

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

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corrected per 11/29/06 errata letter

Steven J. Doleski, Regional Permit Administrator
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, NY 14203-7165

Re: CWM Chemical Services, LLC, Supplemental Corrective Action Requirements
under Part 373 Permit Module II, Condition J

Dear Mr. Doleski:

Please accept the following comments on behalf of Niagara County on plans proposed by CWM under the above-referenced permit condition. The permit condition requires CWM to investigate radiological and chemical contamination in site soils, surface and ground water, a legacy of past dumping before CWM operations began. Specifically, the Department is considering approval of the following plans, proposed by CWM to comply with its permit (hereafter, the "plans"):

Site Radiological Survey Plan (rev. November 2006)
Radiation Environmental Monitoring Plan (rev. March 2006)
Generic Small Project Soil Excavation Monitoring and Management Plan (rev. March 2006)
Monitoring Plan for RMU-2 Groundwater Well Installations (rev. March 2006)
Sitewide Radiological Investigation Soil Sampling Plan (rev. May 2006)

The County criticized deficiencies in previous drafts of one or more of these plans, on May 11 and May 17, 2005, by unsolicited comments submitted to NYSDOH, and on July 26, 2006, in comments on the scope of a proposed new hazardous waste landfill unit (RMU-2) submitted to the Department. Unfortunately, the need for subsurface investigation of radiological contaminants identified in these comments has not been addressed.

Today we are submitting with these comments a new expert report addressing the deficiencies in the radiological survey equipment that would be used under CWM's plans. The County feels strongly that a hazard to public health and the environment will result if the lack of subsurface investigation and equipment deficiencies are not rectified prior to any excavation.¹

¹ The County also has serious concerns regarding the sufficiency of groundwater monitoring for radiological and chemical contaminants that will be the subject of future comments. The simplest method for determining whether such contaminants exist may be to sample stream bank seeps in the Central Drainage Ditch during wet weather, but this area has been specifically omitted from CWM's plans. *See*

The Department is therefore urged in the strongest terms to request further revisions to CWM's proposed plans that address these deficiencies prior to any approval.

Background

The manner in which the CWM plans have developed is important to understanding the County's concerns.

On December 23, 2003, CWM submitted a request to NYSDOH that the agency vacate outstanding orders issued in 1972 and 1974 requiring prior NYSDOH approval for any excavation at the site. The NYSDOH orders are based on a finding that, owing to past uses of the site authorized by the Atomic Energy Commission,² "hazardous radioactive emissions from the soil" occur on what is now CWM property.³

On May 14, 2004, CWM submitted a revised request to NYSDOH to consider a "phased approach" to NYSDOH approval of soil disturbing activities pending a determination on its request to have the NYSDOH orders vacated. CWM noted in its revised request that the phased approach is "necessary to accommodate the permitting of the proposed RMU-2 landfill."⁴ On June 9, 2004 the agency accepted the phased approach under which the plans listed above were submitted by CWM to NYSDOH.

On October 21, 2004 NYSDOH informed CWM that its plans must generate "technically defensible" data.⁵ On December 14, 2004 NYSDOH added that this data must fill in "data gaps" left by inadequate investigation and remediation in the past and cautioned that the agency's analysis of whether to vacate its orders "cannot be completed without detailed information from

Site Radiological Survey Plan, p. 16.

² The Atomic Energy Commission has been succeeded by the U.S. Department of Energy (DOE).

³ NYSDOH Order, In the Matter of Certain Property of the Fort Conti Corporation Located in the Town of Lewiston, Niagara County (April 27, 1972), p. 1. *Cf.* NYSDOH Supplementary Order (same matter, June 21, 1974).

⁴ Richard Sturges, CWM, to S. Gavitt, NYSDOH, May 14, 2004, p. 1.

⁵ "The Department has agreed to review requests for various projects proposed by CWM provided that adequate radiological surveys are conducted. We had indicated that we intend to use the existing DOE data as well as this additional radiological data, in evaluating CWM's request that the orders be vacated. Further, it was agreed during the July conference call that any radiological surveys would be conducted in such a manner to eliminate the need to revisit the surveyed areas. Any such data must be carefully documented and technically defensible. We understand that an adequate radiological investigation of CWM property is time consuming and costly, however, if data are not collected and documented properly, the data will not be useful for making any decisions on the orders." S. Gavitt, NYSDOH, to J. Hino, CWM, October 21, 2004, p. 2.

CWM on historical soil movements on the affected properties.”⁶

On June 17, 2005, NYSDOH clarified that data must be gathered under the plans “before we would approve plans to move soil.”⁷ With regard to radiological surveys based on a “site wide gamma walkover,” notwithstanding that “performance requirements for the instruments you plan to use to conduct these surveys” had not yet been submitted, NYSDOH approved commencement of the walkover survey subject to “changes to the plan, including frequency of sampling . . . based on results achieved.”⁸

On August 5, 2005, NYSDEC incorporated requirements that these plans be developed into the corrective action module of CWM’s Sitewide Renewal Permit.⁹ These requirements were added to the draft permit in part in response to numerous public comments addressing the risks posed by residual radioactive wastes on CWM property, but with no opportunity to comment on the draft plans.¹⁰ In response to a public comment specifically requesting public participation in the development of such plans, the Department responded that “steps will be taken to inform the public about the plan and the results of the required surveys and investigations. The Department will give consideration to soliciting comments from the public on the plans.”¹¹

⁶ S. Gavitt, NYSDOH, to J. Knickerbocker, CWM, December 14, 2004, pp. 1, 5. Specifically, NYSDOH found that past subsurface investigations (core sampling) either “did not occur,” occurred without any effort to detect important radiological contaminants that would be expected in the subsurface soils (e.g., Thorium-230), found such contaminants at levels above then-applicable release guidelines (e.g., Radium-226) and released those areas as clean anyway, or failed to prevent land development from burying or relocating on site excavated soils that were radiologically contaminated. Subsurface core samples that were taken on behalf of DOE in the early 1980s were substantially more limited than what is required to decommission radiologically contaminated sites (i.e., standards under NUREG-1727). *Id.*, pp. 2-4.

⁷ S. Gavitt, NYSDOH, to J. Knickerbocker, CWM, June 17, 2005, pp. 1. Specifically, NYSDOH directed CWM to include “wastes from KAPL [Knolls Atomic Power Laboratory] and the University of Rochester,” the Central Drainage Ditch and the west drainage ditch, and “subsurface contamination” in excavated and stockpiled soils in the scope of its survey plan. *Id.*, pp. 2-3.

⁸ *Id.*, p. 3.

⁹ Since 1985, as a condition of their permit, permittees of hazardous waste treatment, storage and disposal facilities have been required to “institute corrective action as necessary to protect human health and the environment for all releases of hazardous waste or constituents from any solid waste management unit at the facility, regardless of the time at which the waste was placed on such unit.” 40 CFR § 264.101. *Cf.* 6 NYCRR § 373-2.6(l); CWM Part 373 Sitewide Renewal Permit, Module II, p. 1.

¹⁰ NYSDEC Responsiveness Summary (Responses to Public Comments regarding RMU-1), Response to Comment 14 (available at <<http://www.dec.state.ny.us/website/dshmh/hzwstman/cwmmodelcity.html>>). Public comments on the renewal permit were received prior to April 17, 2003. *Id.*, Response to Comment 2.

¹¹ *Id.*, Response to Comment 14, Item 10.

Under the 2005 renewal permit the purpose of the plans is to “investigat[e] and control . . . historic chemical and radiological contamination that is known or potentially present in the environmental media on the property of the Permitted facility.”¹² However, in responses to Department comments on earlier drafts of the plans, CWM has made it clear that no historical site investigation will be performed, and no radiological surveys will be performed in areas that are “inaccessible due to dense vegetation, thick brush, trees, steep slopes and ponds” or areas that “are not part of CWM’s current operations.”¹³ Despite the remedial purpose of CWM’s plans,¹⁴ the Department appears ready to acquiesce in this restriction of the scope of the plans.

CWM has failed to provide a sufficient basis for deeming areas “inaccessible”

The Department should restrict the scope of inaccessible areas as proposed by CWM and require the company to provide a sufficient basis for excluding such areas from radiological surveys. There are no natural steep slopes on the site and those that exist are located where older lagoons and other SWMUs have been closed. These are areas where radiological contamination should be expected and therefore should be surveyed. Moreover, dense vegetation, thick brush and trees are not insurmountable obstacles to surveying. Surveys should therefore be conducted in areas with such features unless it is demonstrated they are truly inaccessible.

Need for subsurface investigation prior to any excavation

The Department should include subsurface investigation in the scope of surveys under the plans prior to approval of all but emergency and groundwater monitoring well excavations.

In scoping comments on the RMU-2 proposal submitted to the Department, the County stated, on the basis of expert opinion incorporated into the comments:

[1] ground penetrating radar should be used to determine the location and extent of buried radioactive waste; [2] CWM should demonstrate instruments used to survey surface contamination are sufficiently sensitive to measure proposed action levels of radiation; . . . [3] CWM should analyze further methods for specifying an acceptance rate for individual radionuclides where both water and soil are found

¹² CWM Part 373 Sitewide Renewal Permit, Module II, p. 24. This permit requirement supplements “eighty three (83) RFI [RCRA Facility Investigation] investigations at Solid Waste Management Units (SWMUs) and site-wide areas at the Model City facility” required under previous CWM permits, but none of these included investigation for radiological contaminants. plans. Id., p. 3. An RFI is ordinarily preceded by “a RCRA Facility Assessment (RFA) researching the history of the entire facility and identifying all potential SWMUs on the location.” 5-29 ENVTL. L. PRACTICE GUIDE §29.07[3], HSWA Corrective Action Requirements (2004). However, in this case no RFA is being required.

¹³ CWM, Response to January 25, 206 Department Comments on Revised Radiological Survey Plan, July 19, 2006, p. 17.

¹⁴ See above, footnote 7.

to be contaminated. . . . [4 In addition,] a more comprehensive assessment of the history of radioactive waste dumping at the Model City Facility than CWM has so far undertaken is called for. The County strongly urges the Department to require more information, particularly on subsurface radioactivity . . .¹⁵

The Department has taken the position that the purpose of CWM's radiological surveys should be to determine the scope of future action.¹⁶ However, the plans as currently proposed would use excavation as the only detection method for areas where subsurface radiological contamination exists. This approach is unacceptable from a public health standpoint because contaminated dust would be released into the environment before it can be detected and contained, and because workers would be the first exposed. Instead, at a minimum CWM should include in its surveys ground penetrating radar, and deep soil sampling (cores) where appropriate, in addition to radiological measurements of the site surface and testing surface soils.¹⁷ Only these or equivalent methods can detect the presence of isolated areas of subsurface contamination prior to excavation.¹⁸

The scope of proposed "small project" excavations is excessive

Subsurface excavation to a depth of several feet would be allowed under the "generic" excavation plan. Assuming strata that is consistently thick and whose area extent is known, excavated in-place earth and soil volumes can be calculated as follows:

$$V = T \times A \times (1/27)$$

Where,

V = volume (cubic yards)

A = surficial slope area (square feet)

T = thickness of strata or even cut (feet)¹⁹

¹⁵ G. Abraham (on behalf of Niagara County), letter to Steven J. Doleski, Regional Permit Administrator. Region 9, July 26, 2006, p. 3 (comment I.B.).

¹⁶ On October 18, 2006, the Department clarified that the purpose of CWM's radiological surveys should be to determine to determine the scope of future action rather than acceptance criteria for any area on CWM property. Cf. J.A. Banazak, CWM, to J. Strickland, NYSDEC, November 2, 2006 (response to NYSDEC Comments ##3, 4 and 5).

¹⁷ See G. Abraham to Steven J. Doleski, *supra*, p. 7 (identical language addressed to scoping RMU-2).

¹⁸ See Stephen M. Gavitt, NYSDOH, to Jill A. Knickerbocker, CWM, December 12, 2004, p. 5, top ("small isolated areas of [radiological] contamination exceeding the [DOE release] guidelines could be present in areas released by DOE").

¹⁹ See Daniel P. Duffy, P.E., "Taking the Measure of Methods for Estimating Earthwork Volumes," 6 GRADING AND EXCAVATION CONTRACTOR (September/October 2004) <http://www.forester.net/gx_0409_taking.html>.

Thus, where $A = 1,000$ sq. meters (10,764 sq. ft.), and $V = 150$ cu. meters (196 cu. yds.),

$$196 = T \times 10,764 \times 1/27,$$

$$5,292 = T \times 10,764,$$

$$T = 0.49 \text{ ft.}$$

Where $A = 100$ sq. meters (1,076 sq. ft.), and $V = 150$ cu. meters (196 cu. yds.),

$$196 = T * 1,076 * 1/27,$$

$$5,292 = T * 1,076,$$

$$T = 4.92 \text{ ft.}$$

In the last example, the area to be excavated could be a 1 x 100 meter (3.28 x 328 ft.) trench. The Generic Small Project Excavation Plan would therefore allow CWM to perform much of the work on stormwater upgrades required for RMU-2 prior to a complete permit application.

The County can find no justification for the scope of “small project” excavations CWM proposes, as there is no reason to believe this level of excavation is needed for existing operations. The only kinds of excavation that existing operations may require include emergency spills or leaks. Monitoring wells to determine baseline existing groundwater quality for RMU-2 may also be appropriate. Emergency excavations and excavation of specific groundwater monitoring wells can be approved on a case-by-case basis, and with real-time reporting that is absent from the “generic” plan. But such needs cannot justify the kind of generic pre-approval the Department is contemplating.

The substantially increased potential for exposure of workers, the general public and the environment to radiological and chemical contamination that would result from pre-approval for proposed “small project” excavation is an impact that should be reviewed in the context of the RMU-2 permit review. Pre-approval of up to 1,000 square meters and 150 cubic meters of earth, as contemplated under the currently proposed “Generic Small Project Soil Excavation Monitoring and Management Plan” is therefore inappropriate at this time. Small excavation projects may be appropriate if CWM can show a need that arises from current operations. In that case, such excavation projects should be reviewed on a case-by-case basis with substantially more oversight by the Department than current plans provide.

Equipment deficiencies

The attached technical memo by Mr. Buske concludes that the plans are unable to achieve their design goal under CWM’s permit because radiation survey equipment CWM proposes to use is inadequate.

At pp. 14-15 of his memo Mr. Buske shows that use of a multi-channel analyzer, in contrast to the single-channel analyzer proposed in CWM’s plan, allows low-energy gamma sources such as plutonium and its decay products to be detected. Increasing the energy spectra of

collected data would allow 36 million radiation measurements to be obtained, compared to approximately 1.8 million measurements as currently planned, thus dramatically increasing the amount of information that could be collected from the planned gamma walkover survey. See p. 16 of Mr. Buske's memo.

The absence of attention to such information in CWM's plan is indefensible in light of the known history of dumping of plutonium and fission product waste on the site and "the scarcity of reliable facts" about the exact location of such dumping. Id., p. 6. The County therefore urges the Department to require CWM to use equipment capable of collecting and analyzing radiological data appropriate to the known sources of radiological contaminants, including sources expected to emit low energy gamma radiation.²⁰

Inadequate use of collected data

At pp. 16-17 of his memo Mr. Buske concludes that, because CWM's Site Radiological Survey Plan as currently proposed is incapable of identifying low-energy radiation spectra, the plan is also incapable of identifying surface soil samples for alpha radiation analysis. Therefore, soil samples collected by CWM under its Sitewide Radiological Investigation Soil Sampling Plan would not be analyzed for the presence of plutonium and fission product waste.

In addition, the protocol for reporting collected data under the plan would avoid the level of detail in the collected data by converting one-square-meter measurement area to 2,000-square-meter reporting units.

In addition, the same gamma walkover proposed by CWM could detect low-energy gamma radiation, appropriate for the history of the site. However, the plan submitted to the Department uses equipment incapable of detecting low-energy gamma radiation. In other words, the plan is designed to specifically avoid detecting the presence of surface and near-surface radiation that would be expected from the kinds of waste that pose some of the most serious risks to public health and the environment.

Monitoring and analysis of low-gamma-energy radionuclides should be required prior to any excavation

Under CWM's permit, the Department may specify the radionuclides to be analyzed under the plans:

Aside from those samples and analyses already performed, radiological analyses

²⁰ CWM has, in advance of approval of any of the plans discussed here, "completed approximately 90% of the gamma survey walkover scan" called for under the proposed Site Radiological Survey Scan." J.A. Banazak, CWM, to J. Strickland, NYSDEC, November 2, 2006 (response to NYSDEC October 18, 2006, Comment #1 on September 2005 draft of the plan). However, the permit contemplates "a phased implementation of the [Gamma Walkover] Survey." CWM Part 373 Sitewide Renewal Permit, Module II, p. 25 (Site Radiological Monitoring Plan).

of all samples shall include isotopic uranium, isotopic thorium, radium-226 and radium-228, and gamma spectroscopy, and other radionuclides determined by the Department to be relevant to the media and location.²¹

The analytical results must be included with CWM's environmental monthly monitoring reports, submitted to the Department within 90 days of the last day of the reporting month.²²

Under the Generic Small Project Excavation Plan "small project reports will be included with the environmental monthly monitoring reports," subject to the same 90-day submission delay.²³ Any report a report on contaminants found in the course of small project excavations may therefore not be submitted for several months following the excavation. The Department should therefore require that the survey data be sufficient to justify any excavation prior to soil disturbance. This is consistent with the Department's position that the purpose of CWM's radiological surveys should be to determine the scope of future action.²⁴

The County urges the Department to require that, prior to any excavation, CWM obtain, analyze and submit to the Department its analysis of low-energy radiation spectra for all radionuclides listed in Table 1 of Mr. Buske's technical memo.

Respectfully submitted,

/s/

Gary A. Abraham
Special Counsel for Niagara County

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cc: David Stever, Esq., NYSDEC Regional Attorney, Region 9 (via email)
Paulette Kline, Director Niagara County Health Dept. (via email)

²¹ CWM Part 373 Sitewide Renewal Permit, Module II, p. 25 (Site Radiological Monitoring Plan).

²² Id. and CWM Part 373 Sitewide Renewal Permit, Module I, Cond. C.5.

²³ Generic Plan, Section IV.

²⁴ See above, footnote 12.