

STATE OF NEW YORK  
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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APPLICATIONS OF CWM CHEMICAL SERVICES, LLC,  
for Permits pursuant to Articles 17, 19, 24, and 27 of the  
Environmental Conservation Law (ECL); Parts 201-5 (State  
Air Facility Permits), 373 (Hazardous Waste Management  
Facilities), 663 (Freshwater Wetlands Permit Requirements),  
750 (State Pollutant Discharge Elimination System Permits)  
of Title 6 of the Official Compilation of Codes, Rules and  
Regulations of the State of New York; Section 401 of the  
federal Clean Water Act; and 6 NYCRR 608.9 (Water  
Quality Certifications); and for a Certificate of  
Environmental Safety and Public Necessity pursuant to  
6 NYCRR Part 361 (Siting of Industrial Hazardous Waste  
Facilities)

**REPLACEMENT  
APPEAL OF ADMINISTRATIVE  
LAW JUDGE’S RULING ON  
PROPOSED ISSUES FOR  
ADJUDICATION**

DEC Permit Application Nos.9-2934-00022/00225,  
9-2934-00022/00231, 9-2934-00022/00233,  
9-2934-00022/00232, 9-2934-00022/00249

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## INTRODUCTION

In a timely petition for full party status, Niagara County, the Town and Village of Lewiston, and the Village of Youngstown (the municipalities) identified excavation safety among several issues for adjudication based on the history of burial, storage and transfer of radioactive materials at the CWM facility site, the poorly recorded history of soil movement at the site, the record of failed remediation of onsite residual radioactivity,<sup>1</sup> CWM's failure to properly estimate emissions of potentially contaminated dust (CWM asserts no such emissions would occur), and deficiencies in methods and practices of CWM to characterize areas presumed to be contaminated and proposed for major excavation under its RMU-2 Project proposal. The municipalities offer to prove that radioactive wastes from across the north-eastern U.S. were buried or dumped on the surface in the central portion of the CWM site, where RMU-2 development would occur; that subsequent private development in that area resulted in redistribution and burial of radioactive contamination that hindered remedial efforts; and there has been no complete radiological characterization of the areas of RMU-2 development. Under these circumstances, the municipalities propose that a characterization study followed by remediation and a final status survey where warranted, be added as a condition to the permit modification CWM seeks.<sup>2</sup>

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<sup>1</sup> *Cf.* Ruling, 25 (the "history of facility operations" may be considered by the Siting Board).

<sup>2</sup> *Cf.* Ruling, 128 ("The municipalities recommend that CWM conduct a radiological subsurface investigation 'in compliance with relevant standards,' and then undertake any necessary remediation prior to any excavations on the site of the Model City facility. (See Municipalities October 2, 2015 letter at 1.) To further substantiate the municipalities' contention, Dr. Resnikoff outlines his review and criticisms of the April 2009 URS report in greater detail

The safety of mass excavation on this site is a substantive and significant issue not only under the circumstances of the history of facility operations, but under the Department's standards for qualifying for a variance.<sup>3</sup> CWM requests several variances from the Department's hazardous waste regulations,<sup>4</sup> and as discussed below requires at least one additional variance.<sup>5</sup>

Only one area to be excavated, a surface impoundment known as Fac Pond 8, the proposed location for the first cell of the RMU-2 landfill, has been the object of intensive investigation and there the investigation has been *ad hoc* and incomplete. Nevertheless, 125 tons of radioactive soils were recently removed from a portion of the impoundment, and substantial radiological contamination remains in place. Fac Pond 8, like the remainder of the areas to be excavated under RMU-2, has not been fully or adequately characterized. The Fac Pond 8 experience reflects the larger problem of the risk of unearthing radioactive constituents during

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(see Resnikoff October 2, 2015 report at 5-7).”). The reference to the Resnikoff report should cite pp. 13-14. *See also* DEIS, 52 (relying on the April 2009 URS report in support of the conclusion that little or no radiological contamination in the areas of RMU-2 project development is anticipated).

<sup>3</sup> *See* Petition, 8 (citing 6 NYCRR § 373-1.1(e)(1)(iii)).

<sup>4</sup> *Cf.* Part 373 Applic., Appx. D-2, at 1-2 (requesting variance from 6 NYCRR §§ 373-2.2(k), 373-2.11(b), (j) and (k) (double liner requirement for Fac Ponds 1&2)); Draft Part 373 Permit Modification for RMU-2, Mod. I, Schedule 1, Condition C.1.c (variance from 6 NYCRR § 373-2.10(d)(7) (secondary containment requirements for Tank T-58)); *id.*, Condition C-2e(2) (variance from 6 NYCRR § 373-2.2(e) (requiring a waste analysis plan that includes representative grab sampling for waste receipts required under the Land Disposal Restrictions, 40 CFR Part 268). In addition, CWM seeks an exemption to the air emission standards of section 373-2.29 for proposed and modified surface impoundments in accordance with section 373-2.29(c), which ordinarily triggers waste analysis requirements under 6 NYCRR § 373-2.2(e)(2)(viii). *See* Draft Part 373 Permit Modification for RMU-2, Mod. V, Ex. E, subpara. C.1.2.

<sup>5</sup> *See below*, point 4 under “Grounds for Appeal”.

excavation at this site and exposing workers and the public. The Ruling recommends that no further investigation or characterization of areas to be excavated be required prior to construction of the RMU-2 landfill, a new surface impoundment, and additional ancillary structures.<sup>6</sup> Because this recommendation would deprive the Department, the Siting Board and other involved agencies of the minimum information needed to determine whether the potential impacts of excavation would be safe, the municipalities appeal this portion of the Ruling.<sup>7</sup>

### **BACKGROUND**

Among the approvals sought for the RMU-2 Project proposal, CWM seeks a modification of the current sitewide renewal permit under Part 373, last renewed in 2013, to accommodate the proposed project. Accordingly, the proposal must be consistent with the current Part 373 permit unless the current permit's terms and conditions are specifically requested to be modified.<sup>8</sup> The draft Part 373 Permit for the RMU-2 Project incorporates without modification the following requirements.

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<sup>6</sup> See Ruling, 134.

<sup>7</sup> As discussed below, the DEIS in this matter fails to evaluate such impacts at “a level of detail that reflects the severity of the impacts and the reasonable likelihood of their occurrence,” as SEQRA requires. 6 NYCRR § 617.9(b)(5)(iii). As a result involved agencies will be unable to certify that such impacts “will be avoided or minimized to the maximum extent practicable by incorporating as conditions to the decision those mitigative measures that were identified as practicable.” 6 NYCRR § 617.11(d)(5). The certification is required where approval would create a potentially significant “hazard to human health.” 6 NYCRR § 617.7(c)(1)(vii).

<sup>8</sup> The Ruling, at 137, states that the municipalities challenge “the terms and conditions of the 2013 site-wide Part 373 renewal permit as they relate to the closure and remediation of Fac Pond 8,” but we do not. As discussed below, our petition relies on those terms and conditions and CWM's failure to meet them as relevant to the excavation safety issue.

For small excavation projects, excavated soils must be scanned for radiological contaminants at every six inch lift. Small projects are defined as those where excavation will not exceed 1,000 square meters or 150 cubic meters.<sup>9</sup> Ten large CWM excavation projects have been approved by the Department. The limited scale of each of these projects has enabled CWM to accommodate scanning of excavated soils *in situ* in six-inch lifts.<sup>10</sup> Accordingly, the Department has determined that the six-inch-lift radiological scanning protocol provides a reasonable assurance of safety at this site.<sup>11</sup>

Prior approval for excavation is required at the CWM site because the site was utilized for radioactive waste disposal and storage during the nation's atomic energy program (Manhattan Engineer District).<sup>12</sup> Most of the storage and disposal of radioactive waste during federal management of the site "occurred in the vicinity or within the footprints for the proposed RMU-2 landfill and Fac Pond 5".<sup>13</sup> In 1972 the New York State Department of Health reviewed the history of federal efforts to decontaminate CWM's site and found those efforts to be insufficient

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<sup>9</sup> *Cf.* Ruling, 119; Municipalities' Petition for Party Status, ("Pet."), 50. These excavation planning requirements were first incorporated into CWM's Part 373 Permit with the Department's 2005 sitewide permit renewal. The excavations CWM has completed under these plans involve routine facility maintenance or upgrades.

<sup>10</sup> IC Tr. 120, 523-524, 532-533.

<sup>11</sup> The Ruling, at 119, notes only that "the municipalities note that the construction of the proposed RMU-2 landfill would depart from the safety standard established for small excavations." As shown above, the safety standard has been applied to all excavations, large and small, without exception.

<sup>12</sup> Ruling, 117.

<sup>13</sup> Ruling, 121; Pet., Appx., 1-3. *Cf. id.*, 4, Fig. A-2 for a map of the precise area of radioactive waste management.

to protect public health and safety, warranting an Order prohibiting excavation. In 1974 NYSDOH amended the order to allow site development limited to slab foundations, and to allow soil movement with prior approval from NYSDOH. However, between 1972 and 1974 CWM's predecessors Chem-Trol Pollution Services and SCA Chemical Services conducted substantial soil movement apparently without regard to the 1972 Order,<sup>14</sup> as did CWM after 1974.<sup>15</sup> In 2003-2005 at CWM's request, NYSDOH revisited the 1972 Order and examined the methods and results of radiological investigations after the 1970s. Based on that reexamination NYSDOH determined that previous investigations and decontamination efforts were seriously deficient and reaffirmed the amended 1972 Order.<sup>16</sup> The Department included the requirement for prior NYSDOH approval of soil movement in CWM's 2005 Part 373 sitewide renewal permit.<sup>17</sup> CWM conducted no radiological surveys or remediation for radiological contamination prior to 2005.<sup>18</sup>

Prior to the planning requirements that now govern on site excavation,<sup>19</sup> in 1985 CWM investigated radiological contamination on site based on the history of federal and private use of the site. The investigation results map several areas of potential radiological contamination within the proposed RMU-2 excavation areas.<sup>20</sup> CWM has elected to defer remediation of these

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<sup>14</sup> Pet., Appx. at 20.

<sup>15</sup> Cf. NYSDOH letter to CWM, dated December 14, 2004 (cited *below* at note 33).

<sup>16</sup> Pet., 45-49.

<sup>17</sup> Pet., 50.

<sup>18</sup> *Contra* Ruling, 120 ("Since 1984, CWM or its contractors have undertaken surveys and remediation projects on the site of the Model City facility."). Cf. the next paragraph in the text.

<sup>19</sup> See *below*, p. 8.

<sup>20</sup> Pet., Appx. at 39-40.

areas to the U.S. Army Corps of Engineers.<sup>21</sup>

The central portion of the CWM site where RMU-2 related excavation would occur is comprised of several “Vicinity Properties” to the Niagara Falls Storage Site (NFSS) designated by the U.S. Department of Energy (DOE), for purposes of radiological investigation.<sup>22</sup> From 1982 to 1986, DOE consolidated in a diked containment approximately 240,000 cubic yards of radioactive residues and wastes found to be widespread on the NFSS site. DOE investigations led to a 1992 report certifying that federal decontamination efforts would reduce surface exposure at most VPs to below federal standards<sup>23</sup> (except for portions located beneath existing landfills, surface impoundments or actively used buildings).<sup>24</sup> The municipalities contend (*contra* the DEIS)<sup>25</sup> that despite these efforts the VPs on CWM’s property where RMU-2 development would occur remain contaminated.<sup>26</sup>

In 1997 federal responsibility for investigating the VPs passed from DOE to the U.S.

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<sup>21</sup> Pet., Appx. at 40-42.

<sup>22</sup> *Cf.* Pet., Appx. at 10, Fig. A6.

<sup>23</sup> 50 uR/hr. whole-body dose limit, and 25 mrem/yr.; the NYSDEC standard is 20 uR/hr., and 10 mrem/yr. *Cf.* Pet., 69-71 and *id.*, Appx. at 12. These standards apply to sites released for unrestricted use, and the standard applies to released federal sites where, as here, long-lived radionuclides of concern are identified such that institutional controls cannot be relied on to protect future land users for as long the contaminants remain harmful. Pet., 70-71.

<sup>24</sup> Ruling, 117. *Cf.* Pet., Appx. at 27.n.72.

<sup>25</sup> DEIS, sec. 3.1.2 (“Site Radiological Background”) asserts these three VPs could not be certified decontaminated solely because areas to be investigated were inaccessible, but subsequent reviews of federal investigation reports show accessible portions of the VPs remained contaminated after remediation efforts. *See discussion at* Pet., Appx. at 21-39. Note that the Ruling relies on the DEIS account. Ruling, 117.

<sup>26</sup> Pet., Appx. at 21-39.

Army Corps of Engineers. In 2004, the Corps found high levels of Radium-226 on VPH', previously certified as decontaminated by DOE. VPH' is in the central portion of the CWM facility, but outside the RMU-2 development areas.<sup>27</sup> In 2007, the Corps reported the results of its remedial investigation of the NFSS. The report concluded that areas previously remediated by DOE remain contaminated above DOE criteria, prompting USEPA to recommend that the Corps re-investigate all NFSS Vicinity Properties.<sup>28</sup> For VPG, the Corps found “evidence of materials that remain on this parcel after three cleanups of the property . . . consistent with the historical use of the property as a burial area”, including “laboratory debris, K-65 residues,<sup>29</sup> and other chemical and radiological [constituents].”<sup>30</sup>

As previously noted, in 2004 NYSDOH came to essentially the same conclusion for all VPs. This conclusion is the outcome of research the agency conducted in response to a 2003 request by CWM to vacate the 1972 NYSDOH Order restricting excavation at the Model City site.<sup>31</sup> The 1972 Order is based on a finding that site radiological contamination had not been properly remediated or surveyed by federal agencies.<sup>32</sup> In 2004, NYSDOH concluded DOE's

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<sup>27</sup> Pet., Appx. at 47,48.

<sup>28</sup> Pet., Appx. at 43.

<sup>29</sup> K-65 is high-activity residue generated by processing high content uranium ore from the Belgian Congo.

<sup>30</sup> Pet., Appx. at 44 (quoting *Final Report, Results of Site Investigation and Drum Removal – Vicinity Property G, Niagara Falls Storage Site, Lewiston, NY* (January, 2009)). The Corps found both accessible and inaccessible areas to be contaminated.

<sup>31</sup> See Ruling, 117, 136.

<sup>32</sup> Pet., 46.

1992 certifications are unreliable because as a result of CWM's development of the site at the time of DOE's investigations, "on-going earthmoving activities . . . had the potential to obscure the detection of contamination in the soil and to relocate contaminated soil to other parts of the property", including VPA, VPB, VPC, VPD, VPE, VPE', VPF, and VPG. NYSDOH called attention to current investigation guidelines requiring at least one subsurface soil sample for every 100 square meters, and noted that federal surveys obtained fewer than one sample for every 1,000 square meters. Also important was the substance of the various Vicinity Property reports that provided the basis for DOE's 1992 certification, as the reports indicate that the VPs could not be fully characterized. NYSDOH concluded that it could not vacate the 1972 Order as amended without additional "technically defensible" data.<sup>33</sup>

CWM responded by withdrawing its request that the 1972 Order be vacated, and opted to work within the amended NYSDOH Order. CWM undertook *in situ* radiological scanning of soils during routine excavations and conducted a surface survey of accessible areas of the site. The surface survey found a limited number of hotspots, but the survey method avoided areas with brush and other vegetation. The municipalities criticized the surface survey because of its limited coverage, and because the radiation detection instrument was held three times higher above the ground surface than called for by relevant standards.<sup>34</sup>

The municipalities also criticized a CWM subsurface study of the areas proposed for

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<sup>33</sup> Pet., 46-48, discussing Stephen M. Gavitt, Bureau of Environmental Radiation Protection, NYSDOH, Letter to Jill A. Knickerbocker, CWM, December 14, 2004. This letter was provided with the municipalities post-issues conference submission, dated July 3, 2015.

<sup>34</sup> Pet., 58-60; Pet., Resnikoff Report, 14; Resnikoff-Travers Report.

RMU-2 development.<sup>35</sup> The subsurface study was conducted at the Department's request in order to obtain information on potential contamination of soil and sediment to be excavated for the RMU-2 Project. The Department directed that the information be included in the RMU-2 DEIS.<sup>36</sup> The investigation was designed to provide no more than "a screening level characterization intended to provide confidence in the general condition of targeted materials"<sup>37</sup>— not a subsurface radiological characterization of areas to be excavated. The subsurface soil sampling investigation was criticized by the municipalities for its limited coverage, and for failing to report the required data specified in the approved work plan. Less than one percent of the missing data was provided, after the issues conference at the municipalities' request.<sup>38</sup> The municipalities responded to the submittal with an expert report noting that much of the required data was not recorded, and the approved work plan was not followed, as the plan requires radiological screening of soil cores along their entire length on contact with the sample. The investigation log shows that soil cores were screened at predetermined locations along their length, laboratory analysis was limited to samples from those portions of the core, and no soil cores were screened

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<sup>35</sup> Pet., 60-65; Pet., Resnikoff Report, 13-17; Resnikoff, "Review of RMU-2 Project Specific Soil Excavation Monitoring and Management Plan," October 2, 2015.

<sup>36</sup> URS Corporation, "Results of Subsurface Soil and Pond Sediment Sampling for RMU-2" (April 2009), 1. *Cf.* Ruling, 128, 135.

<sup>37</sup> CWM, "Draft Work Plan – Subsurface and Pond Radiological Sampling" (July 2008), included as Appendix A to the investigation report cited in the Ruling, at 130 ("Results of Subsurface and Pond Radiological Sampling for RMU-2" (April 2009)).

<sup>38</sup> *See* IC Tr., 524, 566-568, 643.

along their length.<sup>39</sup>

For RMU-2 related excavations CWM has prepared a large-project Soil Excavation Monitoring and Management Plan (SEMMP).<sup>40</sup> Following the issues conference, on August 10, 2015 counsel for Department staff (Mr. Stever) transmitted a revised SEMMP, dated May 2015, via email, noting that NYSDOH and DEC staffs “deem acceptable” the revision.<sup>41</sup> On August 11 CWM stated, via email, that it accepts the revised SEMMP. Criticisms of the revised SEMMP by the issues conference participants and the Niagara County Health Department Director were rejected by the staffs, as reflected in Mr. Stever’s August 10 email. Accordingly, there appears to be no dispute between DEC staff and the applicant about the adequacy of the revised SEMMP, and in particular about the safety of the plan.

### GROUND FOR APPEAL

Approval of the RMU-2 SEMMP as revised would allow excavation at the site on a massive scale without prior characterization of the areas to be excavated.<sup>42</sup> Instead, as the municipalities’ consultant reported:

The soil will be excavated and placed within the haul trucks and driven to either a separate stockpile area or directly to a location for the construction of RMU-2, i.e.

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<sup>39</sup> Resnikoff, Memorandum: “Adequacy of URS raw data disclosure,” June 12, 2015, submitted to the Service List under a cover letter by the undersigned of the same date.

<sup>40</sup> See Part 373 Application, Reference Documents, “RMU-2 Project Specific Soil Excavation Monitoring and Management Plan” (rev. Nov. 2013).

<sup>41</sup> All subsequent references to the SEMMP are to the May 2015 version.

<sup>42</sup> *Cf.* Pet., 42 (“Legacy surface and subsurface radiological contamination in the areas to be excavated for the RMU-2 Project has not been adequately characterized.”).

berms or subgrade. For soils to be placed in a stockpile, a lightweight separator textile will be placed upon the ground to act as an indicator/barrier between the soils and the existing ground. For soils to be used directly in construction of the RMU-2 berms and subgrade, soils will be placed directly on the ground within the body of the landfill.<sup>43</sup>

Soil erosion calculations are not provided in the SEMMP, the DEIS or elsewhere in the CWM applications, nor are dust control measures specified.<sup>44</sup>

The Ruling acknowledges that the extent of radiological contamination at the site is not fully known, since Department staff would rely on “monitoring excavations” during construction to “determin[e] the full extent of any contamination.”<sup>45</sup> If such monitoring detects contamination, construction would be suspended. “If excavation and construction activities are suspended, the revised May 2015 project-specific SEMMP states that the prevention of air dispersion and run-on/run-off control would be priorities. Access to the affected area would be restricted until a decision and course of action is developed.”<sup>46</sup> The Ruling concludes that this protocol will not expose workers and persons off-site to dangerous radiological contaminants.

For this conclusion the Ruling relies on an historical account of radioactive waste

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<sup>43</sup> Marvin Resnikoff, “Review of [the revised] RMU-2 Project Specific Soil Excavation Monitoring and Management Plan,” October 2, 2015, 4. A concern with radon exposure of workers inside Fac Pond 8, (*id.*, 8-13), was withdrawn as a proposed issue. I.C. Tr., 573.

<sup>44</sup> Pet., Sahu Report (dated November 19, 2014), at 9-11, 14; Municipalities corresp., October 2, 2015 (comments on SEMMP), Sahu Report (dated September 30, 2015). *See also* Municipalities corresp., June 12, 2015, Sahu Report, at 4 (regarding “radiological contaminant emissions from construction activities,” the municipalities’ emissions consultant reporting that “CWM has provided no technical basis as to the lack of or level of these emissions”).

<sup>45</sup> Ruling, 123 (citing Staff Response to Petitions at A-45 to A-46).

<sup>46</sup> *Id.*, 125 (citing SEMMP, at 6).

management on site provided in the DEIS;<sup>47</sup> a 1992 DOE certification that onsite Vicinity Properties were decontaminated, with the exception of inaccessible areas on VPE, VPE', and VPG;<sup>48</sup> August 24, 2007 correspondence from then-Deputy Commissioner Val Washington;<sup>49</sup> responses to the Petition by Department Staff and AECOM on behalf of CWM; CWM's 2008 surface radiological survey; and a conclusion that under the RMU-2 SEMMP 100% of the excavated area will be evaluated prior to any soil movement.<sup>50</sup> Based principally on its finding that federal radiological investigation guidelines are not applicable to RMU-2,<sup>51</sup> the Ruling rejects the municipalities' concern that CWM's Fac Pond 8 investigation reflects the potential for widespread subsurface radiological contamination.

As will be discussed below, an appendix to the municipalities' petition shows that the historical account provided in the DEIS is inaccurate and incomplete; the record shows that subsequent to the 1992 DOE certification, areas certified as meeting federal decontamination criteria have been discovered to be contaminated; the Ruling specifically misapprehends the Deputy Commissioner's August 24, 2007 letter discussing radiological safety; staff's responses misapprehend the results of the Fac Pond 8 investigation; and under the RMU-2 SEMMP,

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<sup>47</sup> Ruling, 134.

<sup>48</sup> Ruling, 117.

<sup>49</sup> Ruling, 136.

<sup>50</sup> *Id.*

<sup>51</sup> Ruling, 134 (“differing expert opinions about conducting investigative surveys consistent with the guidance outlined in MARSSIM is not an issue for adjudication. MARSSIM is not a rule or a regulation.”) The limited relevance of MARSSIM to this proceeding is acknowledged and discussed below.

excavated areas would not be evaluated prior to hauling the excavated soils outside the excavated area.

***1. The history of site operations and radiological investigations demonstrates a potential for widespread subsurface contamination.***

The municipalities submitted, as an appendix to the petition, a detailed radiological history of the CWM site because the DEIS lacks the necessary information to enable the reviewing agencies and the public to fully understand the potential for adverse impacts resulting from excavation associated with RMU-2. The Ruling nevertheless relies on the DEIS for the present radiological status of areas to be excavated for RMU-2:

The footprint for the proposed RMU-2 landfill and the related modifications to the Model City facility would occupy all or portions of Vicinity Properties B, C, D, E, E', F, G, and K (see DEIS, Figure 3-13). Except for Vicinity Properties E, E', and G, DOE certified, on May 7, 1992, that the Vicinity Properties that comprise the site of the Model City facility complied with federal decontamination criteria. DOE did not certify Vicinity Properties E, E', and G because portions of these Vicinity Properties were not accessible for evaluation. . . . According to the DEIS, the footprint for the proposed RMU-2 landfill would not be located on those portions of the three Vicinity Properties (i.e., E, E', and G) that could not be accessed when DOE issued the 1992 certification. (See DEIS at 50-51).<sup>52</sup>

This is an incomplete account of the status of the identified Vicinity Properties generally, as it neglects the fact, pointed to by the municipalities, that subsequent to DOE's 1992 certification, the Army Corps found the VPs remain contaminated.<sup>53</sup>

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<sup>52</sup> Ruling, 117.

<sup>53</sup> Pet., Appx. at 42-44, 47, 48.

The DEIS also makes a broad assertion, that CWM's surface radiological survey confirms DOE's 1992 finding that the CWM property was properly decontaminated and future use would pose no health threat.<sup>54</sup> This assertion was thoroughly reviewed by the municipalities' expert and found to be baseless.<sup>55</sup> In 2005, NYSDOH reached the same conclusion.<sup>56</sup>

The misplaced reliance on the 1992 DOE certification in the DEIS is illustrated by VPC. This area remains radiologically contaminated despite DOE certification that it meets federal release criteria.

VPC is the area on which Fac Pond 8 is located. In 2005, a radiological surface survey revealed contamination in the floor and east berm of the pond. A follow up survey conducted in 2007 and samples taken and analyzed by the Department showed preliminary Ra-226 concentrations of 2,490 – 264,996 pCi/g of Radium-226.<sup>57</sup> Subsequent remediation removed 125 tons of contaminated soils from the pond floor and the east and north berms, but an extensive layer of radiologically contaminated soil midway downslope 7-12 feet through the north berm remains in place.<sup>58</sup> Characterization of the pond structure as a whole has not been performed.

According to the DEIS, VPG was not certified for release because soil beneath the berms

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<sup>54</sup> DEIS, 52.

<sup>55</sup> Pet., Resnikoff-Travers Report.

<sup>56</sup> NYSDOH letter to J. Devald, Niagara County Health Department, July 16, 2010, at 2 (noting that NYSDOH has advised CWM that radiological investigations are not designed to confirm DOE's 1992 certification, but rather to achieve a more limited purpose, to ensure workers at the facility are not being exposed to surface radiation). *Cf.* Pet., 56 (citing same).

<sup>57</sup> Pet., Appx. at 46-47.

<sup>58</sup> Pet., 67.

of Fac Pond 1&2 is inaccessible.<sup>59</sup> However, remediation was performed on the remainder of VPG.<sup>60</sup> In 2009 the Army Corps of Engineers reported that, despite three cleanups, VPG was still contaminated above federal decontamination criteria. The Corps proposes to conduct a remedial investigation on the property once the ponds (Fac Ponds 1 & 2) are removed.<sup>61</sup> VPG is the location CWM proposes for creation of a mitigation wetland, which would conflict with further investigation and remediation of the area by the Corps.<sup>62</sup>

VPH' is another VP located in the central portion of the CWM site, but outside the RMU-2 development areas. In 2005 significant radiological contamination was found on VPH' by the Army Corps. Subsequent sampling revealed Radium-226 in concentrations up to 836 pCi/g and Thorium-230 up to 394 pCi/g, levels far in excess of federal decontamination criteria.<sup>63</sup>

As shown above, DOE's 1992 certification has clearly been disconfirmed. The DEIS account of present radiological status of areas to be excavated for RMU-2 is therefore clearly inaccurate.

The DEIS is also incomplete. The DEIS does not acknowledge that CWM's 2011 remediation of Fac Pond 8 was not successful, despite the removal of MED contamination from

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<sup>59</sup> See DEIS, 51.

<sup>60</sup> Pet., 54.

<sup>61</sup> Pet., Appx. at 43-44.

<sup>62</sup> DEIS, 169 ("To mitigate for the unavoidable permanent loss of wetlands within the Project area, CWM is proposing the creation of a 4.3-acre successional wetland on a 21-acre parcel of land owned by CWM immediately west of Fac Ponds 1 and 2."). See DEIS, Fig. 3-13 (map of all VPs). See also Pet., 47-48.

<sup>63</sup> Pet., Appx. at 47-48.

pond floor and the east and north berms of the pond. Radiological characterization of the pond structure in 2010, including a surface survey and subsurface sampling of the north berm, found no contamination in the north berm. The 2011 discovery of extensive MED contamination in the north berm occurred as part of a confirmatory pre-remediation survey. Later, when performing a final survey on the north berm an extensive layer of atypical radioactive contamination was found in the subsurface. This layer of radioactive waste remains in place.<sup>64</sup> The DEIS omits this important information, which invalidates the 2010 Fac Pond 8 characterization study and subsequent Remedial Action Plan. The remedial plan was based on the 2010 characterization.<sup>65</sup> The DEIS acknowledges only the 2011 discovery of the lens of atypical radioactive contamination in the northern berm.<sup>66</sup>

Based on these offers of proof, the municipalities contend that legacy radiological contamination within Fac Pond 8 is more extensive than CWM has disclosed to Department Staff

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<sup>64</sup> See Pet., 65-67 (an account of the Fac Pond 8 investigations) (citing Pet., Resnikoff Report, “Review of CWM Radioactive Sampling Program in the Proposed RMU-2 Development Areas” (November 2014), at 6). The underlying documentation for these assertions is the completion report for the subsurface investigation of the north berm of Fac Pond, cited at Pet., 70.n.225.

<sup>65</sup> CWM (LATA), “Remedial Action Plan: Facultative Pond 8”, June 2011, 5:

A site-wide gamma walkover survey (GWS) was performed between 2005 through 2008 that involved a gamma radiation surface survey of all accessible areas of the property (i.e., approximately 450 acres). A more detailed investigation that included soil sampling and analysis was conducted on those areas that exceeded the accepted radiological investigation level (URS, 2009).

*Cf.* Pet., 66-67 (discussing LATA’s completion report, following implementation of its remedial action plan). *Cf. also* CWM, Responses to Petitions, February 27, 2015, Ex. 3 at I-110 (DEC Staff’s discussion of the LATA remedial action plan).

<sup>66</sup> DEIS, 53.

and that the pond continues to require a defensible characterization in order to identify and remediate the contamination.

During the issues conference Department staff stated that the investigative surveys and monitoring undertaken at the CWM site have not shown any significant source of radioactive constituents that could pose an airborne hazard.<sup>67</sup> Apart from the impossibility the municipalities would face proving this negative, staff's statement ignores the substantial radiological contamination found in Fac Pond 8, and the limited success of DOE's decontamination efforts. Staff's statement also neglects the results of on site excavations after the 2005 renewal of CWM's Part 373 permit, which requires plan approval and reporting for all excavations. Most of these excavations reportedly removed radiological contamination.<sup>68</sup> Staff's statement also neglects the fact that, compared to CWM's 2003 RMU-2 project proposal, the RMU-2 landfill footprint has been moved westward, and modifications to Fac Pond 1&2 have been abandoned, in order to avoid radiological contamination in those areas.<sup>69</sup>

CWM contends that site radiological contamination was addressed under its 2013 Part 373 renewal permit. In support of that contention CWM submitted Department staff's responses to the municipalities comments on the 2013 Part 373 renewal permit.<sup>70</sup> The Ruling appears to rely in part on CWM's submittal.<sup>71</sup> However, CWM's submittal shows the opposite.

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<sup>67</sup> Staff Response to Petitions, "Abraham Party Status Petition: Proposed Issues", at A-29.

<sup>68</sup> The municipalities offered to provide these reports. Ruling, 128.

<sup>69</sup> See I.C. Tr., 524-527.

<sup>70</sup> CWM, Response to Petitions, Exhibit 3.

<sup>71</sup> See Ruling, 122.

Staff's responses to the municipalities' 2013 comments state:

In February 2012, CWM submitted a Radiological Investigation Work Plan prepared by LATA for the area of elevated radiation readings on the *inside of Fac Pond 8's east berm* which was identified during 2010 investigations. This plan was revised in March 2012 in response to NYSDEC comments and determined to be acceptable by NYSDEC. This plan was reviewed and deemed acceptable by NYSDEC in consultation with NYSDOH. This plan was intended to define the vertical and horizontal extent of the radiological contamination identified in the berm soils through analysis of soil borings. CWM's contractor (LATA) has performed the sampling and CWM submitted a report containing the results in July 2012.<sup>72</sup>

This response too fails to consider the 2011 discovery of MED contamination in the northern berm of Fac Pond 8.<sup>73</sup> Contaminated soils on the east berm identified during the 2010 characterization were removed in 2011. However, staff's response to the municipalities' petition indicates staff is unaware of the MED contamination discovered in the north berm in 2011, and unaware of the layer of apparently non-MED radiological contamination midway downslope within the north berm, also discovered in 2011.<sup>74</sup> Neither source of contamination was detected during the 2010 characterization. Staff confuses the east berm where elevated readings were found in 2010, with the north berm downslope contamination, which remains in place.

The municipalities agree that, as staff states above, the goal of the approved Fac Pond 8 remediation plan was to provide a three-dimensional understanding of the amount and extent of

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<sup>72</sup> CWM, Response to Petitions, Exhibit 3, NYSDEC Response to Comment 44, at I-110 (emphases added).

<sup>73</sup> *See above*, pp. 15-16.

<sup>74</sup> *See Staff Response to Petitions, A3, "Radiological Issue – 2", at 2 (submitted February 27, 2015) ("The Resnikoff Report lacks a reference to redistribution of contamination and burial of [radioactive] materials [in Fac Pond 8].")*.

radiological contamination in the pond structure. This was also the goal of CWM's 2009 subsurface soil sampling program for all areas of disturbance under the RMU-2 proposal. However, we offered to show that neither the Fac Pond 8 investigation or the larger subsurface investigation achieved that goal.<sup>75</sup>

The Ruling fails to consider our offers of proof and relies instead on an inaccurate and incomplete account of the radiological status of the site, and staff's misapprehension of the status of Fac Pond 8, whose contaminated soils must be removed for the RMU-2 landfill.

***2. The deficient methods and limited scope of CWM's radiological investigations are overlooked in the Ruling.***

In addition to its reliance on DOE's 1992 VP certification and CWM's incomplete account of the radiological history of the areas to be excavated for RMU-2, the Ruling relies on deficient and insufficient surface and subsurface radiological investigations. According to the Ruling,

Department staff and CWM note that some of the areas that were surveyed were vegetated. As a result, tall grass, weeds, shrubs, and trees did not permit the survey instrument to be lowered to within 10 cm from the surface of the soil. . . . I find it reasonable that vegetation on the site of the Model City facility may be a factor in determining the distance between the survey instrument and the soil.<sup>76</sup>

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<sup>75</sup> Pet., Resnikoff Report, "Review of CWM Radioactive Sampling Program in the Proposed RMU-2 Development Areas", 5-8 and 14; Resnikoff Report, "Review of RMU-2 Project Specific Soil Excavation Monitoring and Management Plan" (October 2, 2015), 8, submitted under the municipalities cover letter of the same date.

<sup>76</sup> Ruling, 134.

Heavily vegetated areas were treated differently by deeming those areas inaccessible and not surveying them at all.<sup>77</sup> In the accessible areas, the survey instrument was consistently maintained at a height of about 30 cm.<sup>78</sup> As a result of the height of the detector, 35% less radioactivity will be detected.<sup>79</sup> In its response to the Resnikoff-Travers report, Staff does not question the report's criticism of the 10 cm detector height.

More importantly, a surface survey utilizing a gamma detector, as CWM's surface survey did, is unable to detect 98% of any radiological contamination located one foot below the surface.<sup>80</sup> The low number of detections of radiation that resulted from the gamma walkover survey is therefore not a reliable indicator of the extent of radiological contamination of site soils.<sup>81</sup>

The Ruling goes on to credit the municipalities' concern that as a result of detector height during the surface survey, the survey failed to detect radiation on the surface above the investigation threshold:

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<sup>77</sup> Pet., 54 (citing CWM, Response to January 25, 2006 Department Comments on Revised Radiological Survey Plan, July 19, 2006, at 17). In this response CWM also stated it would not survey areas that "are not part of CWM's current operations." *Id.* (quoting the response).

<sup>78</sup> Pet., Resnikoff-Travers Report, 11-13.

<sup>79</sup> *Id.*, 12.

<sup>80</sup> Pet., Resnikoff Report, 6. *See also* Resnikoff, "Review of [Revised] RMU-2 Project Specific Soil Excavation Monitoring and Management Plan", October 2, 2015, 1 (noting acknowledgment by CWM's radiological consultant that "[s]ite radiological contamination may be located at sufficient depth in soil to give no indication of its presence at the surface").

<sup>81</sup> *Cf.* DEIS, Appx. F, 39. CWM's subsequent subsurface investigation is discussed below.

Nevertheless, significant deviations from the guidance [recommending a 10 cm detector height] could invalidate the results of an investigative survey. The question then becomes whether Dr. Resnikoff's criticisms are sufficient to require CWM to undertake another investigative survey in the manner outlined in the municipalities' petition and in Dr. Resnikoff's reports (see e.g., Municipalities Petition at 73-74, Resnikoff/Travers Report at 13). Another way to consider the question posed by the municipalities is whether the review, required pursuant to SEQRA and its implementing regulations at 6 NYCRR Part 617, is sufficient with respect to this topic.<sup>82</sup>

The municipalities do not insist on any particular survey method, only a radiological surface survey that adheres to a defensible method. More importantly, the Ruling as quoted appears to misunderstand the scope of CWM's surface survey. Vegetated areas, areas with buildings, and surface impoundments and landfills were all deemed inaccessible and not surveyed. Several such areas must be excavated for RMU-2. Thus the question is whether these areas will be surveyed at all prior to excavation,<sup>83</sup> not whether they need to be resurveyed.

The municipalities also do not insist that MARSSIM, the federal guidance for performing "final status surveys" to confirm the success of radiological decontamination efforts,<sup>84</sup> be applied

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<sup>82</sup> Ruling, 134.

<sup>83</sup> They would not: areas with vegetation and brush previously deemed inaccessible and not surveyed would first be excavated; "[t]he vegetation, brush and tree stumps will be excavated and placed into haul trucks and driven to a stockpile area where the vegetated material will be placed and graded (if possible) in 6 inch lifts"; only after the area is cleared in this way would a surface survey commence. SEMMP, 3. This clearly fails to achieve the purpose of a surface survey, as NYSDOH advised CWM, to ensure workers at the facility are not being exposed to surface radiation. *See above*, footnote 56.

<sup>84</sup> Nuclear Regulatory Commission, MULTI-AGENCY RADIATION SURVEY AND SITE INVESTIGATION MANUAL (MARSSIM), Rev. 1 (August 2000), NUREG-1575, Rev. 1; EPA 402-R-97-016, Rev. 1; DOE/EH-0624, Rev. 1, available at <<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1575/r1/>>. MARSSIM has been adopted as a soils investigation protocol by NRC, EPA, DOE and the Department of Defense.

unless required.<sup>85</sup> CWM opened the door to the question of consistency of its investigations with MARSSIM by adopting technical concepts from the guidance to describe its methods. Thus, CWM's subsurface soil sampling program treated all investigation areas as "Class 3" under MARSSIM.<sup>86</sup> NYSDOH advised CWM in 2004 that VPs on site are "Class 1" areas in MARSSIM's terms.<sup>87</sup> These classifications determine the density of soil samples in a subsurface investigation.<sup>88</sup> Class 1 areas are those with known or previously remediated contamination; Class 3 areas "are not expected to contain any residual radioactivity . . . based on site operating history and previous radiation surveys."<sup>89</sup> Thus, MARSSIM is relevant to this matter principally as a source of technical terms. Secondly, compliance with MARSSIM's standards for a final status survey is applicable at the CWM site to areas that are radiologically remediated, by the terms of CWM's Part 373 permit. Under the current Part 373 sitewide permit, a "complete radiological investigation" of Fac Pond 8 is required, followed by a "final status survey"

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<sup>85</sup> *Cf.* Pet., Resnikoff-Travers Report, 13 ("The standard surveying references, NUREG-1507 and MARSSIM, advise a height of 10 cm.").

<sup>86</sup> Resnikoff Report, "Review of RMU-2 Project Specific Soil Excavation Monitoring and Management Plan" (October 2, 2015), 7. This review was provided with the municipalities' October 2, 2015 submittal, as authorized by ALJ O'Connell's correspondence, dated September 11, 2015.

<sup>87</sup> Pet., 70.n.222.

<sup>88</sup> Resnikoff Report, "Review of RMU-2 Project Specific Soil Excavation Monitoring and Management Plan" (October 2, 2015), 7; Staff Responses to Petitions, A-3 ("Radiological Issue – 2"), at 9 ("The density of any systematic sampling depends on the classification of the survey unit in question.").

<sup>89</sup> *Id.*, 7-8 (quoting MARSSIM).

consistent with MARSSIM.<sup>90</sup> The current permit also requires, “if an area of radiological contamination is remediated a final status survey must be performed in that area using procedures consistent with the Multi Agency Radiation Survey and Site Investigation Manual (MARSSIM).”<sup>91</sup>

The fact that CWM need not comply with MARSSIM unless a site radiological investigation discovers contamination requiring remediation is therefore of limited relevance to this matter. Even if MARSSIM is not a “rule or regulation” applicable to RMU-2 generally,<sup>92</sup> radiological investigations and soil and dust management plans should provide a reasonable assurance that excavation will be safe for workers and others.<sup>93</sup> As discussed above, CWM’s *ad hoc* and incomplete surface survey of RMU-2 development areas fails to provide such assurance. The fact that CWM’s surface survey defined the scope of its subsurface soil sampling program further diminishes any such assurance.

Subsurface radioactive contamination remains a concern at the CWM site owing to its

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<sup>90</sup> Sitewide Part 373 Permit, Mod. V Supp., Ex. E.D.2. (“The Permittee must initiate and complete radiological investigation and, where necessary, remediation of FAC Pond 8 soil/sediment, including its berm, and complete a final radiological survey . . . The final status survey for FAC Pond 8 must be performed using procedures consistent with the Multi Agency Radiation Survey and Site Investigation Manual (MARSSIM), and the Permittee must submit a final status survey report for Department approval prior to re-commencing closure activities.”).

<sup>91</sup> Sitewide Part 373 Permit (2013), Module II, Cond. J. item 3.

<sup>92</sup> Ruling, 134.

<sup>93</sup> *Cf.* Municipalities corresp., October 2, 2015 (comments on SEMMP), Sahu Report (dated September 30, 2015).

history of soil movement.<sup>94</sup> Excavation on the scale of the RMU-2 Project has the potential to bring significant radioactive materials to the surface. As previously noted, in 2008 the Department requested CWM investigate the soil and sediment that would be excavated for the proposed project, directing CWM to include the information obtained in the DEIS.<sup>95</sup> As stated in the approved investigation plan, the objectives of the subsurface investigation were:

1. Assuring that the materials do not pose a radiological hazard to workers during the construction activities.
2. Assessing the potential for liability for soil disposal costs if the materials were found to be sufficiently contaminated to warrant regulated disposal.
3. Provide confidence to stakeholders about the acceptable conditions on site.
4. Satisfy regulatory requirements regarding radiation monitoring during site soil excavation activities.<sup>96</sup>

The RMU-2 subsurface sampling investigation is described as a screening characterization program intended to provide confidence in the general condition of targeted materials.<sup>97</sup> Detailed review of the subsurface investigation's sampling plan shows that the plan is not fit for the purposes listed above.<sup>98</sup>

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<sup>94</sup> See CWM, Response to Petitions, Exhibit 3 (NYSDEC Responses to Comments), at I-104.

<sup>95</sup> See above, text note 36.

<sup>96</sup> URS Corporation, "Results of Subsurface Soil and Pond Sediment Sampling for RMU-2" (April 2009), Appx. A ("Draft Work Plan), at 1.

<sup>97</sup> *Id.*

<sup>98</sup> Pet., Resnikoff Report, 13-14; Resnikoff-Travers Report, *passim*.

In the first instance, materials were targeted to subsurface investigation based on radioactivity detected during the surface survey. As noted above, substantial portions of subsurface investigation were never surveyed from the surface to determine areas of investigation interest.

In addition, in the areas subject to the subsurface investigation, too few samples were taken to define the vertical and horizontal extent of the radiological contamination. Previously, in 2007, the Department wrote to counsel for the municipalities, indicating that the Department anticipated that “[a] subsurface investigation would consist of a number of borings, located ten or more meters apart.”<sup>99</sup> However, the sample density utilized in CWM’s subsurface investigation of the area proposed for Fac Pond 5 was 45 samples per 40,000 square meters, reflecting the decision to classify all areas investigated as Class 3, *i.e.*, areas not expected to contain any radioactivity.<sup>100</sup> The sample density within the RMU-2 landfill footprint was 15 samples per 20,000 square meters.<sup>101</sup>

The description of the subsurface investigation found in the DEIS is highly misleading:

CWM conducted a chemical and radiological subsurface sampling program in areas that would be affected by the RMU-2 project between Aug 2008 and Feb 2009. (Results of Subsurface Soil & Pond Sediment for RMU-2. URS, April 2009). These areas include

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<sup>99</sup> See Gary A. Abraham, Letter to ALJ O’Connell, October 2, 2015, 2 (quoting and attaching Val Washington, Deputy Commissioner for Remediation and materials Management, NYSDEC, Letter to Gary A. Abraham, August 24, 2007). As previously noted, NYSDOH advised CWM that current investigation guidelines require at least one subsurface soil sample for every 100 square meters. *Cf. above* footnote 33.

<sup>100</sup> Pet., Resnikoff Report, 14 (discussing the April 2009 URS report).

<sup>101</sup> Abraham Letter to ALJ O’Connell, October 2, 2015, 2 (citing the April 2009 URS report).

the RMU-2 footprint, location of the relocated Drum Management Building, location of new Fac Pond 5, Fac Pond 3 and Fac Ponds 1/2. Soil borings up to 20 feet deep were completed in a systematic grid based pattern within the areas of RMU-2, Fac Pond 5 and the Drum Management Building. The soil cores were scanned for chemical and radiological contamination. If the meter identified elevated readings, a sample was taken and sent off site for analysis.<sup>102</sup>

Contrary to the approved investigation plan, soil core samples were not scanned along their length, and core samples sent for analysis were not taken from the most radioactive portions of the core, but rather at predetermined depths, reducing the likelihood that subsurface contamination could be quantified. A sodium iodide (NaI) gamma radiation meter was used to scan the core instead of the more effective pancake detector ordinarily called for in such investigation plans.<sup>103</sup>

Given the limitations in the scope of CWM's subsurface investigation, together with the incomplete surface survey of the site, the safety of excavating without additional subsurface investigation remains a significant issue.

***3. CWM's proposed RMU-2 Soil Excavation Monitoring and Management Plan (SEMMP) is unsafe under the circumstances.***

The Ruling concludes that, prior to RMU-2 excavation, "100% of the excavated area would be evaluated with the revised May 2015 project specific SEMMP."<sup>104</sup> For this conclusion,

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<sup>102</sup> DEIS, 52.

<sup>103</sup> Pet., Resnikoff Report, 13-14.

<sup>104</sup> Ruling, 136 (emphases added).

the Ruling relies on an August 24, 2007 letter from then-Deputy Commissioner for the Department noting that since CWM's generic small-project SEMMP requires *in situ* radiological scanning of each six-inch lift of soil, "100% of the excavated area" must be evaluated. "In addition, the Deputy Commissioner extends the benefit associated with the generic small-project SEMMP to 'other radiological plans required by CWM's Part 373 permit.'"<sup>105</sup> This is a reference to large-project excavations, except for the RMU-2 SEMMP.<sup>106</sup> The RMU-SEMMP would not scan each six-inch lift of soil as excavated.<sup>107</sup>

The proposed RMU-2 SEMMP post-dates the August 24, 2007 correspondence. Accordingly, the Deputy Commissioner could not have evaluated the proposed RMU-2 SEMMP. Nevertheless, based on the Deputy Commissioner's anticipation that required future radiological plans would be equally protective as the small-project SEMMP she did evaluate, the Ruling concludes that "[a]s with the generic small-project SEMMP, 100% of the excavated area would be evaluated with the revised May 2015 project specific SEMMP."

There is no basis in the record for this conclusion. According to the RMU-2 SEMMP, excavated soils would not be characterized until after they are hauled to the stockpile site away from the excavation area, dumped, and later spread out in six- to nine-inch lifts, then compacted.<sup>108</sup> Thus under the SEMMP, the first time excavated soils would be scanned for

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<sup>105</sup> Ruling, 135-136.

<sup>106</sup> *Cf. above*, text note 10.

<sup>107</sup> *See* Ruling, 125 (noting that radiological scanning would be conducted every six inches during the excavation of trenches only, up to a maximum depth of four feet).

<sup>108</sup> *Pet.*, 62-63. *Cf. SEMMP*, 6 (retaining this provision). *See* Ruling, 125 (noting that excavated soils would be hauled to a stockpile site outside the excavation area, the stockpiled

radiation is after they are laid down and compacted, away from the excavation site. Following this protocol, information about the precise location from which any detected contamination originated will be lost. The evaluation of “100% of *the excavated area*” would thus not actually occur. Instead, 100% of the excavated soils would be evaluated, but only after moving the soils several times.

The most common radionuclide on site is Radium-226, a known carcinogen whose exposure pathway is through inhalation and ingestion of contaminated dust.<sup>109</sup> Adherence to the RMU-2 SEMMP thus creates a risk of exposure to airborne radionuclides each time soils are moved. The protocol would also create several opportunities for mixing and deposition of contaminated soils elsewhere. No reasonable assurance of safety results from the fact that, under the plan, “any potential radiological constituents would remain *on the [Model City] site* when the excavated soils are scanned.”<sup>110</sup>

Under the SEMMP as proposed, in the event radiological contamination is detected in stockpiled and graded excavation soils, “the prevention of air dispersion and run-on/run-off

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soils then “would be placed in six to nine inch lifts and compacted to six inches where a radiological technician would perform a surface scan walkover of the material and document the scanning results.”) (citing Revised May 2015 project-specific SEMMP at 4-5). *See also id.*, 124 (“During mass excavations, soils would be placed in haul trucks and taken either to a separate stock pile area on the site, or to a location for the construction of landfill components such as berms or subgrade.”); *id.*, 125-126 (“During mass excavations, soils brought to the stockpile areas would be placed in six to nine inch lifts and graded.”).

<sup>109</sup> *Cf.* SEMMP, Appx. 1 (Health and Safety Plan), 6-7. Unfortunately, this plan rejects dust ingestion and inhalation as the “controlling level for allowable worker dose” since, by itself, the plan considers these pathways would result in exposures “below the action level”. As we argue, such analytical decisions are premature in the absence of a defensible investigation of subsurface radiological constituents in the first instance.

<sup>110</sup> Ruling, 136 (emphases added).

control would be priorities.”<sup>111</sup> This assertion falls far short of a reasonable assurance of safety.

In order to allay the municipalities’ concern with exposure to airborne radioactivity during excavation,<sup>112</sup> following the issues conference CWM provided updated soil erosion calculations, concluding that there will be no emissions of soil dust expected during the construction of RMU-2. However, based on our air emissions consultant’s review, we commented on CWM’s submission as follows:

CWM’s calculations assume that the erosion potential of site soils is comparable to a “western surface coal mine”, the published value for which was input to its calculations. By contrast, literature values for soils more like those anticipated on site are much higher. In addition, AP-42, from which CWM derived the “western surface coal mine” value, recommends that for such calculations site-specific values be obtained. AP-42 also cautions against using the default equation CWM has used, where soil piles are high enough to penetrate into the surface wind. The RMU-2 soil pile height would be 30 feet, thus likely to significantly penetrate the surface wind layer. In addition, CWM’s calculations assume a surface roughness height of just 0.5 cm for the terrain near the soil pile, which we believe is unreasonable and unsupported.<sup>113</sup>

Accordingly, the SEMMP fails to address the municipalities’ concern with exposure to airborne radioactivity during excavation.

***4. Under the SEMMP as proposed, CWM would illegally stockpile contaminated soils on site.***

The concern with exposure to airborne radioactivity during excavation is heightened by

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<sup>111</sup> Ruling, 125.

<sup>112</sup> Pet., 92-96; Pet., Sahu Report, 10-11; I.C. Tr., 91 (air emissions consultant for the municipalities). See ALJ Memo, August 6, 2015, 2-3.

<sup>113</sup> Gary A. Abraham, Letter to ALJ O’Connell, September 2, 2015, at 4 (citations omitted).

the proposal in the SEMMP to store soil exceeding 16,000 cpm for up to two years.<sup>114</sup> CWM would containerize radiologically (or chemically) contaminated waste soil only if its volume is “<10 square foot”.<sup>115</sup> These proposals are not in accord with the requirement that all hazardous waste, radiological waste and mixed waste be containerized while in storage.

The Department’s regulations generally prohibit the storage of wastes restricted from land disposal under Part 376.<sup>116</sup> “Land disposal” includes “placement in a landfill . . . [or] waste pile.”<sup>117</sup> The prohibition does not apply where the permittee “stores such wastes . . . solely for the purpose of the accumulation of such quantities of hazardous waste as necessary to facilitate proper recovery, treatment or disposal.”<sup>118</sup> Accumulation wastes must be containerized.<sup>119</sup> To store radiologically contaminated soils in an open air waste pile greater than 10 square feet for two years, CWM must obtain a variance from these provisions.<sup>120</sup> To qualify for the variance CWM must, among other things, demonstrate doing so is safe.<sup>121</sup> As noted above, CWM has not provided reliable soil erosion calculations, nor an acceptable characterization of the radiological condition of site soils to support such a demonstration.

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<sup>114</sup> SEMMP, 6.

<sup>115</sup> SEMMP, 7.

<sup>116</sup> 6 NYCRR § 376.5(a).

<sup>117</sup> 6 NYCRR § 376.1(b)(3).

<sup>118</sup> 6 NYCRR § 376.5(a)(ii).

<sup>119</sup> 6 NYCRR § 376.5(a)(ii).

<sup>120</sup> 6 NYCRR § 373-1.1(e).

<sup>121</sup> 6 NYCRR § 373-1.1(e)(1)(iii).

## CONCLUSION

### **Radiological characterization should be required prior to RMU-2 excavation**

Largely as a result of a complex radiological history, CWM's is a complex site.<sup>122</sup> As noted above, the site has generated a substantial amount of research and remedial effort. Because of their very limited area coverage, and documented deficiencies making them unfit for their purposes, CWM's two site radiological investigations, a surface survey and a subsurface soil sampling program, provide less than what a reasonable person would want to know about the extent and location of residual radioactive constituents. The DEIS does not fill the information gap, as it lacks any meaningful safety risk assessment for potential exposure to radionuclides during excavation. The only RMU-2 development area that has been intensively investigated is Fac Pond 8, and that investigation found substantial volumes of radiologically contaminated soils, some of which remain in place. Characterization of the pond, including its other three berms, has accordingly been delayed. The history of site operations is marked by poorly regulated federal storage and burial of radiological wastes followed by 20 years during which CWM excavated and moved presumably contaminated soils up to 2005, when radiological investigations in advance of any excavation first became required. Under these circumstances, it is not sufficient to rely on the fact that "DOH must approve soil displacements or excavations."<sup>123</sup>

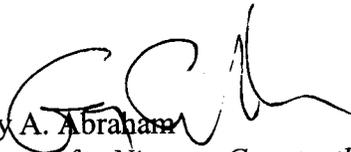
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<sup>122</sup> See Ruling, 70 (citing IC Tr., 317-318).

<sup>123</sup> Ruling, 135 (citing NYSDOH 1972 Order at para. III; NYSDOH corresp. dated October 5, 2015).

This does obviate the need for the Department and the Siting Board to take a hard look at whether the RMU-2 SEMMP adequately addresses health and safety concerns arising from the necessity to handle potentially radiologically contaminated materials, as identified in this proceeding. The Department should not allow mass excavation and movement of soils without conditioning such excavations on a prior defensible investigation determining in advance where buried radioactive constituents are located.<sup>124</sup> To determine such permit conditions, the Department should certify the issue of excavation safety for further adjudication.

Respectfully submitted,



Gary A. Abraham  
*Attorney for Niagara County, the Town and Village of Lewiston, and  
the Village of Youngstown*

DATED: March 9, 2016

gaa

cc: Service List

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<sup>124</sup> As we wrote to the ALJ following the issues conference, under the circumstances “we cannot know with reasonable certainty the location, volume and concentration of radioactivity. We do not regard the CWM solution to this problem, digging up massive amounts of potentially contaminated soil and passing it through portal monitors, as the safe way to proceed. Rather, the Department should require CWM to identify where radioactive contamination exists through a thorough sampling program. This contamination should be safely removed before construction on RMU-2 begins.” Abraham Letter to ALJ O’Connell, June 12, 2015, at 3.