

# *LAW OFFICE OF GARY A. ABRAHAM*

170 No. Second Street  
Allegany, New York 14706  
716-372-1913; fax is same (please call first)

gabraham44@eznet.net  
www.garyabraham.com

June 30, 2010

Hon. Edward Buhrmaster  
NYS Dept. of Environmental Conservation  
Office of Hearings & Mediation Services  
625 Broadway, First Floor  
Albany, NY 12233-1550

Re: Chemung County Landfill permit modification,  
Application No. 8-0728-00004/00013; RFPLC  
responses to NEWSNY submissions

Dear Judge Buhrmaster:

Enclosed please find responses by Dr. Resnikoff (radiological issues) and Mr. Szulecki (noise issues) on behalf of proposed intervenor RFPLC to the applicant's submissions in this matter supplied under Mr. West's June 9 letter. Since Mr. West discusses the earlier submitted CoPhysics report in his letter, we are revisiting those aspects of the report.

## Radiological Issues

These responses are very restricted owing to Mr. West's successful efforts to keep clarifying information about the nature of waste management at Marcellus shale drilling sites out of the record. *See* Petition, Ex. B at 1 (Resnikoff memo dated April 7) (“The procedure for dewatering the radioactively contaminated drilling fluid and what happens to the remaining radioactively contaminated fluid is also not clear.”).<sup>1</sup> Waste management practices may vary

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<sup>1</sup> For example, NEWSNY has provided no information regarding how drilling wastes disposed at the Chemung County Landfill are processed, by means of a shale shaker, by collecting sediments in an unlined pit, or by some other mechanism. In any case, however, we consider “rock cuttings and any solids originally present in the drilling fluid are filtered out,” (*id.*), and the process of filtration of precipitates and sediment, including rock cuttings, “may concentrate the radioactive materials and require them to be disposed of at a facility prepared to handle this waste.” I.C. Ex. 11 at 1 (NYSDOH Bureau of Environmental Radiation Protection Comments [on DEC, SDGEIS on the Oil, Gas and Solution Mining Regulatory Program (2009)], dated July 21, 2009). Residual liquid in drilling wastes concentrate Radium-226 because this radionuclide is soluble in water.

from one drill site to the next, but none of the submissions by NEWSNY or Department Staff supply enough information to understand the processes by which drilling wastes are readied for off site disposal. Instead, the record on this subject is dominated by the unsworn assertions of Mr. West.

For example, Mr. West has been careful to say that the landfill will not accept for disposal “sludges associated with produced water,” but has not said the landfill will not accept sludges associated with drilling wastes. *See* I.C. Tr. at 37:14-15, 83:17, 84:20-21, 169:14-15, 214:3. Since wastes accepted at the landfill need be only 20% solids, (*id.* at 151:6-9 (Staff); Draft Permit Cond. 31(b), I.C. Ex. 6), or may contain up to 20% liquid, (I.C. Tr. at 226-227 (Abraham)), “dewatered brine and sludge waste from development of Marcellus shale in Pennsylvania may be disposed of in the Chemung County Landfill.” Petition, Ex. B at 4.<sup>2</sup> Staff’s view that these wastes are no more than environmentally benign “ground rocks, fragmented rocks,” (I.C. Tr. at 164:6-11), is thus belied by the record.<sup>3</sup>

Without any basis in the report, Mr. West asserts that the CoPhysics report establishes that samples analyzed by CoPhysics were taken from horizontal boreholes of Marcellus shale gas wells. West letter of June 9, at 1. Whatever CoPhysics analyzed, no weight should be given to its analysis because CoPhysics is not licensed to perform laboratory analysis of radiochemistry in New York.

Environmental laboratories that analyze solid waste samples for radiochemical or chemical parameters in New York must be certified to do so by the New York State Department of Health (DOH). Pub. Health L. § 502. Under DOH regulations, such laboratories must employ a full time supervisor with at least three

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Resnikoff, “Radioactivity in Marcellus Shale,” dated May 19, 2010, text following note 15.

<sup>2</sup> NEWSNY has also acknowledged that formation brine or produced water can be included in spill waste from drilling sites. I.C. Tr. At 84:1-19. Drill cuttings also include “drilling fluid.” CoPhysics, “Radiological Survey Report,” April 26, 2010, at 5.

<sup>3</sup> The Department has found that Marcellus shale rock cuttings alone are at least 25 times more radioactive than background radioactivity at the surface. *See* DEC, SGEIS at 5-29ff. (10 radionuclides measured in Marcellus shale rock cuttings at Lebanon and Bath equal  $25.4 \pm 4.6$  pCi/g and  $29.2 \pm 4.3$  pCi/g total radioactivity); Petition, Ex. B at 2 (background radioactivity in New York generally is 0.85 pCi/g). It is therefore more than “sheer speculation” to conclude that samples with substantially less radioactivity are not representative of wastes that originate from a Marcellus shale horizontal wellbore. *Contra* West letter, dated June 9, 2010, at 1.

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years experience in the field to oversee radiochemistry analyses. 10 NYCRR §§ 55-2.10(a), (f). DOH certification is obtained by compliance with the standards specified for an appropriate analytical category, including radiochemistry, in DOH's Environmental Laboratory Approval Program (ELAP). 10 NYCRR § 55-2.1 *et seq.*

The ELAP website lists all New York laboratories certified to perform radiochemical analysis in New York, and CoPhysics is not listed.<sup>4</sup> According to its website, CoPhysics specializes in the analysis of radioactivity in medical and dental offices, not environmental radiochemistry; and the company does not state that it is ELAP certified in any analytical category.<sup>5</sup>

CoPhysics is therefore not an environmental laboratory.<sup>6</sup> As a result, as Dr. Resnikoff notes in his May 19 report, at sec. 6.0, CoPhysics has been unable to accurately measure radium concentrations in the Marcellus shale waste samples it was given and instead has measured surrogates which, unlike radium, are not soluble in water. In his current report Dr. Resnikoff notes that this restriction has prevented CoPhysics from directly measuring radium in the waste samples resulting in inaccurate conclusions. For this reason, no weight should be given to conclusions about the radioactivity concentration in drilling wastes found in the CoPhysics report.

The Billman report lacks any supporting information such as a well log or other contemporaneous report that would confirm the manner in which the samples CoPhysics analyzed were obtained and, in any case, offers no new information about the radioactivity of the samples. For these reasons the Billman report is not helpful in reaching any conclusions about the radiological issues.

Finally, according to the May 28, 2010 Chesapeake letter

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4 See <<http://www.wadsworth.org/labcert/elap/radiochem.html>> (visited June 21, 2010).

5 See <[http://cophysics.com/#Radiological\\_Services](http://cophysics.com/#Radiological_Services)> (visited June 21, 2010). CoPhysics may have a NYSDOH radioactive materials license authorizing it to handle small amounts of radioactive materials, but this does not authorize the company to analyze radiochemistry.

6 In its April 10 report, at page 2, CoPhysics is careful to state that the company “is licensed to handle radioactive materials and provide radiological services by the NYS Department of Health” without, however, addressing whether it is an environmental laboratory certified by NYSDOH to analyze solid materials for radiochemistry.

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attached to NEWSNY's June 1 submission, "benzene may be present" in soil contaminated with "produced water," i.e., commingled produced water and stormwater. *See* "Material Safety Data Sheet" attached to May 28, 2010 Chesapeake letter. However, because no spill report from Pennsylvania DEP was made available, (*id.*), we cannot say what concentration of benzene characterizes the waste.<sup>7</sup> Because the presence of benzene in Marcellus shale well site spill wastes is new information that came to light during the issues conference and thus could not have been addressed at the time petitions were due, RFPLC seeks to supplement its petition by raising the issue whether drilling wastes identified in the petition are hazardous as well as radioactive such that they should not be disposed in the landfill. *See* Part 624.4(b)(5).

### Noise Issues

We continue to suffer from an absence of information regarding locations on the Cell IV-B working face where sufficient elevation will be reached to eliminate intervening terrain and thus subject sensitive receptors to excessive noise. A complete noise assessment is not possible without this locational information, but we have determined that without intervening topography and winds from the west, sound levels at the Garew property to the west of Cell IV-B will reach at least 60 dBA, (The Noise Consultancy, May 18, 2010, at 5) and a straight-line model results in a sound level at this location of 59.8 dBA, *Leq. Id.* at 6. An engineering map that shows the terrain at full build-out was made available by Ms. Schwartz earlier this week and has not been reviewed because a copy service is required to copy and send us the document.

In addition, we raised a supplemental issue in our May 19 submissions, (*see* Part 624.4(b)(5)), whether NEWSNY would operate its bulldozer in compliance with the limit at Part 360-1.14(p)

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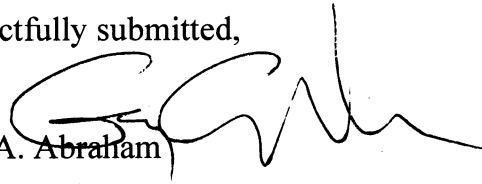
<sup>7</sup> The Department has identified benzene and other aromatic hydrocarbons as additives in fracturing fluid. DEGEIS at 5-62; Table 6.1 at 6-22. *See also* DGEIS at 5-32 ("fracturing fluid is an engineered product"); 5-107 ("[m]ost fracturing fluid additives used in a well can be expected in the flowback water"). These spill wastes can also be expected to concentrate radioactivity. According to the Department, "The composition of flowback water changes with time, depending on a variety of factors," including "mobilization of materials within the shale," and over time flowback water increases in radioactivity. DGEIS at 5-106. The same processes that concentrate radioactivity in spill wastes occurs when drilling wastes are generated. *Cf. id.*

(4). The Noise Consultancy, May 18, 2010, at 9. NEWSNY has responded that the bulldozer is utilized for construction purposes and operations will utilize a different model, but has not disclosed what that model is, its manufacturer's sound specifications, and whether it can be feasibly utilized to manage waste at the increased tonnage rate requested. Thus, this issue remains unresolved.

In his current report Mr. Szulecki finds that NEWSNY's compactor also exceeds the limit at Part 360-1.14(p)(4).

Respectfully submitted,

Gary A. Abraham



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cc: Service List w/encs. (via email and USPS)