



John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

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DECEMBER 13, 2016

Mike Heher
Division Manager
Carbon Limestone Landfill LLC
8100 South Stateline Road
Lowellville, OH 44436

Re: Carbon Limestone Landfill LLC
Director's Authorization
Approval
Municipal Solid Waste Landfills
Mahoning County
MSWL018781

**Subject: Carbon Limestone Landfill, Mahoning County
Selection of Corrective Measures**

Dear Mr. Heher:

On May 13, 2016, the Ohio Environmental Protection Agency (Ohio EPA), Northeast District Office (NEDO) received a revised Corrective Measures Plan (CMP) for the Carbon Limestone Landfill (Facility). The plan was submitted by Eagon & Associates, Inc. (Eagon) on behalf of Republic Services, Inc. (Republic). The CMP consists of the following documents:

- *Corrective Measures Plan (CMP) Carbon Limestone Landfill Mahoning County, Ohio Revision 2 May 2016;*
- *Corrective Measures Monitoring Plan (CMMP) Carbon Limestone Landfill Mahoning County, Ohio Revision 2 May 2016;*
- *Statistical Analysis and Data Evaluation Program (StAP) for Corrective Measures Monitoring Carbon Limestone Landfill Mahoning County, Ohio Revision 1 May 2016; and*
- *Responses to Ohio EPA Comments Dated November 30, 2015 on the Corrective Measures Program and Submittal of Groundwater Corrective Measures Plan Revision 2, Corrective Measures Monitoring Plan Revision 2 and Corrective Measures Statistical Analysis Program Revision 1, Carbon Limestone Landfill – Mahoning County, Ohio dated May 12, 2016.*

Carbon Limestone Landfill is an operating facility. Republic is conducting ground water quality assessment for 21 contaminants of concern (COCs).

Ohio Administrative Code (OAC) Rule 3745-27-10(F) requires the owner or operator of a municipal solid waste landfill to submit a CMP upon determining, through assessment activities performed in accordance with OAC Rule 3745-27-10(E), that waste-derived contaminants have been detected in the ground water. In accordance with OAC Rule 3745-27-10(F)(10), the director shall select from the CMP the corrective measure which best meets the criteria listed in paragraphs (F)(2), (F)(3), and (F)(7) of the rule.

OAC Rule 3745-27-10(F)(2) requires the CMP to evaluate all practicable remediation procedures which are available for remediating any contamination discovered during assessment monitoring. OAC Rule 3745-27-10(F)(3) requires the CMP to include an evaluation of each proposed remediation procedure.

In accordance with OAC Rule 3745-27-10(F)(7), the CMP shall propose a concentration level for each waste-derived constituent detected in the ground water at a statistically significant level. In accordance with OAC Rule 3745-27-10(F)(7)(a), the proposed concentration levels are required to be protective of human health and safety and the environment. In accordance with OAC Rule 3745-27-10(F)(7)(b)(i), if there is a maximum contaminant level (MCL) promulgated for the constituent, that shall be used as the concentration level. If an MCL has not been established, the background concentration shall be used unless the Director establishes an alternate ground water remediation standard in accordance with OAC Rule 3745-27-10(F)(7)(d).

The CMP was reviewed to determine if it meets the requirements listed in OAC Rules 3745-27-10(F)(2), (F)(3), and (F)(7). Upon review, it has been determined that the CMP includes provisions for semiannual sampling in accordance with OAC Rule 3745-27-10(F)(2); all practicable remediation procedures were evaluated (including consideration of the applicable COCs, potential flow paths including surface water discharges, and historical ground water quality results) in accordance with OAC Rule 3745-27-10(F)(3); and the ground water remediation standards meet the requirements of OAC Rule 3745-27-10(F)(7).

Ground water remediation standards in Table 1 were derived from the following:

- MCL/Secondary MCL (SMCL) where available or Action Level;
- United States Environmental Protection Agency (U.S. EPA) Health Advisories;
- U.S. EPA Regional Screening Levels (RSL);
- Site background concentrations; or
- If nothing was established by any of the above resources, then dietary levels were used.

After each ground water sampling event, Republic will evaluate the data and determine if the results trigger the evaluation of additional source controls.

The CMP identifies 21 COCs. Ground Water Remediation Standards were established for all 21 COCs from the sources listed above. The table below presents each COC with its GWRS and the basis for the standard.

Table 1

Ground Water Remediation Standards (GWRS) Carbon Limestone Landfill		
COC	GWRS (mg/L)	Basis for GWRS
Organics		
1,1-dichloroethane	0.027	Regional Screening Levels
Chlorobenzene	0.10	MCL
Cis-1,2-dichloroethene	0.07	MCL
Dichlorodifluoromethane	0.0985	Regional Screening Levels
Trichloroethylene	0.005	MCL
Trichlorofluoromethane	0.570	Regional Screening Levels
Vinyl Chloride	0.002	MCL
Inorganics		
Antimony	0.006	MCL
Arsenic	0.01	MCL
Barium	2.0	MCL
Chloride	250	SMCL
Chromium	0.1	MCL
Copper	1.3	Action Level
Iron	1.0	Background
Nickel	0.1	Health Advisory
Potassium	750	Dietary Recommendations
Sodium	400	Dietary Recommendations
Thallium	0.002	MCL
Zinc	5	SMCL
Water Quality		
Ammonia	30	Health Advisory
TDS	2500	Background

The CMP evaluated two Corrective Measures Alternatives listed below:

1. Continued Operation and Maintenance of Existing Source Controls and Hydraulic Controls; and
2. Continued Operation and Maintenance of Existing Source Controls and Hydraulic Controls with Ground Water Monitoring, Installation of the Slurry Wall, Ground Water Collector Trench, and Ground Water Treatment Wetlands.

Republic has proposed Corrective Measures Alternative 2 as the preferred corrective measure. Alternative 2 includes the items in Alternative 1 with the addition of the ground water collector trench and ground water treatment wetlands located east of the Phase I disposal area. The ground water collector trench and ground water treatment wetlands will be monitored through the Facility's National Pollutant Discharge Elimination System (NPDES) permit.

Ohio EPA has reviewed the CMP as described above and determined that the CMP and Corrective Measures Alternative 2 meet the requirements listed in OAC Rules 3745-27-10(F)(2), (F)(3), and (F)(7), including the requirement to be protective of human health and safety and the environment. Therefore, I select Alternative 2: Existing Source Controls and Hydraulic Controls with Ground Water Monitoring, Installation of the Slurry Wall, Ground Water Collector Trench, and Ground Water Treatment Wetlands. Republic shall implement the selected corrective measure at the Facility in accordance with the CMP as received in May 13, 2016.

You are hereby notified that this action of the Director of Environmental Protection (Director) is final and may be appealed to the Environmental Review Appeals Commission pursuant to Ohio Revised Code Section 3745.04. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of \$70.00 made payable to "Treasurer, State of Ohio." The Commission, in its discretion, may reduce the fee if by affidavit it is demonstrated that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
77 South High St., 17th Floor
Columbus, Ohio 43215

If you have any questions concerning this letter, please contact Clarissa Gereby, Ohio EPA, Northeast District Office at (330) 963-1224.

Sincerely,

A handwritten signature in black ink, appearing to read "Craig W. Butler". The signature is stylized with a large initial "C" and "B".

Craig W. Butler
Director

CWB:CG:cla

cc: Mahoning County Health Department

ec: Mike Heher, Republic Services, Inc.
Paul Parrish, Ohio EPA, NEDO, DDAGW
Joe Montello, Republic Services, Inc.

Project IDs# 5673, 5674, 6986, 6987 and 6989