November 7, 2014

The Honorable Matthew A. Cartwright
United States House of Representatives
2157 Rayburn House Office Building
Washington, DC 20515-6143

Dear Congressman Cartwright:

The Pennsylvania Department of Environmental Protection (DEP) is pleased to provide the following in response to your October 29, 2014 request for information regarding the management of waste material from gas well operations in Pennsylvania. Please note that I did not receive an official hard copy of your letter; nonetheless we are responding to the electronic version that was sent to our legislative office on October 29, 2014.

Pennsylvania’s residual waste regulations provide a comprehensive approach for managing waste from the point of generation to transportation, processing, recycling and disposal. The specific information you requested spans many programs and offices within the DEP structure and would take weeks to pull together; therefore, to respond within your requested time frame, DEP is providing its existing program guidance and operating and inspection procedures that are used routinely in the administration and implementation of our waste management program. Additionally, DEP is providing guidance specific to the gas well industry for reporting waste generated, reused, recycled, processed or disposed.

Residual Waste Generator Requirements

Records

The residual waste regulations at § 287.55(a) require generators of residual waste in any quantity to maintain records that include the following:

- Types and amounts of waste generated.
- Date on which the waste was generated.
- Date on which the waste was disposed of or processed onsite.
- Name, address and telephone number of the transporter.
- Name, address and telephone number of the waste disposal or destination facility.

In addition, the above records must be retained on the premises where the waste was generated for five years and must be made available to DEP for inspection upon request.

Biennial Report

The residual waste regulations at § 287.52(a) require a biennial report to be provided by March 1 of each odd numbered year and include the following:

- Name, address, county and telephone number of the generator.
- Generator ID number.
- Name and telephone number of a contact person who can answer questions about the report.
- Description of the business and SIC numbers reflecting principal products and services.
- Types of residual waste generated, related SIC numbers, and weight of each type of waste.
• For each waste type:
  o Whether waste was disposed or processed on the premises where it was generated
    or at an offsite facility.
  o Whether waste is a liquid.
  o Chemical Abstract Numbers for the five most concentrated constituents in the
    waste, if the generating facility was required to file a Toxic Release Inventory
    reporting form.
• Description of the generator's efforts to implement its Source Reduction Strategy.
• Name, location and permit number for each processing or disposal facility that has
  been authorized to receive the generator’s waste.

Chemical Analysis of Waste

Section 287.51(b) of the regulations requires that a person or municipality that generates more
than 2,200 pounds of residual waste per generating location in any single month in the previous
year shall comply with § 287.54 (relating to chemical analysis of waste). Section 287.54(a)
requires the chemical analysis of waste to include the following:
  • A detailed analysis that fully characterizes the physical properties and chemical
    composition of each type of waste that is generated.
  • A determination of whether the waste is a hazardous waste.
  • Copies of analysis, determination and laboratory quality control procedures used, which
    must be submitted to DEP and to each solid waste management facility which accepts or
    proposes to accept the waste in accordance with the timetable established in § 287.54(b).

In addition, § 287.54(c) requires that records of the analyses be kept on the premises where the
waste is generated and made available to DEP for inspection.

Special Reporting for Waste Generated by the Gas Well Industry

The oil and gas regulations at § 78.121 require the operator of a well permitted to produce gas
from the Marcellus shale formation to submit a semi-annual production and status report for each
well on an individual basis, on or before February 15 and August 15 of each year. The
production report must include information on the amount and type of waste produced and the
method of waste disposal or reuse for the preceding six-month period. Waste information
submitted to DEP in accordance with this subsection is deemed to satisfy the residual waste
biennial reporting requirements of § 287.52 (relating to biennial report). DEP has developed an
electronic reporting system for this information. Production and waste reports are available at
https://www.paoilandgasreporting.state.pa.us/publicreports. Also see the enclosed manuals on
Oil and Gas Production and Waste Reporting.

Transporter Requirements

Records

Under § 299.219 of the regulations transporters are required to maintain an operational record for
each day that residual waste is collected or transported, or both. The daily operational record
shall be kept in the cab of each transportation vehicle on the date of collection or transportation.
The record shall include the following:
  • Type or classification of residual waste transported.
• Weight or volume of the types of wastes transported.
• Name, address, telephone number, county and state of each generator of transported waste.
• Name and location of a transfer facility that has received or will receive the waste.
• Name and location of the solid waste processing or disposal facility where the waste will ultimately be disposed or processed.
• Description of handling problems or emergency disposal activities.
• Name and address of the person or municipality collecting or transporting the waste.
• License plate number of the trailer.

The records are required to be made available to DEP upon request and shall be retained for at least five years.

Signage

Section 299.220 of the regulations requires a vehicle or conveyance that is ordinarily or primarily used for the transportation of solid waste to bear a sign that meets the following:
• Includes the name and business address of the person or municipality that owns the vehicle or conveyance.
• Includes the specific type of solid waste (residual or municipal) transported by the vehicle or conveyance.
• Has lettering that is six inches in height and clearly visible.

Act 90 – Waste Transportation Safety Act

In addition to the residual waste regulations, the Waste Transportation Safety Act (Act 90 of 2002) requires waste haulers that transport waste to a Pennsylvania processing or disposal facility to obtain an authorization from DEP for each truck over 17,000 pounds or tractor and trailer over 10,000 pounds. The fees from these authorizations are used by DEP and the Pennsylvania State Police (PSP) to perform inspections of waste transportation vehicles. In 2013, DEP and PSP respectively performed 7,692 and 13,920 waste vehicle inspections. Among them were 1,452 DEP and 4,107 PSP inspections of oil and gas-related waste vehicles.

Enclosed is the Waste Transportation Safety Program (WTSP) 2013 Annual Report. Additional information on the WTSP is available at:

Disposal Facilities

Siting Criteria

Municipal and residual waste landfills and residual waste processing facilities may not be located within:
• The 100-year floodplain of waters of this Commonwealth.
• 300 feet of an exceptional value wetland as defined in § 105.17 (relating to wetlands).
• 100 feet of a wetland other than an exceptional value wetland.
• 100 feet of a perennial stream unless storage, processing and disposal will not occur within that distance and no adverse hydrologic or water quality impacts will result.

In addition, municipal and residual waste landfills are prohibited within one quarter-mile upgradient and within 300 feet or 91.4 meters downgradient of a private or public water source.

Design and Operations

All municipal and residual waste landfills in Pennsylvania that are permitted to receive oil and gas waste are designed with state-of-the-art double liner systems that include leachate collection, detection and treatment systems; groundwater monitoring systems; gas collection systems; and radiation monitoring systems. Monitoring of groundwater and leachate is done on a quarterly basis and reported to DEP. Landfills are designed in a manner that generally meets the design and operating requirements for hazardous waste landfills.

Waste Acceptance

Prior to disposal of each type of residual waste, the landfill needs to ensure that the waste fits within its waste acceptance plan. The waste acceptance procedure, known as the Form U process, is used by DEP to determine if landfills can accept new or additional waste streams and ensure that there is no adverse reaction from the disposal of the waste material due to interaction or mixing with other wastes already disposed in the landfill. The Form U application includes information on where and how the waste was generated, a chemical and physical characterization of the waste, and a determination that the waste fits within the landfill’s permitted waste acceptance plan. A Form U request is required to be submitted by each landfill operator that proposes to accept a new waste or source of waste. In order for a landfill to accept oil and gas-derived waste, a Form U is required for each type of waste generated on each gas well pad from which the landfill proposes to accept waste.

Inspections

Each landfill is inspected a minimum of 12 times per year. These comprehensive inspections include evaluations of daily operating records, design and operation of the facility, and determinations whether the facility may have engaged in unlawful conduct under the solid waste management act, may have violated an environmental protection act or have existing conditions which may pose a threat to public health, safety, welfare or the environment. The list of municipal waste landfills and residual waste landfills is available on the DEP web site and includes a link to Pennsylvania’s Environment Facility Application Compliance Tracking System (eFACTS), which provides inspection, violation and enforcement information. In addition to landfill inspections, DEP performed over 6,700 inspections in 2013. Those inspections included solid waste processing facilities, transporters, generators, disposal facilities and transfer stations as well as reports of illegal dumping.

Enforcement

DEP has long-standing policies for performing inspections, citing violations, initiating enforcement actions and assessing penalties. Fines and penalties collected as a result of enforcement actions are deposited into the Solid Waste Abatement Fund, which is used to abate and eliminate potential hazards to the public and the environment resulting from the improper
processing, storage, treatment or disposal of waste. Copies of these policies are enclosed and are also available at: http://www.elibrary.dep.state.pa.us/dsweb/View/Collection-8338.

Oil and Gas Waste Information

The following tables provide a summary of information obtained from the oil and gas production and waste reports from 2011 to 2013 regarding the generation of waste from the oil and gas industry. These production and waste reports are available at https://www.paoilandgasreporting.state.pa.us/publicreports.

<table>
<thead>
<tr>
<th>Oil and Gas Waste Type</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Sediment (bbl)</td>
<td>5,313</td>
<td>10,098</td>
<td>2,124</td>
</tr>
<tr>
<td>Drill Cuttings (tons)</td>
<td>823,035</td>
<td>1,445,821</td>
<td>1,255,276</td>
</tr>
<tr>
<td>Drilling Fluid Waste (bbl)</td>
<td>2,526,040</td>
<td>1,983,716</td>
<td>1,546,991</td>
</tr>
<tr>
<td>Flowback Fracturing Sand (tons)</td>
<td>14,517</td>
<td>51,579</td>
<td>45,037</td>
</tr>
<tr>
<td>Fracturing Fluid Waste (bbl)</td>
<td>8,056,360</td>
<td>9,720,234</td>
<td>8,119,433</td>
</tr>
<tr>
<td>Produced Fluid (bbl)</td>
<td>9,582,217</td>
<td>17,406,286</td>
<td>22,564,907</td>
</tr>
<tr>
<td>Servicing Fluid (bbl)</td>
<td>0</td>
<td>10,515</td>
<td>64,136</td>
</tr>
<tr>
<td>Spent Lubricant (bbl)</td>
<td>5,256</td>
<td>5,196</td>
<td>25</td>
</tr>
</tbody>
</table>

Drilling, Fracturing and Produced Fluid Management

<table>
<thead>
<tr>
<th>Management Method</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Reuse</td>
<td>56%</td>
<td>71%</td>
<td>67%</td>
</tr>
<tr>
<td>Recycle for Reuse</td>
<td>23%</td>
<td>16%</td>
<td>22%</td>
</tr>
<tr>
<td>Injection Well</td>
<td>15%</td>
<td>13%</td>
<td>10%</td>
</tr>
<tr>
<td>Treatment and Discharge</td>
<td>6%</td>
<td>1%</td>
<td>1%</td>
</tr>
</tbody>
</table>

If after reviewing the enclosed documentation you still have specific questions about our regulation of residual wastes in Pennsylvania, we would be happy to provide additional information. Please contact Vincent J. Brisini, Deputy Secretary for Waste, Air, Radiation and Remediation, by e-mail at vbrisini@pa.gov or by telephone at 717.772.2724, or Kenneth Reisinger, Director of the Bureau of Waste Management, by e-mail at kereisinger@pa.gov or by telephone at 717.783.2388.

Respectfully,

Dana K. Aunkst
Acting Secretary

Enclosures