

SEP 04 2014

Mr. Brian Power
Area Environmental Manager
Republic Services, Inc.
13570 St. Charles Rock Road
Bridgeton, MO 63044

RE: Expanded Heat Removal Pilot Study Submittal, Fill Plan Update and Data Review
Bridgeton Landfill, Permit Number 0118912, St. Louis County

Dear Mr. Power:

This letter is in follow-up to the above items and related discussions during the Bridgeton Landfill site visit on August 28, 2014. Specifically;

- The “Expanded Heat Removal Pilot Study” originally received by the Missouri Department of Natural Resources’ Solid Waste Management Program (SWMP) on July 24, 2014, with additional technical information e-mailed on August 15, 2014, and related August 25, 2014, response from the SWMP.
- Our technical consultant’s Data Package Review for the months of July and August 2014 along with his recommendations and the SWMP’s comments on his report. (See enclosed copy of August 29, 2014, Report by Todd Thalhamer, P.E.)
- A September 2, 2014, letter received via e-mail expressing Bridgeton Landfill’s concerns about collection of additional carbon monoxide (CO) data from the gas interceptor well (GIW) system.

Expanded Heat Removal Pilot Study

Bridgeton Landfill is approved to begin full implementation of the expansion pilot study including the following:

- Modification of the six (6) GIWs -2, -3, -5, -6, -7 and -10 with heat removal technology,
- Installation of eight (8) additional temperature monitoring probes (TMPs) located next to two (2) of the GIWs (GIW-5 and GIW-10) to be used to determine the effectiveness of the heat removal technology,

- Installation of three (3) additional TMPs north of the existing GIWs, as shown in revised Drawing 3,
- Use of the grout mixture and related procedure included in the facility's August 15, 2014, submittal, and
- A quarterly update on the progress of the pilot study to be submitted along with the facility's monthly report.

The Expanded Heat Removal Pilot Study permit modification request is hereby approved and incorporated into Permit Number 0118912 with the following conditions:

CONDITIONS:

1. Other information required to be submitted by Bridgeton Landfill as detailed in the August 25, 2014, response letter is still required and must be provided as it becomes available to the facility, but no later than submittal of the pilot study report.
2. Pilot projects for beneficial use are usually granted by the SWMP for a period not to exceed one year. Reports are received to evaluate the effectiveness of the project. The initial pilot project report must be submitted one month prior to the first year anniversary of the date of this letter. The pilot project will be allowed to continue while the report is being reviewed.

Fill Plan Update

The SWMP is currently reviewing fill plans submitted by Bridgeton Landfill for the purpose of backfilling subsidence areas at the landfill's surface (i.e., voids, depressions and cracks that form under the EVOH capping material due to settlement). Materials to be used in these fill plans include soils and flowable fill mixtures similar to the grout mixture used in the Expanded Heat Removal Pilot Study for TMP installation. The placement of these inert materials will maintain positive drainage of stormwater, increase the thickness of the underlying soil below the EVOH capping material and further reduce pathways that might allow surfacing of the smoldering event. Upon approval by the department, Bridgeton Landfill will be able to move forward with implementation of these fill plans.

Monthly Data Package Review and September 2, 2014 CO Sampling in GIWs

Gas extraction well (GEW) and TMP temperatures continue to trend upward in the neck area of the Bridgeton Landfill. While there are 10 GEWs currently being monitored, in order to determine the current extent of the smoldering event, CO data is needed from the GIWs. This additional CO data from the neck area will allow for a better understanding of the CO gradients being observed in this area over time.

The SWMP agrees the CO data obtained from the GIWs will exhibit some scatter and variability. The overall trend within a range as limited in size as the neck area will become observable over time and will provide useful data for determining the extent of the smoldering event. With data captured over time, the SWMP anticipates trends from the GIWs will likely reflect the influence of the expanded heat removal system.

Given that the construction schedule for the isolation barrier is unknown, the SWMP concurs with our technical consultant's recommendation for CO testing in the thirteen (13) GIWs to be necessary and appropriate at this time. The SWMP is amenable to an off-set of a similar number of GEWs in the South Quarry, which is already known to be fully affected by the event. Modification of the Second Amendment to the First Agreed Order of Preliminary Injunction will be necessary to implement this change. The wells in the neck area and South Quarry are identified in the following table.

	South Quarry
Gas Interceptor Well	Gas Extraction Well
#1	#15
#2	#34A
#3	#58
#4	#59R
#5	#61B
#6	#70R
#7	#71
#8	#75
#9	#83
#10	#84
#11	#86
#12	#104
#13	#112

Additionally, our technical consultant recommended that comments on compromised wells yet to be repaired and wells repaired during the reporting cycle be included in the Monthly Data submittal, so the operational status of wells is known to any reviewer of the data package. The SWMP agrees with this recommendation. The information can be provided by either submitting a copy of field notes identifying the impairment or repair of wells or by adding a comments field to the monthly reporting form. Significant changes other than smoldering event impacts can then be more easily differentiated by the reviewer.

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In regard to the technical consultant's recommendation that chain-of-custody forms and laboratory data sheets that show the raw data and quality control data for CO testing be submitted, SWMP staff plan to review such information during the monthly site visit to Bridgeton Landfill. By reviewing at the meeting, SWMP staff will have an opportunity for discussion of concerns, if any, with Bridgeton Landfill staff.

If you have any questions or comments, please feel free to contact me at (573) 526-3940 or at P.O. Box 176, Jefferson City, Missouri 65102-0176.

Sincerely,

SOLID WASTE MANAGEMENT PROGRAM



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

CSF:

Enclosure

- c: Mr. James Getting, Environmental Manager
Ms. Laura Yates, St Louis County Department of Health
Mr. Larry Lehman, Compliance/Enforcement Section, SWMP
Ms. Brenda Ardrey, Operations Section Chief, SWMP
Mr. Joe Trunko, St. Louis Regional Office