month of May, 2017

| <i>May</i> | <i>Feet Measured</i> | <i>Action Taken</i> | <i>Comments</i> |
|------------------|----------------------|---------------------|-----------------|
| <i>Monday</i> | <i>1</i> | <i>4'</i> | <i>pumped</i> |
| <i>Tuesday</i> | <i>2</i> | <i>na</i> | |
| <i>Wednesday</i> | <i>3</i> | <i>4'</i> | <i>pumped</i> |
| <i>Thursday</i> | <i>4</i> | <i>na</i> | |
| <i>Friday</i> | <i>5</i> | <i>4'</i> | |
| <i>Saturday</i> | <i>6</i> | <i>na</i> | |
| <i>Sunday</i> | <i>7</i> | <i>na</i> | |
| <i>Monday</i> | <i>8</i> | <i>4'1"</i> | <i>pumped</i> |
| <i>Tuesday</i> | <i>9</i> | <i>3'7"</i> | |
| <i>Wednesday</i> | <i>10</i> | <i>3'6"</i> | |
| <i>Thursday</i> | <i>11</i> | <i>3'7"</i> | |
| <i>Friday</i> | <i>12</i> | <i>3'8"</i> | |
| <i>Saturday</i> | <i>13</i> | <i>na</i> | |
| <i>Sunday</i> | <i>14</i> | <i>na</i> | |
| <i>Monday</i> | <i>15</i> | <i>4'4"</i> | <i>pumped</i> |
| <i>Tuesday</i> | <i>16</i> | <i>4'3"</i> | <i>pumped</i> |
| <i>Wednesday</i> | <i>17</i> | <i>3'9"</i> | <i>pumped</i> |
| <i>Thursday</i> | <i>18</i> | <i>3'7"</i> | |
| <i>Friday</i> | <i>19</i> | <i>3'10"</i> | |
| <i>Saturday</i> | <i>20</i> | <i>na</i> | |
| <i>Sunday</i> | <i>21</i> | <i>na</i> | |
| <i>Monday</i> | <i>22</i> | <i>4'4"</i> | |
| <i>Tuesday</i> | <i>23</i> | <i>3'9"</i> | |
| <i>Wednesday</i> | <i>24</i> | <i>3'4"</i> | |
| <i>Thursday</i> | <i>25</i> | <i>4'4"</i> | |
| <i>Friday</i> | <i>26</i> | <i>3'8"</i> | |
| <i>Saturday</i> | <i>27</i> | <i>na</i> | |
| <i>Sunday</i> | <i>28</i> | <i>na</i> | |
| <i>Monday</i> | <i>29</i> | <i>na</i> | |
| <i>Tuesday</i> | <i>30</i> | <i>3'9"</i> | <i>pumped</i> |
| <i>Wednesday</i> | <i>31</i> | <i>3'10"</i> | <i>pumped</i> |

MSW South Slope Pump Chamber

Date: 8-May-17

Level: 36"

Ash Mono Fill
Collection Chamber Readings
Month of June, 2017

| <i>June</i> | | <i>Feet Measured</i> | <i>Action Taken</i> | <i>Comments</i> |
|------------------|-----------|----------------------|---------------------|-----------------|
| <i>Thursday</i> | <i>1</i> | <i>3'3"</i> | <i>pumped</i> | |
| <i>Friday</i> | <i>2</i> | <i>3'</i> | | |
| <i>Saturday</i> | <i>3</i> | <i>na</i> | | |
| <i>Sunday</i> | <i>4</i> | <i>na</i> | | |
| <i>Monday</i> | <i>5</i> | <i>3'7"</i> | | |
| <i>Tuesday</i> | <i>6</i> | <i>3'7"</i> | | |
| <i>Wednesday</i> | <i>7</i> | <i>3'8"</i> | | |
| <i>Thursday</i> | <i>8</i> | <i>3'8"</i> | | |
| <i>Friday</i> | <i>9</i> | <i>3'7"</i> | | |
| <i>Saturday</i> | <i>10</i> | <i>na</i> | | |
| <i>Sunday</i> | <i>11</i> | <i>na</i> | | |
| <i>Monday</i> | <i>12</i> | <i>3'11"</i> | | |
| <i>Tuesday</i> | <i>13</i> | <i>3'6"</i> | | |
| <i>Wednesday</i> | <i>14</i> | <i>3'7"</i> | | |
| <i>Thursday</i> | <i>15</i> | <i>3'10"</i> | | |
| <i>Friday</i> | <i>16</i> | <i>3'10"</i> | <i>pumped</i> | |
| <i>Saturday</i> | <i>17</i> | <i>na</i> | | |
| <i>Sunday</i> | <i>18</i> | <i>na</i> | | |
| <i>Monday</i> | <i>19</i> | <i>3'6"</i> | | |
| <i>Tuesday</i> | <i>20</i> | <i>3'7"</i> | | |
| <i>Wednesday</i> | <i>21</i> | <i>3'7"</i> | | |
| <i>Thursday</i> | <i>22</i> | <i>3'8"</i> | | |
| <i>Friday</i> | <i>23</i> | <i>3'8"</i> | | |
| <i>Saturday</i> | <i>24</i> | <i>na</i> | | |
| <i>Sunday</i> | <i>25</i> | <i>na</i> | | |
| <i>Monday</i> | <i>26</i> | <i>4'2"</i> | | |
| <i>Tuesday</i> | <i>27</i> | <i>4'4"</i> | <i>pumped</i> | |
| <i>Wednesday</i> | <i>28</i> | <i>3'6"</i> | | |
| <i>Thursday</i> | <i>29</i> | <i>3'10"</i> | <i>pumped</i> | |
| <i>Friday</i> | <i>30</i> | <i>3'4"</i> | | |

MSW South Slope Pump Chamber

Date: 1-Jun-17

Level: 34"

**Table 3A
Islip Resource Recovery Agency
Blydenburgh Road Landfill Complex**

FIELD INSPECTION OF CONDENSATE COLLECTION SYSTEM FOR GAS SYSTEMS

DATE: 7/11,7/25/17

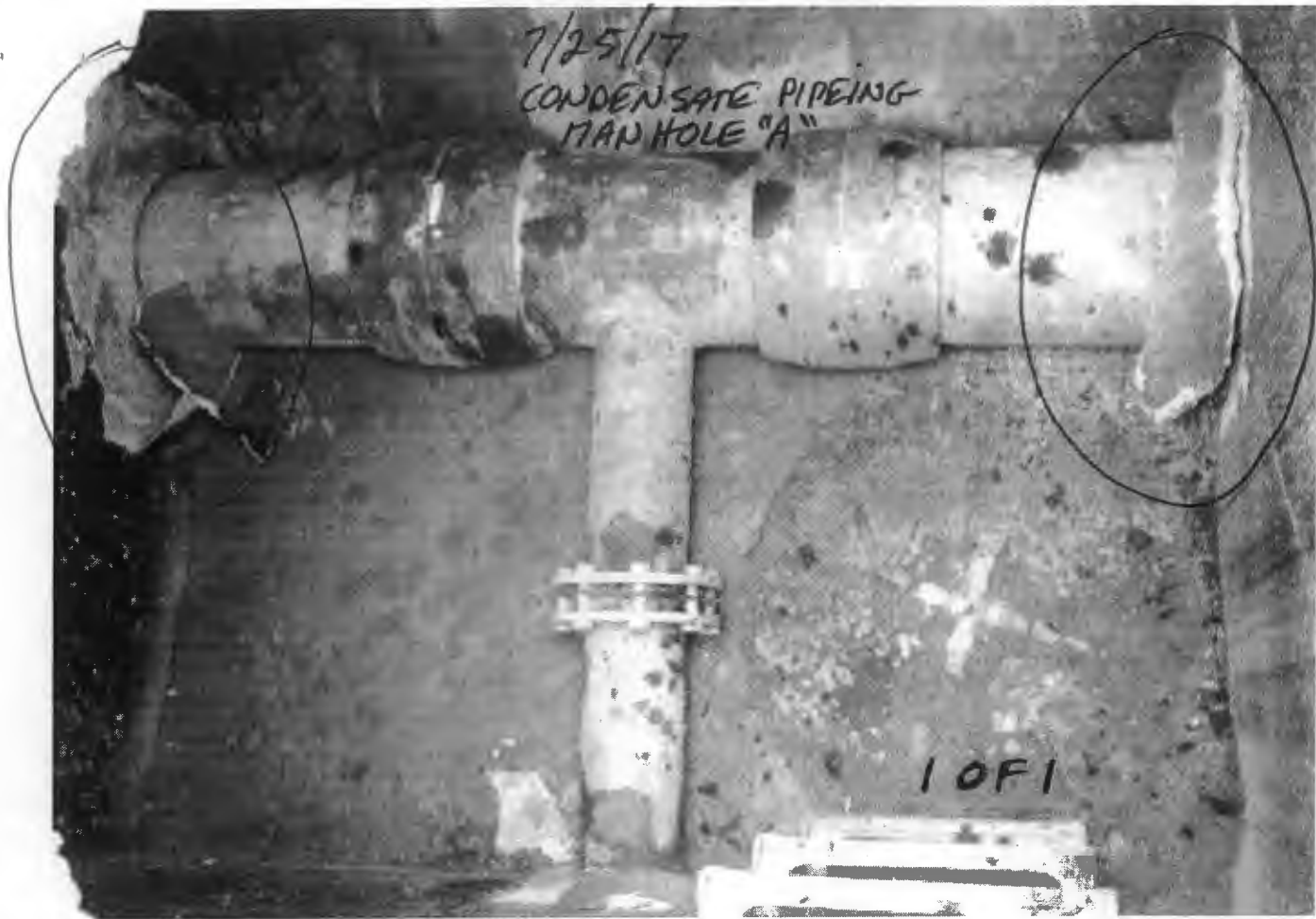
WEATHER: Sunny, Overcast/Cloudy.

INSPECTOR(S): Fazil Rahaman

INSPECTION (Check One): QUARTERLY SEMI-ANNUAL OTHER

| ITEM | ADEQUATE (or YES) | REQUIRES MAINTENANCE | COMMENTS/ REMARKS <small>(Note if repair/maintenance is recommended and describe its location/extent)</small> |
|---|---|--|--|
| 1.0 SYSTEM HARDWARD AND COMPONENTS | | | |
| North Valving Structure | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | REQUIRES MAINTENANCE <input type="checkbox"/> | |
| Condensate Drain Valves | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | REQUIRES MAINTENANCE <input checked="" type="checkbox"/> | V-215 Indicater Inoperable. |
| Condensate Piping | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | REQUIRES MAINTENANCE <input type="checkbox"/> | |
| Condensate Piping Manhole "A" | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | REQUIRES MAINTENANCE <input checked="" type="checkbox"/> | Precast around Condensate Piping, Photo attached. |
| Condensate Piping Manhole "B" | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | REQUIRES MAINTENANCE <input type="checkbox"/> | |
| Comments | | | V-201 Combine Header Valve Inoperable, REQUIRES MAINTENANCE. |
| | | | V-203 Phase 111 Field Valve Inoperable , REQUIRES MAINTENANCE. |
| | | | Craig D., Landfill Personell Present for inspection of N.V.Structure. |

7/25/17
CONDENSATE PIPEING
MAN HOLE "A"



10F1

Table 4
Islip Resource Recovery Agency
Blydenburgh Road Landfill Complex

FIELD INSPECTION FORM NO. 3 FOR QUARTERLY FIELD INSPECTION
OF LEACHATE MANAGEMENT SYSTEM

DATE: 7/5, 7/11, 7/25/17

WEATHER: Sunny, Sunny, Overcast/Cloudy.

INSPECTOR(S): Fazil Rahaman

INSPECTION (Check One): QUARTERLY SEMI-ANNUAL OTHER

| ITEM | ADEQUATE (or YES) | NEEDS ATTENTION (or NO) | COMMENTS/ REMARKS <small>(Note if repair/maintenance is recommended and describe its location/extent)</small> |
|---|---|---|--|
| 1.0 MUNICIPAL SOLID WASTE LANDFILL | | | |
| 1.1 Southern Pump Manhole/Air Ejector Pump | | | |
| Manhole Condition | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | Re: Table 4 Section 1.2, Chamber readings january to June 2017 |
| Air Hoses to Ejector Pump | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Re: Table 3 Section 1.0 Attached to table 3 |
| Vent Hoses/ Bio-Filter | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Re: Table 3 Section 1.0 |
| Air Ejector Pump Operation | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Re: Table 3 Section 1.0 |
| Discharge Piping Connections | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Re: Table 3 Section 1.0 |
| Air Compressor | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Re: Table 3 Section 1.0 |
| Air Regulator/ Filter | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Re: Table 3 Section 1.0 |
| Air Compressor Shed | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Re: Table 3 Section 1.0 |
| Air Compressor Controls/Electrical Connection | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Re: Table 3 Section 1.0 |
| 1.2 Eastern and Western Leachate Detection Manhole | | | |
| Eastern Leachate Detection Manhole Condition | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | Re: Engineering consulting firm examination report 9/20/2013 att. |
| Eastern Leachate Detection Vent Hoses/Bio-Filter | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Vent piping part of M.S.W. Gas collection system. |
| Western Leachate Detection Manhole Condition | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | Re: Table 3 Section 1.0 |
| Western Leachate Detection Vent Hoses/Bio-filter | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Vent piping part of M.S.W. Gas collection system. |

Table 4
Islip Resource Recovery Agency
Blydenburgh Road Landfill Complex

FIELD INSPECTION FORM NO. 3 FOR QUARTERLY FIELD INSPECTION
OF LEACHATE MANAGEMENT SYSTEM

| ITEM | ADEQUATE (or YES) | NEEDS ATTENTION (or NO) | COMMENTS/ REMARKS <small>(Note if repair/maintenance is recommended and describe its location/extent)</small> |
|---|---|---|--|
| 1.0 MUNICIPAL SOLID WASTE LANDFILL (Cont'd) | | | |
| 1.3 Manholes and Piping (both primary and secondary systems) | | | |
| Manholes No. 2 Condition | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| Manholes No. 3 Condition | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| Manholes No. 4 Condition | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| Manholes No. 5 Condition | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| Manholes No. 6 Condition | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| Manholes No. 7 Condition | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| Manholes No. 8 Condition | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| 1.4 Pump Station – Manhole No. 1 | | | |
| Manhole Condition | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| Inlet Piping (2 pipes) | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| Discharge Piping | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| Sump Pump No. 1 and Wires | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| Sump Pump No. 2 and Wires | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| Level Floats (4) and Wires | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| Slide Rail System | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| Hoist, Pulley and Chain | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| Electrical Disconnect Switches | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | One of the Two switche`s stuck in the off position. |
| 1.5 Valve/Metering Vault | | | |
| Vault Condition | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| Piping and Valves | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| Flow Meter and Wires | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |

Table 4
Islip Resource Recovery Agency
Blydenburgh Road Landfill Complex

FIELD INSPECTION FORM NO. 3 FOR QUARTERLY FIELD INSPECTION
OF LEACHATE MANAGEMENT SYSTEM

| ITEM | ADEQUATE (or YES) | NEEDS ATTENTION (or NO) | COMMENTS/ REMARKS <small>(Note if repair/maintenance is recommended and describe its location/extent)</small> |
|--|---|---|--|
| 2.0 LEACHATE STORAGE AREA | | | |
| 2.1 Leachate Storage Tanks | | | |
| Tank #1 and Assoc. Pipe/Fitting/Valves | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Valves exercised 1x per. wk. and lubed 2x a Month. |
| Tank #2 and Assoc. Pipe/Fitting/Valves | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Valves exercised 1x per. wk. and lubed 2x a Month. |
| Tank #3 and Assoc. Pipe/Fitting/Valves | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Valves exercised 1x per. wk. and lubed 2x a Month. |
| Tank #4 and Assoc. Pipe/Fitting/Valves | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Valves exercised 1x per. wk. and lubed 2x a Month. |
| Condition of Concrete Apron | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Inlet Grate over Sump in N.W. Corner | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Valve Access Pits in N.W. Corner | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| 2.2 Containment Sump and Pump | | | |
| Sump Condition | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Inlet Piping | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Re: Table 3 Section 4.0 |
| Sump Pump and Wires | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Level Floats and Wires | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Slide Rail System | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | Not equipped. |

Table 4
Islip Resource Recovery Agency
Blydenburgh Road Landfill Complex

FIELD INSPECTION FORM NO. 3 FOR QUARTERLY FIELD INSPECTION
OF LEACHATE MANAGEMENT SYSTEM

| ITEM | ADEQUATE (or YES) | NEEDS ATTENTION (or NO) | COMMENTS/ REMARKS <small>(Note if repair/maintenance is recommended and describe its location/extent)</small> |
|---|---|---|--|
| 3.0 EMERGENCY GENERATOR BUILDING | | | |
| 3.1 Pump Station Manhole No. 1 Control Panel | | | |
| Panel Condition | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Alarms and Lights | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Re: Table 3 Section 3.0 |
| Wiring and Conduit | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| 3.2 Sump Pump Control Panel | | | |
| Panel Condition | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Alarms and Lights | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Re: Table 3 Section 4.0 |
| Wiring and Conduit | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| 3.3 Flow Meter | | | |
| Panel Condition | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Alarms and Lights | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Wiring and Conduit | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| 3.4 Emergency Diesel Generator | | | |
| Generator Condition | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Fuel Oil Tank | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Transfer Switch | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | INOPERABLE Re: Table 3 Section 5.0 |
| Exhaust Stack | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Wiring and Conduit | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| 3.5 Miscellaneous | | | |
| Exhaust Fan | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Lighting/Exit Sign | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Building Heater | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Fuse Box | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Unloading Piping, Valves & Disconnects | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Fire Extinguisher | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |

Table 4

Islip Resource Recovery Agency
Blydenburgh Road Landfill Complex

FIELD INSPECTION FORM NO. 3 FOR QUARTERLY FIELD INSPECTION
OF LEACHATE MANAGEMENT SYSTEM

| ITEM | ADEQUATE (or YES) | NEEDS ATTENTION (or NO) | COMMENTS/ REMARKS <small>(Note if repair/maintenance is recommended and describe its location/extent)</small> |
|---|---|---|--|
| 4.0 ASH MONOFILL | | | |
| 4.1 Ash Monofill Pump Station Manhole No. 9 | | | |
| Manhole Condition | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Inlet Piping | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Leachate Level | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | Re: Table 3 Section 6.0 |
| 4.2 Ash Monofill Leachate Detection Manhole No. 10 | | | |
| Manhole Condition | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Inlet Piping | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Liquid in Secondary Collection System | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Re: Table 3 Section 6.0 |
| 4.3 Manholes and Piping | | | |
| Manhole No. 11 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Manhole No. 12 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Repair Vent. Will be addressed in closure of C&D, Photo attached. |
| Manhole No. 13 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Manhole No. 14 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Manhole No. 15 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |

- 1) Use this inspection form along with Figure 5 – Leachate Management System Plan and Figure 6 – Leachate Storage Tank Flow Diagram by Golder Associates.
- 2) Inspection of items listed under 1.0 – Leachate Conveyance require the inspector to enter a confined space.
- 3) Conditions/features to inspect for related to the concrete apron listed under 2.0 – Leachate Management: collect debris, structural integrity, cracking/spalling, signs of leachate leakage, etc.



KNOWN AS DVIRKA AND BARTILUCCI CONSULTING ENGINEERS

330 Crossways Park Drive, Woodbury, New York 11797-2015

516-364-9890 • 718-460-3634 • Fax: 516-364-9045 • www.dvirkaandbartilucci.com

Board of Directors

Henry J. Chlupsa, P.E., BCEE
President & Chairman
Steven A. Fangmann, P.E., BCEE
Executive Vice President
Robert L. Raab, P.E., BCEE
Vice President

Vice Presidents

Richard M. Walka
Senior Vice President
Joseph H. Marturano
Senior Vice President
Dennis F. Koehler, P.E.
Senior Vice President
Garrett M. Byrnes, P.E.
Vice President
Thomas P. Fox, P.G.
Vice President
William D. Merklin, P.E.
Vice President
Michael Neuberger, P.E.
Vice President
Kenneth J. Pritchard, P.E.
Vice President
Theodore S. Pytlar, Jr.
Vice President
Michael E. Urtnowski
Vice President
Brian M. Veith, P.E.
Vice President
Charles J. Wachsmuth, P.E.
Vice President

Dir. of Architecture

André H. Keel, R.A.

Senior Associates

Steven M. Cabrera
Christopher M. Clement
Rob J. DeGiorgio, P.E., CPESC
Joseph A. Floriso, P.E.
Michael R. Hofgren
Richard W. Lenz, P.E.
Phillip R. Sachs, P.E.
Daniel Shabat, P.E.

Associates

Joseph F. Baader
Rudolph F. Cannavale
Ellen R. DeOrsay
Matthew R. DeVinney, P.E.
Frank DeVita
Christopher W. Francis
Christopher Koegel, P.E.
Christopher M. LeHanka
James J. Magda
Olga Mubarak-Jaramillo
Roger W. Owens
Robbin A. Petrella
Edward J. Reilly
Jason R. Tonne

September 20, 2013

Anthony Varrichio, P.E.
Chief Engineer
Islip Resource Recovery Agency
401 Main Street
Islip, NY 11751

Re: Blydenburgh Road Landfill
MSW Phase II Leachate Collection
D&B No. 3103

Dear Mr. Varrichio

On May 9, 2013, the Islip Resource Recovery Agency performed an examination of the East Leachate Structure associated with the Phase II area of the capped and closed MSW Landfill. The video examination was performed by Precision Industrial Maintenance, Inc. using a closed circuit camera. The examination was observed by representatives of the Islip Resource Recovery Agency (IRRA), the New York State Department of Environmental Conservation (NYSDEC) and Dvirka and Bartilucci (D&B).

The East Leachate Structure is an eight foot diameter precast concrete chimney that extends from the top of the capped landfill down to the base of the lined, Phase II landfill area. The structure is reported to be approximately 145 to 150 feet deep. The chimney was constructed in segments to keep pace with the filling of the landfill. The base section was installed in the early 1980's as part of the construction of the landfill bottom liner system and connects to an influent pipe which introduces liquid to the structure from the leachate collection system. The chimney, above the base, was constructed by stacking additional precast sections on top of the lower segments. The precast segments have butt ends (flat ends) that sit on the adjacent section rather than tongue and groove joints.

During the operation of the landfill, the IRRA utilized the leachate structure to access the base of the landfill and remove leachate from the leachate collection

Anthony Varrichio, P.E.
Islip Resource Recovery Agency
September 20, 2013

Page 2

system. Over time, the ability to lower a pump down the entire depth of the 8 foot diameter structure became more difficult. In an effort to address these concerns, the IRRA had a video inspection of the structure performed in February 1988 to assess the ability to continue lowering pumping equipment to the bottom of the structure. The video examination revealed that the chimney structure was still continuous but that the overall structure was not plumb and that some misalignment of the concrete segments was being experienced. The 1988 video examination confirmed that the conditions in the structure would make it more difficult to lower a pump assembly to the bottom of the structure without becoming hung up on the ledges created at the segment misalignments.

The 1988 video shows the entrance of the leachate influent pipe entering the lower portion of the structure. The influent pipe is positioned such that there is a sump or wet well volume located below the elevation of the influent pipe. The height of the influent pipe above the structure invert is difficult to quantify but appears to be on the order of several feet.

In order to preserve the continued function of the leachate structure, a length of 6 inch steel pipe was inserted into the structure for its full depth in 1994 to create a riser pipe. The lowest portion of the riser pipe was fitted with a screen section. The pipe sections are joined by threaded and coupled joints. The bottom of the pipe column rests on the floor slab of the leachate structure. The pipe column extends up through the height of the precast structure but is not fastened to the structure. The pipe column terminates near the underside of the top slab.

The IRRA utilized the 6 inch riser pipe to facilitate the installation of a submersible pump at the bottom of the structure to allow the leachate to be pumped to grade for off-site disposal. In the period of March 1994 October 1994, a total of 910,000 gallons of leachate was removed from the structure. The operation of the pump was discontinued after a period of time where it was found that the structure was essentially dry and the pump could not encounter enough liquid to operate.

In October 2002, an examination of the east structure was performed as part of an effort to determine whether there was sufficient liquid in the structure to allow for the operation of a pumping system. The examination was performed using a closed circuit camera lowered into both the precast structure and the 6 inch riser pipe. The examination was performed by Pengat Construction and was observed by representatives from D&B.

The results of the October 2002 examination are presented in a letter report dated June 30, 2003. The October 2002 examination found the precast structure and the steel riser pipe to be competent and sufficient to allow pumping equipment to be lowered to the base of the structure. The examination also indicated that there was only a nominal accumulation of liquid in the base

Anthony Varrichio, P.E.
Islip Resource Recovery Agency
September 20, 2013

Page 3

of the structure and the depth of the liquid was confined to the limits of the sump area of the structure. The depth of liquid was not sufficient to allow for the operation of a submersible pump. This condition documented the site personnel's observations from 1994 that the submersible pump was no longer operational because there was no liquid available to be pumped.

The examination of the East Structure in May 2013 noted that there has been some shifting of the precast chimney since the October 2002 examination. In October 2002, the top of the 6 inch riser pipe was visible and accessible from a 16 inch diameter opening in the top slab of the structure. During the May 2013 examination, the top of the 6 inch riser pipe was not visible or accessible from the 16 inch diameter opening. In an effort to proceed with the work, the technicians were able to insert the camera into the top of the riser pipe by reaching through a smaller opening in the top slab and feeling for the top of the 6 inch pipe. However, this arrangement produced an S curve in the fiberglass push rod used to advance the camera. While the camera was able to be raised and lowered in the riser pipe, the flex in the push rod negated the accuracy and linearity of the distance counter on the camera assembly.

The camera was advanced down the 6 inch riser pipe for its entire length. The riser pipe shows signs of corrosion on the inside of the pipe as would be expected from a steel pipe in a moist environment. The degree of corrosion appears to be consistent with the corrosion observed in the October 2002 examination. The riser pipe appears to be in serviceable condition, with tight joints and no signs that would suggest that the integrity of the riser pipe is compromised. The camera was able to be advanced to the bottom of the riser pipe without difficulty.

Due to the nature of the camera equipment being pushed down the riser pipe on a flexible rod, it is difficult to assess if there is any slope or inclination to the riser pipe and whether the slope is consistent throughout the height of the riser pipe. However, as noted above, the camera was able to be advanced the length of the riser pipe without incident and would suggest that any pumping equipment required could also be installed without issue.

Using the distance counter associated with the camera, the riser pipe was found to be approximately 144 feet in length. The last, lowest section of the riser pipe is a screen section estimated to be approximately 5 feet in length. The liquid level was found to be at a depth of approximately 137 feet, suggesting a liquid depth of approximately 7 feet, however, the depth of liquid was difficult to judge due to the reduced control over the camera movements.

A second examination of the riser pipe (on the same day) found the length of the riser pipe to be approximately 148 feet with the liquid level encountered at approximately 141 feet. In both instances, the liquid level was found to suggest a depth of approximately 7 feet. Given the difficulties gaining access to the top of the pipe, the difference in the two overall length readings

Anthony Varrichio, P.E.
Islip Resource Recovery Agency
September 20, 2013

Page 4

was not considered significant. As noted, the depth of liquid was suggested to be on the order of 7 feet as indicated by the camera distance counter, but this suggested liquid depth appears to be inconsistent with the visual image provided by the camera. As viewed by the camera, the top of the screened interval was visible prior to the camera encountering the liquid surface. If the screen length is 5 feet, as previously reported, then the standing liquid depth must be less than 5 feet, rather than the 7 feet suggested by the camera distance counter.

Following the examination of the riser pipe, an attempt was made to examine the precast structure using the camera. The camera and its lighting were not as well suited for the increased size of the structure as compared to the riser pipe. The image was generally dark and impacted by condensation forming on the lens, rendering an image of limited value. Consequently, the camera served more as a probe or plumb bob rather than providing a visual examination of the precast structure. The camera was lowered to a depth of 127 feet but was not able to be advanced beyond that depth. It is assumed that the camera became hung up on a ledge formed between two precast sections. Given that the structure is not plumb and there are limited opportunities to access the structure through the top slab, the likelihood is high that a weight hanging plumb will encounter the wall of the structure. When the camera (weight) encounters a ledge, it is difficult to maneuver the camera to clear the obstruction.

The inability to reach the bottom of the precast structure is the specific concern that prompted the IRRA to install the 6 inch riser pipe in the first place. In light of the fact that the riser pipe is intact and serviceable, there is limited concern that the precast structure is not fully accessible.

As of this writing, the IRRA has had a new penetration core drilled through the top slab of the leachate structure in order to provide access to the top of the 6 inch riser pipe. The new opening allows for ready access to the top of the 6 inch riser pipe.

In contrast to the conditions experienced while using the camera to define the depth of the structure and the depth of the liquid, the new opening in the slab allows for direct readings to be taken. The overall depth of the 6 inch riser pipe has now been measured using a weighted tape and it has been determined that the depth from the bottom of the 6 inch riser pipe to the top of concrete of the top slab is 141 feet. Efforts to use a water level meter to measure the depth to the water surface were not definitive due the fact that the 6 inch riser pipe is not plumb and the tape has a tendency to adhere to the moist walls of the riser pipe.

Efforts to retrieve a water sample for the purpose of analysis were performed on August 14, 2013. The first baler had a minimal amount of liquid and it was discarded as a matter of routine. The second, third and fourth baler runs showed signs of sediment on the leading edge and provided no retrieved liquid, suggesting that the liquid depth was minimal. No sample could be obtained for the purpose of analysis.

Anthony Varrichio, P.E.
Islip Resource Recovery Agency
September 20, 2013

Page 5

The bubbler tubing was installed in the East Leachate Structure by landfill personnel on Thursday, August 15. D&B personnel were present at the site.

On August 15, a bubbler system was installed in the 6 inch riser pipe to allow the depth of liquid in the riser pipe and structure to be measured directly. The bubbler system consists of two bubbler tubes (3/8 inch O.D., 1/4 inch I.D. polyethylene tubing) which were secured to the outside of a 1 inch diameter PVC, flush joint pipe. The depth of the 6 inch steel pipe was measured to be 141 feet from the bottom of the 6 inch pipe to the top of concrete on the top slab. The bubbler assembly is approximately 145 feet in length. The PVC pipe, bubbler tubes and a retrieval rope were installed in the 6 inch steel riser pipe and were confirmed to be resting on the bottom of the riser pipe (bottom of the structure).

The bubbler tubes were fastened to the PVC pipe with the tubing tip starting 12 inches above (behind) the leading edge of the PVC pipe to keep the bubbler tubes above any sediment at the base of the 6 inch steel riser pipe. This 12 inch dimension will be added to any measurement obtained with the bubbler in order to provide a measure of the overall depth of liquid in the structure. The PVC pipe was set at the bottom of the 6 inch steel pipe by raising and lowering the bubbler assembly to ensure it was set at the bottom.

The bubbler was operated by Town and D&B personnel and was successfully used to measure a depth of submergence of 3 to 4 inches above the tip of the bubbler tube. This measurement indicates that the depth of liquid at the bottom of the structure is approximately 15 to 16 inches. This measurement should be considered as a reliable and repeatable measurement and should be used as reference for future readings.

The measured liquid depth of 15 to 16 inches is comparable to the depth of liquid that was observed in the October 2002 investigation of this chamber. At that time, the depth of liquid was estimated to be nominal, with insufficient depth to allow for pumping of the liquid. The current depth of liquid is also considered as nominal and it is clear that there is no source of inflow to the structure.

If it is assumed that the depth of liquid in the structure has increased by one foot over the duration of an 11 year period (October 2002 to August 2013) and one foot of depth in an 8 foot diameter structure is equivalent to a volume of 376 gallons, then liquid has been accumulating at a rate of approximately 34 gallons per year. Clearly, this rate of accumulation is not indicative of a landfill which is actively generating leachate. This nominal rate of accumulation should serve to document the adequacy of the existing landfill capping system.

The limited depth of leachate present in the East Leachate Structure (15 – 16 inches) will not allow for the pumping of the leachate with a pump suitable for the purpose. If the liquid depth

Anthony Varrichio, P.E.
Islip Resource Recovery Agency
September 20, 2013

Page 6

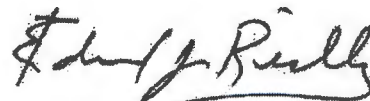
were found to be deeper, a pump such as a QED LDAP4+T would be appropriate for this service. The QED pump is pneumatically driven using compressed air, making it suitable for landfill/leachate applications. The pump is available in either a top loading or a bottom loading configuration. In either case, the pump is only capable of lowering the liquid level to a depth of approximately 28 inches. In this case, if the pump were installed in the 6 inch riser pipe, the operation of the pump would not be initiated since the liquid level is below the threshold depth.

In light of the fact that over a 10+ year period, the volume of accumulated liquid is not sufficient to allow for the operation of an application suitable pump, it should be concluded that pumping from the East Leachate Structure under the current conditions is not warranted.

The installed bubbler system is proposed to remain in place to allow for future measurements of the liquid depth. Going forward, it is recommended that the Town of Islip take measurements of the liquid depth in the East Leachate Structure on a quarterly basis. The depth of liquid should be measured in the units of inches of water. The reported value should include the addition of twelve inches to the measured value to present the overall depth of liquid in the structure. A chronological record should be maintained to track if any increases in depth occur which may warrant or allow for pumping to be performed.

We trust the above is sufficient for your needs. Should you have any questions or comments regarding this matter, please feel free to contact this office.

Very truly yours,



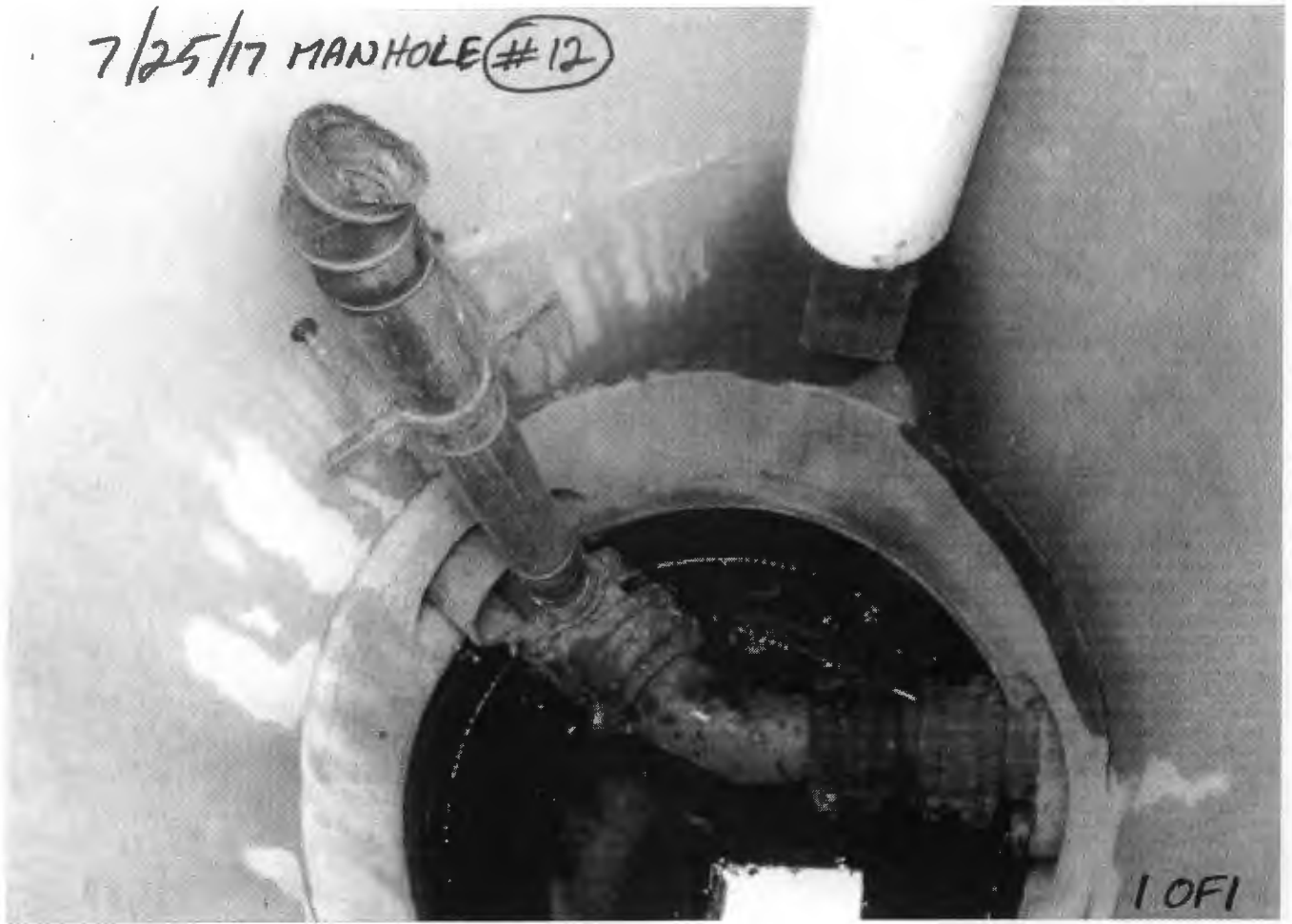
Edward J. Reilly
Associate

EJR/nc

cc: A. Sanchez (IRRA)
R. Walka (D&B)
T. Fox (D&B)
K. Robins (D&B)

◆3103\EJR092013_AV

7/25/17 MANHOLE #12



1 OF 1

Table 5
Islip Resource Recovery Agency
Blydenburgh Road Landfill Complex

**FIELD INSPECTION FORM NO. 4 FOR QUARTERLY INSPECTION OF
 LANDFILL GAS (LFG) MANAGEMENT SYSTEM**

DATE: 7/11, 7/17, 7/27/17

WEATHER: Sunny, Sunny Sunny.

INSPECTOR(S): Fazil Rahaman

INSPECTION (Check One): QUARTERLY SEMI-ANNUAL OTHER

| ITEM | ADEQUATE (or YES) | NEEDS ATTENTION (or NO) | COMMENTS/ REMARKS <small>(Note if repair/maintenance is recommended and describe its location/extent)</small> |
|--|---|---|---|
| 1.0 A-SYSTEM (Above-grade) | | <i>See Notes 1 & 2</i> | |
| 1.1 Extraction Well Head Assemblies | | | |
| Extraction Well A-01 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | <u>Attached to Part III, Landfill Gas, VOC Monitoring Results, and Well Condition Prepared by FPM Engineering Group, P.C.</u> |
| Extraction Well A-02 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well A-03 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well A-04 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well A-05 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well A-06 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | <u>Tilted northeast (monitoring).</u> |
| Extraction Well A-07 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well A-08 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well A-09 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well A-10 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well A-11 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well A-12 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well A-13 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well A-14 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well A-15 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | <u>Tilted east (monitoring).</u> |
| Extraction Well A-16 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well A-17 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well A-18 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| 1.2 Above-Grade Headers | | | |
| Network West of "A" and "B" Blowers | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |

Table 5
Islip Resource Recovery Agency
Blydenburgh Road Landfill Complex
FIELD INSPECTION FORM NO. 4 FOR QUARTERLY INSPECTION OF
LANDFILL GAS (LFG) MANAGEMENT SYSTEM

| ITEM | ADEQUATE (or YES) | NEEDS ATTENTION (or NO) | COMMENTS/ REMARKS <small>(Note if repair/maintenance is recommended and describe its location/extent)</small> |
|--|---|---|---|
| 1.0 A-SYSTEM (Above-grade) cont. | | | |
| 1.3 Blower Station | | | |
| Blower | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Silencer (s) | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Knock-out Pot (Water Separator) | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Flame Arrester(s) | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | Not inspected, System used for venting only. |
| Condensate Tank | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Electrical / Mechanical | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Shelter / Building | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| 1.4 Flare | | | |
| Tube / Tip | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | System used for venting only. |
| Shell / Baffle | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | System used for venting only. |
| Flame Arrester | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Clear Vegetation, System used for venting only. |
| Electrical / Mechanical | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | System used for venting only. |
| 1.5 LFG Monitoring Wells | | | |
| MW-07 Triplet | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Attached to Part III, Landfill Gas, VOC Monitoring Results, and Well Condition Prepared by FPM Engineering Group, P.C. |
| MW-08 Triplet | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| MW-11 Triplet | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| MW-13 Single | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| 2.0 B-SYSTEM (Above-grade) | | | |
| 2.1 Extraction Well Head Assemblies | | | |
| Extraction Well B-01 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Abandoned. |
| Extraction Well B-02 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Abandoned. |
| Extraction Well B-03 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Abandoned. |
| Extraction Well B-04 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Attached to Part III, Landfill Gas, VOC Monitoring Results, and Well Condition Prepared by FPM Engineering Group, P.C. |
| Extraction Well B-05 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well B-06 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |

Table 5
Islip Resource Recovery Agency
Blydenburgh Road Landfill Complex

FIELD INSPECTION FORM NO. 4 FOR QUARTERLY INSPECTION OF
LANDFILL GAS (LFG) MANAGEMENT SYSTEM

| ITEM | ADEQUATE (or YES) | NEEDS ATTENTION (or NO) | COMMENTS/ REMARKS <small>(Note if repair/maintenance is recommended and describe its location/extent)</small> |
|---|---|---|--|
| 2.0 B-SYSTEM (Above-grade) | | | |
| 2.1 Extraction Well Head Assemblies (cont.) | | | |
| Extraction Well B-07 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well B-08 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well B-09 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well B-10 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well B-11 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well B-12 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well B-13 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well B-14 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well B-15 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| 2.2 Above-Grade Headers | | | |
| 6-in.-dia. At B-13 to B-15 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| 8-in.-dia. At B-09 to B-13 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Flexible Header near B-09 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Flexible Header near B-14 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Flange Craked Concerns, Photo Attached. |
| Flexible Header at Network West of A and B Blower Stations | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| 2.3 Blower Station | | | |
| Blower | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Silencer(s) | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Flame Arrester(s) | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | Not inspected, System used for venting only. |
| Knock-out Pot (Water Separator) | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Condensate Tank | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Electrical / Mechanical | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Shelter / Building | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |

Table 5
Islip Resource Recovery Agency
Blydenburgh Road Landfill Complex

**FIELD INSPECTION FORM NO. 4 FOR QUARTERLY INSPECTION OF
LANDFILL GAS (LFG) MANAGEMENT SYSTEM**

| ITEM | ADEQUATE (or YES) | NEEDS ATTENTION (or NO) | COMMENTS/ REMARKS <small>(Note if repair/maintenance is recommended and describe its location/extent)</small> |
|--|---|---|--|
| 2.0 B-SYSTEM (Above-grade) cont. | | | |
| 2.4 Flare | | | |
| Tube / Tip | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | System used for venting only. |
| Shell / Baffle | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | System used for venting only. |
| Flame Arrester | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | System used for venting only. |
| Electrical / Mechanical | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | System used for venting only. |
| 2.5 LFG Monitoring Wells | | | |
| MW-01 Triplet | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Attached to Part III, Landfill Gas, VOC Monitoring Results, |
| MW-02 Triplet | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | and Well Condition Prepared by FPM Engineering Group,P.C |
| MW-25 Triplet | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| MW-26 Triplet | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| MW-27 Triplet | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| MW-28 Triplet | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Abandoned. |
| MW-29 Triplet | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Abandoned. |
| 3.0 C-SYSTEM (Above-grade) | | | |
| 3.1 Extraction Well Head Assemblies | | | |
| Extraction Well C-01 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Attached to Part III, Landfill Gas, VOC Monitoring Results, |
| Extraction Well C-02 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | and Well Condition Prepared by FPM Engineering Group,P.C |
| Extraction Well C-03 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well C-04 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well C-05 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well C-06 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well C-07 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well C-08 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well C-09 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well C-10 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well C-11 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Extraction Well C-12 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |

Table 5
Islip Resource Recovery Agency
Blydenburgh Road Landfill Complex

FIELD INSPECTION FORM NO. 4 FOR QUARTERLY INSPECTION OF
LANDFILL GAS (LFG) MANAGEMENT SYSTEM

| ITEM | ADEQUATE (or YES) | NEEDS ATTENTION (or NO) | COMMENTS/ REMARKS <small>(Note if repair/maintenance is recommended and describe its location/extent)</small> |
|--|---|---|--|
| 3.0 C-SYSTEM (Above-grade) | | | |
| 3.1 Extraction Well Head Assemblies (cont.) | | | |
| Extraction Well C-13 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| Extraction Well C-14 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| Extraction Well C-15 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| Extraction Well C-16 | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| 3.2 Above-Grade Headers | | | |
| NONE | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Not equipped. |
| 3.3 Blower Station | | | |
| Blower | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| Silencer(s) | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| Knock-out Pot (Water Separator) | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| Condensate Tank | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| Electrical / Mechanical | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| Shelter / Building | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| 3.4 Flare | | | |
| Tube / Tip | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | System used for venting only. |
| Shell / Baffle | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | System used for venting only. |
| Flame Arrester | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | System used for venting only. |
| Electrical / Mechanical | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | System used for venting only. |

Table 5
Islip Resource Recovery Agency
Blydenburgh Road Landfill Complex

FIELD INSPECTION FORM NO. 4 FOR QUARTERLY INSPECTION OF
LANDFILL GAS (LFG) MANAGEMENT SYSTEM

| ITEM | ADEQUATE (or YES) | NEEDS ATTENTION (or NO) | COMMENTS/ REMARKS <small>(Note if repair/maintenance is recommended and describe its location/extent)</small> |
|---|---|---|--|
| 3.0 C-SYSTEM (Above-grade) cont. | | | |
| 3.5 LFG Monitoring Wells | | | |
| MW-19 Triplet | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| MW-23 Triplet | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | Cover bolts not secured due to daily inspection. |
| 4.0 ADDITIONAL ITEMS | | | |
| 4.1 Methane Detection at Red House | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | Serviced 5/17/2017. |
| 4.2 Methane Detection at Scale House | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | Serviced 5/17/2017. |
| 4.3 Leachate pumping and detection manholes and biofilters at south end of MSW landfill | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | RE: Table 4 Section 1.2. |
| 4.4 Passive Vents | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | Abandoned. |
| 4.5 Methane Detection @ A-System Building | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Serviced ?, NO READING ON SCREEN. |

COMMENTS:

Craig D., Landfill personell peresent for inspection of, 1.0 A-SYSTEM Section 1.3, 1.4 , 2.0 B-SYSTEM Section 2.3, 2.4, and 3.0 C-SYSTEM Section 3.3, 3.4 .

NOTES:

- 1) Use this inspection form along with Figure OM-5 – Single Line Diagram of Landfill Gas Management System by Golder Associates.
- 2) Regarding inspection of well head assemblies, items/components to observe are extraction well casing, valve, lateral (flexible hose), etc.



Table 6
Islip Resource Recovery Agency
Blydenburgh Road Landfill Complex

FIELD INSPECTION FORM NO. 5 FOR
GROUNDWATER MANAGEMENT SYSTEM

DATE: 3/15, 8/1/17

WEATHER: ?

INSPECTOR(S): Dirvika & Bartilucci.

INSPECTION (Check One): QUARTERLY SEMI-ANNUAL OTHER

| ITEM | ADEQUATE (or YES) | NEEDS ATTENTION (or NO) | COMMENTS/ REMARKS <small>(Note if repair/maintenance is recommended and describe its location/extent)</small> |
|--|--|--|--|
| 1.1 Wells Designated for Quarterly Monitoring | | | |
| GM-1S | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Attached to Part IV, first quarter well condition report's |
| GM-1I | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | for Blydenburgh Road Landfill Complex, |
| GM-1D | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Summary of well status and deficiencies, Dated March 15th, 2017. |
| GM-2S | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-2I | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | First and second quarter Phase 1 and Phase 2 |
| GM-2D | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Cleanfills Landfill and Leachate Impoundment area, |
| GM-3D | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Summary of well status and deficiencies, |
| GM-3I | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Dated March 15th, August 1st, 2017. |
| GM-4G-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Prepared by town consultants Dvirka & Bartilucci (D&B). |
| GM-4G-2 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-4M-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-4M-2 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-5G-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-6G-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-6G-2 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-6G-3 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-6M-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-7G-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-7M-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |

Table 6
Islip Resource Recovery Agency
Blydenburgh Road Landfill Complex

**FIELD INSPECTION FORM NO. 5 FOR
GROUNDWATER MANAGEMENT SYSTEM**

| ITEM | ADEQUATE (or YES) | NEEDS ATTENTION (or NO) | COMMENTS/ REMARKS <small>(Note if repair/maintenance is recommended and describe its location/extent)</small> |
|--|--|--|--|
| 1.1 Wells Designated for Quarterly Monitoring | | | |
| GM-8G-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Attached to Part IV, first quarter well condition report`s |
| GM-8M-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | for Blydenburgh Road Landfill Complex, |
| GM-8M-2 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Summary of well status and deficiencies, Dated March 15th, 2017. |
| GM-9G-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-9M-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | First and second quarter Phase 1 and Phase 2 |
| GM-10G-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Cleanfills Landfill and Leachate Impoundment area, |
| GM-10M-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Summary of well status and deficiencies, |
| GM-11G-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Dated March 15th, August 1st, 2017. |
| GM-11G-2 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Prepared by town consultants Dvirka & Bartilucci (D&B). |
| GM-11M-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-12G-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-12M-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-13G-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-13M-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-14G-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-14G-2 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-14G-1A | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-14M-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-15G-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-15M-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-16G-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-16M-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-18G-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-18G-2 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |

Table 6
Islip Resource Recovery Agency
Blydenburgh Road Landfill Complex
**FIELD INSPECTION FORM NO. 5 FOR
GROUNDWATER MANAGEMENT SYSTEM**

| ITEM | ADEQUATE (or YES) | NEEDS ATTENTION (or NO) | COMMENTS/ REMARKS <small>(Note if repair/maintenance is recommended and describe its location/extent)</small> |
|---|--|--|--|
| 1.1 Wells Designated for Quarterly Monitoring | | | |
| GM-20G-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-21G-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-22M-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| GM-23M-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| 1.2 Wells Installed to Assess Phase II Cleanfill Expansion | | | |
| MW-24G-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Attached to Part IV, first quarter well condition report's for Blydenburgh Road Landfill Complex, |
| MW-24G-2 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| MW-24G-3 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Summary of well status and deficiencies, Dated March 15th, 2017. |
| MW-25G-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| MW-25G-2 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | First and second quarter Phase 1 and Phase 2 |
| MW-26G-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Cleanfills Landfill and Leachate Impoundment area, |
| MW-26G-2 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Summary of well status and deficiencies, |
| MW-26G-3 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Dated March 15th, August 1st, 2017. |
| MW-27G-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | Prepared by town consultants Dvirka & Bartilucci (D&B). |
| MW-27G-2 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| MW-27G-3 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| MW-28G-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| MW-28G-2 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| MW-28G-3 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| MW-19GR-1 | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |

Table 7
Islip Resource Recovery Agency
Blydenburgh Road Landfill Complex

FIELD INSPECTION FORM NO. 6 FOR INSPECTION OF THE PERIMETER SITE SECURITY SYSTEM

DATE: 7/28/17

WEATHER: Sunny.

INSPECTOR(S): Fazil Rahaman

INSPECTION (Check One): QUARTERLY SEMI-ANNUAL OTHER _____

| ITEM | ADEQUATE (or YES) | NEEDS ATTENTION (or NO) | COMMENTS/ REMARKS <small>(Note if repair/maintenance is recommended and describe its location/extent)</small> |
|--|---|---|--|
| 1.0 FENCE LINE | | | |
| | <i>See Notes 1 & 2</i> | | |
| Eastern Perimeter | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| Northern Perimeter | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| Western Perimeter | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Ash monofill fence line. Awaiting Quote/Repairs. |
| Southern Perimeter | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| 2.0 PERIM. GATES, CHAINS, AND LOCKS | | | |
| | <i>See Note 3</i> | | |
| Main Entrance | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | _____ |
| 200 ft North of Main Entrance | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | Gate no longer exists. |

Table 7
Islip Resource Recovery Agency
Blydenburgh Road Landfill Complex

FIELD INSPECTION FORM NO. 6 FOR INSPECTION OF THE
PERIMETER SITE SECURITY SYSTEM

| ITEM | ADEQUATE (or YES) | NEEDS ATTENTION (or NO) | COMMENTS/ REMARKS <small>(Note if repair/maintenance is recommended and describe its location/extent)</small> |
|---|---|---|--|
| 2.0 GATES, CHAINS, AND LOCKS (cont.) | | | |
| 100 ft North of Scale House | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | Gate no longer exists. |
| By Leachate Tank Farm | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| N.E. Property Corner, Off Blydenburgh Rd. | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | Gate no longer exists. |
| Across from 416 Hoffman Lane | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| 3.0 WARNING SIGNS | | | |
| <i>See Note 4</i> | | | |
| 3.1 Fence Line | | | |
| Eastern Perimeter | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| Northern Perimeter | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Readability and visibility concerns due to vegetation. |
| Western Perimeter | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> | Readability and visibility concerns due to vegetation. |
| Southern Perimeter | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| 3.2 Perimeter Access Gates | | | |
| Main Entrance | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| 200 ft North of Main Entrance | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | Gate no longer exists. |
| 100 ft North of Scale House | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | Gate no longer exists. |
| By Leachate Tank Farm | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |
| N.E. Prop. Corner – Blydenburgh Rd. | ADEQUATE <input type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> | Gate no longer exists. |
| Across from 416 Hoffman Lane | ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> | NEEDS ATTENTION <input type="checkbox"/> NO <input type="checkbox"/> | |

- NOTES:**
- 1) Use this inspection form along with Figure 2 – General Site Plan by Golder Associates.
 - 2) Inspect fence line for the condition of posts, rails, chain-link fabric, barbed wire, animal burrows/soil erosion at bottom of fence, etc.
 - 3) Inspect gates for the condition of locks, chains and items mentioned in Note 2.
 - 4) Inspect warning signs for their existence and then for readability and visibility.
 - 5) This site security field inspection form pertains to perimeter fence and warning signs; it does not include the video surveillance equipment at on-site office.

PART II

GROUNDWATER REMEDIATION

FACILITY

RELATED DOCUMENTS

| GROUNDWATER REMEDIATION - POST CLOSURE MONITORING AND MAINTENANCE REPORT SEMI-ANNUAL REPORT ENDING JUNE 2017 | | | | | | |
|--|-----------------------|-------------|-----------------------|------------------------|---------------------------------------|--|
| <u>DATE</u> | <u>TOTAL EFFLUENT</u> | <u>DATE</u> | <u>TOTAL EFFLUENT</u> | <u>TOTAL PROCESSED</u> | <u>AVERAGE DAILY VOLUME PROCESSED</u> | |
| | <u>(gals.)</u> | | <u>(gals.)</u> | <u>IN TIME FRAME</u> | <u>FOR TIME FRAME</u> | |
| 12/31/2016 | 2,431,516,236 | 1/31/2017 | 2,439,410,136 | 7,893,900 | 254,642 | |
| 1/31/2017 | 2,439,410,136 | 2/28/2017 | 2,446,647,203 | 7,237,067 | 258,467 | |
| 2/28/2017 | 2,446,647,203 | 3/31/2017 | 2,454,582,903 | 7,935,700 | 255,990 | |
| 3/31/2017 | 2,454,582,903 | 4/30/2017 | 2,462,454,358 | 7,871,455 | 262,381 | |
| 4/30/2017 | 2,462,454,358 | 5/31/2017 | 2,470,709,636 | 8,255,278 | 266,299 | |
| 5/31/2017 | 2,470,709,636 | 6/30/2017 | 2,477,312,523 | 6,602,887 | 220,096 | |
| Note: 5/20/16 Extraction well #4 Experiencing diminishing flow concerns, and on 12/27/16 out of service UNDER INVEST. | | | | | | |
| 1/13/17 E.W. #4 REPAIRED AND BACK IN SERVICE. | | | | | | |
| 10/24/16 MW-1D Energised but not pumping, in addition flow meter at meter vault #2 spinning counter clockwise. | | | | | | |
| De Energized and Isolate via curb stop (AWAITING REPAIRS TO BE SCHEDULED) | | | | | | |
| 03/29/17 MW-1D (REPAIRED AND BACK IN SERVICE). | | | | | | |

**ISLIP RESOURCE RECOVERY AGENCY
 BLYDENBURGH LANDFILL
 GROUNDWATER TREATMENT FACILITY
 OPERATION AND MAINTENANCE MANUAL**

FACILITY EQUIPMENT SERVICE RECORD

January through June 2017

DATE:

WORK DONE

| | |
|---------------------|--|
| 1/6, 4/7/17 | Filter's Air Compressor; Oil Change. |
| 1/9, 5/8/17 | Aeration Tank Blower #1; Zerk Fittings Greased. |
| 1/13, 2/27, 5/26/17 | Aeration Tank Blower #2; Zerk Fittings Greased. |
| 1/17/17 | Aeration Tank Blower #3; Oil Changed. |
| 2/7/17 | Chemical Pump #2; Oil Changed. |
| 2/23/17 | Filters #2 & 3 Flow Cells Assembly; Disassembled Cleaned & Reassembled. |
| 2/24/17 | Filters #1 Flow Cell Assembly; Disassembled Cleaned & Reassembled. |
| 2/27/17 | Aeration Tank Blower #1; Oil Changed. |
| 3/2/17 | Chemical Pump #3; Oil Changed. |
| 3/13/17 | Aeration Tank Blower #2; Oil Changed. |
| 3/13/17 | Aeration Tank Blower #3; Zerk Fittings Greased. |
| 3/31, 6/30/17 | Blower Room Air Compressor; Oil Changed, Zerk Fittings Greased, Drive Belts Inspected. |
| 4/14/17 | Filter Air Blower; Serviced, Change oil and lube Zerk Fittings. |
| 4/26/17 | Filters #3, 2 & 1 Flow Cells Assembly; Disassembled Cleaned & Reassembled. |
| 5/12/17 | Chemical Pump #1; Oil Changed. |
| 5/15/17 | Aeration Tanks Blower Electric Motors #1, 2 & 3; Zerk Fittings Greased. |
| 5/15/17 | Aeration Tanks Exhaust fan #1&2 Zerk Fittings Greased. |
| 5/23/17 | Extraction Well's #3 & 4 Chlorinated. |
| 6/19/17 | Extraction Well's #1 Chlorinated. |
| | |
| | |
| | |

PART III

**BLYDENBURGH ROAD M.S.W.
LANDFILL**

AND FORMER

ASH MONOFILL GAS MONITORING

REPORTS FROM

JANUARY 2017 THROUGH JUNE 2017

PREPARED BY F.P.M. GROUP

FPM Group, Ltd.
FPM Engineering Group, P.C.
formerly Fanning, Phillips and Molnar

February 1, 2017

CORPORATE HEADQUARTERS
909 Marconi Avenue
Ronkonkoma, NY 11779
631/737-6200
Fax 631/737-2410

Mr. Anthony J. Varrichio, P.E.
Chief Engineer
Islip Resource Recovery Agency
401 Main Street
Islip, New York 11751

Re: **Blydenburgh Road Landfill
January 2017 Landfill Gas and VOC Gas Monitoring Results
FPM File No. 631-17-33**

Dear Mr. Varrichio:

On January 4, 18, and 27, 2017, FPM Group (FPM) performed landfill gas and volatile organic compound (VOC) gas monitoring at the above-referenced site. Monitoring of landfill gas was performed with a Landtec GEM 2000 Gas Analyzer. Monitoring for VOCs in ambient air was performed with a Photovac photoionization detector (PID), model 2020 Pro Plus. Ambient air VOC monitoring was conducted to address the provision for this measure in the Record of Decision (ROD) for this facility and was performed at four locations near the landfill perimeter, including one location downwind from the flare system.

For the Landtec GEM 2000 Gas Analyzer, oxygen (O₂) gas and methane (CH₄) gas were zeroed according to the manufacturer's specifications. The gas analyzer was calibrated with 15 percent (%) CH₄ and 15% carbon dioxide (CO₂) with the balance nitrogen (N₂) gas, and 4% O₂ with the balance N₂ gas according to the manufacturer's recommendation prior to sampling. The Photovac PID was zeroed with ambient air prior to arrival at the landfill property, and calibrated with 100 parts per million (ppm) isobutylene prior to sampling in accordance with the manufacturer's recommendations.

The landfill gas monitoring results are provided in Tables 1 through 11 and the ambient air VOC monitoring results are provided in Table 12. CH₄ was not detected in any of the landfill monitoring wells this month and VOCs were not detected in the ambient air. An elevated level of O₂ was detected in wells MSW-09 and MSW-15. This issue is being addressed.

The next landfill gas monitoring event will begin on February 7, 2017. Jim Jahnke will be notified several days in advance of the sampling event.

Should you have any questions, please do not hesitate to call me at (631) 737-6200, ext. 242.

Sincerely,



Chris Linkletter
Hydrogeologist

CL:tac
Attachments

cc: Jim Jahnke (via email)
Fazil Rahaman (via email)

**TABLE 1
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK**

Extraction Wells - System A

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| A-01 | OK | 1/4/2017 11:12 | 0.00 | 0.70 | 18.20 | 29.2 | -0.31 |
| A-02 | OK | 1/4/2017 11:14 | 0.00 | 0.10 | 18.70 | 29.2 | -0.40 |
| A-03 | OK | 1/4/2017 11:17 | 0.00 | 0.10 | 18.70 | 29.2 | -0.38 |
| A-04 | OK | 1/4/2017 11:21 | 0.00 | 0.30 | 18.60 | 29.2 | -0.47 |
| A-05 | OK | 1/4/2017 11:24 | 0.00 | 0.10 | 18.60 | 29.2 | -0.30 |
| A-06 | OK | 1/4/2017 11:27 | 0.00 | 0.10 | 18.70 | 29.2 | -1.53 |
| A-07 | OK | 1/4/2017 11:31 | 0.00 | 0.10 | 18.70 | 29.3 | -3.34 |
| A-08 | OK | 1/4/2017 11:34 | 0.00 | 0.10 | 18.70 | 29.3 | -0.77 |
| A-09 | OK | 1/4/2017 11:38 | 0.00 | 0.10 | 18.80 | 29.2 | -0.78 |
| A-10 | OK | 1/4/2017 11:41 | 0.00 | 0.10 | 18.80 | 29.2 | -0.69 |
| A-11 | OK | 1/4/2017 11:47 | 0.00 | 0.10 | 18.90 | 29.3 | -4.18 |
| A-12 | OK | 1/4/2017 11:49 | 0.00 | 0.10 | 18.90 | 29.2 | -0.37 |
| A-13 | OK | 1/4/2017 11:53 | 0.00 | 0.10 | 18.90 | 29.2 | -0.46 |
| A-14 | OK | 1/4/2017 11:56 | 0.00 | 1.40 | 17.90 | 29.2 | -0.39 |
| A-15 | OK | 1/4/2017 11:59 | 0.00 | 1.50 | 17.80 | 29.2 | -0.31 |
| A-16 | OK | 1/4/2017 12:15 | 0.20 | 0.10 | 18.80 | 29.2 | -0.69 |
| A-17 | OK | 1/4/2017 12:18 | 0.00 | 0.10 | 18.70 | 29.3 | -0.40 |
| A-18 | OK | 1/4/2017 12:21 | 0.00 | 0.10 | 18.80 | 29.3 | -1.32 |
| BLOWER A | N/A | 1/4/2017 12:32 | 0.30 | 3.80 | 15.80 | 29.3 | 26.22 |
| BLOWER B | N/A | 1/4/2017 12:34 | 0.00 | 0.10 | 18.90 | 29.3 | -0.03 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.

Relative well head pressure is reported in inches of water.

Atmospheric pressure is reported in inches of mercury.

Blower status - On

N/A - Not Applicable

Weather - Partly Cloudy, 53°F

FPM

TABLE 2
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Monitoring Wells - System A

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| MW-07/20 | OK | 1/4/2017 13:09 | 0.00 | 0.10 | 18.70 | 29.2 | -0.09 |
| MW-07/40 | OK | 1/4/2017 13:11 | 0.00 | 0.10 | 18.80 | 29.2 | -0.16 |
| MW-07/60 | OK | 1/4/2017 13:13 | 0.00 | 0.10 | 18.90 | 29.2 | -0.17 |
| MW-08/20 | OK | 1/4/2017 13:16 | 0.00 | 0.50 | 18.70 | 29.2 | -0.05 |
| MW-08/40 | OK | 1/4/2017 13:18 | 0.00 | 0.10 | 19.00 | 29.2 | -0.09 |
| MW-08/60 | OK | 1/4/2017 13:20 | 0.00 | 0.10 | 19.00 | 29.2 | -0.13 |
| MW-11/20 | OK | 1/4/2017 13:02 | 0.00 | 0.10 | 18.50 | 29.2 | -0.07 |
| MW-11/40 | OK | 1/4/2017 13:04 | 0.00 | 0.10 | 18.60 | 29.2 | -0.12 |
| MW-11/60 | OK | 1/4/2017 13:06 | 0.00 | 0.10 | 18.70 | 29.2 | -0.12 |
| MW-13/20 | OK | 1/4/2017 13:23 | 0.00 | 0.10 | 19.10 | 29.2 | -0.02 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.

Relative well head pressure is reported in inches of water.

Atmospheric pressure is reported in inches of mercury.

Blower status - On

Weather - Partly Cloudy, 53°F

FPM

TABLE 3
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Extraction Wells - System B

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| B-04 | OK | 1/27/2017 9:54 | 0.00 | 0.10 | 19.10 | 29.4 | -1.03 |
| B-05 | OK | 1/27/2017 9:58 | 0.00 | 0.10 | 19.10 | 29.4 | -1.20 |
| B-06 | OK | 1/27/2017 10:06 | 0.00 | 0.10 | 19.00 | 29.4 | -0.91 |
| B-07 | OK | 1/27/2017 10:09 | 0.00 | 0.10 | 19.00 | 29.4 | -4.74 |
| B-08 | OK | 1/27/2017 10:14 | 0.00 | 0.10 | 19.00 | 29.4 | -1.01 |
| B-09 | OK | 1/27/2017 10:21 | 0.00 | 0.10 | 19.00 | 29.4 | -4.89 |
| B-10 | OK | 1/27/2017 10:22 | 0.00 | 0.10 | 19.00 | 29.5 | -0.97 |
| B-11 | OK | 1/27/2017 10:25 | 0.00 | 0.30 | 18.90 | 29.5 | -1.24 |
| B-12 | OK | 1/27/2017 10:27 | 0.00 | 0.10 | 19.00 | 29.5 | -7.03 |
| B-13 | OK | 1/27/2017 10:29 | 0.00 | 0.10 | 19.00 | 29.5 | -46.75 |
| B-14 | OK | 1/27/2017 10:31 | 0.00 | 0.10 | 19.10 | 29.5 | -3.74 |
| B-15 | OK | 1/27/2017 10:34 | 0.00 | 0.10 | 19.20 | 29.5 | -6.78 |
| BLOWER B | N/A | 1/27/2017 10:17 | 0.10 | 2.80 | 16.80 | 29.4 | 9.26 |
| BLOWER C | N/A | 1/27/2017 11:12 | 0.40 | 3.30 | 16.20 | 29.5 | 2.64 |

Notes:

- CH₄, CO₂, and O₂ are reported in percent gas.
- Relative well head pressure is reported in inches of water.
- Atmospheric pressure is reported in inches of mercury.
- Blower status - On
- N/A - Not Applicable
- Weather - Overcast, 42°F



**TABLE 4
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK**

Monitoring Wells - System B

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| MW-01/20 | OK | 1/27/2017 9:48 | 0.00 | 0.10 | 19.20 | 29.4 | -0.34 |
| MW-01/40 | OK | 1/27/2017 9:50 | 0.00 | 0.10 | 19.20 | 29.4 | -0.28 |
| MW-01/60 | OK | 1/27/2017 9:52 | 0.00 | 0.10 | 19.20 | 29.4 | -0.24 |
| MW-02/20 | OK | 1/27/2017 10:01 | 0.00 | 0.10 | 19.00 | 29.4 | -0.32 |
| MW-02/40 | OK | 1/27/2017 10:03 | 0.00 | 0.10 | 19.00 | 29.4 | -0.38 |
| MW-02/60 | OK | 1/27/2017 10:04 | 0.00 | 0.10 | 19.00 | 29.4 | -0.36 |
| MW-25/20 | OK | 1/27/2017 10:56 | 0.00 | 0.10 | 19.10 | 29.5 | -0.17 |
| MW-25/40 | OK | 1/27/2017 10:58 | 0.00 | 0.10 | 19.00 | 29.5 | -0.48 |
| MW-25/60 | OK | 1/27/2017 10:58 | 0.00 | 0.10 | 19.00 | 29.5 | -6.56 |
| MW-26/20 | OK | 1/27/2017 10:47 | 0.00 | 0.10 | 19.20 | 29.5 | -0.16 |
| MW-26/40 | OK | 1/27/2017 10:49 | 0.00 | 0.10 | 19.20 | 29.5 | -0.27 |
| MW-26/60 | OK | 1/27/2017 10:51 | 0.00 | 0.10 | 19.20 | 29.5 | -0.03 |
| MW-27/20 | OK | 1/27/2017 10:40 | 0.00 | 0.10 | 19.30 | 29.5 | -0.11 |
| MW-27/40 | OK | 1/27/2017 10:42 | 0.00 | 0.10 | 19.30 | 29.5 | -0.22 |
| MW-27/60 | OK | 1/27/2017 10:44 | 0.00 | 0.10 | 19.30 | 29.5 | -0.19 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.
 Relative well head pressure is reported in inches of water.
 Atmospheric pressure is reported in inches of mercury.
 Blower status - On
 Weather - Overcast, 42°F

FPM

TABLE 5
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Extraction Wells - System C

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| C-01 | OK | 1/27/2017 12:24 | 0.00 | 0.10 | 18.90 | 29.4 | -1.26 |
| C-02 | OK | 1/27/2017 12:22 | 0.00 | 0.40 | 18.50 | 29.4 | -0.47 |
| C-03 | OK | 1/27/2017 12:18 | 0.00 | 0.10 | 18.90 | 29.4 | -0.93 |
| C-04 | OK | 1/27/2017 12:15 | 0.00 | 0.10 | 18.90 | 29.4 | -0.74 |
| C-05 | OK | 1/27/2017 12:10 | 0.00 | 0.10 | 18.90 | 29.4 | -0.73 |
| C-06 | OK | 1/27/2017 12:06 | 0.00 | 0.10 | 19.00 | 29.4 | -0.67 |
| C-07 | OK | 1/27/2017 12:03 | 0.00 | 0.20 | 18.80 | 29.4 | -0.79 |
| C-08 | OK | 1/27/2017 11:59 | 0.00 | 0.20 | 18.90 | 29.4 | -1.17 |
| C-09 | OK | 1/27/2017 11:56 | 0.00 | 0.60 | 18.60 | 29.4 | -0.90 |
| C-10 | OK | 1/27/2017 11:52 | 0.00 | 0.50 | 19.00 | 29.4 | -2.00 |
| C-11 | OK | 1/27/2017 11:49 | 0.00 | 0.40 | 18.70 | 29.4 | -1.88 |
| C-12 | OK | 1/27/2017 11:44 | 0.00 | 0.60 | 18.50 | 29.5 | -1.05 |
| C-13 | OK | 1/27/2017 11:41 | 0.00 | 0.20 | 19.00 | 29.5 | -0.62 |
| C-14 | OK | 1/27/2017 11:37 | 0.00 | 0.10 | 18.90 | 29.5 | -0.44 |
| C-15 | OK | 1/27/2017 11:31 | 0.00 | 0.10 | 18.80 | 29.5 | -1.11 |
| C-16 | OK | 1/27/2017 11:29 | 0.00 | 0.10 | 18.60 | 29.5 | -0.54 |
| C-17 | OK | 1/27/2017 12:36 | 0.00 | 7.60 | 13.40 | 29.4 | -1.57 |
| BLOWER C | N/A | 1/27/2017 11:12 | 0.40 | 3.30 | 16.20 | 29.5 | 2.64 |

Notes:

- CH₄, CO₂, and O₂ are reported in percent gas.
- Relative well head pressure is reported in inches of water.
- Atmospheric pressure is reported in inches of mercury.
- Blower status - On
- N/A - Not Applicable
- Weather - Overcast, 42°F



TABLE 6
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Monitoring Wells - System C

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| MW-19/20 | OK | 1/27/2017 13:00 | 0.00 | 0.90 | 18.00 | 29.4 | -0.05 |
| MW-19/40 | OK | 1/27/2017 13:02 | 0.00 | 0.70 | 18.10 | 29.4 | 0.00 |
| MW-19/60 | OK | 1/27/2017 13:03 | 0.00 | 0.40 | 18.30 | 29.4 | 0.00 |
| MW-23/20 | OK | 1/27/2017 12:54 | 0.00 | 0.20 | 18.80 | 29.4 | 0.00 |
| MW-23/40 | OK | 1/27/2017 12:55 | 0.00 | 0.10 | 18.70 | 29.4 | 0.00 |
| MW-23/60 | OK | 1/27/2017 12:57 | 0.00 | 0.60 | 18.20 | 29.4 | 0.01 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.

Relative well head pressure is reported in inches of water.

Atmospheric pressure is reported in inches of mercury.

Blower status - On

Weather - Overcast, 42°F

FPM

**TABLE 9
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK**

Monitoring Wells

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| MW-50 | OK | 1/27/2017 10:11 | 0.00 | 0.10 | 19.00 | 29.4 | -0.14 |
| MW-51 | OK | 1/4/2017 13:01 | 0.00 | 0.10 | 18.50 | 29.3 | -0.18 |
| MW-52 | OK | 1/4/2017 11:44 | 0.00 | 0.50 | 18.60 | 29.2 | -0.03 |
| MW-53 | OK | 1/4/2017 12:25 | 0.00 | 0.10 | 18.80 | 29.3 | -0.05 |
| MW-54 | OK | 1/4/2017 12:27 | 0.00 | 0.40 | 18.60 | 29.3 | -0.08 |
| MW-56 | OK | 1/27/2017 11:22 | 0.00 | 1.90 | 17.40 | 29.4 | 0.03 |
| MW-57 | OK | 1/27/2017 11:27 | 0.00 | 0.10 | 18.50 | 29.5 | -0.01 |
| MW-58 | OK | 1/27/2017 13:12 | 0.00 | 0.20 | 18.40 | 29.4 | 0.00 |
| MW-59 | OK | 1/27/2017 11:34 | 0.00 | 0.20 | 18.80 | 29.5 | -0.02 |
| MW-60 | OK | 1/27/2017 11:39 | 0.00 | 0.10 | 19.00 | 29.5 | -0.01 |
| MW-61 | OK | 1/27/2017 11:46 | 0.00 | 0.10 | 19.10 | 29.5 | -0.10 |
| MW-62 | OK | 1/27/2017 13:08 | 0.00 | 0.10 | 18.50 | 29.4 | 0.00 |
| MW-63 | OK | 1/27/2017 13:06 | 0.00 | 0.10 | 18.50 | 29.4 | 0.00 |
| MW-64 | OK | 1/27/2017 12:13 | 0.00 | 0.10 | 18.90 | 29.4 | -0.04 |
| MW-65 | OK | 1/27/2017 12:20 | 0.00 | 0.10 | 18.90 | 29.4 | 0.00 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.

Relative well head pressure is reported in inches of water.

Atmospheric pressure is reported in inches of mercury.

Blower status - On

Weather: 1/4/2017 - Partly Cloudy, 53°F 1/27/2017 - Overcast, 42°F

FPM

TABLE 10
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Extraction Wells - Closed MSW Landfill

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure | Well Head Vacuum |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|------------------|
| MSW-01 | * | NS | NS | NS | NS | NS | NS | NS |
| MSW-03 | OK | 1/18/2017 11:02 | 33.20 | 38.00 | 0.60 | 29.7 | -0.04 | -3.33 |
| MSW-04 | OK | 1/18/2017 11:09 | 15.80 | 27.90 | 2.60 | 29.6 | -2.93 | -3.57 |
| MSW-05 | OK | 1/18/2017 11:13 | 44.50 | 52.80 | 0.40 | 29.6 | -1.59 | -2.58 |
| MSW-06 | OK | 1/18/2017 11:17 | 26.80 | 39.40 | 0.50 | 29.6 | -1.65 | -2.32 |
| MSW-07 | OK | 1/18/2017 11:22 | 21.70 | 20.00 | 1.90 | 29.6 | -1.07 | -2.24 |
| MSW-09 | OK | 1/18/2017 11:30 | 19.50 | 32.00 | 3.30 | 29.6 | -1.22 | -2.13 |
| MSW-10 | OK | 1/18/2017 11:36 | 42.20 | 57.70 | 0.50 | 29.6 | -0.93 | - |
| MSW-11 | OK | 1/18/2017 11:42 | 24.50 | 43.90 | 0.60 | 29.6 | -1.90 | -2.16 |
| MSW-12 | OK | 1/18/2017 11:46 | 26.10 | 44.90 | 0.50 | 29.6 | -1.73 | -2.21 |
| MSW-13 | OK | 1/18/2017 11:52 | 38.50 | 60.80 | 0.80 | 29.6 | -0.38 | - |
| MSW-14 | OK | 1/18/2017 11:58 | 35.80 | 61.10 | 0.80 | 29.6 | 2.66 | - |
| MSW-15 | OK | 1/18/2017 12:02 | 40.40 | 52.20 | 3.40 | 29.6 | -1.1 | -2.71 |
| MSW-16 | OK | 1/18/2017 12:05 | 22.80 | 41.30 | 0.40 | 29.6 | -2.25 | -2.86 |
| MSW-17 | OK | 1/18/2017 11:06 | 34.20 | 47.30 | 0.70 | 29.6 | -0.47 | - |
| MSW-18 | OK | 1/18/2017 12:11 | 39.80 | 59.50 | 0.50 | 29.6 | -1.00 | - |
| MSW-19 | OK | 1/18/2017 12:16 | 42.70 | 56.00 | 0.60 | 29.6 | -1.41 | -1.01 |

Notes:

- = No well head vacuum sample port present.
 CH₄, CO₂, and O₂ are reported in percent gas.
 Relative well head pressure is reported in inches of water.
 Atmospheric pressure is reported in inches of mercury.
 Blower status - On
 NS - Not Sampled
 Weather - Overcast, 40°F

***MSW-01 - Well under repair**

**TABLE 11
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK**

CLOSED MSW LANDFILL

| Location ID | Date | Time | CH ₄ | CO ₂ | O ₂ | Temp. | Well Head Pressure | Atmospheric Pressure | Valve Position |
|--|-----------|------|-----------------|-----------------|----------------|-------|--------------------|----------------------|----------------|
| <u>N. Valve Structure</u> | 1/27/2017 | 9:15 | 15.80 | 18.80 | 6.40 | 44 | -3.56 | 29.4 | 1/2 open |
| V-200 | | 9:17 | 5.40 | 13.00 | 8.10 | 46 | -3.61 | 29.4 | 1/4 open |
| <u>Dog House</u> | 1/27/2017 | 9:22 | 26.30 | 34.30 | 2.50 | 44 | -4.86 | 29.4 | open |
| Phase IV Vertical Phase II Horizontal | | 9:24 | 0.00 | 10.40 | 8.70 | 46 | -0.90 | 29.4 | closed |
| <u>Small Dog House</u> | 1/27/2017 | 9:26 | 12.90 | 23.90 | 3.50 | 46 | -4.40 | 29.4 | 1/2 open |
| Phase II Horizontal | | | | | | | | | |
| <u>Phase II Valve Pit</u> | 1/27/2017 | 9:30 | 30.10 | 46.50 | 0.40 | 44 | -6.07 | 29.4 | 1/2 open |
| E-Horizontal | | 9:33 | 28.30 | 46.00 | 0.40 | 44 | -6.16 | 29.4 | 1/2 open |
| W-Horizontal | | | | | | | | | NS |
| CF Phase II-Vertical** | | | | | | | | | |
| <u>Flare Compound</u> | 1/27/2017 | 9:37 | 0.00 | 2.20 | 17.70 | 48 | -1.52 | 29.4 | N/A |
| *MP-01 Gas Analyzer CF Phase I** | | NS | NS | NS | NS | NS | NS | NS | NS |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.
 Relative well head pressure is reported in inches of water.
 Atmospheric pressure is reported in inches of mercury.
 Temperature measured in degrees Fahrenheit.
 Blower status - On
 Weather - Overcast, 42°F
 * = Analyzer combined
 ** = Offline
 N/A = Not Applicable
 NS = Not Sampled



TABLE 12
AMBIENT VOLATILE ORGANIC COMPOUND (VOC) GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

| Location ID | Date | Location Description | VOCs |
|-------------|-----------|---|------|
| AMBIENT 1 | 1/27/2017 | Northern portion of landfill property, just south of MW-26/40 | 0.0 |
| AMBIENT 2 | 1/27/2017 | Southern portion of landfill property, just north of MW-D4/40 | 0.0 |
| AMBIENT 3 | 1/27/2017 | Western portion of landfill property, just east of B-04 | 0.0 |
| AMBIENT 4 | 1/27/2017 | Eastern portion of landfill property, just west of C-04 | 0.0 |

Notes:

VOCs reported as parts per million, as measured by a calibrated photoionization detector.

Weather - Overcast, 42°F

FPM

FPM Group, Ltd.
FPM Engineering Group, P.C.
formerly Fanning, Phillips and Molnar

March 2, 2017

CORPORATE HEADQUARTERS
909 Marconi Avenue
Ronkonkoma, NY 11779
631/737-6200
Fax 631/737-2410

Mr. Anthony J. Varrichio, P.E.
Chief Engineer
Islip Resource Recovery Agency
401 Main Street
Islip, New York 11751

Re: **Blydenburgh Road Landfill
February 2017 Landfill Gas and VOC Gas Monitoring Results
FPM File No. 631-17-33**

Dear Mr. Varrichio:

On February 6, 13, and 24, 2017, FPM Group (FPM) performed landfill gas and volatile organic compound (VOC) gas monitoring at the above-referenced site. Monitoring of landfill gas was performed with a Landtec GEM 2000 Gas Analyzer. Monitoring for VOCs in ambient air was performed with a Photovac photoionization detector (PID), model 2020 Pro Plus. Ambient air VOC monitoring was conducted to address the provision for this measure in the Record of Decision (ROD) for this facility and was performed at four locations near the landfill perimeter, including one location downwind from the flare system.

For the Landtec GEM 2000 Gas Analyzer, oxygen (O₂) gas and methane (CH₄) gas were zeroed according to the manufacturer's specifications. The gas analyzer was calibrated with 15 percent (%) CH₄ and 15% carbon dioxide (CO₂) with the balance nitrogen (N₂) gas, and 4% O₂ with the balance N₂ gas according to the manufacturer's recommendation prior to sampling. The Photovac PID was zeroed with ambient air prior to arrival at the landfill property, and calibrated with 100 parts per million (ppm) isobutylene prior to sampling in accordance with the manufacturer's recommendations.

The landfill gas monitoring results are provided in Tables 1 through 11 and the ambient air VOC monitoring results are provided in Table 12. CH₄ was not detected in any of the landfill monitoring wells this month and VOCs were not detected in the ambient air. An elevated level of O₂ was detected in wells MSW-04, MSW-09 and MSW-15. This issue is being addressed.

The next landfill gas monitoring event will begin on March 3, 2017. Jim Jahnke will be notified several days in advance of the sampling event.

Should you have any questions, please do not hesitate to call me at (631) 737-6200, ext. 242.

Sincerely,



Chris Linkletter
Hydrogeologist

CL:tac
Attachments

cc: Jim Jahnke (via email)
Fazil Rahaman (via email)

**TABLE 1
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK**

Extraction Wells - System A

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| A-01 | OK | 2/6/2017 11:33 | 0.00 | 0.60 | 18.20 | 29.9 | -0.35 |
| A-02 | OK | 2/6/2017 11:36 | 0.00 | 0.10 | 18.50 | 29.9 | -0.45 |
| A-03 | OK | 2/6/2017 11:40 | 0.00 | 0.10 | 18.60 | 29.9 | -0.56 |
| A-04 | OK | 2/6/2017 11:44 | 0.00 | 0.30 | 18.50 | 29.9 | -0.38 |
| A-05 | OK | 2/6/2017 11:47 | 0.00 | 0.10 | 18.80 | 29.9 | -0.27 |
| A-06 | OK | 2/6/2017 11:52 | 0.00 | 0.10 | 18.90 | 29.9 | -1.58 |
| A-07 | OK | 2/6/2017 11:55 | 0.00 | 0.10 | 18.90 | 29.9 | -3.28 |
| A-08 | OK | 2/6/2017 11:57 | 0.00 | 0.10 | 19.00 | 29.9 | -0.79 |
| A-09 | OK | 2/6/2017 11:59 | 0.00 | 0.10 | 19.10 | 29.9 | -0.80 |
| A-10 | OK | 2/6/2017 12:03 | 0.00 | 0.40 | 19.00 | 29.9 | -0.70 |
| A-11 | OK | 2/6/2017 12:09 | 0.00 | 0.10 | 19.30 | 29.9 | -4.23 |
| A-12 | OK | 2/6/2017 12:12 | 0.00 | 0.10 | 19.40 | 29.9 | -0.30 |
| A-13 | OK | 2/6/2017 12:16 | 0.00 | 0.10 | 19.40 | 29.9 | -0.46 |
| A-14 | OK | 2/6/2017 12:19 | 0.00 | 1.00 | 18.70 | 29.9 | -0.33 |
| A-15 | OK | 2/6/2017 12:22 | 0.00 | 0.20 | 19.30 | 29.9 | -0.22 |
| A-16 | OK | 2/6/2017 12:38 | 0.00 | 0.10 | 18.70 | 29.9 | -0.70 |
| A-17 | OK | 2/6/2017 12:43 | 0.00 | 0.10 | 18.60 | 29.9 | -0.51 |
| A-18 | OK | 2/6/2017 12:45 | 0.00 | 0.10 | 18.70 | 29.9 | -1.48 |
| BLOWER A | N/A | 2/6/2017 13:07 | 0.20 | 2.80 | 16.50 | 29.9 | 26.79 |
| BLOWER B | N/A | 2/6/2017 13:10 | 0.00 | 0.10 | 18.80 | 29.9 | -0.03 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.

Relative well head pressure is reported in inches of water.

Atmospheric pressure is reported in inches of mercury.

Blower status - On

N/A - Not Applicable

Weather - Partly Cloudy, 46°F



TABLE 2
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Monitoring Wells - System A

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| MW-07/20 | OK | 2/6/2017 13:32 | 0.00 | 0.10 | 18.80 | 29.8 | -0.08 |
| MW-07/40 | OK | 2/6/2017 13:34 | 0.00 | 0.10 | 18.90 | 29.8 | -0.14 |
| MW-07/60 | OK | 2/6/2017 13:36 | 0.00 | 0.10 | 19.00 | 29.8 | -0.16 |
| MW-08/20 | OK | 2/6/2017 13:40 | 0.00 | 0.10 | 19.10 | 29.8 | -0.05 |
| MW-08/40 | OK | 2/6/2017 13:42 | 0.00 | 0.10 | 19.20 | 29.8 | -0.09 |
| MW-08/60 | OK | 2/6/2017 13:44 | 0.00 | 0.10 | 19.20 | 29.8 | -0.12 |
| MW-11/20 | OK | 2/6/2017 13:26 | 0.00 | 0.10 | 18.50 | 29.8 | -0.06 |
| MW-11/40 | OK | 2/6/2017 13:28 | 0.00 | 0.10 | 18.60 | 29.8 | -0.09 |
| MW-11/60 | OK | 2/6/2017 13:30 | 0.00 | 0.10 | 18.70 | 29.9 | -0.05 |
| MW-13/20 | OK | 2/6/2017 13:46 | 0.00 | 0.10 | 19.40 | 29.8 | -0.02 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.

Relative well head pressure is reported in inches of water.

Atmospheric pressure is reported in inches of mercury.

Blower status - On

Weather - Partly Cloudy, 46°F

FPM

**TABLE 3
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK**

Extraction Wells - System B

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| B-04 | OK | 2/13/2017 10:24 | 0.00 | 0.10 | 19.70 | 29.4 | -0.66 |
| B-05 | OK | 2/13/2017 10:29 | 0.00 | 0.10 | 19.70 | 29.4 | -0.95 |
| B-06 | OK | 2/13/2017 10:36 | 0.00 | 0.10 | 19.40 | 29.4 | -0.63 |
| B-07 | OK | 2/13/2017 10:38 | 0.00 | 0.10 | 19.30 | 29.4 | -2.95 |
| B-08 | OK | 2/13/2017 10:42 | 0.00 | 0.10 | 19.40 | 29.4 | -0.73 |
| B-09 | OK | 2/13/2017 10:53 | 0.00 | 0.10 | 19.40 | 29.5 | -4.96 |
| B-10 | OK | 2/13/2017 10:55 | 0.00 | 0.10 | 19.40 | 29.5 | -0.95 |
| B-11 | OK | 2/13/2017 10:57 | 0.00 | 0.30 | 19.30 | 29.5 | -1.50 |
| B-12 | OK | 2/13/2017 11:00 | 0.00 | 0.10 | 19.40 | 29.5 | -8.08 |
| B-13 | OK | 2/13/2017 11:06 | 0.00 | 0.10 | 19.50 | 29.5 | -45.26 |
| B-14 | OK | 2/13/2017 11:07 | 0.00 | 0.10 | 19.40 | 29.5 | -3.92 |
| B-15 | OK | 2/13/2017 11:09 | 0.00 | 0.10 | 19.40 | 29.5 | -6.28 |
| BLOWER B | N/A | 2/13/2017 10:51 | 0.00 | 0.10 | 19.40 | 29.4 | -0.01 |
| BLOWER C | N/A | 2/24/2017 12:29 | 0.00 | 3.00 | 15.70 | 29.6 | 2.58 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.
 Relative well head pressure is reported in inches of water.
 Atmospheric pressure is reported in inches of mercury.
 Blower status - On
 N/A - Not Applicable
 Weather: 2/13/2017 - Partly Cloudy, 38°F 2/24/2017 - Clear, 60°F



**TABLE 4
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK**

Monitoring Wells - System B

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| MW-01/20 | OK | 2/13/2017 10:19 | 0.00 | 0.10 | 19.90 | 29.4 | -0.27 |
| MW-01/40 | OK | 2/13/2017 10:21 | 0.00 | 0.10 | 19.80 | 29.4 | -0.28 |
| MW-01/60 | OK | 2/13/2017 10:23 | 0.00 | 0.10 | 19.80 | 29.4 | -0.22 |
| MW-02/20 | OK | 2/13/2017 10:31 | 0.00 | 0.10 | 19.60 | 29.4 | -0.25 |
| MW-02/40 | OK | 2/13/2017 10:32 | 0.00 | 0.10 | 19.60 | 29.4 | -0.37 |
| MW-02/60 | OK | 2/13/2017 10:34 | 0.00 | 0.10 | 19.50 | 29.4 | -0.32 |
| MW-25/20 | OK | 2/13/2017 11:35 | 0.00 | 0.10 | 18.80 | 29.5 | -0.17 |
| MW-25/40 | OK | 2/13/2017 11:37 | 0.00 | 0.10 | 19.00 | 29.5 | -0.21 |
| MW-25/60 | OK | 2/13/2017 11:40 | 0.00 | 0.20 | 19.00 | 29.5 | -0.59 |
| MW-26/20 | OK | 2/13/2017 11:28 | 0.00 | 0.10 | 18.70 | 29.5 | -0.18 |
| MW-26/40 | OK | 2/13/2017 11:30 | 0.00 | 0.10 | 18.80 | 29.5 | -0.28 |
| MW-26/60 | OK | 2/13/2017 11:32 | 0.00 | 0.10 | 18.90 | 29.5 | -0.09 |
| MW-27/20 | OK | 2/13/2017 11:21 | 0.00 | 0.10 | 18.90 | 29.5 | -0.19 |
| MW-27/40 | OK | 2/13/2017 11:23 | 0.00 | 0.10 | 18.80 | 29.5 | -0.30 |
| MW-27/60 | OK | 2/13/2017 11:25 | 0.00 | 0.10 | 18.80 | 29.6 | -0.12 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.

Relative well head pressure is reported in inches of water.

Atmospheric pressure is reported in inches of mercury.

Blower status - On

Weather - Partly Cloudy, 38°F

FPM

TABLE 5
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Extraction Wells - System C

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| C-01 | OK | 2/24/2017 13:22 | 0.00 | 0.00 | 18.70 | 29.7 | -1.62 |
| C-02 | OK | 2/24/2017 13:19 | 0.00 | 0.60 | 18.10 | 29.7 | -0.44 |
| C-03 | OK | 2/24/2017 13:14 | 0.00 | 0.00 | 18.60 | 29.7 | -1.21 |
| C-04 | OK | 2/24/2017 13:11 | 0.00 | 0.00 | 18.50 | 29.7 | -0.92 |
| C-05 | OK | 2/24/2017 13:07 | 0.00 | 0.00 | 18.50 | 29.7 | -0.63 |
| C-06 | OK | 2/24/2017 13:04 | 0.00 | 0.00 | 18.50 | 29.7 | -0.60 |
| C-07 | OK | 2/24/2017 13:02 | 0.00 | 0.10 | 18.50 | 29.7 | -1.04 |
| C-08 | OK | 2/24/2017 12:58 | 0.00 | 0.10 | 18.50 | 29.7 | -1.21 |
| C-09 | OK | 2/24/2017 12:56 | 0.00 | 0.20 | 18.20 | 29.8 | -0.79 |
| C-10 | OK | 2/24/2017 12:53 | 0.00 | 0.10 | 18.40 | 29.8 | -1.29 |
| C-11 | OK | 2/24/2017 12:50 | 0.00 | 0.50 | 17.90 | 29.8 | -1.87 |
| C-12 | OK | 2/24/2017 12:46 | 0.00 | 0.50 | 17.90 | 29.8 | -1.16 |
| C-13 | OK | 2/24/2017 12:44 | 0.00 | 0.10 | 18.30 | 29.8 | -0.74 |
| C-14 | OK | 2/24/2017 12:41 | 0.00 | 0.10 | 18.20 | 29.8 | -0.53 |
| C-15 | OK | 2/24/2017 12:38 | 0.00 | 0.10 | 18.20 | 29.8 | -0.81 |
| C-16 | OK | 2/24/2017 12:35 | 0.00 | 0.10 | 18.20 | 29.8 | -0.64 |
| C-17 | OK | 2/24/2017 13:33 | 0.00 | 4.60 | 15.10 | 29.7 | -1.34 |
| BLOWER C | N/A | 2/24/2017 12:29 | 0.00 | 3.00 | 15.70 | 29.6 | 2.58 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.
 Relative well head pressure is reported in inches of water.
 Atmospheric pressure is reported in inches of mercury.
 Blower status - On
 N/A - Not Applicable
 Weather - Clear, 60°F



**TABLE 6
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK**

Monitoring Wells - System C

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| MW-19/20 | OK | 2/24/2017 13:53 | 0.00 | 0.70 | 18.00 | 29.7 | -0.10 |
| MW-19/40 | OK | 2/24/2017 13:55 | 0.00 | 0.50 | 18.20 | 29.7 | -0.04 |
| MW-19/60 | OK | 2/24/2017 13:57 | 0.00 | 0.30 | 18.50 | 29.7 | -0.04 |
| MW-23/20 | OK | 2/24/2017 13:45 | 0.00 | 0.50 | 18.10 | 29.7 | 0.01 |
| MW-23/40 | OK | 2/24/2017 13:46 | 0.00 | 0.60 | 17.80 | 29.7 | -0.01 |
| MW-23/60 | OK | 2/24/2017 13:48 | 0.00 | 1.30 | 17.00 | 29.7 | 0.21 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.

Relative well head pressure is reported in inches of water.

Atmospheric pressure is reported in inches of mercury.

Blower status - On

Weather - Clear, 60°F

FPM

**TABLE 9
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK**

Monitoring Wells

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| MW-50 | OK | 2/13/2017 10:40 | 0.00 | 0.10 | 19.40 | 29.4 | -0.23 |
| MW-51 | OK | 2/6/2017 13:24 | 0.00 | 0.10 | 18.50 | 29.9 | -0.18 |
| MW-52 | OK | 2/6/2017 12:06 | 0.00 | 0.50 | 18.80 | 29.9 | 0.00 |
| MW-53 | OK | 2/6/2017 12:54 | 0.00 | 0.10 | 18.80 | 29.9 | -0.06 |
| MW-54 | OK | 2/6/2017 12:57 | 0.00 | 0.30 | 18.80 | 29.9 | -0.08 |
| MW-56 | OK | 2/13/2017 11:44 | 0.00 | 0.10 | 19.10 | 29.5 | -0.20 |
| MW-57 | OK | 2/13/2017 12:01 | 0.00 | 0.10 | 18.80 | 29.5 | -0.13 |
| MW-58 | OK | 2/24/2017 14:17 | 0.00 | 0.30 | 18.50 | 29.7 | -0.01 |
| MW-59 | OK | 2/13/2017 12:06 | 0.00 | 0.10 | 18.80 | 29.6 | 0.00 |
| MW-60 | OK | 2/24/2017 12:42 | 0.00 | 0.10 | 18.30 | 29.8 | -0.02 |
| MW-61 | OK | 2/24/2017 12:49 | 0.00 | 0.10 | 18.40 | 29.8 | -0.08 |
| MW-62 | OK | 2/24/2017 14:02 | 0.00 | 0.10 | 18.80 | 29.7 | -0.05 |
| MW-63 | OK | 2/24/2017 14:04 | 0.00 | 1.10 | 17.80 | 29.7 | 0.00 |
| MW-64 | OK | 2/24/2017 13:09 | 0.00 | 0.00 | 18.50 | 29.7 | -0.06 |
| MW-65 | OK | 2/24/2017 13:16 | 0.00 | 0.00 | 18.60 | 29.7 | 0.03 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.

Relative well head pressure is reported in inches of water.

Atmospheric pressure is reported in inches of mercury.

Blower status - On

Weather: 2/6/2017 - Partly Cloudy, 46°F 2/13/2017 - Partly Cloudy, 38°F 2/24/2017 - Clear, 60°F

FPM

**TABLE 10
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK**

Extraction Wells - Closed MSW Landfill

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure | Well Head Vacuum |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|------------------|
| MSW-01 | * | NS | NS | NS | NS | NS | NS | NS |
| MSW-03 | OK | 2/24/2017 11:00 | 30.60 | 36.50 | 0.50 | 29.7 | -0.15 | -1.24 |
| MSW-04 | OK | 2/24/2017 11:07 | 13.40 | 25.20 | 3.20 | 29.7 | -1.39 | -1.16 |
| MSW-05 | OK | 2/24/2017 11:10 | 41.60 | 51.30 | 0.30 | 29.6 | -1.06 | -1.31 |
| MSW-06 | OK | 2/24/2017 11:13 | 23.20 | 36.30 | 0.30 | 29.6 | -1.10 | -1.45 |
| MSW-07 | OK | 2/24/2017 11:16 | 18.40 | 18.30 | 2.30 | 29.6 | -0.78 | -1.23 |
| MSW-09 | OK | 2/24/2017 11:20 | 16.70 | 29.40 | 3.20 | 29.6 | -0.85 | -1.14 |
| MSW-10 | OK | 2/24/2017 11:23 | 43.70 | 55.50 | 0.70 | 29.7 | -0.68 | - |
| MSW-11 | OK | 2/24/2017 11:27 | 25.20 | 40.40 | 0.30 | 29.7 | -1.65 | -2.06 |
| MSW-12 | OK | 2/24/2017 11:32 | 26.70 | 41.40 | 0.40 | 29.6 | -1.64 | -1.43 |
| MSW-13 | OK | 2/24/2017 11:36 | 42.70 | 59.80 | 0.40 | 29.6 | -0.21 | - |
| MSW-14 | OK | 2/24/2017 11:39 | 39.50 | 59.50 | 0.80 | 29.6 | 2.27 | - |
| MSW-15 | OK | 2/24/2017 11:51 | 9.50 | 11.00 | 14.60 | 29.6 | -0.38 | -1.94 |
| MSW-16 | OK | 2/24/2017 12:00 | 21.20 | 39.10 | 0.30 | 29.6 | -1.33 | -1.53 |
| MSW-17 | OK | 2/24/2017 11:04 | 26.70 | 41.20 | 1.50 | 29.6 | -0.48 | - |
| MSW-18 | OK | 2/24/2017 12:06 | 42.10 | 57.30 | 0.40 | 29.6 | -0.55 | - |
| MSW-19 | OK | 2/24/2017 11:44 | 40.50 | 58.80 | 0.60 | 29.6 | -0.45 | -0.44 |

Notes:

- = No well head vacuum sample port present.
 CH₄, CO₂, and O₂ are reported in percent gas.
 Relative well head pressure is reported in inches of water.
 Atmospheric pressure is reported in inches of mercury.
 Blower status - On
 NS - Not Sampled
 Weather - Clear, 60°F

***MSW-01 - Well under repair**

**TABLE 11
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK**

CLOSED MSW LANDFILL

| Location ID | Date | Time | CH ₄ | CO ₂ | O ₂ | Temp. | Well Head Pressure | Atmospheric Pressure | Valve Position |
|---------------------------|-----------|-------|-----------------|-----------------|----------------|-------|--------------------|----------------------|----------------|
| <u>N. Valve Structure</u> | | | | | | | | | |
| V-200 | 2/24/2017 | 10:26 | 14.90 | 18.00 | 6.30 | 54 | -2.95 | 29.8 | 1/2 open |
| V-203 | | 10:28 | 4.40 | 11.80 | 8.00 | 56 | -3.28 | 29.8 | 1/4 open |
| <u>Dog House</u> | | | | | | | | | |
| Phase IV Vertical | 2/24/2017 | 10:33 | 25.00 | 33.10 | 2.40 | 58 | -4.55 | 29.8 | open |
| Phase II Horizontal | | 10:35 | 0.10 | 5.70 | 13.20 | 58 | -0.58 | 29.7 | closed |
| <u>Small Dog House</u> | | | | | | | | | |
| Phase II Horizontal | 2/24/2017 | 10:37 | 11.90 | 23.60 | 2.50 | 56 | -2.10 | 29.7 | 1/2 open |
| <u>Phase II Valve Pit</u> | | | | | | | | | |
| E-Horizontal | 2/24/2017 | 10:41 | 28.70 | 40.90 | 1.00 | 58 | -2.26 | 29.7 | 1/2 open |
| W-Horizontal | | 10:43 | 24.40 | 41.30 | 0.20 | 56 | -5.84 | 29.7 | 1/2 open |
| CF Phase II-Vertical** | | | | | | | | | NS |
| <u>Flare Compound</u> | | | | | | | | | |
| *MP-01 Gas Analyzer | 2/24/2017 | 10:47 | 0.00 | 0.10 | 18.20 | 54 | -2.41 | 29.7 | N/A |
| CF Phase I** | | NS | NS | NS | NS | NS | NS | NS | NS |

Notes:

- CH₄, CO₂, and O₂ are reported in percent gas.
- Relative well head pressure is reported in inches of water.
- Atmospheric pressure is reported in inches of mercury.
- Temperature measured in degrees Fahrenheit.
- Blower status - On
- Weather - Clear, 60°F
- * = Analyzer combined
- ** = Offline
- N/A = Not Applicable
- NS = Not Sampled



TABLE 12
AMBIENT VOLATILE ORGANIC COMPOUND (VOC) GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

| Location ID | Date | Location Description | VOCs |
|-------------|-----------|--|------|
| AMBIENT 1 | 2/24/2017 | Northeastern portion of landfill property, just west of well C-13 | 0.0 |
| AMBIENT 2 | 2/24/2017 | Southeastern portion of landfill property, just west of well MW-D10 | 0.0 |
| AMBIENT 3 | 2/24/2017 | Northwestern portion of landfill property, just southeast of well A-17 | 0.0 |
| AMBIENT 4 | 2/24/2017 | Southwestern portion of landfill property, just east of well MW-2C | 0.0 |

Notes:

VOCs reported as parts per million, as measured by a calibrated photoionization detector.

Weather - Clear, 60°F

FPM

FPM Group, Ltd.
FPM Engineering Group, P.C.
formerly Fanning, Phillips and Molnar

April 3, 2017

CORPORATE HEADQUARTERS
909 Marconi Avenue
Ronkonkoma, NY 11779
631/737-6200
Fax 631/737-2410

Mr. Anthony J. Varrichio, P.E.
Chief Engineer
Islip Resource Recovery Agency
401 Main Street
Islip, New York 11751

Re: **Blydenburgh Road Landfill**
March 2017 Landfill Gas and VOC Gas Monitoring Results
FPM File No. 631-17-33

Dear Mr. Varrichio:

On March 3, 9, and 16, 2017, FPM Group (FPM) performed landfill gas and volatile organic compound (VOC) gas monitoring at the above-referenced site. Monitoring of landfill gas was performed with a Landtec GEM 2000 Gas Analyzer. Monitoring for VOCs in ambient air was performed with a Photovac photoionization detector (PID), model 2020 Pro Plus. Ambient air VOC monitoring was conducted to address the provision for this measure in the Record of Decision (ROD) for this facility and was performed at four locations near the landfill perimeter, including one location downwind from the flare system.

For the Landtec GEM 2000 Gas Analyzer, oxygen (O₂) gas and methane (CH₄) gas were zeroed according to the manufacturer's specifications. The gas analyzer was calibrated with 15 percent (%) CH₄ and 15% carbon dioxide (CO₂) with the balance nitrogen (N₂) gas, and 4% O₂ with the balance N₂ gas according to the manufacturer's recommendation prior to sampling. The Photovac PID was zeroed with ambient air prior to arrival at the landfill property, and calibrated with 100 parts per million (ppm) isobutylene prior to sampling in accordance with the manufacturer's recommendations.

The landfill gas monitoring results are provided in Tables 1 through 11 and the ambient air VOC monitoring results are provided in Table 12. CH₄ was not detected in any of the landfill monitoring wells this month and VOCs were not detected in the ambient air.

The next landfill gas monitoring event will begin on April 5, 2017. Jim Jahnke will be notified several days in advance of the sampling event.

Should you have any questions, please do not hesitate to call me at (631) 737-6200, ext. 242.

Sincerely,



Chris Linkletter
Hydrogeologist

CL:tac
Attachments

cc: Jim Jahnke (via email)
Fazil Rahaman (via email)

S:\Islip RRA\Reports\2017-Ltr\Mar Blydenburgh.Docx

TABLE 1
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Extraction Wells - System A

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| A-01 | OK | 3/3/2017 11:14 | 0.00 | 0.10 | 18.40 | 29.9 | -0.54 |
| A-02 | OK | 3/3/2017 11:17 | 0.00 | 0.10 | 18.50 | 29.9 | -0.55 |
| A-03 | OK | 3/3/2017 11:20 | 0.00 | 0.10 | 18.50 | 30.0 | -0.82 |
| A-04 | OK | 3/3/2017 11:22 | 0.00 | 0.10 | 18.60 | 30.0 | -0.66 |
| A-05 | OK | 3/3/2017 11:25 | 0.00 | 0.10 | 18.70 | 30.0 | -0.45 |
| A-06 | OK | 3/3/2017 11:28 | 0.00 | 0.10 | 18.80 | 30.0 | -2.34 |
| A-07 | OK | 3/3/2017 11:30 | 0.00 | 0.10 | 18.80 | 30.0 | -6.20 |
| A-08 | OK | 3/3/2017 11:33 | 0.00 | 0.10 | 19.00 | 30.0 | -1.37 |
| A-09 | OK | 3/3/2017 11:37 | 0.00 | 0.10 | 19.10 | 30.0 | -1.24 |
| A-10 | OK | 3/3/2017 11:41 | 0.00 | 0.10 | 19.10 | 30.0 | -1.08 |
| A-11 | OK | 3/3/2017 11:49 | 0.00 | 0.10 | 19.40 | 30.0 | -7.21 |
| A-12 | OK | 3/3/2017 11:53 | 0.00 | 0.10 | 19.40 | 30.0 | -0.67 |
| A-13 | OK | 3/3/2017 11:57 | 0.00 | 0.10 | 19.20 | 30.0 | -0.54 |
| A-14 | OK | 3/3/2017 12:01 | 0.00 | 0.10 | 19.10 | 30.0 | -0.48 |
| A-15 | OK | 3/3/2017 12:06 | 0.00 | 0.10 | 19.10 | 30.0 | -0.35 |
| A-16 | OK | 3/3/2017 12:12 | 0.00 | 0.10 | 19.00 | 30.0 | -0.83 |
| A-17 | OK | 3/3/2017 12:16 | 0.00 | 0.10 | 19.00 | 30.0 | -0.66 |
| A-18 | OK | 3/3/2017 12:19 | 0.00 | 0.10 | 19.10 | 30.0 | -2.08 |
| BLOWER A | N/A | 3/3/2017 12:31 | 0.00 | 0.10 | 19.60 | 30.0 | 0.00 |
| BLOWER B | N/A | 3/3/2017 12:34 | 0.20 | 2.20 | 17.90 | 30.0 | 9.07 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.
 Relative well head pressure is reported in inches of water.
 Atmospheric pressure is reported in inches of mercury.
 Blower status - On
 N/A - Not Applicable
 Weather - Partly Cloudy, 40°F



TABLE 2
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Monitoring Wells - System A

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| MW-07/20 | OK | 3/3/2017 13:08 | 0.00 | 0.10 | 19.10 | 30.0 | -0.15 |
| MW-07/40 | OK | 3/3/2017 13:10 | 0.00 | 0.10 | 19.10 | 29.9 | -0.23 |
| MW-07/60 | OK | 3/3/2017 13:12 | 0.00 | 0.10 | 19.20 | 29.9 | -0.26 |
| MW-08/20 | OK | 3/3/2017 13:15 | 0.00 | 0.10 | 19.30 | 29.9 | -0.12 |
| MW-08/40 | OK | 3/3/2017 13:18 | 0.00 | 0.10 | 19.40 | 30.0 | -0.16 |
| MW-08/60 | OK | 3/3/2017 13:19 | 0.00 | 0.10 | 19.40 | 29.9 | -0.18 |
| MW-11/20 | OK | 3/3/2017 13:00 | 0.00 | 0.10 | 18.70 | 30.0 | -0.09 |
| MW-11/40 | OK | 3/3/2017 13:02 | 0.00 | 0.10 | 18.80 | 30.0 | -0.07 |
| MW-11/60 | OK | 3/3/2017 13:04 | 0.00 | 0.10 | 18.90 | 30.0 | -0.06 |
| MW-13/20 | OK | 3/3/2017 13:22 | 0.00 | 0.10 | 19.50 | 30.0 | -0.02 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.
 Relative well head pressure is reported in inches of water.
 Atmospheric pressure is reported in inches of mercury.
 Blower status - On
 Weather - Partly Cloudy, 40°F



TABLE 3
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Extraction Wells - System B

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| B-04 | OK | 3/16/2017 10:18 | 0.00 | 0.10 | 19.30 | 29.7 | -0.66 |
| B-05 | OK | 3/16/2017 10:21 | 0.00 | 0.10 | 19.20 | 29.7 | -0.74 |
| B-06 | OK | 3/16/2017 10:29 | 0.00 | 0.10 | 19.10 | 29.7 | -0.63 |
| B-07 | OK | 3/16/2017 10:34 | 0.00 | 0.10 | 19.10 | 29.7 | -2.76 |
| B-08 | OK | 3/16/2017 10:39 | 0.00 | 0.10 | 19.00 | 29.7 | -0.85 |
| B-09 | OK | 3/16/2017 10:46 | 0.00 | 0.10 | 19.00 | 29.7 | -5.03 |
| B-10 | OK | 3/16/2017 10:49 | 0.00 | 0.10 | 19.00 | 29.7 | -0.99 |
| B-11 | OK | 3/16/2017 10:51 | 0.00 | 0.20 | 18.90 | 29.7 | -1.60 |
| B-12 | OK | 3/16/2017 10:54 | 0.00 | 0.10 | 19.10 | 29.7 | -6.77 |
| B-13 | OK | 3/16/2017 10:59 | 0.00 | 0.10 | 19.10 | 29.8 | -49.39 |
| B-14 | OK | 3/16/2017 11:01 | 0.00 | 0.10 | 19.20 | 29.8 | -3.79 |
| B-15 | OK | 3/16/2017 11:03 | 0.00 | 0.10 | 19.30 | 29.8 | -6.38 |
| BLOWER B | N/A | 3/16/2017 10:44 | 0.00 | 0.10 | 19.00 | 29.7 | -0.05 |
| BLOWER C | N/A | 3/16/2017 10:56 | 0.20 | 2.60 | 17.10 | 29.8 | 2.80 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.
 Relative well head pressure is reported in inches of water.
 Atmospheric pressure is reported in inches of mercury.
 Blower status - On
 N/A - Not Applicable
 Weather - Scattered Clouds, 38°F



TABLE 4
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Monitoring Wells - System B

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| MW-01/20 | OK | 3/16/2017 10:13 | 0.00 | 0.10 | 19.20 | 29.7 | -0.27 |
| MW-01/40 | OK | 3/16/2017 10:15 | 0.00 | 0.10 | 19.20 | 29.7 | -0.26 |
| MW-01/60 | OK | 3/16/2017 10:17 | 0.00 | 0.10 | 19.20 | 29.7 | -0.19 |
| MW-02/20 | OK | 3/16/2017 10:23 | 0.00 | 0.10 | 19.20 | 29.7 | -0.27 |
| MW-02/40 | OK | 3/16/2017 10:25 | 0.00 | 0.10 | 19.10 | 29.7 | -0.33 |
| MW-02/60 | OK | 3/16/2017 10:27 | 0.00 | 0.10 | 19.10 | 29.7 | -0.32 |
| MW-25/20 | OK | 3/16/2017 11:19 | 0.00 | 0.10 | 19.30 | 29.8 | -0.15 |
| MW-25/40 | OK | 3/16/2017 11:22 | 0.00 | 0.10 | 19.30 | 29.8 | -0.20 |
| MW-25/60 | OK | 3/16/2017 11:24 | 0.00 | 0.10 | 19.30 | 29.8 | -0.57 |
| MW-26/20 | OK | 3/16/2017 11:13 | 0.00 | 0.10 | 19.40 | 29.8 | -0.22 |
| MW-26/40 | OK | 3/16/2017 11:15 | 0.00 | 0.10 | 19.40 | 29.8 | -0.32 |
| MW-26/60 | OK | 3/16/2017 11:17 | 0.00 | 0.10 | 19.40 | 29.8 | -0.03 |
| MW-27/20 | OK | 3/16/2017 11:06 | 0.00 | 0.10 | 19.30 | 29.8 | -0.16 |
| MW-27/40 | OK | 3/16/2017 11:08 | 0.00 | 0.10 | 19.40 | 29.8 | -0.29 |
| MW-27/60 | OK | 3/16/2017 11:11 | 0.00 | 0.10 | 19.40 | 29.8 | -0.19 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.
 Relative well head pressure is reported in inches of water.
 Atmospheric pressure is reported in inches of mercury.
 Blower status - On
 Weather - Scattered Clouds, 38°F



TABLE 5
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Extraction Wells - System C

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| C-01 | OK | 3/16/2017 12:39 | 0.00 | 0.10 | 19.20 | 29.7 | -1.06 |
| C-02 | OK | 3/16/2017 12:35 | 0.00 | 0.10 | 19.30 | 29.7 | -0.76 |
| C-03 | OK | 3/16/2017 12:29 | 0.00 | 0.10 | 19.30 | 29.7 | -1.30 |
| C-04 | OK | 3/16/2017 12:27 | 0.00 | 0.10 | 19.30 | 29.7 | -0.62 |
| C-05 | OK | 3/16/2017 12:22 | 0.00 | 0.10 | 19.30 | 29.7 | -1.20 |
| C-06 | OK | 3/16/2017 12:19 | 0.00 | 0.10 | 19.40 | 29.7 | -0.84 |
| C-07 | OK | 3/16/2017 12:17 | 0.00 | 0.10 | 19.40 | 29.7 | -1.19 |
| C-08 | OK | 3/16/2017 12:12 | 0.00 | 0.10 | 19.30 | 29.7 | -1.31 |
| C-09 | OK | 3/16/2017 12:10 | 0.00 | 0.10 | 19.20 | 29.8 | -1.26 |
| C-10 | OK | 3/16/2017 12:05 | 0.00 | 0.10 | 19.10 | 29.8 | -2.95 |
| C-11 | OK | 3/16/2017 12:03 | 0.00 | 0.30 | 18.90 | 29.8 | -1.94 |
| C-12 | OK | 3/16/2017 11:58 | 0.00 | 0.20 | 18.80 | 29.8 | -1.48 |
| C-13 | OK | 3/16/2017 11:55 | 0.00 | 0.10 | 18.80 | 29.8 | -0.97 |
| C-14 | OK | 3/16/2017 11:51 | 0.00 | 0.10 | 18.60 | 29.8 | -0.64 |
| C-15 | OK | 3/16/2017 11:47 | 0.00 | 0.10 | 18.20 | 29.8 | -1.36 |
| C-16 | OK | 3/16/2017 11:45 | 0.00 | 0.10 | 18.20 | 29.8 | -0.91 |
| C-17 | OK | 3/16/2017 12:47 | 0.00 | 4.40 | 16.10 | 29.7 | -1.61 |
| BLOWER C | N/A | 3/16/2017 10:56 | 0.20 | 2.60 | 17.10 | 29.8 | 2.80 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.
 Relative well head pressure is reported in inches of water.
 Atmospheric pressure is reported in inches of mercury.
 Blower status - On
 N/A - Not Applicable
 Weather - Scattered Clouds, 38°F



TABLE 6
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Monitoring Wells - System C

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| MW-19/20 | OK | 3/16/2017 13:19 | 0.00 | 0.80 | 18.10 | 29.7 | -0.19 |
| MW-19/40 | OK | 3/16/2017 13:21 | 0.00 | 0.50 | 18.30 | 29.7 | 0.00 |
| MW-19/60 | OK | 3/16/2017 13:23 | 0.00 | 0.30 | 18.50 | 29.7 | -0.04 |
| MW-23/20 | OK | 3/16/2017 13:09 | 0.00 | 0.10 | 18.70 | 29.7 | -0.05 |
| MW-23/40 | OK | 3/16/2017 13:11 | 0.00 | 0.10 | 18.60 | 29.7 | -0.02 |
| MW-23/60 | OK | 3/16/2017 13:13 | 0.00 | 0.20 | 18.40 | 29.7 | -0.03 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.

Relative well head pressure is reported in inches of water.

Atmospheric pressure is reported in inches of mercury.

Blower status - On

Weather - Scattered Clouds, 38°F

FPM

**TABLE 9
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK**

Monitoring Wells

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| MW-50 | OK | 3/16/2017 10:35 | 0.00 | 0.10 | 19.10 | 29.7 | -0.20 |
| MW-51 | OK | 3/3/2017 12:59 | 0.00 | 0.10 | 18.70 | 30.0 | -0.18 |
| MW-52 | OK | 3/3/2017 11:43 | 0.00 | 0.10 | 19.20 | 30.0 | -0.07 |
| MW-53 | OK | 3/3/2017 12:22 | 0.00 | 0.10 | 19.20 | 30.0 | -0.11 |
| MW-54 | OK | 3/3/2017 12:25 | 0.00 | 0.20 | 19.20 | 30.0 | -0.10 |
| MW-56 | OK | 3/16/2017 11:40 | 0.00 | 0.10 | 18.30 | 29.8 | -0.06 |
| MW-57 | OK | 3/16/2017 11:44 | 0.00 | 0.10 | 18.10 | 29.8 | -0.13 |
| MW-58 | OK | 3/16/2017 13:35 | 0.00 | 0.20 | 18.70 | 29.7 | 0.00 |
| MW-59 | OK | 3/16/2017 11:49 | 0.00 | 0.10 | 18.40 | 29.8 | 0.00 |
| MW-60 | OK | 3/16/2017 11:53 | 0.00 | 0.10 | 18.70 | 29.8 | -0.18 |
| MW-61 | OK | 3/16/2017 12:00 | 0.00 | 0.10 | 19.00 | 29.8 | -0.35 |
| MW-62 | OK | 3/16/2017 13:28 | 0.00 | 0.10 | 18.90 | 29.7 | 0.00 |
| MW-63 | OK | 3/16/2017 13:26 | 0.00 | 0.10 | 18.80 | 29.7 | 0.00 |
| MW-64 | OK | 3/16/2017 12:24 | 0.00 | 0.10 | 19.30 | 29.7 | -0.27 |
| MW-65 | OK | 3/16/2017 12:32 | 0.00 | 0.10 | 19.30 | 29.7 | -0.11 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.

Relative well head pressure is reported in inches of water.

Atmospheric pressure is reported in inches of mercury.

Blower status - On

Weather: 3/3/2017 - Partly Cloudy, 40°F 3/16/2017 - Scattered Clouds, 38°F

FPM

**TABLE 10
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK**

Extraction Wells - Closed MSW Landfill

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure | Well Head Vacuum |
|-------------|----------------|----------------|-----------------|-----------------|----------------|----------------------|-------------------|------------------|
| MSW-01 | * | NS | NS | NS | NS | NS | NS | NS |
| MSW-03 | OK | 3/9/2017 10:17 | 33.40 | 37.90 | 0.50 | 29.7 | -0.05 | -3.05 |
| MSW-04 | OK | 3/9/2017 10:24 | 15.70 | 27.10 | 2.70 | 29.6 | -2.61 | -3.13 |
| MSW-05 | OK | 3/9/2017 10:29 | 41.70 | 52.20 | 0.30 | 29.6 | -1.79 | -2.63 |
| MSW-06 | OK | 3/9/2017 10:34 | 23.80 | 37.00 | 0.40 | 29.6 | -1.87 | -2.53 |
| MSW-07 | OK | 3/9/2017 10:42 | 18.90 | 18.50 | 2.40 | 29.6 | -1.20 | -3.07 |
| MSW-09 | OK | 3/9/2017 10:48 | 16.10 | 30.70 | 2.20 | 29.6 | -1.33 | -2.10 |
| MSW-10 | OK | 3/9/2017 10:51 | 44.70 | 54.50 | 0.60 | 29.6 | -1.02 | - |
| MSW-11 | OK | 3/9/2017 10:58 | 23.90 | 39.90 | 0.40 | 29.6 | -2.32 | -2.49 |
| MSW-12 | OK | 3/9/2017 11:02 | 25.90 | 42.00 | 0.50 | 29.6 | -1.70 | -2.01 |
| MSW-13 | OK | 3/9/2017 11:06 | 38.00 | 60.90 | 1.00 | 29.6 | -0.45 | - |
| MSW-14 | OK | 3/9/2017 11:10 | 44.10 | 60.80 | 0.40 | 29.6 | 1.95 | - |
| MSW-15 | * | NS | NS | NS | NS | NS | NS | NS |
| MSW-16 | OK | 3/9/2017 11:23 | 23.00 | 38.90 | 0.30 | 29.6 | -1.33 | -2.50 |
| MSW-17 | OK | 3/9/2017 10:21 | 29.30 | 41.60 | 1.90 | 29.6 | -0.68 | - |
| MSW-18 | OK | 3/9/2017 11:28 | 42.10 | 57.10 | 0.70 | 29.6 | -1.14 | - |
| MSW-19 | OK | 3/9/2017 11:18 | 37.90 | 58.60 | 1.00 | 29.6 | -1.01 | -0.95 |

Notes:

- = No well head vacuum sample port present.
 CH₄, CO₂, and O₂ are reported in percent gas.
 Relative well head pressure is reported in inches of water.
 Atmospheric pressure is reported in inches of mercury.
 Blower status - On
 NS - Not Sampled
 Weather - Scattered Clouds, 60°F

***MSW-01 and MSW-15 - Wells under repair**

**TABLE 11
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK**

CLOSED MSW LANDFILL

| Location ID | Date | Time | CH ₄ | CO ₂ | O ₂ | Temp. | Well Head Pressure | Atmospheric Pressure | Valve Position |
|---------------------------|-----------|-------|-----------------|-----------------|----------------|-------|--------------------|----------------------|----------------|
| <u>N. Valve Structure</u> | | | | | | | | | |
| V-200 | 3/16/2017 | 10:48 | 17.50 | 23.10 | 5.10 | 44 | -3.58 | 29.8 | 1/2 open |
| V-203 | | 10:52 | 3.00 | 8.80 | 11.00 | 42 | 0.54 | 29.7 | 1/4 open |
| <u>Dog House</u> | | | | | | | | | |
| Phase IV Vertical | 3/16/2017 | 10:56 | 23.50 | 32.40 | 3.10 | 42 | -6.34 | 29.7 | open |
| Phase II Horizontal | | 10:58 | 0.10 | 7.80 | 13.30 | 46 | -1.14 | 29.7 | closed |
| <u>Small Dog House</u> | | | | | | | | | |
| Phase II Horizontal | 3/16/2017 | 11:00 | 9.00 | 19.30 | 5.60 | 44 | -5.50 | 29.7 | 1/2 open |
| <u>Phase II Valve Pit</u> | | | | | | | | | |
| E-Horizontal | 3/16/2017 | 11:04 | 34.40 | 47.10 | 0.60 | 40 | -8.06 | 29.7 | 1/2 open |
| W-Horizontal | | 11:06 | 25.70 | 42.60 | 0.40 | 40 | -7.85 | 29.7 | 1/2 open |
| CF Phase II-Vertical** | | | | | | | | | NS |
| <u>Flare Compound</u> | | | | | | | | | |
| *MP-01 Gas Analyzer | 3/16/2017 | 10:47 | 0.00 | 0.20 | 19.00 | 42 | -11.3 | 29.7 | N/A |
| CF Phase I** | | NS | NS | NS | NS | NS | NS | NS | NS |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.
 Relative well head pressure is reported in inches of water.
 Atmospheric pressure is reported in inches of mercury.
 Temperature measured in degrees Fahrenheit.
 Blower status - On
 Weather - Scattered Clouds, 38°F
 * = Analyzer combined
 ** = Offline
 N/A = Not Applicable
 NS = Not Sampled

TABLE 12
AMBIENT VOLATILE ORGANIC COMPOUND (VOC) GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

| Location ID | Date | Location Description | VOCs |
|-------------|-----------|---|------|
| AMBIENT 1 | 3/16/2017 | Northern portion of landfill property, just south of MW-26/40 | 0.0 |
| AMBIENT 2 | 3/16/2017 | Southern portion of landfill property, just north of MW-D4/40 | 0.0 |
| AMBIENT 3 | 3/16/2017 | Western portion of landfill property, just east of B-04 | 0.0 |
| AMBIENT 4 | 3/16/2017 | Eastern portion of landfill property, just west of C-04 | 0.0 |

Notes:

VOCs reported as parts per million, as measured by a calibrated photoionization detector.
 Weather - Scattered Clouds, 38°F

FPM

FPM Group, Ltd.
FPM Engineering Group, P.C.
formerly Fanning, Phillips and Molnar

May 3, 2017

CORPORATE HEADQUARTERS
909 Marconi Avenue
Ronkonkoma, NY 11779
631/737-6200
Fax 631/737-2410

Mr. Anthony J. Varrichio, P.E.
Chief Engineer
Islip Resource Recovery Agency
401 Main Street
Islip, New York 11751

Re: **Blydenburgh Road Landfill**
April 2017 Landfill Gas and VOC Gas Monitoring Results
FPM File No. 631-17-33

Dear Mr. Varrichio:

On April 7, 13, and 27, 2017, FPM Group (FPM) performed landfill gas and volatile organic compound (VOC) gas monitoring at the above-referenced site. Monitoring of landfill gas was performed with a Landtec GEM 2000 Gas Analyzer. Monitoring for VOCs in ambient air was performed with a Photovac photoionization detector (PID), model 2020 Pro Plus. Ambient air VOC monitoring was conducted to address the provision for this measure in the Record of Decision (ROD) for this facility and was performed at four locations near the landfill perimeter, including one location downwind from the flare system.

For the Landtec GEM 2000 Gas Analyzer, oxygen (O₂) gas and methane (CH₄) gas were zeroed according to the manufacturer's specifications. The gas analyzer was calibrated with 15 percent (%) CH₄ and 15% carbon dioxide (CO₂) with the balance nitrogen (N₂) gas, and 4% O₂ with the balance N₂ gas according to the manufacturer's recommendation prior to sampling. The Photovac PID was zeroed with ambient air prior to arrival at the landfill property, and calibrated with 100 parts per million (ppm) isobutylene prior to sampling in accordance with the manufacturer's recommendations.

The landfill gas monitoring results are provided in Tables 1 through 11 and the ambient air VOC monitoring results are provided in Table 12. CH₄ was not detected in any of the landfill monitoring wells this month and VOCs were not detected in the ambient air. An elevated level of O₂ was detected in wells MSW-04 and MSW-15. This issue is being addressed.

The next landfill gas monitoring event will begin on May 4, 2017. Jim Jahnke will be notified several days in advance of the sampling event.

Should you have any questions, please do not hesitate to call me at (631) 737-6200, ext. 242.

Sincerely,



Chris Linkletter
Hydrogeologist

CL:tac
Attachments

cc: Jim Jahnke (via email)
Fazil Rahaman (via email)

TABLE 1
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Extraction Wells - System A

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| A-01 | OK | 4/7/2017 10:33 | 0.00 | 0.80 | 18.10 | 29.1 | -0.58 |
| A-02 | OK | 4/7/2017 10:36 | 0.00 | 0.10 | 18.60 | 29.1 | -0.58 |
| A-03 | OK | 4/7/2017 10:40 | 0.00 | 0.10 | 18.50 | 29.1 | -0.96 |
| A-04 | OK | 4/7/2017 10:45 | 0.00 | 0.20 | 18.40 | 29.1 | -0.69 |
| A-05 | OK | 4/7/2017 10:48 | 0.00 | 0.10 | 18.30 | 29.1 | -0.32 |
| A-06 | OK | 4/7/2017 10:51 | 0.00 | 0.10 | 18.30 | 29.1 | -2.44 |
| A-07 | OK | 4/7/2017 10:54 | 0.00 | 0.10 | 18.40 | 29.1 | -5.86 |
| A-08 | OK | 4/7/2017 10:57 | 0.00 | 0.10 | 18.60 | 29.1 | -1.68 |
| A-09 | OK | 4/7/2017 11:00 | 0.00 | 0.10 | 18.60 | 29.1 | -1.28 |
| A-10 | OK | 4/7/2017 11:03 | 0.00 | 0.10 | 18.60 | 29.1 | -1.06 |
| A-11 | OK | 4/7/2017 11:10 | 0.00 | 0.10 | 18.70 | 29.1 | -7.21 |
| A-12 | OK | 4/7/2017 11:13 | 0.00 | 0.10 | 18.70 | 29.1 | -0.68 |
| A-13 | OK | 4/7/2017 11:16 | 0.00 | 0.10 | 18.80 | 29.1 | -0.60 |
| A-14 | OK | 4/7/2017 11:19 | 0.00 | 0.10 | 18.80 | 29.1 | -0.53 |
| A-15 | OK | 4/7/2017 11:23 | 0.00 | 1.10 | 17.90 | 29.1 | -0.43 |
| A-16 | OK | 4/7/2017 11:30 | 0.00 | 0.10 | 18.80 | 29.1 | -1.07 |
| A-17 | OK | 4/7/2017 11:33 | 0.00 | 0.10 | 18.70 | 29.1 | -0.67 |
| A-18 | OK | 4/7/2017 11:35 | 0.00 | 0.10 | 18.80 | 29.1 | -2.26 |
| BLOWER A | N/A | 4/7/2017 11:49 | 0.00 | 0.10 | 18.90 | 29.2 | -1.07 |
| BLOWER B | N/A | 4/7/2017 11:51 | 0.30 | 2.90 | 16.50 | 29.2 | 8.80 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.
 Relative well head pressure is reported in inches of water.
 Atmospheric pressure is reported in inches of mercury.
 Blower status - On
 N/A - Not Applicable
 Weather - Overcast, 50°F

FPM

TABLE 2
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Monitoring Wells - System A

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| MW-07/20 | OK | 4/7/2017 12:25 | 0.00 | 0.10 | 18.40 | 29.1 | -0.19 |
| MW-07/40 | OK | 4/7/2017 12:27 | 0.00 | 0.10 | 18.50 | 29.1 | -0.30 |
| MW-07/60 | OK | 4/7/2017 12:29 | 0.00 | 0.10 | 18.50 | 29.1 | -0.34 |
| MW-08/20 | OK | 4/7/2017 12:32 | 0.00 | 0.20 | 18.60 | 29.1 | -0.18 |
| MW-08/40 | OK | 4/7/2017 12:35 | 0.00 | 0.10 | 18.70 | 29.1 | -0.23 |
| MW-08/60 | OK | 4/7/2017 12:37 | 0.00 | 0.10 | 18.90 | 29.1 | -0.26 |
| MW-11/20 | OK | 4/7/2017 12:17 | 0.00 | 0.10 | 18.10 | 29.1 | -0.13 |
| MW-11/40 | OK | 4/7/2017 12:19 | 0.00 | 0.10 | 18.20 | 29.1 | -0.19 |
| MW-11/60 | OK | 4/7/2017 12:21 | 0.00 | 0.10 | 18.30 | 29.1 | -0.20 |
| MW-13/20 | OK | 4/7/2017 12:42 | 0.00 | 0.10 | 18.90 | 29.1 | -0.06 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.

Relative well head pressure is reported in inches of water.

Atmospheric pressure is reported in inches of mercury.

Blower status - On

Weather - Overcast, 50°F

FPM

TABLE 3
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Extraction Wells - System B

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| B-04 | OK | 4/27/2017 11:25 | 0.00 | 0.10 | 18.00 | 29.7 | -0.49 |
| B-05 | OK | 4/27/2017 11:28 | 0.00 | 0.10 | 18.00 | 29.7 | -0.89 |
| B-06 | OK | 4/27/2017 11:30 | 0.00 | 0.10 | 18.00 | 29.7 | -0.65 |
| B-07 | OK | 4/27/2017 11:33 | 0.00 | 0.10 | 18.10 | 29.7 | -2.80 |
| B-08 | OK | 4/27/2017 11:37 | 0.00 | 0.10 | 18.20 | 29.7 | -0.74 |
| B-09 | OK | 4/27/2017 11:44 | 0.00 | 0.10 | 18.30 | 29.7 | -6.02 |
| B-10 | OK | 4/27/2017 11:47 | 0.00 | 0.10 | 18.30 | 29.7 | -1.16 |
| B-11 | OK | 4/27/2017 11:49 | 0.00 | 0.20 | 18.20 | 29.7 | -1.99 |
| B-12 | OK | 4/27/2017 11:51 | 0.00 | 0.10 | 18.30 | 29.7 | -6.69 |
| B-13 | OK | 4/27/2017 11:54 | 0.00 | 0.10 | 18.30 | 29.7 | -51.20 |
| B-14 | OK | 4/27/2017 11:57 | 0.00 | 0.10 | 18.40 | 29.7 | -4.25 |
| B-15 | OK | 4/27/2017 11:59 | 0.00 | 0.10 | 18.40 | 29.8 | -7.33 |
| BLOWER B | N/A | 4/27/2017 11:42 | 0.00 | 0.10 | 18.20 | 29.7 | 0.00 |
| BLOWER C | N/A | 4/27/2017 12:30 | 0.40 | 2.70 | 16.10 | 29.7 | 2.80 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.

Relative well head pressure is reported in inches of water.

Atmospheric pressure is reported in inches of mercury.

Blower status - On

N/A - Not Applicable

Weather - Partly Cloudy, 67°F

FPM

TABLE 4
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Monitoring Wells - System B

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| MW-01/20 | OK | 4/7/2017 10:07 | 0.00 | 0.10 | 18.60 | 29.1 | -0.43 |
| MW-01/40 | OK | 4/7/2017 10:09 | 0.00 | 0.10 | 18.50 | 29.1 | -0.39 |
| MW-01/60 | OK | 4/7/2017 10:16 | 0.10 | 0.10 | 18.50 | 29.1 | -0.29 |
| MW-02/20 | OK | 4/7/2017 10:19 | 0.00 | 0.10 | 18.60 | 29.1 | -0.36 |
| MW-02/40 | OK | 4/7/2017 10:21 | 0.00 | 0.10 | 18.60 | 29.1 | -0.48 |
| MW-02/60 | OK | 4/7/2017 10:24 | 0.00 | 0.10 | 18.60 | 29.1 | -0.48 |
| MW-25/20 | OK | 4/27/2017 12:20 | 0.00 | 0.20 | 18.30 | 29.8 | -0.22 |
| MW-25/40 | OK | 4/27/2017 12:22 | 0.00 | 0.10 | 18.30 | 29.7 | -0.31 |
| MW-25/60 | OK | 4/27/2017 12:24 | 0.00 | 0.20 | 18.20 | 29.7 | -0.66 |
| MW-26/20 | OK | 4/27/2017 12:13 | 0.00 | 0.10 | 18.50 | 29.8 | -0.20 |
| MW-26/40 | OK | 4/27/2017 12:14 | 0.00 | 0.10 | 18.50 | 29.8 | -0.32 |
| MW-26/60 | OK | 4/27/2017 12:16 | 0.00 | 0.10 | 18.40 | 29.8 | -0.45 |
| MW-27/20 | OK | 4/27/2017 12:05 | 0.00 | 0.10 | 18.40 | 29.8 | -0.11 |
| MW-27/40 | OK | 4/27/2017 12:07 | 0.00 | 0.10 | 18.40 | 29.8 | -0.28 |
| MW-27/60 | OK | 4/27/2017 12:09 | 0.00 | 0.10 | 18.40 | 29.8 | -0.21 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.

Relative well head pressure is reported in inches of water.

Atmospheric pressure is reported in inches of mercury.

Blower status - On

Weather: 4/7/2017 - Overcast, 50°F 4/27/2017 - Partly Cloudy, 67°F

FPM

TABLE 5
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Extraction Wells - System C

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| C-01 | OK | 4/27/2017 13:27 | 0.00 | 0.00 | 18.30 | 29.7 | -1.20 |
| C-02 | OK | 4/27/2017 13:24 | 0.00 | 0.10 | 18.30 | 29.7 | -0.78 |
| C-03 | OK | 4/27/2017 13:19 | 0.00 | 0.10 | 18.30 | 29.7 | -1.02 |
| C-04 | OK | 4/27/2017 13:16 | 0.00 | 0.10 | 18.30 | 29.7 | -0.67 |
| C-05 | OK | 4/27/2017 13:12 | 0.00 | 0.10 | 18.30 | 29.7 | -1.08 |
| C-06 | OK | 4/27/2017 13:08 | 0.00 | 0.10 | 18.40 | 29.7 | -0.83 |
| C-07 | OK | 4/27/2017 13:05 | 0.00 | 0.10 | 18.40 | 29.7 | -1.06 |
| C-08 | OK | 4/27/2017 13:02 | 0.00 | 0.10 | 18.50 | 29.7 | -1.41 |
| C-09 | OK | 4/27/2017 12:59 | 0.00 | 0.10 | 18.50 | 29.8 | -0.91 |
| C-10 | OK | 4/27/2017 12:56 | 0.00 | 0.10 | 18.40 | 29.8 | -2.29 |
| C-11 | OK | 4/27/2017 12:54 | 0.00 | 0.20 | 18.30 | 29.8 | -2.12 |
| C-12 | OK | 4/27/2017 12:50 | 0.00 | 0.10 | 18.20 | 29.8 | -1.33 |
| C-13 | OK | 4/27/2017 12:48 | 0.00 | 0.10 | 18.40 | 29.8 | -0.93 |
| C-14 | OK | 4/27/2017 12:45 | 0.00 | 0.10 | 18.30 | 29.8 | -0.54 |
| C-15 | OK | 4/27/2017 12:40 | 0.00 | 0.10 | 18.30 | 29.8 | -0.91 |
| C-16 | OK | 4/27/2017 12:38 | 0.00 | 0.10 | 18.30 | 29.8 | -0.76 |
| C-17 | OK | 4/27/2017 13:38 | 0.00 | 5.10 | 13.90 | 29.7 | -1.06 |
| BLOWER C | N/A | 4/27/2017 12:30 | 0.40 | 2.70 | 16.10 | 29.7 | 2.80 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.
Relative well head pressure is reported in inches of water.
Atmospheric pressure is reported in inches of mercury.
Blower status - On
N/A - Not Applicable
Weather - Partly Cloudy, 67°F



TABLE 6
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Monitoring Wells - System C

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| MW-19/20 | OK | 4/27/2017 14:07 | 0.00 | 0.50 | 17.90 | 29.7 | -0.23 |
| MW-19/40 | OK | 4/27/2017 14:09 | 0.00 | 0.40 | 17.80 | 29.7 | -0.06 |
| MW-19/60 | OK | 4/27/2017 14:11 | 0.00 | 0.30 | 17.80 | 29.7 | -0.04 |
| MW-23/20 | OK | 4/27/2017 13:56 | 0.00 | 0.20 | 18.00 | 29.7 | -0.01 |
| MW-23/40 | OK | 4/27/2017 13:58 | 0.00 | 0.20 | 18.00 | 29.7 | -0.03 |
| MW-23/60 | OK | 4/27/2017 14:00 | 0.00 | 0.10 | 18.00 | 29.7 | -0.04 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.
 Relative well head pressure is reported in inches of water.
 Atmospheric pressure is reported in inches of mercury.
 Blower status - On
 Weather - Partly Cloudy, 67°F

FPM

**TABLE 9
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK**

Monitoring Wells

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| MW-50 | OK | 4/27/2017 11:35 | 0.00 | 0.10 | 18.10 | 29.7 | -0.12 |
| MW-51 | OK | 4/7/2017 12:13 | 0.00 | 0.10 | 18.10 | 29.2 | -0.29 |
| MW-52 | OK | 4/7/2017 11:06 | 0.00 | 0.10 | 18.70 | 29.1 | -0.08 |
| MW-53 | OK | 4/7/2017 11:38 | 0.00 | 0.10 | 18.80 | 29.1 | -0.14 |
| MW-54 | OK | 4/7/2017 11:41 | 0.00 | 0.30 | 18.80 | 29.2 | -0.12 |
| MW-56 | OK | 4/27/2017 12:34 | 0.00 | 0.10 | 18.30 | 29.7 | -0.07 |
| MW-57 | OK | 4/27/2017 12:36 | 0.00 | 0.10 | 18.30 | 29.8 | -0.10 |
| MW-58 | OK | 4/27/2017 14:25 | 0.00 | 0.10 | 18.20 | 29.7 | -0.01 |
| MW-59 | OK | 4/27/2017 12:43 | 0.00 | 0.10 | 18.30 | 29.8 | -0.01 |
| MW-60 | OK | 4/27/2017 12:47 | 0.00 | 0.10 | 18.40 | 29.8 | -0.15 |
| MW-61 | OK | 4/27/2017 12:52 | 0.00 | 0.10 | 18.40 | 29.8 | -0.32 |
| MW-62 | OK | 4/27/2017 14:18 | 0.00 | 0.00 | 18.20 | 29.7 | -0.09 |
| MW-63 | OK | 4/27/2017 14:16 | 0.00 | 0.00 | 18.20 | 29.7 | -0.21 |
| MW-64 | OK | 4/27/2017 13:14 | 0.00 | 0.10 | 18.30 | 29.7 | -0.19 |
| MW-65 | OK | 4/27/2017 13:21 | 0.00 | 0.10 | 18.30 | 29.7 | -0.13 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.

Relative well head pressure is reported in inches of water.

Atmospheric pressure is reported in inches of mercury.

Blower status - On

Weather: 4/7/2017 - Overcast, 50°F 4/27/2017 - Partly Cloudy, 67°F

FPM

**TABLE 10
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK**

Extraction Wells - Closed MSW Landfill

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure | Well Head Vacuum |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|------------------|
| MSW-01 | * | NS | NS | NS | NS | NS | NS | NS |
| MSW-03 | OK | 4/13/2017 11:36 | 29.10 | 35.70 | 0.30 | 30.1 | -0.03 | -2.12 |
| MSW-04 | OK | 4/13/2017 11:43 | 10.90 | 24.20 | 3.80 | 30.0 | -1.73 | -1.88 |
| MSW-05 | OK | 4/13/2017 11:48 | 39.10 | 49.70 | 0.30 | 30.0 | -1.25 | -1.58 |
| MSW-06 | OK | 4/13/2017 11:52 | 21.30 | 35.50 | 0.30 | 30.0 | -1.32 | -1.67 |
| MSW-07 | OK | 4/13/2017 11:58 | 16.30 | 18.20 | 2.10 | 30.0 | -0.90 | -1.54 |
| MSW-09 | OK | 4/13/2017 12:04 | 16.20 | 32.30 | 0.90 | 30.0 | -1.06 | -1.33 |
| MSW-10 | OK | 4/13/2017 12:09 | 45.20 | 53.50 | 1.20 | 30.0 | -0.75 | - |
| MSW-11 | OK | 4/13/2017 12:13 | 25.70 | 41.30 | 0.40 | 30.0 | -1.28 | -1.39 |
| MSW-12 | OK | 4/13/2017 12:17 | 25.60 | 41.30 | 0.30 | 30.0 | -1.17 | -2.01 |
| MSW-13 | OK | 4/13/2017 12:21 | 41.10 | 59.10 | 0.70 | 30.0 | -0.32 | - |
| MSW-14 | OK | 4/13/2017 12:28 | 42.90 | 55.50 | 1.50 | 30.0 | -1.31 | - |
| MSW-15 | OK | 4/13/2017 12:33 | 36.70 | 47.10 | 4.10 | 30.0 | -0.84 | -3.04 |
| MSW-16 | OK | 4/13/2017 12:36 | 16.80 | 36.10 | 0.30 | 30.0 | -2.21 | -2.95 |
| MSW-17 | OK | 4/13/2017 11:40 | 20.40 | 36.20 | 2.70 | 30.0 | -0.59 | - |
| MSW-18 | OK | 4/13/2017 12:49 | 41.50 | 53.10 | 0.70 | 30.0 | -1.37 | - |
| MSW-19 | OK | 4/13/2017 12:41 | 40.20 | 59.10 | 0.60 | 30.0 | -0.94 | -1.03 |

Notes:

- = No well head vacuum sample port present.
 CH₄, CO₂, and O₂ are reported in percent gas.
 Relative well head pressure is reported in inches of water.
 Atmospheric pressure is reported in inches of mercury.
 Blower status - On
 NS - Not Sampled
 Weather - Partly Cloudy, 62°F

***MSW-01 - Well under repair**



**TABLE 11
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK**

CLOSED MSW LANDFILL

| Location ID | Date | Time | CH ₄ | CO ₂ | O ₂ | Temp. | Well Head Pressure | Atmospheric Pressure | Valve Position |
|---------------------------|-----------|-------|-----------------|-----------------|----------------|-------|--------------------|----------------------|----------------|
| <u>N. Valve Structure</u> | | | | | | | | | |
| V-200 | 4/27/2017 | 11:00 | 14.90 | 18.10 | 6.30 | 72 | -3.14 | 29.7 | 1/2 open |
| V-203 | | 11:03 | 4.50 | 12.00 | 7.90 | 72 | -2.84 | 29.7 | 1/4 open |
| <u>Dog House</u> | | | | | | | | | |
| Phase IV Vertical | 4/27/2017 | 11:06 | 23.00 | 30.70 | 3.50 | 72 | -5.74 | 29.7 | open |
| Phase II Horizontal | | 11:08 | 0.10 | 5.30 | 13.40 | 78 | -0.94 | 29.7 | closed |
| <u>Small Dog House</u> | | | | | | | | | |
| Phase II Horizontal | 4/27/2017 | 11:10 | 9.70 | 20.80 | 3.70 | 74 | -5.52 | 29.7 | 1/2 open |
| <u>Phase II Valve Pit</u> | | | | | | | | | |
| E-Horizontal | 4/27/2017 | 11:13 | 35.00 | 46.40 | 0.40 | 78 | -7.24 | 29.7 | 1/2 open |
| W-Horizontal | | 11:15 | 25.60 | 41.00 | 0.40 | 78 | -7.07 | 29.7 | 1/2 open |
| CF Phase II-Vertical** | | | | | | | | | NS |
| <u>Flare Compound</u> | | | | | | | | | |
| *MP-01 Gas Analyzer | 4/27/2017 | 11:18 | 0.10 | 0.10 | 17.90 | 72 | -10.06 | 29.7 | N/A |
| CF Phase I** | | NS | NS | NS | NS | NS | NS | NS | NS |

Notes:

- CH₄, CO₂, and O₂ are reported in percent gas.
- Relative well head pressure is reported in inches of water.
- Atmospheric pressure is reported in inches of mercury.
- Temperature measured in degrees Fahrenheit.
- Blower status - On
- Weather - Partly Cloudy, 67°F
- * = Analyzer combined
- ** = Offline
- N/A = Not Applicable
- NS = Not Sampled



TABLE 12
AMBIENT VOLATILE ORGANIC COMPOUND (VOC) GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

| Location ID | Date | Location Description | VOCs |
|-------------|-----------|--|------|
| AMBIENT 1 | 4/27/2017 | Northeastern portion of landfill property, just west of well C-13 | 0.0 |
| AMBIENT 2 | 4/27/2017 | Southeastern portion of landfill property, just west of well MW-D10 | 0.0 |
| AMBIENT 3 | 4/27/2017 | Northwestern portion of landfill property, just southeast of well A-17 | 0.0 |
| AMBIENT 4 | 4/27/2017 | Southwestern portion of landfill property, just east of well MW-2C | 0.0 |

Notes:

VOCs reported as parts per million, as measured by a calibrated photoionization detector.
 Weather - Partly Cloudy, 67°F

FPM

FPM Group, Ltd.
FPM Engineering Group, P.C.
formerly Fanning, Phillips and Molnar

June 8, 2017

CORPORATE HEADQUARTERS
909 Marconi Avenue
Ronkonkoma, NY 11779
631/737-6200
Fax 631/737-2410

Mr. Anthony J. Varrichio, P.E.
Chief Engineer
Islip Resource Recovery Agency
401 Main Street
Islip, New York 11751

Re: **Blydenburgh Road Landfill
May 2017 Landfill Gas and VOC Gas Monitoring Results
FPM File No. 631-17-33**

Dear Mr. Varrichio:

On May 4, 12, and 17, 2017, FPM Group (FPM) performed landfill gas and volatile organic compound (VOC) gas monitoring at the above-referenced site. Monitoring of landfill gas was performed with a Landtec GEM 2000 Gas Analyzer. Monitoring for VOCs in ambient air was performed with a Photovac photoionization detector (PID), model 2020 Pro Plus. Ambient air VOC monitoring was conducted to address the provision for this measure in the Record of Decision (ROD) for this facility and was performed at four locations near the landfill perimeter, including one location downwind from the flare system.

For the Landtec GEM 2000 Gas Analyzer, oxygen (O₂) gas and methane (CH₄) gas were zeroed according to the manufacturer's specifications. The gas analyzer was calibrated with 15 percent (%) CH₄ and 15% carbon dioxide (CO₂) with the balance nitrogen (N₂) gas, and 4% O₂ with the balance N₂ gas according to the manufacturer's recommendation prior to sampling. The Photovac PID was zeroed with ambient air prior to arrival at the landfill property, and calibrated with 100 parts per million (ppm) isobutylene prior to sampling in accordance with the manufacturer's recommendations.

The landfill gas monitoring results are provided in Tables 1 through 11 and the ambient air VOC monitoring results are provided in Table 12. CH₄ was not detected in any of the landfill monitoring wells this month and VOCs were not detected in the ambient air. An elevated level of O₂ was detected in wells MSW-04 and MSW-15. This issue is being addressed.

The next landfill gas monitoring event will begin on June 21, 2017. Jim Jahnke will be notified several days in advance of the sampling event.

Should you have any questions, please do not hesitate to call me at (631) 737-6200, ext. 242.

Sincerely,



Chris Linkletter
Hydrogeologist

CL:tac
Attachments

cc: Jim Jahnke (via email)
Fazil Rahaman (via email)

TABLE 1
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Extraction Wells - System A

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| A-01 | OK | 5/4/2017 11:34 | 0.00 | 0.00 | 18.40 | 30.0 | -0.38 |
| A-02 | OK | 5/4/2017 11:38 | 0.00 | 0.00 | 18.50 | 30.0 | -0.48 |
| A-03 | OK | 5/4/2017 11:42 | 0.00 | 0.00 | 18.60 | 30.0 | -0.66 |
| A-04 | OK | 5/4/2017 11:45 | 0.00 | 0.00 | 18.60 | 30.0 | -0.51 |
| A-05 | OK | 5/4/2017 11:51 | 0.00 | 0.00 | 18.60 | 30.0 | -0.44 |
| A-06 | OK | 5/4/2017 11:53 | 0.00 | 0.00 | 18.60 | 30.0 | -1.74 |
| A-07 | OK | 5/4/2017 11:55 | 0.00 | 0.00 | 18.60 | 30.0 | -3.13 |
| A-08 | OK | 5/4/2017 11:59 | 0.00 | 0.00 | 18.80 | 30.0 | -1.30 |
| A-09 | OK | 5/4/2017 12:03 | 0.00 | 0.00 | 18.70 | 30.0 | -0.90 |
| A-10 | OK | 5/4/2017 12:06 | 0.00 | 0.00 | 18.80 | 30.0 | -0.67 |
| A-11 | OK | 5/4/2017 12:12 | 0.00 | 0.00 | 18.80 | 30.0 | -4.16 |
| A-12 | OK | 5/4/2017 12:15 | 0.00 | 0.00 | 18.90 | 30.0 | -0.45 |
| A-13 | OK | 5/4/2017 12:20 | 0.00 | 0.00 | 18.70 | 30.0 | -0.34 |
| A-14 | OK | 5/4/2017 12:24 | 0.00 | 0.70 | 18.00 | 30.0 | -0.31 |
| A-15 | OK | 5/4/2017 12:28 | 0.00 | 0.40 | 18.30 | 30.0 | -0.25 |
| A-16 | OK | 5/4/2017 12:33 | 0.00 | 0.00 | 18.60 | 30.0 | -0.63 |
| A-17 | OK | 5/4/2017 12:37 | 0.00 | 0.00 | 18.70 | 30.0 | -0.45 |
| A-18 | OK | 5/4/2017 12:39 | 0.00 | 0.00 | 18.70 | 30.0 | -1.41 |
| BLOWER A | N/A | 5/4/2017 12:57 | 0.20 | 1.70 | 16.90 | 30.1 | 26.10 |
| BLOWER B | N/A | 5/4/2017 12:59 | 0.00 | 0.00 | 18.50 | 30.1 | -0.01 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.

Relative well head pressure is reported in inches of water.

Atmospheric pressure is reported in inches of mercury.

Blower status - On

N/A - Not Applicable

Weather - Partly Cloudy, 64°F



TABLE 2
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Monitoring Wells - System A

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| MW-07/20 | OK | 5/4/2017 13:27 | 0.00 | 0.00 | 18.70 | 30.0 | -0.12 |
| MW-07/40 | OK | 5/4/2017 13:29 | 0.00 | 0.00 | 18.70 | 30.0 | -0.19 |
| MW-07/60 | OK | 5/4/2017 13:31 | 0.00 | 0.00 | 18.90 | 30.0 | -0.17 |
| MW-08/20 | OK | 5/4/2017 13:34 | 0.00 | 0.00 | 18.80 | 30.0 | -0.08 |
| MW-08/40 | OK | 5/4/2017 13:36 | 0.00 | 0.00 | 18.90 | 30.0 | -0.13 |
| MW-08/60 | OK | 5/4/2017 13:38 | 0.00 | 0.00 | 18.90 | 30.0 | -0.19 |
| MW-11/20 | OK | 5/4/2017 13:19 | 0.00 | 0.00 | 18.40 | 30.0 | -0.07 |
| MW-11/40 | OK | 5/4/2017 13:21 | 0.00 | 0.00 | 18.30 | 30.0 | -0.08 |
| MW-11/60 | OK | 5/4/2017 13:23 | 0.00 | 0.00 | 18.40 | 30.0 | -0.10 |
| MW-13/20 | OK | 5/4/2017 13:42 | 0.00 | 0.10 | 18.90 | 30.0 | -0.03 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.

Relative well head pressure is reported in inches of water.

Atmospheric pressure is reported in inches of mercury.

Blower status - On

Weather - Partly Cloudy, 64°F



**TABLE 3
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK**

Extraction Wells - System B

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| B-04 | OK | 5/17/2017 10:06 | 0.00 | 0.10 | 18.10 | 29.8 | -0.69 |
| B-05 | OK | 5/17/2017 10:09 | 0.00 | 0.10 | 18.10 | 29.8 | -0.82 |
| B-06 | OK | 5/17/2017 10:14 | 0.00 | 0.10 | 17.90 | 29.8 | -0.70 |
| B-07 | OK | 5/17/2017 10:17 | 0.00 | 0.10 | 17.80 | 29.8 | -2.74 |
| B-08 | OK | 5/17/2017 10:22 | 0.00 | 0.10 | 17.70 | 29.8 | -0.76 |
| B-09 | OK | 5/17/2017 10:35 | 0.00 | 0.10 | 17.60 | 29.8 | -5.99 |
| B-10 | OK | 5/17/2017 10:37 | 0.00 | 0.10 | 17.60 | 29.8 | -1.12 |
| B-11 | OK | 5/17/2017 10:40 | 0.00 | 0.20 | 17.60 | 29.8 | -1.91 |
| B-12 | OK | 5/17/2017 10:42 | 0.00 | 0.00 | 17.70 | 29.8 | -9.20 |
| B-13 | OK | 5/17/2017 10:44 | 0.00 | 0.00 | 17.60 | 29.8 | -50.89 |
| B-14 | OK | 5/17/2017 10:47 | 0.00 | 0.00 | 17.70 | 29.8 | -3.92 |
| B-15 | OK | 5/17/2017 10:50 | 0.00 | 0.00 | 17.70 | 29.9 | -7.58 |
| BLOWER B | N/A | 5/17/2017 10:28 | 0.00 | 0.10 | 17.50 | 29.8 | 0.02 |
| BLOWER C | N/A | 5/17/2017 12:03 | 0.60 | 2.70 | 15.40 | 29.8 | 2.73 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.

Relative well head pressure is reported in inches of water.

Atmospheric pressure is reported in inches of mercury.

Blower status - On

N/A - Not Applicable

Weather - Scattered Clouds, 75°F

FPM

TABLE 4
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Monitoring Wells - System B

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| MW-01/20 | OK | 5/4/2017 11:15 | 0.00 | 0.10 | 18.20 | 30.0 | -0.17 |
| MW-01/40 | OK | 5/4/2017 11:17 | 0.00 | 0.00 | 18.20 | 30.0 | -0.15 |
| MW-01/60 | OK | 5/4/2017 11:19 | 0.00 | 0.00 | 18.30 | 30.0 | -0.11 |
| MW-02/20 | OK | 5/4/2017 11:22 | 0.00 | 0.00 | 18.30 | 30.0 | -0.17 |
| MW-02/40 | OK | 5/4/2017 11:24 | 0.00 | 0.00 | 18.30 | 30.0 | -0.25 |
| MW-02/60 | OK | 5/4/2017 11:26 | 0.00 | 0.00 | 18.40 | 30.0 | -0.25 |
| MW-25/20 | OK | 5/17/2017 11:24 | 0.00 | 0.10 | 17.90 | 29.9 | -0.17 |
| MW-25/40 | OK | 5/17/2017 11:26 | 0.00 | 0.00 | 18.20 | 29.8 | -0.25 |
| MW-25/60 | OK | 5/17/2017 11:29 | 0.00 | 0.10 | 17.80 | 29.8 | -0.53 |
| MW-26/20 | OK | 5/17/2017 11:14 | 0.00 | 0.00 | 18.00 | 29.9 | -0.18 |
| MW-26/40 | OK | 5/17/2017 11:16 | 0.00 | 0.00 | 18.10 | 29.8 | -0.30 |
| MW-26/60 | OK | 5/17/2017 11:18 | 0.00 | 0.00 | 18.10 | 29.8 | -0.40 |
| MW-27/20 | OK | 5/17/2017 11:05 | 0.00 | 0.00 | 17.90 | 29.9 | -0.08 |
| MW-27/40 | OK | 5/17/2017 11:07 | 0.00 | 0.00 | 18.00 | 29.9 | -0.27 |
| MW-27/60 | OK | 5/17/2017 11:09 | 0.00 | 0.00 | 18.00 | 29.9 | -0.21 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.

Relative well head pressure is reported in inches of water.

Atmospheric pressure is reported in inches of mercury.

Blower status - On

Weather: 5/4/2017 - Partly Cloudy, 64°F 5/17/2017 - Scattered Clouds, 75°F

FPM

TABLE 5
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Extraction Wells - System C

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| C-01 | OK | 5/17/2017 13:21 | 0.00 | 0.00 | 18.30 | 29.7 | -1.16 |
| C-02 | OK | 5/17/2017 13:18 | 0.00 | 0.50 | 17.60 | 29.7 | -0.63 |
| C-03 | OK | 5/17/2017 13:11 | 0.00 | 0.00 | 18.20 | 29.8 | -1.39 |
| C-04 | OK | 5/17/2017 13:08 | 0.00 | 0.00 | 18.20 | 29.8 | -1.20 |
| C-05 | OK | 5/17/2017 13:04 | 0.00 | 0.00 | 18.10 | 29.8 | -0.85 |
| C-06 | OK | 5/17/2017 13:00 | 0.00 | 0.00 | 18.10 | 29.8 | -0.77 |
| C-07 | OK | 5/17/2017 12:57 | 0.00 | 0.00 | 18.10 | 29.8 | -1.14 |
| C-08 | OK | 5/17/2017 12:52 | 0.00 | 0.00 | 18.20 | 29.8 | -0.94 |
| C-09 | OK | 5/17/2017 12:49 | 0.00 | 0.10 | 18.10 | 29.8 | -1.01 |
| C-10 | OK | 5/17/2017 12:46 | 0.00 | 0.00 | 18.10 | 29.8 | -1.84 |
| C-11 | OK | 5/17/2017 12:43 | 0.00 | 0.00 | 18.00 | 29.8 | -1.57 |
| C-12 | OK | 5/17/2017 12:39 | 0.00 | 0.50 | 17.50 | 29.8 | -1.76 |
| C-13 | OK | 5/17/2017 12:36 | 0.00 | 0.00 | 18.00 | 29.8 | -0.99 |
| C-14 | OK | 5/17/2017 12:33 | 0.00 | 0.00 | 17.90 | 29.8 | -0.59 |
| C-15 | OK | 5/17/2017 12:24 | 0.00 | 0.00 | 17.80 | 29.8 | -0.67 |
| C-16 | OK | 5/17/2017 12:22 | 0.00 | 0.00 | 17.70 | 29.8 | -0.63 |
| C-17 | OK | 5/17/2017 13:32 | 0.00 | 4.20 | 14.70 | 29.7 | -1.71 |
| BLOWER C | N/A | 5/17/2017 12:03 | 0.60 | 2.70 | 15.40 | 29.8 | 2.73 |

Notes:

- CH₄, CO₂, and O₂ are reported in percent gas.
- Relative well head pressure is reported in inches of water.
- Atmospheric pressure is reported in inches of mercury.
- Blower status - On
- N/A - Not Applicable
- Weather - Scattered Clouds, 75°F



TABLE 6
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Monitoring Wells - System C

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| MW-19/20 | OK | 5/17/2017 13:57 | 0.00 | 0.40 | 17.70 | 29.7 | -0.15 |
| MW-19/40 | OK | 5/17/2017 13:59 | 0.00 | 0.30 | 17.80 | 29.7 | -0.06 |
| MW-19/60 | OK | 5/17/2017 14:02 | 0.00 | 0.30 | 17.60 | 29.8 | -0.04 |
| MW-23/20 | OK | 5/17/2017 13:46 | 0.00 | 0.20 | 17.80 | 29.7 | -0.01 |
| MW-23/40 | OK | 5/17/2017 13:48 | 0.00 | 0.10 | 18.00 | 29.7 | 0.11 |
| MW-23/60 | OK | 5/17/2017 13:50 | 0.00 | 1.90 | 15.30 | 29.7 | 0.15 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.

Relative well head pressure is reported in inches of water.

Atmospheric pressure is reported in inches of mercury.

Blower status - On

Weather - Scattered Clouds, 75°F

FPM

**TABLE 9
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK**

Monitoring Wells

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| MW-50 | OK | 5/17/2017 10:19 | 0.00 | 0.10 | 17.70 | 29.8 | -0.06 |
| MW-51 | OK | 5/4/2017 13:17 | 0.00 | 0.00 | 18.30 | 30.1 | -0.13 |
| MW-52 | OK | 5/4/2017 12:08 | 0.00 | 0.00 | 18.80 | 30.0 | -0.05 |
| MW-53 | OK | 5/4/2017 12:43 | 0.00 | 0.00 | 18.70 | 30.0 | -0.06 |
| MW-54 | OK | 5/4/2017 12:46 | 0.00 | 0.20 | 18.40 | 30.1 | -0.07 |
| MW-56 | OK | 5/17/2017 12:12 | 0.00 | 0.00 | 17.70 | 29.8 | -0.02 |
| MW-57 | OK | 5/17/2017 12:20 | 0.00 | 0.00 | 17.60 | 29.8 | -0.01 |
| MW-58 | OK | 5/17/2017 14:18 | 0.00 | 0.00 | 18.10 | 29.8 | -0.02 |
| MW-59 | OK | 5/17/2017 12:30 | 0.00 | 0.00 | 17.90 | 29.8 | 0.00 |
| MW-60 | OK | 5/17/2017 12:34 | 0.00 | 0.00 | 17.90 | 29.8 | -0.02 |
| MW-61 | OK | 5/17/2017 12:41 | 0.00 | 0.00 | 18.10 | 29.8 | -0.14 |
| MW-62 | OK | 5/17/2017 14:11 | 0.00 | 0.00 | 18.20 | 29.8 | -0.02 |
| MW-63 | OK | 5/17/2017 14:08 | 0.00 | 0.00 | 18.10 | 29.7 | -0.02 |
| MW-64 | OK | 5/17/2017 13:06 | 0.00 | 0.00 | 18.10 | 29.8 | -0.15 |
| MW-65 | OK | 5/17/2017 13:14 | 0.00 | 0.00 | 18.20 | 29.8 | -0.09 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.

Relative well head pressure is reported in inches of water.

Atmospheric pressure is reported in inches of mercury.

Blower status - On

Weather: 5/4/2017 - Partly Cloudy, 64°F 5/17/2017 - Scattered Clouds, 75°F

FPM

TABLE 10
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Extraction Wells - Closed MSW Landfill

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure | Well Head Vacuum |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|------------------|
| MSW-01 | * | NS | NS | NS | NS | NS | NS | NS |
| MSW-03 | OK | 5/12/2017 11:02 | 31.90 | 36.10 | 0.50 | 29.7 | -0.11 | -4.84 |
| MSW-04 | OK | 5/12/2017 11:09 | 14.40 | 24.60 | 3.10 | 29.8 | -3.99 | -4.72 |
| MSW-05 | OK | 5/12/2017 11:13 | 42.50 | 49.00 | 0.40 | 29.7 | -2.33 | -3.68 |
| MSW-06 | OK | 5/12/2017 11:16 | 21.70 | 35.90 | 0.40 | 29.7 | -2.30 | -3.03 |
| MSW-07 | OK | 5/12/2017 11:21 | 16.10 | 17.60 | 2.10 | 29.7 | -1.77 | -3.33 |
| MSW-09 | OK | 5/12/2017 11:26 | 15.40 | 32.00 | 0.90 | 29.7 | -1.96 | -2.82 |
| MSW-10 | OK | 5/12/2017 11:31 | 44.00 | 55.40 | 0.50 | 29.7 | -1.45 | - |
| MSW-11 | OK | 5/12/2017 11:35 | 21.50 | 38.40 | 0.40 | 29.8 | -2.73 | -3.23 |
| MSW-12 | OK | 5/12/2017 11:42 | 23.20 | 39.50 | 0.40 | 29.8 | -2.74 | -3.17 |
| MSW-13 | OK | 5/12/2017 11:46 | 40.70 | 58.50 | 0.60 | 29.7 | -1.06 | - |
| MSW-14 | OK | 5/12/2017 11:53 | 43.10 | 53.40 | 1.60 | 29.8 | -1.98 | - |
| MSW-15 | OK | 5/12/2017 12:00 | 32.60 | 46.20 | 3.50 | 29.7 | -1.74 | -3.62 |
| MSW-16 | OK | 5/12/2017 12:05 | 12.40 | 33.20 | 0.30 | 29.8 | -3.21 | -3.70 |
| MSW-17 | OK | 5/12/2017 11:07 | 26.50 | 39.80 | 1.10 | 29.7 | -0.94 | - |
| MSW-18 | OK | 5/12/2017 12:12 | 34.00 | 48.40 | 1.10 | 29.8 | -1.83 | - |
| MSW-19 | OK | 5/12/2017 11:55 | 42.70 | 56.10 | 1.10 | 29.8 | -1.58 | -1.60 |

Notes:

- = No well head vacuum sample port present.
 CH₄, CO₂, and O₂ are reported in percent gas.
 Relative well head pressure is reported in inches of water.
 Atmospheric pressure is reported in inches of mercury.
 Blower status - On
 NS - Not Sampled
 Weather - Scattered Clouds, 60°F

***MSW-01 - Well under repair**

**TABLE 11
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK**

CLOSED MSW LANDFILL

| Location ID | Date | Time | CH ₄ | CO ₂ | O ₂ | Temp. | Well Head Pressure | Atmospheric Pressure | Valve Position |
|---------------------------|-----------|-------|-----------------|-----------------|----------------|-------|--------------------|----------------------|----------------|
| <u>N. Valve Structure</u> | | | | | | | | | |
| V-200 | 5/12/2017 | 9:58 | 27.60 | 29.60 | 3.60 | 68 | -3.60 | 29.9 | 1/2 open |
| V-203 | | 10:01 | 4.30 | 12.00 | 8.40 | 64 | -3.85 | 29.9 | 1/4 open |
| <u>Dog House</u> | | | | | | | | | |
| Phase IV Vertical | 5/12/2017 | 10:05 | 23.00 | 31.20 | 3.60 | 76 | -6.29 | 29.9 | open |
| Phase II Horizontal | | 10:08 | 0.00 | 5.50 | 14.70 | 76 | -0.85 | 29.8 | closed |
| <u>Small Dog House</u> | | | | | | | | | |
| Phase II Horizontal | 5/12/2017 | 10:10 | 8.40 | 19.50 | 4.40 | 76 | -5.69 | 29.8 | 1/2 open |
| <u>Phase II Valve Pit</u> | | | | | | | | | |
| E-Horizontal | 5/12/2017 | 10:13 | 35.50 | 46.60 | 0.40 | 70 | -8.24 | 29.8 | 1/2 open |
| W-Horizontal | | 10:15 | 25.50 | 40.90 | 0.30 | 68 | -8.35 | 29.8 | 1/2 open |
| CF Phase II-Vertical** | | | | | | | | | NS |
| <u>Flare Compound</u> | | | | | | | | | |
| *MP-01 Gas Analyzer | 5/12/2017 | 10:21 | 0.00 | 0.10 | 18.30 | 68 | -11.33 | 29.8 | N/A |
| CF Phase I** | | NS | NS | NS | NS | NS | NS | NS | NS |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.
 Relative well head pressure is reported in inches of water.
 Atmospheric pressure is reported in inches of mercury.
 Temperature measured in degrees Fahrenheit.
 Blower status - On
 Weather - Scattered Clouds, 60°F
 * = Analyzer combined
 ** = Offline
 N/A = Not Applicable
 NS = Not Sampled



**TABLE 12
 AMBIENT VOLATILE ORGANIC COMPOUND (VOC) GAS MONITORING RESULTS
 BLYDENBURGH ROAD LANDFILL
 ISLIP, NEW YORK**

| Location ID | Date | Location Description | VOCs |
|-------------|-----------|---|------|
| AMBIENT 1 | 5/17/2017 | Northern portion of landfill property, just south of MW-26/40 | 0.0 |
| AMBIENT 2 | 5/17/2017 | Southern portion of landfill property, just north of MW-D4/40 | 0.0 |
| AMBIENT 3 | 5/17/2017 | Western portion of landfill property, just east of B-04 | 0.0 |
| AMBIENT 4 | 5/17/2017 | Eastern portion of landfill property, just west of C-04 | 0.0 |

Notes:

VOCs reported as parts per million, as measured by a calibrated photoionization detector.
 Weather - Scattered Clouds, 75°F

FPM

FPM Group, Ltd.
FPM Engineering Group, P.C.
formerly Fanning, Phillips and Molnar

July 5, 2017

CORPORATE HEADQUARTERS
909 Marconi Avenue
Ronkonkoma, NY 11779
631/737-6200
Fax 631/737-2410

Mr. Anthony J. Varrichio, P.E.
Chief Engineer
Islip Resource Recovery Agency
401 Main Street
Islip, New York 11751

Re: **Blydenburgh Road Landfill
June 2017 Landfill Gas and VOC Gas Monitoring Results
FPM File No. 631-17-33**

Dear Mr. Varrichio:

On June 14 and 23, 2017, FPM Group (FPM) performed landfill gas and volatile organic compound (VOC) gas monitoring at the above-referenced site. Monitoring of landfill gas was performed with a Landtec GEM 2000 Gas Analyzer. Monitoring for VOCs in ambient air was performed with a Photovac photoionization detector (PID), model 2020 Pro Plus. Ambient air VOC monitoring was conducted to address the provision for this measure in the Record of Decision (ROD) for this facility and was performed at four locations near the landfill perimeter, including one location downwind from the flare system.

For the Landtec GEM 2000 Gas Analyzer, oxygen (O₂) gas and methane (CH₄) gas were zeroed according to the manufacturer's specifications. The gas analyzer was calibrated with 15 percent (%) CH₄ and 15% carbon dioxide (CO₂) with the balance nitrogen (N₂) gas, and 4% O₂ with the balance N₂ gas according to the manufacturer's recommendation prior to sampling. The Photovac PID was zeroed with ambient air prior to arrival at the landfill property, and calibrated with 100 parts per million (ppm) isobutylene prior to sampling in accordance with the manufacturer's recommendations.

The landfill gas monitoring results are provided in Tables 1 through 11 and the ambient air VOC monitoring results are provided in Table 12. CH₄ was not detected in any of the landfill monitoring wells this month and VOCs were not detected in the ambient air. An elevated level of O₂ was detected in wells MSW-04, MSW-10, MSW-13, MSW-17 and MSW-18. This issue is being addressed.

The next landfill gas monitoring event will begin on July 7, 2017. Jim Jahnke will be notified several days in advance of the sampling event.

Should you have any questions, please do not hesitate to call me at (631) 737-6200, ext. 242.

Sincerely,



Chris Linkletter
Hydrogeologist

CL:tac
Attachments

cc: Jim Jahnke (via email)
Fazil Rahaman (via email)

TABLE 1
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Extraction Wells - System A

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| A-01 | OK | 6/14/2017 10:27 | 0.00 | 0.00 | 17.40 | 29.7 | -0.41 |
| A-02 | OK | 6/14/2017 10:32 | 0.00 | 0.00 | 17.40 | 29.8 | -0.55 |
| A-03 | OK | 6/14/2017 10:38 | 0.00 | 0.00 | 17.40 | 29.8 | -0.60 |
| A-04 | OK | 6/14/2017 10:41 | 0.00 | 0.00 | 17.40 | 29.8 | -0.45 |
| A-05 | OK | 6/14/2017 10:45 | 0.00 | 0.00 | 17.40 | 29.8 | -0.23 |
| A-06 | OK | 6/14/2017 10:48 | 0.00 | 0.00 | 17.50 | 29.8 | -1.65 |
| A-07 | OK | 6/14/2017 10:54 | 0.00 | 0.00 | 17.50 | 29.8 | -1.97 |
| A-08 | OK | 6/14/2017 10:57 | 0.00 | 0.00 | 17.60 | 29.8 | -1.10 |
| A-09 | OK | 6/14/2017 11:03 | 0.00 | 0.00 | 17.70 | 29.8 | 0.27 |
| A-10 | OK | 6/14/2017 11:07 | 0.00 | 0.00 | 17.70 | 29.8 | -0.68 |
| A-11 | OK | 6/14/2017 11:13 | 0.00 | 0.00 | 17.70 | 29.8 | -4.05 |
| A-12 | OK | 6/14/2017 11:17 | 0.00 | 0.00 | 17.80 | 29.8 | -0.55 |
| A-13 | OK | 6/14/2017 11:20 | 0.00 | 0.00 | 17.70 | 29.8 | -0.38 |
| A-14 | OK | 6/14/2017 11:23 | 0.00 | 0.70 | 17.10 | 29.8 | -0.37 |
| A-15 | OK | 6/14/2017 11:26 | 0.00 | 0.70 | 17.00 | 29.8 | -0.26 |
| A-16 | OK | 6/14/2017 11:30 | 0.00 | 0.00 | 17.60 | 29.8 | -0.61 |
| A-17 | OK | 6/14/2017 11:33 | 0.00 | 0.00 | 17.70 | 29.8 | -0.50 |
| A-18 | OK | 6/14/2017 11:35 | 0.00 | 0.00 | 17.70 | 29.8 | -1.61 |
| BLOWER A | N/A | 6/14/2017 11:46 | 0.20 | 1.90 | 16.00 | 29.8 | 25.56 |
| BLOWER B | N/A | 6/14/2017 11:48 | 0.00 | 0.10 | 17.70 | 29.8 | -0.02 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.

Relative well head pressure is reported in inches of water.

Atmospheric pressure is reported in inches of mercury.

Blower status - On

N/A - Not Applicable

Weather - Partly Cloudy, 77°F

**TABLE 2
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK**

Monitoring Wells - System A

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| MW-07/20 | OK | 6/14/2017 13:59 | 0.00 | 0.00 | 18.00 | 29.7 | -0.14 |
| MW-07/40 | OK | 6/14/2017 14:01 | 0.00 | 0.00 | 18.00 | 29.7 | -0.19 |
| MW-07/60 | OK | 6/14/2017 14:03 | 0.00 | 0.00 | 18.00 | 29.7 | -0.19 |
| MW-08/20 | OK | 6/14/2017 14:06 | 0.00 | 0.00 | 17.90 | 29.7 | -0.08 |
| MW-08/40 | OK | 6/14/2017 14:08 | 0.00 | 0.00 | 18.00 | 29.7 | -0.12 |
| MW-08/60 | OK | 6/14/2017 14:09 | 0.00 | 0.00 | 18.00 | 29.7 | -0.02 |
| MW-11/20 | OK | 6/14/2017 13:50 | 0.00 | 0.00 | 17.90 | 29.7 | -0.08 |
| MW-11/40 | OK | 6/14/2017 13:52 | 0.00 | 0.00 | 17.70 | 29.7 | -0.12 |
| MW-11/60 | OK | 6/14/2017 13:54 | 0.00 | 0.00 | 17.70 | 29.7 | -0.14 |
| MW-13/20 | OK | 6/14/2017 14:13 | 0.00 | 0.30 | 17.70 | 29.8 | -0.04 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.
 Relative well head pressure is reported in inches of water.
 Atmospheric pressure is reported in inches of mercury.
 Blower status - On
 Weather - Partly Cloudy, 77°F

FPM

TABLE 3
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Extraction Wells - System B

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| B-04 | OK | 6/23/2017 10:23 | 0.00 | 0.10 | 17.50 | 29.5 | -0.83 |
| B-05 | OK | 6/23/2017 10:26 | 0.00 | 0.10 | 17.60 | 29.5 | -1.13 |
| B-06 | OK | 6/23/2017 10:37 | 0.00 | 0.10 | 17.70 | 29.5 | -0.83 |
| B-07 | OK | 6/23/2017 10:39 | 0.00 | 0.10 | 17.70 | 29.5 | -4.27 |
| B-08 | OK | 6/23/2017 10:45 | 0.00 | 0.10 | 17.80 | 29.5 | -1.10 |
| B-09 | OK | 6/23/2017 10:57 | 0.00 | 0.10 | 17.80 | 29.6 | -5.66 |
| B-10 | OK | 6/23/2017 11:00 | 0.00 | 0.00 | 17.80 | 29.6 | -1.08 |
| B-11 | OK | 6/23/2017 11:03 | 0.00 | 0.30 | 17.80 | 29.6 | -1.84 |
| B-12 | OK | 6/23/2017 11:05 | 0.00 | 0.00 | 17.80 | 29.6 | -7.30 |
| B-13 | OK | 6/23/2017 11:11 | 0.00 | 0.00 | 17.80 | 29.6 | -45.48 |
| B-14 | OK | 6/23/2017 11:14 | 0.00 | 0.00 | 17.90 | 29.6 | -3.72 |
| B-15 | OK | 6/23/2017 11:18 | 0.00 | 0.00 | 18.00 | 29.6 | -7.40 |
| BLOWER B | N/A | 6/23/2017 10:52 | 0.10 | 2.50 | 15.60 | 29.5 | 8.55 |
| BLOWER C | N/A | 6/23/2017 11:56 | 0.50 | 3.30 | 15.20 | 29.6 | 3.16 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.

Relative well head pressure is reported in inches of water.

Atmospheric pressure is reported in inches of mercury.

Blower status - On

N/A - Not Applicable

Weather - Overcast, 80°F

FPM

TABLE 4
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Monitoring Wells - System B

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| MW-01/20 | OK | 6/23/2017 10:16 | 0.00 | 0.10 | 17.40 | 29.6 | -0.20 |
| MW-01/40 | OK | 6/23/2017 10:18 | 0.00 | 0.10 | 17.40 | 29.6 | -0.14 |
| MW-01/60 | OK | 6/23/2017 10:21 | 0.00 | 0.10 | 17.50 | 29.6 | -0.08 |
| MW-02/20 | OK | 6/23/2017 10:29 | 0.00 | 0.10 | 17.60 | 29.5 | -0.19 |
| MW-02/40 | OK | 6/23/2017 10:31 | 0.00 | 0.10 | 17.60 | 29.5 | -0.18 |
| MW-02/60 | OK | 6/23/2017 10:33 | 0.00 | 0.10 | 17.60 | 29.5 | -0.17 |
| MW-25/20 | OK | 6/23/2017 11:38 | 0.00 | 0.30 | 17.70 | 29.6 | -0.18 |
| MW-25/40 | OK | 6/23/2017 11:40 | 0.00 | 0.00 | 17.80 | 29.6 | -0.21 |
| MW-25/60 | OK | 6/23/2017 11:42 | 0.00 | 0.30 | 17.70 | 29.6 | -0.47 |
| MW-26/20 | OK | 6/23/2017 11:29 | 0.00 | 0.10 | 17.90 | 29.6 | -0.12 |
| MW-26/40 | OK | 6/23/2017 11:31 | 0.00 | 0.00 | 17.90 | 29.6 | -0.21 |
| MW-26/60 | OK | 6/23/2017 11:34 | 0.00 | 0.00 | 17.90 | 29.6 | -0.36 |
| MW-27/20 | OK | 6/23/2017 11:22 | 0.00 | 0.00 | 17.90 | 29.6 | -0.07 |
| MW-27/40 | OK | 6/23/2017 11:24 | 0.00 | 0.10 | 17.90 | 29.6 | -0.20 |
| MW-27/60 | OK | 6/23/2017 11:26 | 0.00 | 0.00 | 17.90 | 29.6 | -0.17 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.

Relative well head pressure is reported in inches of water.

Atmospheric pressure is reported in inches of mercury.

Blower status - On

Weather - Overcast, 80°F

FPM

TABLE 5
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Extraction Wells - System C

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| C-01 | OK | 6/23/2017 13:12 | 0.00 | 0.00 | 17.90 | 29.5 | -1.49 |
| C-02 | OK | 6/23/2017 13:09 | 0.00 | 1.30 | 16.60 | 29.5 | -0.62 |
| C-03 | OK | 6/23/2017 13:03 | 0.00 | 0.00 | 17.90 | 29.5 | -0.94 |
| C-04 | OK | 6/23/2017 12:59 | 0.00 | 0.00 | 17.90 | 29.5 | -0.89 |
| C-05 | OK | 6/23/2017 12:53 | 0.00 | 0.00 | 17.90 | 29.6 | -0.94 |
| C-06 | OK | 6/23/2017 12:50 | 0.00 | 0.00 | 17.90 | 29.6 | -0.63 |
| C-07 | OK | 6/23/2017 12:45 | 0.00 | 0.10 | 17.90 | 29.6 | -1.36 |
| C-08 | OK | 6/23/2017 12:42 | 0.00 | 0.00 | 17.90 | 29.6 | -0.83 |
| C-09 | OK | 6/23/2017 12:38 | 0.00 | 0.10 | 17.80 | 29.6 | -0.78 |
| C-10 | OK | 6/23/2017 12:33 | 0.00 | 0.00 | 17.80 | 29.6 | -2.74 |
| C-11 | OK | 6/23/2017 12:30 | 0.00 | 0.10 | 17.80 | 29.6 | -2.05 |
| C-12 | OK | 6/23/2017 12:25 | 0.00 | 0.00 | 17.90 | 29.6 | -1.69 |
| C-13 | OK | 6/23/2017 12:22 | 0.00 | 0.10 | 17.80 | 29.6 | -0.96 |
| C-14 | OK | 6/23/2017 12:18 | 0.00 | 0.00 | 17.80 | 29.6 | -0.39 |
| C-15 | OK | 6/23/2017 12:12 | 0.00 | 0.00 | 17.70 | 29.6 | -1.21 |
| C-16 | OK | 6/23/2017 12:10 | 0.00 | 0.00 | 17.90 | 29.6 | -0.81 |
| C-17 | OK | 6/23/2017 13:24 | 0.00 | 4.70 | 14.10 | 29.5 | -1.82 |
| BLOWER C | N/A | 6/23/2017 11:56 | 0.50 | 3.30 | 15.20 | 29.6 | 3.16 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.
 Relative well head pressure is reported in inches of water.
 Atmospheric pressure is reported in inches of mercury.
 Blower status - On
 N/A - Not Applicable
 Weather - Overcast, 80°F



**TABLE 6
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK**

Monitoring Wells - System C

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| MW-19/20 | OK | 6/23/2017 13:57 | 0.00 | 0.50 | 17.40 | 29.5 | -0.15 |
| MW-19/40 | OK | 6/23/2017 13:59 | 0.00 | 0.40 | 17.50 | 29.5 | -0.09 |
| MW-19/60 | OK | 6/23/2017 14:01 | 0.00 | 0.50 | 17.40 | 29.5 | -0.04 |
| MW-23/20 | OK | 6/23/2017 13:48 | 0.00 | 4.20 | 12.90 | 29.5 | -0.01 |
| MW-23/40 | OK | 6/23/2017 13:50 | 0.00 | 3.10 | 14.70 | 29.5 | 0.27 |
| MW-23/60 | OK | 6/23/2017 13:52 | 0.00 | 1.50 | 16.10 | 29.5 | 0.30 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.

Relative well head pressure is reported in inches of water.

Atmospheric pressure is reported in inches of mercury.

Blower status - On

Weather - Overcast, 80°F

FPM

**TABLE 9
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK**

Monitoring Wells

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|
| MW-50 | OK | 6/23/2017 10:43 | 0.00 | 0.10 | 17.70 | 29.5 | -0.08 |
| MW-51 | OK | 6/14/2017 13:48 | 0.00 | 0.00 | 17.80 | 29.7 | -0.20 |
| MW-52 | OK | 6/14/2017 11:09 | 0.00 | 0.00 | 17.70 | 29.8 | 0.00 |
| MW-53 | OK | 6/14/2017 11:38 | 0.00 | 0.00 | 17.70 | 29.8 | -0.08 |
| MW-54 | OK | 6/14/2017 11:40 | 0.00 | 0.30 | 17.60 | 29.8 | 0.00 |
| MW-56 | OK | 6/23/2017 12:03 | 0.00 | 1.00 | 17.00 | 29.6 | -0.01 |
| MW-57 | OK | 6/23/2017 12:08 | 0.00 | 1.10 | 16.80 | 29.6 | 0.01 |
| MW-58 | OK | 6/23/2017 14:16 | 0.00 | 1.30 | 16.90 | 29.6 | -0.02 |
| MW-59 | OK | 6/23/2017 12:15 | 0.00 | 0.90 | 17.10 | 29.6 | 0.00 |
| MW-60 | OK | 6/23/2017 12:20 | 0.00 | 0.00 | 17.80 | 29.6 | -0.04 |
| MW-61 | OK | 6/23/2017 12:27 | 0.00 | 0.00 | 17.90 | 29.6 | -0.12 |
| MW-62 | OK | 6/23/2017 14:09 | 0.00 | 1.20 | 16.90 | 29.5 | -0.01 |
| MW-63 | OK | 6/23/2017 14:07 | 0.00 | 0.00 | 18.00 | 29.5 | -0.07 |
| MW-64 | OK | 6/23/2017 12:56 | 0.00 | 0.00 | 17.90 | 29.6 | -0.07 |
| MW-65 | OK | 6/23/2017 13:05 | 0.00 | 0.00 | 17.90 | 29.5 | -0.02 |

Notes:

CH₄, CO₂, and O₂ are reported in percent gas.

Relative well head pressure is reported in inches of water.

Atmospheric pressure is reported in inches of mercury.

Blower status - On

Weather: 6/14/2017 - Partly Cloudy, 77°F 6/23/2017 - Overcast, 80°F

FPM

TABLE 10
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

Extraction Wells - Closed MSW Landfill

| Location ID | Well Condition | Time & Date | CH ₄ | CO ₂ | O ₂ | Atmospheric Pressure | Relative Pressure | Well Head Vacuum |
|-------------|----------------|-----------------|-----------------|-----------------|----------------|----------------------|-------------------|------------------|
| MSW-01 | * | NS | NS | NS | NS | NS | NS | NS |
| MSW-03 | OK | 6/14/2017 12:03 | 29.80 | 35.10 | 0.50 | 29.8 | -0.34 | -4.36 |
| MSW-04 | OK | 6/14/2017 12:11 | 12.60 | 22.70 | 3.40 | 29.7 | -4.04 | -4.95 |
| MSW-05 | OK | 6/14/2017 12:16 | 39.60 | 47.40 | 0.40 | 29.7 | -2.38 | -3.52 |
| MSW-06 | OK | 6/14/2017 12:21 | 23.30 | 34.00 | 0.40 | 29.7 | -2.10 | -3.05 |
| MSW-07 | OK | 6/14/2017 12:25 | 17.60 | 16.50 | 2.10 | 29.7 | -1.71 | -3.16 |
| MSW-09 | OK | 6/14/2017 12:32 | 16.10 | 30.00 | 0.90 | 29.7 | -1.94 | -2.82 |
| MSW-10 | OK | 6/14/2017 12:40 | 32.80 | 32.80 | 6.10 | 29.7 | -1.53 | - |
| MSW-11 | OK | 6/14/2017 12:47 | 19.70 | 36.40 | 0.40 | 29.7 | -2.70 | -3.12 |
| MSW-12 | OK | 6/14/2017 13:00 | 21.40 | 37.70 | 0.40 | 29.7 | -2.63 | -2.98 |
| MSW-13 | OK | 6/14/2017 12:56 | 34.30 | 43.00 | 4.70 | 29.7 | -1.15 | - |
| MSW-14 | OK | 6/14/2017 13:05 | 40.70 | 53.20 | 0.70 | 29.7 | -3.26 | - |
| MSW-15 | OK | 6/14/2017 13:08 | 40.00 | 52.00 | 0.80 | 29.7 | -1.71 | -3.56 |
| MSW-16 | OK | 6/14/2017 13:11 | 13.30 | 31.20 | 0.40 | 29.7 | -3.01 | -2.60 |
| MSW-17 | OK | 6/14/2017 12:08 | 10.80 | 12.70 | 10.80 | 29.7 | -1.00 | - |
| MSW-18 | OK | 6/14/2017 13:23 | 17.80 | 21.90 | 8.10 | 29.7 | -1.71 | - |
| MSW-19 | OK | 6/14/2017 13:17 | 43.90 | 51.60 | 1.80 | 29.7 | -1.60 | -1.60 |

Notes:

- = No well head vacuum sample port present.
 CH₄, CO₂, and O₂ are reported in percent gas.
 Relative well head pressure is reported in inches of water.
 Atmospheric pressure is reported in inches of mercury.
 Blower status - On
 NS - Not Sampled
 Weather - Partly Cloudy, 77°F

***MSW-01 - Well under repair**

**TABLE 11
LANDFILL GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK**

CLOSED MSW LANDFILL

| Location ID | Date | Time | CH ₄ | CO ₂ | O ₂ | Temp. | Well Head Pressure | Atmospheric Pressure | Valve Position |
|---------------------------|-----------|------|-----------------|-----------------|----------------|-------|--------------------|----------------------|----------------|
| <u>N. Valve Structure</u> | 6/23/2017 | | | | | | | | |
| V-200 | | 9:28 | 4.40 | 13.00 | 7.40 | 86 | -1.70 | 29.6 | 1/2 open |
| V-203 | | 9:30 | 4.40 | 13.00 | 7.30 | 88 | -1.66 | 29.6 | 1/4 open |
| <u>Dog House</u> | 6/23/2017 | | | | | | | | |
| Phase IV Vertical | | 9:35 | 27.60 | 36.20 | 2.20 | 88 | -2.25 | 29.6 | open |
| Phase II Horizontal | | 9:37 | 0.20 | 8.60 | 8.20 | 86 | -0.22 | 29.6 | closed |
| <u>Small Dog House</u> | 6/23/2017 | | | | | | | | |
| Phase II Horizontal | | 9:40 | 11.30 | 23.30 | 2.50 | 88 | -2.16 | 29.6 | 1/2 open |
| <u>Phase II Valve Pit</u> | 6/23/2017 | | | | | | | | |
| E-Horizontal | | 9:44 | 38.60 | 48.20 | 0.40 | 86 | -2.78 | 29.6 | 1/2 open |
| W-Horizontal | | 9:46 | 28.10 | 41.30 | 0.40 | 88 | -2.78 | 29.6 | 1/2 open |
| CF Phase II-Vertical** | | | | | | | | | NS |
| <u>Flare Compound</u> | 6/23/2017 | | | | | | | | |
| *MP-01 Gas Analyzer | | 9:51 | 0.00 | 0.10 | 16.80 | 86 | -3.83 | 29.6 | N/A |
| CF Phase I** | | NS | NS | NS | NS | NS | NS | NS | NS |

Notes:

- CH₄, CO₂, and O₂ are reported in percent gas.
- Relative well head pressure is reported in inches of water.
- Atmospheric pressure is reported in inches of mercury.
- Temperature measured in degrees Fahrenheit.
- Blower status - On
- Weather - Overcast, 80°F
- * = Analyzer combined
- ** = Offline
- N/A = Not Applicable
- NS = Not Sampled



TABLE 12
AMBIENT VOLATILE ORGANIC COMPOUND (VOC) GAS MONITORING RESULTS
BLYDENBURGH ROAD LANDFILL
ISLIP, NEW YORK

| Location ID | Date | Location Description | VOCs |
|-------------|-----------|--|------|
| AMBIENT 1 | 6/23/2017 | Northeastern portion of landfill property, just west of well C-13 | 0.0 |
| AMBIENT 2 | 6/23/2017 | Southeastern portion of landfill property, just west of well MW-D10 | 0.0 |
| AMBIENT 3 | 6/23/2017 | Northwestern portion of landfill property, just southeast of well A-17 | 0.0 |
| AMBIENT 4 | 6/23/2017 | Southwestern portion of landfill property, just east of well MW-2C | 0.0 |

Notes:

VOCs reported as parts per million, as measured by a calibrated photoionization detector.
 Weather - Overcast, 80°F

FPM

PART IV

**BLYDENBURGH ROAD LANDFILL
COMPLEX**

**GROUNDWATER MONITORING
REPORT SUMMARIES**

MARCH 15th, August 1st 2017

PREPARED BY

DVIRKA & BARTILUCCI

TOWN CONSULTANTS



**D&B ENGINEERS
AND
ARCHITECTS, P.C.**

330 Crossways Park Drive, Woodbury, New York 11797

516-364-9890 • 718-460-3634 • Fax: 516-364-9045 • www.db-eng.com

Board of Directors

Henry J. Chlupsa, P.E., BCEE
President & Chairman
Steven A. Fangmann, P.E., BCEE
Executive Vice President
Robert L. Raab, P.E., BCEE, CCM
Senior Vice President

Vice Presidents

Rob J. DeGiorgio, P.E., CPESC
Senior Vice President
Stephen M. Dudar, P.E.
Senior Vice President
Dennis F. Koehler, P.E.
Senior Vice President
Joseph H. Marturano
Senior Vice President
William D. Merklin, P.E.
Senior Vice President
John Schreck, P.E.
Senior Vice President
Brian M. Veith, P.E.
Senior Vice President
Richard M. Walka
Senior Vice President
Garrett M. Byrnes, P.E.
Vice President
Thomas P. Fox, P.G.
Vice President
Michael Neuberger, P.E.
Vice President
Theodore S. Pytlar, Jr.
Vice President
Philip R. Sachs, P.E.
Vice President
Charles J. Wachsmuth, P.E.
Vice President

Dir. of Architecture

Michael P. Scianillo, AIA, NCARB

Senior Associates

Ellen R. DeOrsay
Matthew R. DeVinney, P.E.
Frank DeVita
Joseph A. Fioraliso, P.E.
Michael R. Hofgren
Christopher Koegel, P.E., CCM
Richard W. Lenz, P.E.
Jamil Miranda, P.E.
Olga Mubarak-Jaramillo
Adam Remick, P.E.
Daniel Shabat, P.E.

Associates

Meredith A. Byers
Anthony M. Caniano
Rudolph F. Cannavale
Christopher W. Francis
James J. Magda
Michele Mastrangelo
Roger W. Owens
Robbin A. Petrella
Swaroop C. Puchalapalli, P.E.
Edward J. Reilly
Michael G. Savarese, P.E.
Stephen E. Taus

March 15, 2017

**Anthony J. Varrichio, P.E.
Chief Engineer
Islip Resource Recovery Agency
401 Main Street
Islip, NY 11751**

**Re: Blydenburgh Road Landfill Complex
Post-Closure Groundwater Monitoring Program
Well Condition Report
D&B No. 3763-7B**

Dear Mr. Varrichio:

Enclosed please find the First Quarter 2017 Well Condition Report for the Blydenburgh Road Landfill Complex. This report consists of Table 1, which presents a summary of monitoring well status and deficiencies along with recommendations. In addition, individual monitoring well inspection checklists are included.

If you have any questions or require additional information, please contact me.

Very truly yours,

**Keith S. Robins
Project Manager**

**KSR/nc
Enclosure
◆3763\KSR17_Ltr-01**

Table 1

**BLYDENBURGH ROAD LANDFILL COMPLEX
POST CLOSURE GROUNDWATER MONITORING PROGRAM
SUMMARY OF MONITORING WELL STATUS AND DEFICIENCIES
FIRST QUARTER 2017 SAMPLING EVENT**

| Well Designation | Surface Concrete Pad | | | Ponding of Water Around Concrete Seal | Protective Flush-Mounted Cover/Standpipe Cover and Lock | | Well Casing Alignment | Survey Measuring Point Clearly Marked | Well Clearly Labeled | Well is Protected | Remarks and Recommendations |
|------------------|----------------------|---------|-------------|---------------------------------------|---|-----------------|-----------------------|---------------------------------------|----------------------|-------------------|--|
| | Intact | Cracked | Missing | | Cover/Pipe - Intact | Lock - In Place | | | | | |
| GM-1S | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| GM-1I | Yes | | | No | Well inside vault | Yes | Straight | Yes | Yes | Yes | No action required. |
| GM-1D | Yes | | | No | Well inside vault | Yes | Straight | Yes | Yes | Yes | No action required. |
| GM-2S | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| GM-2I | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| GM-2D | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| GM-3S | | | Not Visible | No | Yes | No | Straight | Yes | Yes | Yes | Well not locked. No action required. This well is not owned by the IRRA. |
| GM-3I | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| GM-3D | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 4G-1 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 4G-2 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 4M-1 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 4M-2 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 5G-1 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 6G-1 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 6G-2 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 6G-3 | | Yes | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 6M-1 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 7G-1 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 7M-1 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 8G-1 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 8M-1 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |

Table 1 (continued)

**BLYDENBURGH ROAD LANDFILL COMPLEX
POST CLOSURE GROUNDWATER MONITORING PROGRAM
SUMMARY OF MONITORING WELL STATUS AND DEFICIENCIES
FIRST QUARTER 2017 SAMPLING EVENT**

| Well Designation | Surface Concrete Pad | | | Ponding of Water Around Concrete Seal | Protective Flush-Mounted Cover/Standpipe Cover and Lock | | Well Casing Alignment | Survey Measuring Point Clearly Marked | Well Clearly Labeled | Well is Protected | Remarks and Recommendations |
|------------------|----------------------|---------|-------------|---------------------------------------|---|-----------------|-----------------------|---------------------------------------|----------------------|-------------------|-----------------------------|
| | Intact | Cracked | Missing | | Cover/Pipe - Intact | Lock - In Place | | | | | |
| 8M-2 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 9G-1 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 9M-1 | | | Not visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 10G-1 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 10M-1 | Yes | | | Yes | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 11G-1 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 11G-2 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 11M-1 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 12G-1 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 12M-1 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 13G-1 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 13M-1 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 14G-1 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 14G-1A | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 14G-2 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 14M-1 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 15G-1 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 15M-1 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 16G-1 | | | Not Visible | Yes | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 16M-1 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 18G-1 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 18G-2 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 22M-1 | Yes | | | Yes | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| 23M-1 | Yes | | | Yes | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |



330 Crossways Park Drive, Woodbury, New York 11797
516-364-9890 • 718-460-3634 • Fax: 516-364-9045 • www.db-eng.com

Board of Directors

Henry J. Chlupsa, P.E., BCEE
President & Chairman
Steven A. Fangmann, P.E., BCEE
Executive Vice President
Robert L. Raab, P.E., BCEE, CCM
Senior Vice President

Vice Presidents

Rob J. DeGiorgio, P.E., CPESC
Senior Vice President
Stephen M. Dudar, P.E.
Senior Vice President
Dennis F. Koehler, P.E.
Senior Vice President
Joseph H. Marturano
Senior Vice President
William D. Merklin, P.E.
Senior Vice President
John Schreck, P.E.
Senior Vice President
Brian M. Veith, P.E.
Senior Vice President
Richard M. Walka
Senior Vice President
Garrett M. Byrnes, P.E.
Vice President
Thomas P. Fox, P.G.
Vice President
Michael Neuberger, P.E.
Vice President
Theodore S. Pytlar, Jr.
Vice President
Philip R. Sachs, P.E.
Vice President
Charles J. Wachsmuth, P.E.
Vice President

Dir. of Architecture

Michael P. Sciarillo, AIA, NCARB

Senior Associates

Ellen R. DeOrsay
Matthew R. DeVinney, P.E.
Frank DeVita
Joseph A. Fioraliso, P.E.
Michael R. Hofgren
Christopher Koegel, P.E., CCM
Richard W. Lenz, P.E.
Jamil Miranda, P.E.
Olga Mubarak-Jaramillo
Adam Remick, P.E.
Daniel Shabat, P.E.

Associates

Meredith A. Byers
Anthony M. Caniano
Rudolph F. Cannavale
Christopher W. Francis
James J. Magda
Michele Mastrangelo
Roger W. Owens
Robbin A. Petrella
Swaroop C. Puchalapalli, P.E.
Edward J. Reilly
Michael G. Savarese, P.E.
Stephen E. Tauss

March 15, 2017

Anthony J. Varrichio, P.E.
Chief Engineer
Islip Resource Recovery Agency
401 Main Street
Islip, NY 11751

Re: Blydenburgh Road Landfill Complex
Phase 1 and Phase 2 Cleanfill Landfills and
Leachate Impoundment Area
Well Condition Report
D&B No. 3339-25A

Dear Mr. Varrichio:

Enclosed please find the First Quarter 2017 Well Condition Report for the Phase 1 and Phase 2 Cleanfill Landfills and Leachate Impoundment Area. This report consists of Table 1, which presents a summary of monitoring well status and deficiencies along with recommendations. In addition, individual monitoring well inspection checklists are included.

If you have any questions or require additional information, please contact me at (516) 364-9890, Ext. 3058.

Very truly yours,

Keith S. Robins
Project Manager

KSR/nc
Enclosure
◆3339\KSR17_Ltr -01

Table 1

**BLYDENBURGH ROAD LANDFILL COMPLEX
PHASE 1 AND PHASE 2 CLEANFILL LANDFILLS AND LEACHATE IMPOUNDMENT AREA
SUMMARY OF MONITORING WELL STATUS AND DEFICIENCIES
FIRST QUARTER 2017 SAMPLING EVENT**

| Well Designation | Surface Concrete Pad | | | Ponding Water Around Concrete Seal | Protective Flush-Mounted Cover/Standpipe Cover and Lock | | Well Casing Alignment | Survey Measuring Point Marked | Well Labeled | Well Protected | Remarks and Recommendations |
|------------------|----------------------|---------|-------------|------------------------------------|---|-----------------|-----------------------|-------------------------------|--------------|----------------|-----------------------------|
| | Intact | Cracked | Missing | | Cover/Pipe - Intact | Lock - In Place | | | | | |
| MW-4G-1 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-4G-2 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-11G-1 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-11G-2 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-14G-1 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-14G-2 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-14M-1 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-14G-1A | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-18G-1 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-18G-2 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-19GR-1 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-20G-1 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-21G-1 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-24G-1 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-24G-2 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-24G-3 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-25G-1 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-25G-2 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-26G-1 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-26G-2 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-26G-3 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-27G-1 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-27G-2 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-27G-3 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-28G-1 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-28G-2 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-28G-3 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |



**D&B ENGINEERS
AND
ARCHITECTS, P.C.**

330 Crossways Park Drive, Woodbury, New York 11797

516-364-9890 • 718-460-3634 • Fax: 516-364-9045 • www.db-eng.com

Board of Directors

Henry J. Chlupsa, P.E., BCEE
President & Chairman
Steven A. Fangmann, P.E., BCEE
Executive Vice President
Robert L. Raab P.E., BCEE, CCM
Senior Vice President

Vice Presidents

Rob J. DeGiorgio, P.E., CPESC
Senior Vice President
Stephen M. Dudar, P.E.
Senior Vice President
Dennis F. Koehler, P.E.
Senior Vice President
Joseph H. Marturano
Senior Vice President
William D. Merklin, P.E.
Senior Vice President
John Schreck, P.E.
Senior Vice President
Brian M. Veith, P.E.
Senior Vice President
Richard M. Walka
Senior Vice President
Garrett M. Byrnes, P.E.
Vice President
Thomas P. Fox, P.G.
Vice President
Michael Neuberger, P.E.
Vice President
Theodore S. Pytlar, Jr.
Vice President
Phillip R. Sachs, P.E.
Vice President
Charles J. Wachsmuth, P.E.
Vice President

Dir. of Architecture

Michael P. Sciarillo, AIA, NCARB

Senior Associates

Ellen R. DeOrsay
Matthew R. DeVinney, P.E.
Frank DeVita
Joseph A. Floralliso, P.E.
Michael R. Hofgren
Christopher Koegel, P.E., CCM
Jamil Miranda, P.E.
Olga Mubarak
Adam Remick, P.E.
Daniel Shabat, P.E.

Associates

Meredith A. Byers
Anthony M. Caniano
Rudolph F. Cannavale
James J. Magda
Michele Mastrangelo
Robbin A. Petrella
Swaroop C. Puchalapalli, P.E.
Edward J. Reilly
Michael G. Savarese, P.E.
Stephen E. Tauss, P.G.

August 1, 2017

Anthony J. Varrichio, P.E.
Chief Engineer
Islip Resource Recovery Agency
401 Main Street
Islip, NY 11751

Re: Blydenburgh Road Landfill Complex
Phase 1 and Phase 2 Cleanfill Landfills and
Leachate Impoundment Area
Well Condition Report
D&B No. 3339-26B

Dear Mr. Varrichio:

Enclosed please find the Second Quarter 2017 Well Condition Report for the Phase 1 and Phase 2 Cleanfill Landfills and Leachate Impoundment Area. This report consists of Table 1, which presents a summary of monitoring well status and deficiencies along with recommendations. In addition, individual monitoring well inspection checklists are included.

If you have any questions or require additional information, please contact me at (516) 364-9890, Ext. 3058.

Very truly yours,

Keith S. Robins

Keith S. Robins
Project Manager

KSR/nc
Enclosure
◆3339KSR17_Ltr-02

Table 1

**BLYDENBURGH ROAD LANDFILL COMPLEX
PHASE 1 AND PHASE 2 CLEANFILL LANDFILLS AND LEACHATE IMPOUNDMENT AREA
SUMMARY OF MONITORING WELL STATUS AND DEFICIENCIES
SECOND QUARTER 2017 SAMPLING EVENT**

| Well Designation | Surface Concrete Pad | | | Ponding Water Around Concrete Seal | Protective Flush-Mounted Cover/Standpipe Cover and Lock | | Well Casing Alignment | Survey Measuring Point Marked | Well Labeled | Well Protected | Remarks and Recommendations |
|------------------|----------------------|---------|-------------|------------------------------------|---|-----------------|-----------------------|-------------------------------|--------------|----------------|-----------------------------|
| | Intact | Cracked | Missing | | Cover/Pipe - Intact | Lock - In Place | | | | | |
| MW-4G-1 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-4G-2 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-11G-1 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-11G-2 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-14G-1 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-14G-2 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-14M-1 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-14G-1A | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-18G-1 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-18G-2 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-19GR-1 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-20G-1 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-21G-1 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-24G-1 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-24G-2 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-24G-3 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-25G-1 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-25G-2 | | | Not Visible | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-26G-1 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-26G-2 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-26G-3 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-27G-1 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-27G-2 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-27G-3 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-28G-1 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-28G-2 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |
| MW-28G-3 | Yes | | | No | Yes | Yes | Straight | Yes | Yes | Yes | No action required. |