



Joyce Engineering, Inc.
2211 West Meadowview Rd
Suite 101
Greensboro, NC 27407

tel: 336/323-0092
fax: 336/323-0093

www.JoyceEngineering.com

May 27, 2011

Ms. Christine Ritter, P.G.
NCDENR, Solid Waste Section
1646 Mail Service Center
Raleigh, NC 27699

RE: Response to Interim Regional Landfill Gas Issues
Coastal Regional Solid Waste Management Authority
Permit No. 25-04
JEI Project No. 618.0900.11, Task 05

Dear Christine:

Joyce Engineering, Inc. is submitting this letter on behalf of the Coastal Regional Solid Waste Management Authority (CRSWMA) in response to your request at our May 10, 2011 meeting on site following the Phase 3 expansion preconstruction meeting regarding the elevated landfill gas readings from the Interim Regional Landfill (IRL).

As we have discussed in February 2011, gas probes *GP-3*, *GP-4*, and *GP-5* with elevated methane readings on the southwest side of the IRL are not well understood and further investigation is warranted. We plan to investigate the reasons for the elevated methane readings in the relatively small area on the southwest side of the IRL during this summer. The investigation will be developed on some basic assumptions that consider the physical setting of the landfill.

- The landfill Subtitle D bottom liner system was constructed above the surrounding land surface, and the ditches around the landfill intercepting the groundwater. These constrains likely eliminate landfill gas migration through the soil.
- The IRL footprint is not rectangular, but the southwest corner was cut out from the design because of swamp deposits and the area was deemed not suitable for the landfill development.
- We believe the elevated readings are merited to swamp deposits with organic decay and production of gas.

We propose a plan for the investigation to delineate the extent of gas occurring on the southwest side of the IRL by boring several locations between the LFG Probes 3, 4 and 5, and take LFG/methane readings along the length of the investigation.



LFG investigation for the IRL:

- Drill four borings in a row 10 feet apart and 10 to 20 feet away (conditions vary) from each existing IRL gas probe GP-3, 4 and 5. Three of the borings will be drilled to water table and one deeper to approximately 15 feet below ground surface in order to investigate the subsoil and organic material at depth.
- Drill three borings at 100 feet apart between the probes 3 and 4, and three borings at 100 feet apart between probes 4 and 5. The borings will be advance to top of groundwater table to take readings from each borehole for potential landfill gas and methane concentration.

If you have comments to this proposed investigation, please contact me at your convenience by telephone 336-790-2252 or email hannu@joyceengineering.com.

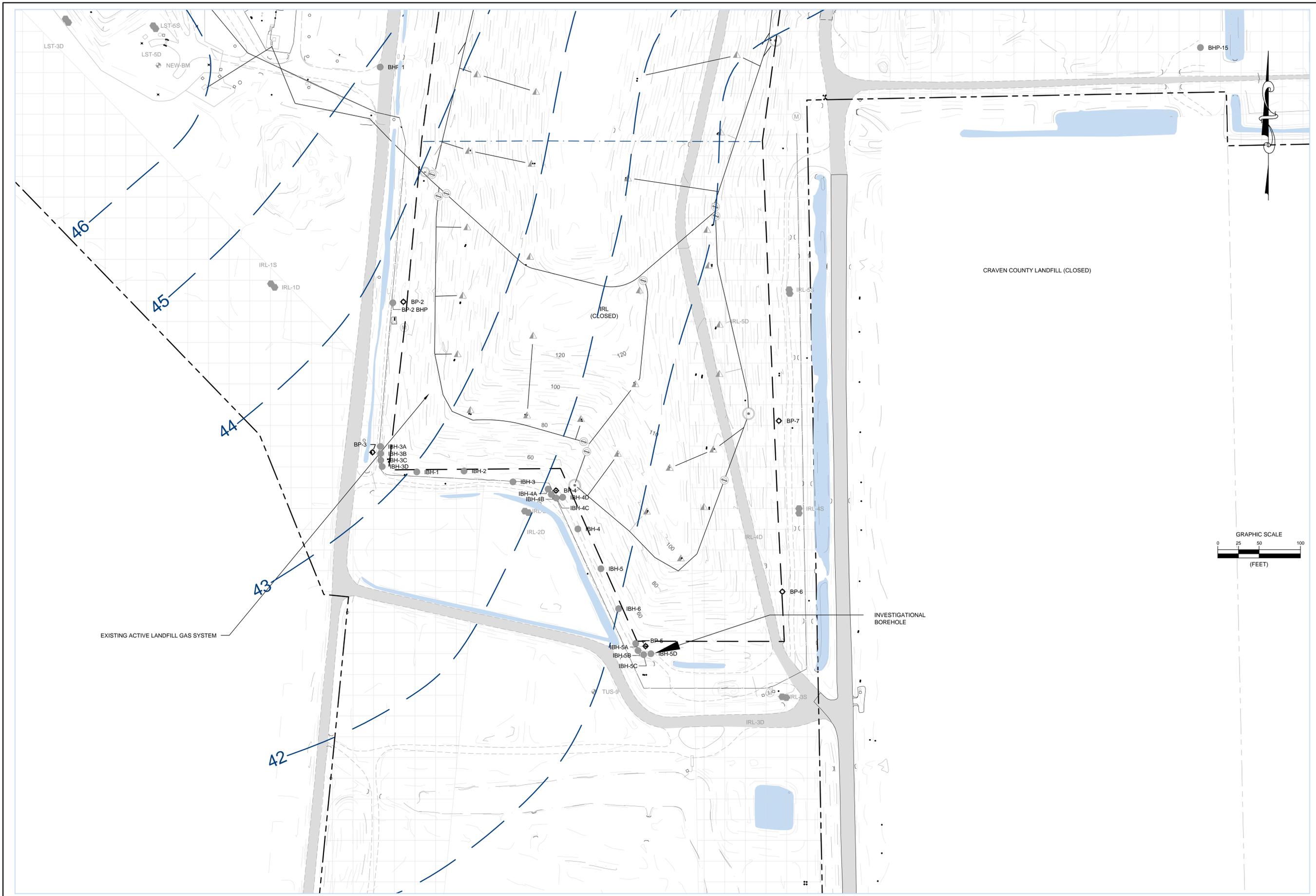
Sincerely,
JOYCE ENGINEERING, INC.



Hannu Kemppinen, P.G.
Senior Project Consultant

C Allen Hardison and David Warmack, CRSWMA

Attachment



CRSWMA - TUSCARORA LANDFILL CRAVEN COUNTY, NORTH CAROLINA		ENGINEERING, INC. 2211 W. MEADOWVIEW ROAD GREENSBORO, NC 27407 PHONE: (336) 323-0092 NC CORP. LIC. C-0782		DESIGNED DRAWN CHECKED APPROVED DATE	CTM CTM HKK HKK 09/24/11	REVISIONS AND RECORD OF ISSUE NO. BY CK APP DATE
INTERIM REGIONAL LANDFILL LANDFILL GAS INVESTIGATION LOCATIONS		PROJECT NO. 618.0900.11		SCALE AS SHOWN		DRAWING NO.