NYS’s Current Solid Waste Disposal Regulatory Framework for Gas Development Wastes

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Focus

• Discussion on wastes acceptable for disposal at landfills in New York State
  - Conventional drilling wastes generated within New York State
  - Convention and/or HVHF drilling wastes generated outside New York State

• Beneficial Use Determinations (BUDs) for drilling wastes
Gas Extraction Process – 3 stages

• Drilling
  – Drill Cuttings, Drilling Muds
• Fracturing
  – Flowback Water, Solid Residuals
• Production
  – Production Brine, Solid Residuals
Production Brine

- Fluids naturally present in some shale formations. Generated from the well during production.

- BUDs for roadspraying have been issued for brine generated from conventionally drilled wells both inside and outside NYS – 38 BUDs issued to date

- No petitions for HVHF brine have been received by the Department
Flowback Water

• Frac Water generated from the well after fracturing is complete.
  – Either recycled or disposed
  – No BUD for roadspraying would be available because the material is not an effective substitute.
Solids Disposal Restrictions

General Wastes prohibited from disposal at solid waste landfills

- Regulated Hazardous Waste
- Industrial or Commercial Wastes, except for those with specific Department authorization
- Regulated Radioactive Waste
- Sludges with <20% solids
- Bulk Liquids
Drilling Waste Status

• Exempt from regulation as a Hazardous Waste
  
  — 371.1(e)(2)(v) — “Solid wastes which are not hazardous wastes. The following solid wastes are not hazardous wastes: drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil, natural gas or geothermal energy;”

• Excluded from definition of Industrial Waste
  
  — 360-1.2(b)(88) — “… This term does not include oil or gas drilling, production, and treatment wastes (such as brines, oil, and frac fluids); overburden, spoil, or tailings resulting from mining; or solution mining brine and insoluble component wastes.”

• Conditionally excluded from regulation as Radioactive Waste
  
  — 380-1.2(e) — “This Part does not apply to NORM or materials containing NORM unless processed and concentrated.”
Drill Cuttings Disposal

- Air- or Water-based drilling method
  - Uncontaminated rock and soil
  - May be disposed of as C&D debris at a C&D Debris Landfill or MSW Landfill

- Oil- or Polymer-based drilling method
  - Requires disposal at MSW Landfill

- May require dewatering/bulking to meet 20% solids requirement
Drill Cuttings Disposal (cont.)

- Radioactivity (if present) in Drill Cuttings considered NORM

- Dewatered Drill Cuttings ≠ “Processed and Concentrated”

- Dewatered Drill Cuttings not prohibited from disposal in solid waste landfills

- Concern – mixture of regulated radioactive wastes with Drill Cuttings
Drilling Mud

- Drilling Mud are typically reconditioned for reuse
- Must meet 20% solids to be accepted for disposal
- Dewatering/bulking ≠ Processed & Concentrated  
  – not prohibited from disposal in solid waste landfill
- Any additive? MSW Landfill for disposal
Solid Residuals

- Result from the treatment of liquid drilling wastes
  - Examples: Filter cake, sludge, concentrate
  - Processed and Concentrated
    - Therefore, a Regulated Radioactive Waste

- Requires disposal in Part 380 Landfill or out-of-state equivalent
Piping/Tanks with Scale Buildup

• Processed and Concentrated

• Above 50 microR/hr: requires radioactive materials license and disposal in compliance with Part 380.
2012 Disposal of Drilling Waste at Landfills in New York State

C&D Debris Landfills
Chemung County C&D Landfill (Region 8) 16,282 tons (80% waste disposed)
Hakes C&D Landfill (Region 8) 38,590 tons (17% waste disposed)

MSW Landfills
Chemung County Sanitary Landfill (Region 8) 65,902 tons (37% waste disposed)
Allied Waste Niagara Falls Landfill (Region 9) 59,645 tons (9% waste disposed)
Hyland Landfill (Region 9) 9,033 tons (4% waste disposed)
Current Industry Practice

- All landfills in New York State that accept drilling wastes:
  - Utilize radiation detectors
  - Screen wastes for hazardous characteristic
  - Approve each waste using industrial waste approval process
Moving Forward - Policy

• DEC is currently drafting a Program Policy for landfills accepting drilling wastes for disposal
  – Radiation detectors
  – Standards for radiation detection operations
    • Trigger settings, calibration, training, response criteria
  – Screen wastes for hazardous characteristic
  – Utilize industrial waste acceptance criteria
  – Monitor leachate for constituents of concern
Thank You

Questions?

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