



October 4, 2010

Ms. Jaclyne Drummond  
NCDENR DWM Solid Waste Section  
1646 Mail Service Center  
Raleigh, North Carolina 27699-1646

**RE: Landfill Gas Investigation Work Plan  
Avery County Closed MSW Landfill  
Spruce Pine, North Carolina**

Dear Ms. Drummond:

This letter is sent to update you on progress made regarding additional investigations at the closed Avery County MSW landfill in response to landfill gas concentration exceedances near the property line in landfill gas probes P-3 and P-7. In previous correspondence<sup>1</sup>, RSG submitted monitoring data collected in accordance with the Landfill Gas Monitoring Plan<sup>2</sup> and indicated that additional investigation regarding the extent of landfill gas migration would be completed in the future.

*Investigation Area*

RSG plans to perform an investigation along the property line of the landfill, as well as on the Unimin Corporation (Unimin) property located to the north across Brushy Creek Road (near P-3) and to the south of the landfill (near P-7), and on the Avery County Airport Authority property located west of the landfill (near P-7). These probe locations and adjacent properties are shown on **Figure 1**.

*Site Access Agreements*

At this time, Avery County is in the process of securing the necessary access agreements from Unimin and the Avery County Airport Authority to allow investigation on those properties. Once these agreements are executed, we will finalize the schedule for this investigation.

It should be noted that the Unimin property is a mining property and is therefore regulated by the Mine Safety and Health Administration (MSHA). Due to the mining activities on this property, all site visitors must complete a safety training course prior to working on the site. This safety course covers several topics including (but not limited

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<sup>1</sup> Letter to Mr. Bill Wagner, NCDENR dated June 30, 2010 from Richardson Smith Gardner and Assoc.

<sup>2</sup> Landfill Gas Monitoring Plan Avery County MSW Landfill, Richardson Smith Gardner and Associates, Inc., January 2010

to): hazard recognition and avoidance, emergency and evacuation procedures, health and safety standards, personal protective equipment, safety rules and procedures, respiratory devices and stockpile safety. Additionally, a Unimin representative must be present with all non-Unimin workers while they are on the property. Therefore, scheduling remedial response and site investigations are subject to review by our site contact, Mr. Mike Vencill, Unimin Plant Manager.

### *Investigation Procedures*

RSG personnel will be using a soil gas probe system to perform the preliminary investigation of landfill gas extent. This system utilizes 1/2-inch diameter metal rods that are driven into the subsurface either by a slide hammer, or by electric hammer drill. These probes will be driven to a minimum depth of 4 feet below grade. Each probe includes a retractable tip that allows for landfill gas testing through the probe rod. Once landfill gas measurements are collected in one location, the probe will be removed and the investigation will continue at another location.

The probe locations will be determined by the landfill gas readings collected as the investigation is completed. Therefore, no plan of individual proposed probe locations has been prepared, but rather a plan depicting expected radii of investigation from probes P-3 and P-7 is included with this letter (**Figure 1**). A minimum of three probes will be advanced on or near 100 foot radius line from each of the two probes with exceedances. Based upon the landfill gas concentrations detected in each of these probes, additional probes may be advanced on or near the 200 foot radius line. Should additional investigation be warranted based upon readings at these locations, additional probes may be advanced approximately 300 feet from the probes (P-3 and P-7).

### *Limitations*

It should be noted that surface outcrops of rock have been noted in some off-site areas, therefore, our preliminary investigation will be influenced by the location of these outcrops and the ability of our soil gas survey equipment to penetrate the subsurface in some areas. It should be noted that the preliminary investigation locations are temporary locations. Should permanent monitoring probes be necessary in the future, further agreements between Avery County and the property owner(s) will be required.

### *Schedule*

RSG expects to begin this investigation on or around October 25, 2010. If you would like to visit the site to observe investigation activities, please inform us ahead of time so that all property owners can be made aware of additional visitors, and provisions for safety training can be made for all visitors to the Unimin property.

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If you have any questions, or require additional information, please contact me at your earliest convenience at 919-828-0577 x 221 or by e-mail (address below).

Sincerely,

**Richardson Smith Gardner and Associates, Inc.**



Joan A. Smyth, P.G.  
Senior Hydrogeologist  
[joan@rsgengineers.com](mailto:joan@rsgengineers.com)

Attachments

CC: Buddy Norris – Avery County  
Bill Wagner – NCDENR- ARO  
Mike Vencill – Unimin Corp.  
Stacey Smith, P.E. – RSG  
File

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**REFERENCES**

1. ADJACENT PROPERTIES ARE FROM AVERY COUNTY GIS MAPPING DEPARTMENT.
2. MONITORING WELL LOCATIONS FROM FIELD SURVEY DATED 1/14/08, BY SURVEYING SOLUTIONS, P.C.
3. PROPERTY LINE FROM FIELD SURVEY DATED APRIL 9, 2010, BY APPALACHIAN PROFESSIONAL LAND SURVEYORS & CONSULTANTS.
4. LFG PROBES LOCATIONS FROM FIELD SURVEY DATED APRIL 9, 2010, BY APPALACHIAN PROFESSIONAL LAND SURVEYORS & CONSULTANTS. PROBE P-2 AND P-3 LOCATIONS WERE NOT SURVEYED AND ARE APPROXIMATE.

  
**RICHARDSON SMITH GARDNER & ASSOCIATES**  
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 www.rsgengineers.com  
 14 N. Boylan Ave.  
 Raleigh, N.C. 27603  
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FIGURE NO.	1	FILE NAME	AVERY-B0142
SCALE:	AS NOTED	PROJECT NO.	AVERY 10-2
CHECKED BY:	J.A.S.	DATE:	Oct. 2010
DRAWN BY:	C.T.J.		

TITLE: **PROPOSED LANDFILL GAS EXTENT INVESTIGATION AVERY COUNTY CLOSED MSWLF SPRUCE PINE, NC**