



Jeremiah W. (Jay) Nixon, Governor • Sara Parker Pauley, Director

DEPARTMENT OF NATURAL RESOURCES

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JUL 11 2012

CERTIFIED MAIL # 7009 3410 0001 9190 2057
RETURN RECEIPT REQUESTED

Mr. David Vasbinder
Bridgeton Landfill, LLC
13570 St. Charles Rock Road
Bridgeton, MO 63044

RE: Subsurface Smoldering Event, Gas System Expansion, Gas Migration and Odor Control,
Bridgeton Sanitary Landfill, Permit Number 0118912, St. Louis County

Dear Mr. Vasbinder:

This letter is sent in response to a submittal dated June 20, 2012, and received on June 21, 2012, by the Missouri Department of Natural Resources' (Department) Solid Waste Management Program (SWMP). It was submitted by F. Daniel Brennan, P.E. and sealed by Deborah A. English, P.E. of SCS Engineers. The submittal is to install additional gas wells to help control odor issues due to the Subsurface Smoldering Event (SSE) and to help reduce the gas migration issue at the landfill.

On June 14, 2012, Department staff visited the landfill to observe the conditions and continuing physical changes at the landfill and to discuss the next steps in controlling the SSE.

The submittal was reviewed by Department staff and our technical consultants.

The SWMP has the following comments on the submittal.

COMMENTS:

GENERAL:

1. Bridgeton Landfill needs to determine the location of the SSE, horizontally and vertically with the best available technology and put this information on all drawings pertaining to the SSE or this area of the landfill.
2. The SWMP is concerned that drilling, with the potential of excavating hot waste may initiate a fire during these dry conditions. Therefore, a surface fire contingency plan should be in place that includes, at a minimum: 1) notification of the fire department in

advance of any drilling, 2) maintain a fire truck or water truck on site in case of a fire, (a fire truck would have rescue ability in case hot liquid or steam ejected from a well comes in contact with workers) and, 3) water on site to cool down the bore hole if needed.

3. There is some conflicting information included in the submittal that needs to be cleared up.
 - A. The SCS letter does not state the number of wells proposed. The Aquaterra letter to St. Louis County states 25 wells and the drawings submitted shows 26 wells.
 - B. The SCS letter states the depth of wells proposed at 140 feet deep. The Aquaterra letter to St. Louis County states wells will be no greater than 100 feet deep and the drawings submitted shows wells varying from 60 to 140 feet.
 - C. On Drawing 3, LFG extraction well detail shows a minimum for each bore to be 15 feet from the bottom of the landfill, while the well schedule shows 6 wells with less. This should be consistent.
 - D. On Drawing 3, LFG extraction well detail, notation number 2 needs to be removed and the description of the bottom cap needs to be changed to steel. The slotting detail description needs to be changed from PVC to steel.
 - E. This landfill has already installed wells designated as perimeter gas extraction wells that are installed outside the waste boundary; this may be confusing to designate these with the same nomenclature. The SWMP suggests, at a minimum, to label them interior perimeter gas extraction wells.
4. How will the vacuum box collected gas be treated to reduce the odors?

BY SECTION

Section 1, Introduction:

1. The SWMP requests a design report showing the proposed perimeter (interior) gas well radius of influence (ROI) and how this will affect the gas migration and the odor issues. This should show the expected coverage of the wells at the quarry walls and adjacent wells. This may also help in their placement to limit the potential for air intrusion at the quarry walls. This report needs to consider a monitoring plan for the interior perimeter wells checking for oxygen intrusion on a frequent basis.
2. The SSE may require that you use a smaller ROI on the replacement extraction wells because of the reduced efficiency with the increased temperatures. This would assist you

in determining that enough wells are installed the first time instead of having to add additional wells later if odors persist.

3. Describe what the blockages are from. Are they due to compressive failure of the well pipe, shear movement, liquid in the well or collapsing from the additional heat of the SSE?

Section 2, Design Approach:

1. Please submit historical waste drawings so the geometry of the quarry can be understood.
2. The ROI should be used to design the system along the quarry walls along with your historical information to determine the number of wells rather than picking the mid-point of the existing interior wells.

Section 5, Odor Control during Drilling:

Drilling times should take into consideration the generation of odors and plan to minimize those odors as much as possible using known site conditions and local meteorology.

Section 6, Health and Safety:

Drilling:

1. A copy of the Site Specific Health and Safety Plan (SSHSP) should be submitted to the SWMP seven (7) business days prior to drilling.
2. Provide a summary of what fire equipment will be available at the drill rig and the facility. At a minimum, 2-20 pound ABC extinguishers and a 500 gallon water wagon with a 100 foot hose should be available. Notify the local fire department in advance of activity going on at the site.
3. Submit qualifications of specified drilling personnel and the state from which it was granted.
4. The SWMP strongly suggests using a Photo Ionization Detector (PID) for detection of Volatile Organic Compounds (VOC's) to ensure worker safety.
5. The level of personal protective equipment (PPE) should be determined and signed by an Industrial Hygienist. Personnel should be properly trained and have the ability to upgrade their PPE depending on conditions.

Mr. David Vasbinder
Bridgeton Sanitary Landfill
Page 4 of 4

6. The driller should have equipment to measure waste temperature with depth by lowering a thermocouple into boring immediately after each bucket of waste.

Well construction:

7. Add a PID to the air monitoring equipment.
8. Personnel should be properly trained and have the ability to upgrade their PPE depending on conditions.

Section 8, Estimated Construction Dates:

Drilling should be coordinated with SWMP personnel so at least one SWMP representative can be present for each well drilling and installation.

The Department appreciates the commitment of resources provided by Bridgeton Landfill, L.L.C. and its contractors. Please re-submit a new submittal which addresses all comments no later than 15 days from receipt of this letter.

If you have any questions regarding this letter, please contact me at (573) 526-3940, P.O. Box 176, Jefferson City, Missouri 65102-0176 or by email at charlene.fitch@dnr.mo.gov.

Sincerely,

SOLID WASTE MANAGEMENT PROGRAM



for Charlene S. Fitch, P.E.
Chief, Engineering Section

CSF:jbl

- c: John Haasis, P.E., St. Louis County Department of Health
Mr. Tim Duggan, Attorney General's Office
Mr. Brandon Doster, Hazardous Waste Program
Mr. Joe Trunko, St. Louis Regional Office