

Amy Witryol
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March 9, 2016

Hon. Daniel P. O'Connell
Chief Administrative Law Judge
Office of Hearings and Mediation Services
625 Broadway, 1st Floor
Albany, New York, 12233-1550 by email and by First Class U.S. Mail

RE: Request to Reconvene Issues Conference in the matter of CWM Chemical Services, LLC RMU-2

Dear Judge O'Connell,

Pursuant to your Memorandum of March 25, 2016, enclosed is a request to reconvene the Issues Conference to evaluate new information not already addressed by post-petition submissions.

Radiation:

Issue #1: Army Corps of Engineers *Proposed Plan* to remove all contents of the Interim Waste Containment Structure at the Niagara Falls Storage Site, adjacent to CWM, issued Dec. 2015. Removal of high-activity residues, upwind and upgradient of CWM will increase short-term risk according to the Corps (during the project construction period c.2021-2027)

Issue #2: Department of Energy (DOE) referral to the Corps to reopen Vicinity Property (VP) H' located on CWM and Vicinity Property X adjacent to CWM.

- a) These are the first VPs to be reopened further evidencing 1980's DOE surveys and remediation were inadequate (as NYS Dept. of Health concluded in 2005 over the objections of CWM and DEC staff.) Corps remediation standards are exponentially better than DEC soil excavation standards.
- b) Knolls Atomic Power Laboratory reactor (KAPL) waste was handled on both of these VPs

Environmental Justice/Compliance:

Issue #3 EPA and DEC failed to initiate timely consultation with the Tuscarora Nation about CWM as early as possible in the process pursuant to EJ guidance for both. DEC did not disclose the Tuscarora's Oct. 2015 letter to both EPA and DEC until my FOIL of Jan. 2016. The letter is not posted on DEC webpages for CWM.

Issue #4: RMU-1 closed Nov. 17, 2015.

- a) The baseline for traffic and noise is therefore, -0-, not RMU-1 volume.
- b) CWM's parent still tells investors it operates "5 *active* hazardous waste landfills."

A copy of this letter and memo are being mailed to the Service List.

Thank you.

Sincerely,



Amy H. Witryol

Issue #1:

Army Corps of Engineers *Proposed Plan*¹ to remove all contents of the Interim Waste Containment Structure (IWCS) at the Niagara Falls Storage Site (NFSS), adjacent to CWM property.

In December of 2015, the U.S. Army Corps of Engineers published a Proposed Plan for the high-activity radioactive residues in “temporary” storage at the NFSS since the 1940’s. I notified the ALJ and parties of this announcement in an email dated December 7, 2015.

This announcement is significant to CWM applications in that it elevates risk in the context of SEQR during the proposed operational period of RMU-2.

The Proposed Plan calls for spending \$490 million over 8 years to remove all contents of the NFSS IWCS. While the Plan provides permanent protection for the community over the long-term, it will increase risk from radioactive residues over the short-term (i.e. the proposed construction period.) The Corps anticipates another year prior to finalizing the Record of Decision, another two years to begin funding, then two years of design prior to six years of remedial construction which would:

- 1) Increase the risk of releases to the community according to the Army Corps
- 2) Increase the risk of transportation according to the Army Corps
- 3) Overlap proposed RMU-2 construction and operations for six years, approximately 2021-2027

From the Corps Plan a/k/a Alternative 4: (Excerpts and references in Exhibit A to this memo.)

“This additional volume results in increased waste handling and transportation and an increased risk for construction-type and vehicle-related accidents. Therefore, Alternative 4 is rated low for short-term effectiveness.”

Other disadvantages include the potential short-term impacts to both the worker and the public related to uncovering the Subunit A residues (K-65, L-30, L-50, and F-32 residues) and R-10 residues, as well as the complexity of segregating and size-reducing the Subunit B building materials...

This alternative has the greatest amount of worker and transportation risk due to the large volume of waste being handled and off-site transportation of residues and other materials. Although a similar remediation effort was successfully implemented at the Fernald K-65 Project, including successful cement stabilization of the residues, there are enough differences at the IWCS to acknowledge that there are implementability unknowns with this alternative.”

¹ Proposed Plan: <http://www.lrb.usace.army.mil/Portals/45/docs/FUSRAP/NFSS/EI/nfss-iwcs-propplan-2015-12.pdf>

Highlights from Exhibit A excerpting the Plan and its Feasibility Study include:

Within the IWCS, the radioactive residues, K-65, L-30, L-50, and F-32, were placed in existing concrete structures that had been part of the freshwater treatment plant for the Lake Ontario Ordnance Works during the 1940s.

The design life of the existing IWCS cap is 25 to 50 years [2011-2036], and the design life of the bottom,² dike, and cut-off walls is 200 to 1,000 years (BNI 1986).³

No intrusive sampling of the IWCS materials was conducted for the remedial investigation phase (USACE 2007). It was determined that sampling would require a breach of the clay cap, and this was considered unacceptable.

The USDOE [1986] estimated that the annual radiological dose to the lung tissue from inhalation of radon gas and its radioactive decay products would be approximately 8,000 rem per year, which could be fatal in a few years.

In both the 1986 [DOE] and 2012 [USACE] studies, the exposure assessment for the on-site hypothetical resident was limited to the indoor radon inhalation pathway because the estimated radon inhalation risk was so large, the evaluation of lesser exposures (e.g., eating contaminated food...drinking water...gamma radiation from residues) was considered unnecessary to determine site risks. The fatal cancer risk for the hypothetical resident was 4×10^{-1} (4 in 10) via the radon inhalation pathway, which is above the acceptable human health risk range by several orders of magnitude.

A breach of the cap also would pose unacceptable risk to a hypothetical industrial worker."

What follows is a discussion of new SEQR impacts raised by the Proposed Plan requiring evaluation for CWM applications preceded by a list of some of the relevant SEQR issues from DEC's SEQR Handbook (2010.)

² USACE suggests this was based on the Bechtel National, Inc. 1994 – *Failure Analysis Report for the NFSS Lewiston, New York* (BNI.) However, the IWCS has no "bottom." From that BNI report also described in Exhibit A: "The bottom of the WCS consists of naturally occurring brown clay. . ."

³ I will not reiterate here my petition and Appeal comments on the impact of probable leakage from the NFSS on CWM or the hydraulic connections between the two properties. However, a reasonable person might wonder why a federal agency would propose spending nearly a half-billion dollars to remove high-activity residues supposedly stable and secure for another 175-975 years were more clay added to the cap.

SEQR:

From DEC's 2010 SEQR Handbook:

14. What are short and long term impacts?

. . . Long term impacts are the continuing impacts from an action over time, for example, impacts to community health from the long term operation of an industrial plant with substantial air emissions or the commuting traffic resulting from the completion of a new office building.

In identifying and evaluating long term impacts, it is important to understand that some impacts may have to be assessed in terms of significance over time. For example, while local water supply may be adequate to support the initial stages of a residential development, the supply may be inadequate to support that development at full build out.

16. What are cumulative impacts?

Cumulative impacts occur when multiple actions affect the same resource(s). These impacts can occur when the incremental or increased impacts of an action, or actions, are added to other past, present and reasonably foreseeable future actions.

Cumulative impacts can result from a single action or from a number of individually minor but collectively significant actions taking place over a period of time. Cumulative impacts do not have to all be associated with one sponsor or applicant. They may include indirect or secondary impacts, long term impacts and synergistic effects.

17. When must cumulative impacts be assessed?

If the impacts of related or unrelated actions may be incrementally significant and the impacts themselves are related.

Another factor in examining whether two or more actions should be considered as contributing to cumulative impacts, is whether the two actions are in close enough proximity to affect the same resources. Examples include construction along a single road segment, hydrological connections, or demands on the same water or sewer system.

22. What is a synergistic effect and how must it be treated for SEQR purposes?

Synergistic environmental impacts are caused by an interaction between two or more direct adverse environmental impacts, where the combined impacts are more severe than the sum of the individual effects. For example, nitrogen oxides and sulfur dioxide air contaminants have been demonstrated to have a more severe combined effect, as "acid rain", on certain vegetation than either of these contaminants individually. When synergistic effects are likely to be of environmental importance, they must be considered in a determination of significance.

- 1. Inevitable groundwater pumping in the lower aquifer at CWM which would be required for construction of an RMU-2 (over many years) and also for new Corrective Action needed for the lower aquifer would interfere with NFSS monitoring during higher risk remedial construction.⁴**

The Muni Stakeholders petition (p.37) states,

“in addition to DNAPL plumes that were detected in 1993 several hundred feet from their presumed source, acetone has migrated through the glaciolacustrine clay and then within the lower aquifer for a distance of some 1,500 ft.”

“In the West Drum Area, a small amount of DNAPL was recently recovered from wells TW-16S and TW-17S but none has been recovered from a number of recovery sumps associated with groundwater extraction trenches installed in the area, attesting to the ineffectiveness of the trenches. All of these trenches and sumps extract groundwater from the shallow zone. There is no monitoring of the deeper groundwater zone.”

The Machalski report p. 15 enclosed with the Muni. Stakeholder petition states,

“In the Application and supporting materials the Applicant mentions offsite pumping impacts only once. *See* DEIS, 62. According to the Applicant, previous dewatering of the lower aquifer (Glaciolacustrine Silt/Sand unit) at the neighboring Modern Landfill, concluded in March 1999, caused a temporary alteration in groundwater flow towards the south in a portion of the CWM site. *Id.* The DEIS states that if Modern Landfill resumes its dewatering operation, southerly flow would be re-established and the RMU-2 monitoring network would then be evaluated. *Id.*

A memorandum by Carey (2005) provides graphs and a discussion of dewatering impacts at the Modern Landfill on wells and piezometers on the Modern Landfill and the DOE/NFSS sites. (No CWM wells were included in Carey’s evaluation.) The dewatering pumping rate ranged from approximately 12,000 gpd (8.3 gpm) to 6,000 gpd (4.2 gpm), as detailed on graphs extracted from Carey (2005) and provided herewith as Exhibit 15. These graphs provide potentiometric levels during the 1990-2005 period for wells located more than 2,000 ft away from the pumping centers at the landfill and completed in the Sand and Silt Unit (SSOW wells) and the Queenston Formation bedrock (QFM wells). These distant wells show potentiometric head decline of as much as five feet in response to the dewatering at the Modern Landfill.”

and at p. 17 Malchowski:

“the large extent of the pit dewatering-impacted area, stretching for a distance of at least 10,000 ft from the John Long pond in the west to beyond the eastern boundary of the CWM site, attests to hydraulic continuity and a significant transmissivity of the sand and gravel unit within the buried valley. Furthermore, the lack of any significant responses in CWM wells located at the northern east-west till ridge to the hydraulic stresses from dewatering operations at Modern Landfill, and the Pletcher Road and John Long borrow pits provides a hydraulic verification of the role of this ridge as a flow barrier that imposes the west-southwesterly flow direction along the axis of the buried valley.”

The RMU-2 footprint is less than 10,000 ft., less than 2,000 ft. and less than 1,500 ft. from the NFSS.

⁴ This is in addition to interfering with NFSS groundwater monitoring over the next 5 years (prior to remedial construction) as offered in my petition and Appeal regarding evidence that detection levels of Uranium in groundwater outside the NFSS IWCS are rising at an alarming rate, some 20 years after IWCS construction, with no corresponding detections of Ur in soil outside the IWCS to explain the steep spike.

- 2. The Corps health risk assessment did not evaluate, “Cumulative or Long Term impacts . . . i.e., collectively significant actions taking place over a period of time. . . not all associated with one applicant.”**

This means the releases to air which may occur from opening the NFSS IWCS cap even with a constructed dome to reduce emissions have not been evaluated *in combination with RMU-2 emissions*. CWM should provide an assessment of its contribution to the cumulative impacts from discharges anticipated with a proposed RMU-2. Impacts from the Modern Landfill should be included in CWM’s analysis.

A significant and substance fact associated with this higher risk Proposed Plan is that the Corps anticipates excavation of roughly 50,000 cubic yards,⁵ far in excess of what CWM applications propose for RMU-2, a new Fac Pond, Wetlands mitigation and the Drum Building relocation. In other words, the risk in CWM’s applications are expected to be several orders of magnitude higher than the already high risk associated with the Corps removal of IWCS contents.

As for the short term (several years of construction,) not unlike groundwater monitoring, CWM air monitoring protocol would be nominal and insufficient compared to the air monitoring procedures the Corps would undertake.

As for the long term outcomes, CWM’s RMU-2 proposal would increase permanent risk (6 million tons) while the Corps Proposed Plan would eliminate permanent risk altogether.

- 3. The discharges to ground or surface water which may occur from IWCS construction have not been evaluated *in combination with RMU-2 discharges to shared ditches*.**

The shared ditches run to Four Mile Creek past houses and farms and into the Great Lakes System. CWM should provide an assessment of its contribution to the cumulative impacts from discharges anticipated with a proposed RMU-2. Impacts from the Modern Landfill should be included in CWM’s analysis.

⁵ Army Corps December 2015 NFSS IWCS Feasibility Study, Table 4-4, p. 4-20

Issue #2:

The U.S. Department of Energy referred back to the Army Corps of Engineers FUSRAP Program Vicinity Property H' located on CWM and Vicinity Property X adjacent to CWM. DOE letters were referenced in Jan. 2016 and became available in March 2016; they are included here in Exhibit B.⁶ DOE has never before referred a certified VP back to Corps for reopening.

The DOE letters are evidence that reopening VPs is “reasonably foreseeable” during CWM’s projected 32-year life for RMU-2.

Significant and substance issues: 1) CWM soil excavation protocol is not comparable to “investigation” and “remediation” by the Corps and, 2) the RMU-2 proposed project would create reasonably foreseeable obstacles to remediation of radiological contamination at the site given this DOE action.

DOE policy on reopening previously certified sites:

“Congress directed that only USACE has authority to conduct remedial action for FUSRAP sites. Therefore, if DOE is informed that a hazard may exist on a completed FUSRAP site, DOE will confirm that the hazard exists and refer the site to USACE. USACE will determine whether the contamination is eligible for FUSRAP remediation. If appropriate, USACE will formally include the site in FUSRAP (referred to as “designation”), the site status will be changed from completed to active, and the applicable provisions of the MOU will apply.”⁷

The radiological problems on these two VPs were discovered not by the Corps’ radiological program (FUSRAP), but in the ordinary course of prerequisite scanning for worker safety under the Corps’ Chemical program (DERP-FUDS). DERP-FUDS sporadically conducts investigations on and around CWM property to address Dept. of Defense legacy contamination there (TNT, boron, etc.,) as opposed to Dept. of Energy contamination (i.e., radiological.) FUSRAP is barred from radiological investigation on closed (certified) VP’s without authorization from DOE.

“Both VPs are currently in the preliminary assessment phase of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process that the Corps of Engineers follows when implementing FUSRAP. If it is determined that further action or investigation on either VP is warranted, the VP will move into the site inspection phase.”⁸

The extensive radiological discussions in my submissions or those from the Municipal Stakeholders on this issue will not be repeated here. However, it should be noted that in addition to NYS DOH, EPA, and Muni Stakeholder experts, we now have the referral (reversal) from the certifying agency, DOE identifying the inadequacy of the 1980’s DOE surveys.

⁶ While the letters are dated Sept. 2014, the Corps did not publicize them until Jan. 2016 as a tiny bullet on one of many posters at a public meeting. The Corps subsequently posted the DOE letters on its website in March of 2016 in response to a FOIA request.

⁷ *Recent Developments in DOE FUSRAP Feb. 2013*, p.5, <http://energy.gov/sites/prod/files/2013/03/f0/13014b.pdf>

⁸ Per Army Corps Public Relations email, April 1, 2016

At the Issues Conference Mr. Darragh stated⁹ that the Corps would not remediate Fac Pond 8 contamination “anytime soon” as CWM had requested¹⁰ for its RMU-2 timetable. However, that’s hardly a rationale for RMU-2 effectively barring Corps investigation of Fac Ponds 1&2 for the next 40+ years (32 years for CWM’s projected RMU-2 plus the subsequent leachate reduction over another 10+ years.)

The Siting Board in its questions to DOH about the DOH Order asked whether CWM operations were an obstacle to Army Corps investigation and remediation of radiological contamination on CWM property, using the Castle Garden Dump site beneath Fac Ponds 1&2. DOH did not respond to this question.

The Vicinity Property G Fact Sheet and investigation referenced in submissions and petitions from myself and the Muni Stakeholders note that the Corps cannot investigate the Castle Garden site until Fac Ponds 1&2 are closed. Yet another reason why the community opposes RMU-2.

For the benefit of Mr. D’Amato who asked at the Issues Conference¹¹ if there was an offer from the Corps to investigate, from the Corps Final Report of its limited VP G investigation:¹²

Vicinity Property “G” Niagara Falls Storage Site January 2009
Page 36 Tetra Tech, Inc.

“8.0 RECOMMENDATIONS

The investigation performed at VPG confirmed the presence of chemical and radiological SRCs in surface and subsurface soils. The extent of this contamination, as well as the presence of additional laboratory debris, K-65 residues, and other chemical and radiological SRCs is unknown. Evaluation of the VPG property will be conducted in accordance with the CERCLA process. A thorough Remedial Investigation will be initiated once funding is available, a site access agreement is completed, and physical obstructions are removed to allow access to the entire site for investigative purposes.”

The DOE referral letters are evidence that DOE and the Corps will act if given the opportunity, albeit perhaps not within CWM’s desired RMU-2 construction timeframes. The Corps would not plan a particular investigation where CWM has created obstacles or where CWM would not likely grant the Corps access – for example, where CWM wants to place a 50-acre landfill. Therefore, the premise of Mr. D’Amato’s question as to whether the Corps was ready to start remediation at CWM was unrealistic. [Note: Neither Corps investigation nor remediation activities begin with “bulldozers.”]

CWM proposes constructing Wetlands mitigation for RMU-2 on VP G creating yet another obstacle to Corps investigation. Flooding a radioactively contaminated area *and* precluding subsurface investigation is a significant and substantive adverse impact associated with the RMU-2 proposal:

“ . . . 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 the Fac Ponds 1 & 2.”¹³

⁹ I/C Transcript p.457-458

¹⁰ In a letter from CWM’s Mike Mahar to Sec. of Defense Robert Gates and Attorney General Eric Holder, April 17, 2009

¹¹ I/C Transcript p. 455-456 “MR. D’AMATO: Is there an offer on that? Has the Federal government said, "If it wasn't for these guys, we would be there with bulldozers?"

¹² <http://www.lrb.usace.army.mil/Portals/45/docs/FUSRAP/NFSS/EI/nfss-vpg-siteinv-2009-01.pdf>

¹³ Part 373 Permit Section B-Final.Revised.11-08-2013 page B-18

As a reminder, the West Drum Area, part of adjudication of groundwater disputes, is located in close proximity to the proposed Successional Wetland for RMU-2. This raises not only the problem of remediation, but potential swift offsite migration of radiological contamination were acres of new wetlands constructed above it.

As noted earlier, CWM's 2009 request to the federal government to reopen VP C to address Fac Pond 8 contamination would not meet its RMU-2 timetable. So instead of a better remediation by the Corps (i.e. reopening VP's, DEC staff is allowing CWM to literally cover-up and avoid (not cap, avoid) remediation of serious radiological contamination at the least possible expense by folding any problems into future Corrective Action plan neither a Siting Board nor an ALJ nor a Commissioner-designee would ever see.¹⁴

A comparison of detections of radioactive contamination found on VP H' compared to other VPs which have recorded higher readings (example, Fac Pond 8 area) might cause a reasonable person to inquire, why VP H'?

In May of 2010, DEC wrote in an email, "We are concerned that based on information provided by the Corp on Vicinity Property H' that residual contaminated soil may still be present at this site and we will be encouraging the DOE to resolve this matter with Corp and the facility owner." This was formally communicated to DOE in a letter from DEC Robert Phaneuf to DOE contractor Robert Darr dated June 11, 2010.

DEC Albany project staff is common to DEC oversight of Corps activity at the NFSS. This is conflictive and highly unusual. Region DEC DER staff typically is assigned to Corps activities. However, here, DEC RCRA staff interfaces with the Corps and CWM. As a reminder, the Muni. Stakeholder consultants pointed out that the Corps and Modern have installed bedrock area groundwater monitoring wells, but CWM has none. Modern groundwater is handled by Region 9 staff, not Albany. Also, as noted previously, in an email to DEC, the Corps accused a DEC project staffer of manipulating Corps work for the benefit of CWM.

Conclusion: 1) DEC Staff has pressed DOE to remediate radiological contaminated areas on certified VPs convenient for CWM and not for contamination inconveniently located for CWM. 2) If RMU-2 were denied, there would be more possibilities to reopen VPs. DEC staff would no longer be conflicted by the RMU-2 application and there would be fewer CWM operational obstacles, and DEC might even someday encourage the Corps to clean up the rest of CWM. Regardless, we now have evidence that remediation is reasonably foreseeable.

¹⁴ Excerpts from March 6, 2008 article, *Negotiating a RCRA Part B Permit* By Daniel M. Darragh:

"As is the case with most first-issue Part B permits, one of the requirements is corrective action -- a potentially costly and time-consuming program that, for the most part, will not improve operating efficiencies and is not necessary for the facility's ongoing hazardous waste management activities. It is, however, required by statute. Perhaps more so than any other, the corrective action module can be significantly improved by the permittee's proactive approach to the process. . .

In our experience, for example, negotiating the details of the corrective action program as part of the permit application process has resulted in a much more user-friendly permit than the typical generic corrective action module. Other site-specific issues that might be negotiated during the permit application process include: 1. The technical details of a groundwater monitoring program. 2. The technical details of a particular hazardous waste management unit. 3. All special conditions inserted by the agency in the draft permit pursuant to its "omnibus authority."

The Difference Between CWM RMU-2 Excavation and Army Corps Remediation:

DEC-approved soil excavation, which differs dramatically from Army Corps investigation and remediation. *DEC's soil Excavation plan does not provide for Remediation.* And DOH has made no representation to the contrary. This protocol comparison chart notes a few of innumerable examples:

Protocol Item	DEC/CWM RMU-2 Excavation	DEC/CWM RMU-2 Investigation/ Remediation	Corps of Engineers Investigation/ Remediation
Scanning before soil movement?	NO	NO	Yes
Gamma detector height above surface	6 inches	12 inches	4 inches
Electromagnetic survey to identify buried waste?	NO	NO	Yes
Standard Soil Core scanning equipment?	n/a	NO ¹⁵	Yes ¹⁶
Soil Cores scanned in compliance with approved work plan?	n/a	NO	YES
soil Core scanning results reported?	n/a	NO	Yes
Analyzes Core samples if radiological activity detected is > 2X Background?	n/a	NO	Yes
Investigates Radionuclides known to have been handled at the site?	NO	NO	Yes
Soil samples from VP G located on CWM analyzed for Plutonium?	NO	NO	Yes
Soil samples from VP G located on CWM analyzed for Strontium-90?	NO	NO	Yes
Would remove rad. contamination >DOE guidelines from Fac Pond 8	NO	NO	Yes

Reports used for the Protocol Comparison chart above are footnoted here.¹⁷

¹⁵ Less sensitive 2"x2" NaI and used for Gamma, only versus:

¹⁶ From Army Corps Balance of Plant Operable Unit Investigation, Niagara Falls Storage Site, February 2015, Table 1 - Radiation Detection Instrumentation Niagara Falls Storage Site:

Function	Radiation Detected	Instrument	Detector	Additional Equipment
Gamma Walkover Surveys	Gamma	Ludlum Model 2221	Ludlum Model 44-10 NaI (2"x2")	Trimble Geo6000 XH, Zephyr Model 2 Antenna
Trench Surveys	Gamma	Ludlum Model 2221	Ludlum Model 44-10 NaI (2"x2")	Ludlum Model 4260-076 Shield
Soil Core Logging	Alpha-Beta-Gamma	Ludlum Model 12	Ludlum Model 44-9 GM	
Soil Core Logging	Alpha-Beta	Ludlum Model 2360	Ludlum Model 43-93	
Frisking Personnel	Alpha-Beta-Gamma and Alpha-Beta	Ludlum Model 12	Ludlum Model 44-9	
Frisking Equipment	Alpha-Beta-Gamma and Alpha-Beta	Ludlum Model 12 or 3 and Ludlum 2360	Ludlum Model 44-9 and Ludlum Model 44-93	
Gamma Survey	Gamma	Ludlum Model 2221	Ludlum Model 44-10 NaI (2"x2")	
Exposure Rate Survey	Gamma	Ludlum Model 3 and Model 10	Ludlum Model 44-2 NaI (1"x1") and Integrated NaI detector	
Smear Counting	Alpha-Beta	Ludlum Model 2929	Ludlum Model 43-10-1	

¹⁷ May 2003 SAIC for USACE Gamma Walkover Survey and Geophysical Survey of the NFSS, December 2007 Tetra Tech Inc. for USACE NFSS Remedial Investigation Report, February 2015 URS Balance of Plant Operable Unit

It is important to note that URS, the Army Corps (USACE) contractor for the Feb. 2015 Field Investigation (footnoted below) was also the contractor for the CWM RMU-2 subsurface soil and pond sediment study but that the protocol difference was striking; the RMU-2 study contained no Field Notes, results were not even recorded. Not unlike CWM groundwater studies, this may suggest manipulation of findings which DEC may not have observed, not unlike many groundwater issues.

The April 17, 2009 CWM (Mahar) letter to U.S. Sec. of Defense Gates and U.S. Attorney General Holder states:

“CWM’s current operating permit requires that it conduct a radiological survey of the entire¹⁸ owned CWM property. As a result of that survey, the area generally encompassed by former Fac Pond 8 was identified as having radioactive contamination in the soils above acceptable levels. Thus, remediation is required.”

Under DEC’s approved closure plan, Fac Pond 8 radiological contamination will now be buried beneath a proposed PCB and chemical landfill that would pierce a groundwater zone.

- The Muni. Appeal noted (p.13) Fac Pond 8 soil analysis included “concentrations of 2,490 – 264,996 pCi/g of Radium-226.”
- By exponential contrast, the DOE cleanup Action level for Ra-226 in the 1980’s for VP certification was 5 pCi/g for surface and 15 pCi/g for subsurface soils.

Therefore, as a factual matter, today the federal government would remove radiological contamination that DEC staff is allowing CWM to bury because of RMU-2.

If not for RMU-2, CWM would wait to close Fac Pond 8 until the Corps came in to remediate it. There would no reason other than RMU-2 that could compel a publicly held company to justify what would otherwise be unnecessary.

The Municipal Stakeholders recent Appeal concludes that radiological characterization should occur prior to RMU-2 in a reasonable manner. The few examples from the many disparate DEC/CWM vs. Corps practices in the chart above suggests the DEC manner is unreasonable. However, the argument in light of the referral letters recently disclosed is that neither RMU-2 soil excavation nor RMU-2 investigation remotely resemble federal investigation and remediation at the same site for the same contamination history.

The willingness of the federal government (i.e. DOE referral letters) to conduct a remediation that would otherwise be precluded by CWM excavation and RMU-2 is significant and substantive.

Knolls Atomic Power Laboratory reactor (KAPL) waste:

Field Investigation Report to Refine the Extent of Soil Contamination NFSS, January 2009 Tetra Tech for USACE Final Report Results of Site Investigation and Drum Removal Vicinity Property G, URS April 2009 Radioactive Contamination report for CWM

¹⁸ CWM did not come anywhere near surveying its “entire” property, and certainly did not conduct the survey in accordance with federal standards applied at the NFSS property, which has identical legacy contamination. Hundreds of acres were excluded from the CWM “survey.”

The referral letters make way for a Corps investigation on CWM property that the Protocol Comparison chart makes clear would be likely to detect Plutonium where the CWM/DEC protocol does not.

The Army Corps read the same 2013 DOE desktop (“evaluation”) of KAPL DEC staff refers to in its Response and Reply to my petition and Appeal on CWM’s failure to use a radiological protocol likely to find as opposed to avoid, alpha and beta emitting radionuclides known to have been handled on CWM property. However, as with the DOE certifications, the Corps has not relied on that evaluation to exclude protocol that would be necessary to detect dangerous levels of alpha or beta emitters such as Plutonium or Strontium-90 for VP X and is unlikely to do so for VP H’, where KAPL waste was burned.

DEC staff common to Corps activities at the NFSS and to CWM permitting is aware that the Corps does not rely heavily on Cesium-137 to detect plutonium. Vicinity Property X is the other of the two VPs DOE has agreed to reopen. The 2014 Feasibility Study for the Corps DERPFUDS program demonstrates that Corps is not relying on Cs-137 there to detect KAPL waste: Beginning at pdf p.167 is a Remedial Capping Alternative discussion. Radionuclides at pdf pgs. 171-172 used for investigation or monitoring different media lists isotopes of Plutonium, Radium, Thorium, Uranium and Lead. Not Cesium-137.¹⁹

Comments submitted to DOE about its desk top explain the weaknesses in the report on KAPL, not unlike the significance of the weaknesses of the DOE VP certifications:

“KAPL wastes incorrectly characterized.

The report findings appear to be based on the assumption that the predominant radionuclide in the KAPL wastes sent to the NFSS is Cesium-137 (Cs-137) with minor amounts of Strontium-90 (Sr-90) and Americium-241 (Am-241). However, this assumption is incorrect:

The processing of irradiated uranium at the KAPL SPRU [separations process unit] facility produced mixed fission product waste containing approximately equal amounts of Cesium-137 and Strontium-90. Review of historical SPRU process documentation confirms that there was no separation of Cesium-137 and Strontium-90, with respect to the mixed fission product waste.

Waste profile information from the remediation of the SPRU facility reflects the preferential adherence of Cesium-137 to surface soils at the KAPL site, not the absence of Strontium-90 in the mixed fission product waste stream.

DOE’s KAPL waste analyses targeted only Cesium-137, not other contaminants of concern (The issue of plutonium may be addressed in future correspondence to you.)

Given that the disposal and storage of KAPL wastes on the NFSS and associated Vicinity Properties would be expected to result in both Cesium-137 and Strontium-90

¹⁹ <http://www.lrb.usace.army.mil/Portals/45/docs/DERPFUDS/LOOW/Reports/loow-wwtp-feasstudy-2014-06.pdf>

contamination, why has Cesium-137 been identified as a contaminant of concern for the NFSS but not Strontium-90? The answer seems to be a lack of analyses. Consider:

An investigative survey of the NFSS, performed by ORAU [Oakridge] in 1986 and 1987 identified areas of elevated Cesium-137 up to 838 pCi/g, but not Strontium-90. No Strontium analyses were performed on the samples.

Review of the radiological survey reports, prepared by ORAU in support of the DOE Formerly Utilized Sites Remedial Action Program [FUSRAP] reveals that only a very small fraction of survey samples, containing elevated Cesium-137, were analyzed for Strontium-90. Note Strontium-90 was detected up to 111pCi/g.

No Strontium-90 analyses were performed for verification survey samples.

Similarly, for the USACE's NFSS *Remedial Investigation* and *Remedial Investigation Addendum*, Strontium-90 analyses were extremely limited and added as an after-thought, only after Cesium-137 had been identified as a radionuclide of concern for the NFSS.

Validity of Using Cesium-137 as an indicator of all KAPL waste contaminants.

The remediation work at the KAPL SPRU facility also raises the question of whether Cesium-137 should be used as an indicator of Strontium-90 and other KAPL waste contaminants. Cesium-137 has been found to adhere strongly to soil, whereas other contaminants, such as Strontium-90, migrate much more easily and have been found in groundwater. The apparent lack of Strontium-90 on the NFSS and Vicinity Properties is likely to be due to a failure to target locations where strontium exists, since Cesium-137 and Strontium-90 would only be co-located in the securely contained KAPL wastes, not in the areas of spills and ground disposal.

KAPL Waste Remaining on Site.

The NFSS *Remedial Investigation* located several abandoned chemical drums on the NFSS and Vicinity Property G. One drum contained elevated uranium and traces of Americium-241, which pointed to it being part of the SPRU wastes sent to the [NFSS/CWM] site from KAPL.²⁰ This type of waste was not reviewed in the current assessment. Discrepancies also exist between the number of drums of mixed fission product waste quoted in the [DOE] review, compared with the actual number sent to the site.

A 1958 monograph by D. A. Manieri and W. H. Truran, "Radioactive Waste Disposal at Knolls Atomic Power Laboratory" contradicts the characterization of the KAPL wastes sent to LOOW as low level.

²⁰ May 2006, "Waste Acceptance Package for Drum Number 1 Generated at Niagara Falls Storage Site" report prepared for Buffalo District USACE by Tetra Tech, Inc. under subcontract to SAIC

Page 2 of the document describes high level and intermediate solid wastes being canned and drummed and high level liquid waste being processed to produce drummed slurry. The term low level waste only applies to boxed solid waste and liquid waste which was released to the sewer at KAPL. High level solid waste is packaged in aluminium tubing containers and placed within lead casks intermediate level solid waste is packaged in 55 gallon carbon steel drums (p. 6) Note, the monograph does not specify the type of drums to be used for radioactive slurry from the processing of high level liquid waste, but documentation consistently shows stainless steel drums were used, probably because the slurry was more aggressive than the solid waste.

The September/October/November 1951 Waste Disposal progress Report for KAPL records an overall average radiation level of 1,190 mr/hr per slurry drum.”

The Dec. 26, 1957 report (Herman Roth) of the first shipment of KAPL wastes sent to LOOW refers to stainless steel slurry drums. In addition to the 191 stainless steel slurry drums received at LOOW, the shipment included 217 carbon steel drums. Only the drums of slurry, 394 drums in total, were addressed. The radioactive content of wastes sent in carbon steel drums (intermediate solid waste according to the 1958 Manieri and Truran monograph) was not addressed. Other documents²¹ refer to 1000 drums of KAPL waste received at the NFSS/CWM. Carbon steel drums deteriorated more than the stainless steel drums.(see attached) The contents of the carbon steel drums has not been addressed.

²¹ Report on KAPL Waste Shipment and Storage at Lake Ontario Ordnance Works Model City, NY by B. James Health Physics Unit. F. W. Malone memos of Oct. 24, 1957 and Dec. 11, 1957. U.S. Atomic Energy Commission letter of Dec. 20, 1957, Waste Burial – Niagara Falls Drums by Herman Roth to Union Carbide Nuclear Company.

Issue #3: EPA and DEC failed to initiate timely consultation with the Tuscarora Nation about CWM as early as possible in the process pursuant to EJ guidance for both.

Reference is made to Judge McClymond's January 26, 2016 response to my Freedom of Information Law request of January 6, 2016. This included correspondence from Tuscarora Chief Leo Henry of Oct. 19, 2015 addressed jointly to EPA Region 2 Administrator Enck and DEC ALJ Judge McClymonds. Also, correspondence from EPA Region 2 Director John Filipelli to Tuscarora Chief Leo Henry of April 10, 2015.

On March 25, 2016 in response to a question from Region 9 Attorney Mucha, Judge O'Connell stated that Chief Henry's letter, which petitioners were provided in January, was "part of the record." In response to my follow up question, the ALJ indicated the letter had also been provided to the Siting Board. The ALJ's memo summarizing the March 25, 2016 conference call among parties, however, makes no mention of these inquiries. It is unclear as to *when* the ALJ and Siting Board received a copy of the letters, and whether the letter can be relied upon as part of the decision-making process.

This request to reconvene the Issues Conference is to allow petitioners to object to CWM's exclusion of the Tuscarora Nation as an impacted EJ community on the significance and substance of the letter and other supporting evidence, some of which is referenced, below.

EPA's Mr. Filipelli wrote in April, 2015:

"We thank the Tuscarora Nation (Nation) for raising to EPA Region 2 (EPA) potential ecological risk and associated environmental justice (EJ) concerns related to the Chemical Waste Management (CWM) Chemical Services facility located on 1550 Balmer Road, Model City, Niagara County, New York. We have determined that these potential concerns trigger the *July 2014 EPA Policy on Environmental Justice for Working with Federally Recognized Tribes and Indigenous Peoples*. . .

. . . The Nation also expressed concern about the lack of dialogue with NYSDEC on the RCRA permitting issuance process. . . The EPA will also discuss how it can assist the coordination between the Nation and NYSDEC regarding the modification to CWM's RCRA permit and the Nation's request to be involved in the permitting review process."

Chief Henry wrote October 2015:

"There is no current technology that prevents landfills from leaking, and the permanent disposal of hazardous waste in such close proximity to the Nation will result in disproportionate impacts to indigenous people who rely on natural resources affected by this proposed action."

Chief Henry's letter notes that the proximity of CWM to the Nation reflected in CWM applications was "incorrect" and that applications overlooked cultural resources and flora and fauna among other issues identified. Neither DEC or EPA complied with the spirit of EJ policy and requested consultation *about CWM* with the Tuscaroras in writing, in the early stages of the application process; they did so only long after the public comment period closed and the Tuscarora, not the agencies raised the issue.²²

²² From Region 9 Administrator Abby Snyder on June 25, 2015, long after the public comment period closed and with no mention of CWM or the timetable associated with the decision-making process:

The fact that CWM mentioned the Nation in its DEIS and dismissed the Nation as impacted might compel a reasonable person to inquire why DEC failed to engage the Nation and find out if it agreed with CWM, particularly knowing the Nation had expressed CWM concerns in the past.

From the DEC FOIL reply, DEC wrote the following to EPA:

Date: March 25, 2015
To: Andrew Park, EPA Region II
From: Matt Mortefolio, DEC Central Office

Andy:

I reviewed our records and I can't find any written comment or Hearing statement on CWM's proposed RMU-2 landfill from anyone identified as speaking for the Tuscarora Nation. Also, I have asked other DEC staff and no one is aware of the Tuscarora Nation raising ecological concerns related to RMU-2, however they have voiced such concerns in the past.

Ecological matters related to RMU-2 are discussed in CWM's Draft Environmental Impact Statement (DEIS), which is part of the current administrative process.

Matt

Date: March 12, 2015
To: Matt Mortefolio, DEC Central Office
From: Andrew Park, EPA Region II
Content:

Matt, Bidjan,

I am informed that the Tuscarora Nation are raising potential ecological concerns with respect to CWM. Can you please confirm whether potential ecological concerns have been assessed?

Thank you,
Andrew Park

DEC finally consulted with the Nation at a meeting joint with EPA held a few weeks ago (March 2016.)

The Issues Conference should be reopened to consider whether an EJ Community is affected by CWM applications. The Tuscarora Nation, the public and all petitioners have been prejudiced by the failure of both DEC and EPA to consult the Nation "at the earliest opportunity" in the process.

"Dear Chief Henry: The Region 9 office of the New York State Department of Environmental Conservation would like to meet with representatives of the Tuscarora Nation to discuss issues of importance or concern to the Nation, and general issues of consultation." This letter did not mention CWM, at all.

From Region 9 Attorney Maureen Brady on April 22, 2015, long after the public comment period had closed and with no mention of CWM or the timetable associated with decision-making:

"Dear Mr. Patterson: Staff from the Department of Environmental Conservation, Region 9, would like to meet with you and other representatives of the Tuscarora Nation to discuss issues of importance or concern to the Nation. I thought I could contact you Friday afternoon to talk about potential dates for a meeting. Are you available then? If not, let me know when would be a good time to talk. Thanks so much"

DEC project staff inaction toward this particular Environmental Justice Community appears hostile for the following reasons.

- DEC staff is aware that the Tuscaroras fish in the Niagara River and Four Mile and Twelve Mile Creeks, and, rely on plant life in addition to the animal life that is common to CWM and the Reservation.
- DEC is also aware that Twelve Mile Creek empties at *Tuscarora* State Park. DEC is also well aware that the Tuscaroras settled at Four Mile Creek when arriving here 300 years ago.
- DEC is also aware that CWM has been fined for discharges of PCBs, VOCs, and semi-VOCs in all of the above areas.

This “part of the record” was released to petitioners only after I submitted a Freedom of Information Request in January. Petitioners should have the opportunity and reasonable time to explore and comment on the ramifications of Chief Henry’s letter and related evidence.

Issue #4: RMU-1 closed Nov. 17, 2015.

- a) The baseline for traffic and noise is therefore, -0-, not RMU-1 volume.
 - b) CWM’s parent still tells investors it operates “5 *active* hazardous waste landfills.”
-

Exhibit C includes excerpts from the transcript for Waste Management, Inc. public earnings call from last quarter (Feb. 2015 for the financial quarter and year ended 12-13-2015) and also slides from March 2016 investor presentations. When asked about the status of the company’s “5 active hazardous waste landfills,” management has neglected to inform investors that (since Nov. 17, 2015) the number is now 4. Waste Management’s CEO was also asked last quarter about how the hazardous waste landfills were doing, and discussed each one except Model City. Given the company’s history of fines for violating Securities and Exchange Commission rules for financial reporting, the failure to disclose the true status of facilities when specifically asked about them is inappropriate. A reasonable person may wish to inquire if this represents another violation of SEC rules.

Exhibit A

Excerpts from Army Corps Proposed Plan and Feasibility Study for the IWCS

“This proposed plan identifies the preferred alternative for addressing the material contained in the Interim Waste Containment Structure (IWCS) Operable Unit at the Niagara Falls Storage Site in Lewiston, New York, and was prepared to fulfill the public participation requirements of Comprehensive Environmental Response, Compensation, and Liability Act Section 117(a) and the National Oil and Hazardous Substances Pollution Contingency Plan [40 Code of Federal Regulations 300.430(f)(2)]. This document is issued by the United States Army Corps of Engineers, the lead agency for site activities. The proposed plan summarizes information that can be found in greater detail in the **Niagara Falls Storage Site remedial investigation reports issued in 2007 and 2011**²³ and the IWCS feasibility study issued in December 2015.

The Corps of Engineers proposes that the final remedial action for the IWCS Operable Unit be the alternative designated as Alternative 4, excavation, partial treatment, and **off-site disposal of the entire contents of the IWCS**, described in more detail in this proposed plan. After evaluating this alternative pursuant to the criteria described in the National Contingency Plan, 40 Code of Federal Regulations Section 300.430(e)(9)(iii), the Corps of Engineers considers it to be protective of human health and the environment and cost effective.” (p. i)

Site Location and History (p.1)

“The Niagara Falls Storage Site (NFSS) is a 77.3-hectare (191-acre) property located at 1397 Pletcher Road in the Town of Lewiston, New York, approximately 19 miles (30.6 kilometers) north of Buffalo, New York. The property is owned by the federal government and operated and maintained by the United States Army Corps of Engineers. The site location is shown on Figure 1.

The NFSS represents a portion of the former Lake Ontario Ordnance Works, a former World War II munitions production facility, and was used by the Manhattan Engineer District and U.S. Atomic Energy Commission to store radioactive residues and other materials beginning in 1944. Uranium ore residues were generated through the processing of uranium ore for development of the atomic bomb. The first materials sent to NFSS for storage were radioactive residues from processing uranium ore at the Linde Air Products facility located in Tonawanda, New York. These residues resulted from processing ores with uranium (U3O8) contents ranging from 3.5 percent to 10 percent and were known as R-10, L-30, L-50, and F-32 residues. Beginning in 1949, radioactive residues from uranium processing at the Mallinckrodt Chemical Works – referred to as the K-65 residues – were shipped to NFSS in 55-gallon drums for storage. The uranium ore from which these residues were generated contained 35 to 65 percent U3O8, as well as uranium decay products, primarily radium and thorium, in secular equilibrium with the uranium prior to processing. Between 1950 and 1952, the K-65 residues were transferred from the drums to a large concrete (former water storage) tower on site, referred to as Building 434.

In addition to the residues, radioactively contaminated materials from decommissioning wartime plants and uranium and thorium billets and rods (processed at private facilities) were sent to the

²³ USACE (U. S. Army Corps of Engineers) 2007. *Remedial Investigation Report for the Niagara Falls Storage Site*, Prepared by Science Applications International Corporation, December.
USACE 2011. *Remedial Investigation Report Addendum for the Niagara Falls Storage Site*, Prepared by Science Applications International Corporation, April.

NFSS for temporary storage. Between 1982 and 1986 the U.S. Department of Energy (USDOE), successor to earlier U.S. energy agencies, constructed the Interim Waste Containment Structure (IWCS) to house the residues at NFSS until a final determination on the residue disposition was made.”

Interim Waste Containment Structure (p.2)

“Between 1982 and 1986, the USDOE constructed the IWCS located in the southwest portion of the NFSS (Figure 2). The IWCS is an engineered landfill that is approximately 300 meters (990 feet) long by 140 meters (450 feet) wide and reaches a maximum height of 10 meters (34 feet) above ground surface. A clay dike/cut-off wall constructed around the IWCS provides an absorption barrier to horizontal radionuclide migration. The cut-off wall also extends across the near-center of the IWCS.

Within the IWCS, the radioactive residues, K-65, L-30, L-50, and F-32, were placed in existing concrete structures that had been part of the freshwater treatment plant for the Lake Ontario Ordnance Works during the 1940s. These buildings, located in the southern end of the IWCS, were made of reinforced concrete and originally designed to securely hold liquids. The R-10 residues remained on the ground in the north end of the IWCS where they were originally placed. In addition to the residues, soil and debris generated from USDOE cleanup activities at the site and nearby areas (termed vicinity properties) were placed over the residues and by 1986, the IWCS was covered by a multi-layered cap. In 1991, miscellaneous contaminated debris and soil were placed in a 99-meter (325-foot) by 59-meter (192-foot) waste containment cell that was excavated within the northern portion of the IWCS (BNI 1991). The excavation did not penetrate the entire depth of the clay cap layer and after waste placement, the cap was restored.

A south-north cross-section of the IWCS is presented on Figure 3.

The residues emit high levels of gamma radiation and produce radon gas from the decay of radium-226, both of which present a potential risk to human health and the environment. By covering the residues with lower-activity waste and a multi-layer cap, the IWCS effectively retards radon and gamma emissions and inhibits infiltration of precipitation and migration of contamination to groundwater.

The design life of the existing IWCS cap is 25 [2011] to 50 years [2036], and the design life of the bottom,²⁴ dike, and cut-off walls is 200 to 1,000 years (BNI 1986). In the years following completion of the IWCS, several investigations have been conducted to review the physical integrity of the clay cap and dike/cut-off walls [United States Army Corps of Engineers (USACE) 2011]. These investigations have found that the IWCS is intact and effectively containing the materials placed inside. Therefore, the IWCS presents no current risk to human health or the environment. Potential future risks from the wastes in their current form are discussed in Section 2.1.

Waste characterization of the IWCS is based on historical information, analytical records, and process knowledge. No intrusive sampling of the IWCS materials was conducted for the remedial investigation phase (USACE 2007). It was determined that sampling would require a breach of the clay cap, and this

²⁴ Based on the Bechtel National, Inc. 1994 – *Failure Analysis Report for the NFSS Lewiston, New York*. However, the IWCS has no “bottom.” See BNI report comment next page.

breach was considered unacceptable. The available data were reviewed and determined to be sufficient for the purpose of conducting the feasibility study (USACE 2015).”

As noted in my petition and elsewhere, the NFSS has no engineered bottom. Its “foundation” is “natural.” From the BNI report (p.4-28): “The bottom of the WCS consists of naturally occurring brown clay. . . In addition to the barriers provided by the natural materials of the WCS foundation, higher activity residues including the K65 residues are surrounded by the basement of what was formerly building 411.” Building 411 was constructed in the 1940’s.

Human Health Risks (p.4)

“The USDOE performed a baseline risk assessment of the IWCS in 1986 to quantify long-term risk assuming no action would be taken on the IWCS (USDOE 1986). Under the No Action scenario, it was assumed by USDOE that there is no monitoring, maintenance, or land-use controls, and a resident intruder builds a house in the contaminated materials and spends 30 years at the same residence, eating contaminated food grown in an on-site garden, and drinking contaminated water from a well located at the edge of the contaminated area. The USDOE estimated that the annual radiological dose to the lung tissue from inhalation of radon gas and its radioactive decay products would be approximately 8,000 rem per year, which could be fatal in a few years. They concluded that “By far the most significant radiological pathway, both in terms of dose and adverse health effects, is the inhalation of radon-222 gas (and its radioactive decay products) with resulting dose to the resident-intruder’s bronchial epithelium (lining of the lung) and consequent increased risk of lung cancer” (USDOE 1986). Radon-222 gas is a decay product of radium-226, the main radioactive component of the K-65 residues.

USDOE’s assessment was later revisited by the Corps of Engineers in 2012 to reflect an updated understanding of the residues, i.e., that the K-65’s likely contained a greater concentration of radium-226 (USACE 2012). In both the 1986 and 2012 studies, the exposure assessment for the on-site hypothetical resident was limited to the indoor radon inhalation pathway because the estimated radon inhalation risk was so large, the evaluation of lesser exposures (e.g., eating contaminated food grown in a garden on the waste area, drinking contaminated groundwater, or even exposure to the significant gamma radiation emanating from the residues) was considered unnecessary to determine site risks. The fatal cancer risk for the hypothetical resident was 4×10^{-1} (4 in 10) via the radon inhalation pathway, which is above the acceptable human health risk range by several orders of magnitude.

More recent calculations showed unacceptable risk to a hypothetical maintenance worker during excavation of the residues, assuming no engineering controls (USACE 2012). Since the current and anticipated future use of the site is industrial and the exposure assumptions for the hypothetical maintenance worker are sufficiently similar to those for an industrial worker, a breach of the cap also would pose unacceptable risk to a hypothetical industrial worker.”

Alternative 4: Excavation, Treatment, and Off-site Disposal of Subunit A; Excavation and Off-site Disposal of Subunits B and C (p.14)

“Under Alternative 4, all of the material in the IWCS is excavated and disposed of off-site. In addition, the K-65 and commingled residues in Subunit A are stabilized, solidified, and containerized by the same methods specified in Alternatives 3A and 3B.

Alternative 4 is very similar in scope and requires similar construction techniques as Alternatives 3A and 3B, so it is also rated high for long-term effectiveness and permanence and moderate for implementability and reduction of toxicity, mobility or volume through treatment. However, under Alternative 4, all of the material in the IWCS is removed, which is 211,455 cubic yards or 76 percent more than Alternative 3A and 181,164 cubic yards or 65 percent more than Alternative 3B. This additional volume results in increased waste handling and transportation and an increased risk for construction-type and vehicle-related accidents. Therefore, Alternative 4 is rated low for short-term effectiveness.

In summary, Alternative 4 is:

- Rated high for long-term effectiveness and permanence;
- Rated moderate for implementability and reduction of toxicity, mobility or volume through treatment;
- Rated low for short-term effectiveness;
- Requires no operations, maintenance and reviews (residual material from the IWCS would be addressed under the subsequent Balance of Plant OU); and
- Costs \$490.6M (all capital costs).”

Feasibility Study Report for the IWCS at the NFSS ²⁵

“4.6.3.1 Long-term effectiveness and permanence (p.4-41)

Alternative 4 removes all wastes and hazardous substances in the IWCS consistent with the RAOs. The IWCS wastes will be removed to action levels as determined by ARARs, resulting in risk within acceptable levels. Therefore, Alternative 4 is effective at preventing long-term unacceptable radon and gamma radiation exposures. The long-term effectiveness and permanence of Alternative 3A is enhanced by the removal and treatment of the K-65 and commingled residues by cement stabilization, which reduces contaminant mobility and radon emanation. The treated waste also is placed in IP-2 steel containers, which provide shielding during both transport and final disposal. The K-65 residues represent only 1% of the total volume of waste but about 90% of the Ra-226 content in the IWCS; therefore, treatment of the K-65 residues addresses the majority of the radioactivity in the IWCS. As a result, the treating and containerizing of the K-65 residues in this alternative improves the overall permanent protectiveness of Alternative 3A with regard to the K-65 residues. The removal of all wastes permanently eliminates the potential for release of IWCS hazardous constituents to groundwater.”

²⁵ Feasibility Study Report: <http://www.lrb.usace.army.mil/Portals/45/docs/FUSRAP/NFSS/EI/nfss-iwcs-feasstudy-2015-12.pdf>

6.5 ALTERNATIVE 4 – REMOVAL; TREATMENT (SUBUNIT A ONLY); AND OFF-SITE DISPOSAL OF SUBUNITS A, B, AND C (p.6-2)

“There are advantages and disadvantages to Alternative 4 relative to the other alternatives. The primary advantage is that the alternative removes all waste from the site. This includes all of the radiological contamination in the IWCS and achieves the goal of reducing the toxicity (via reduced radon emanation) and mobility of the highest activity waste stream—the K-65 residues—through treatment by cement stabilization. Because the alternative removes the hazardous substances from the site, there will be no post-construction operation and monitoring cost for Alternative 4.

The primary disadvantage of this alternative is the high capital cost associated with construction. Capital costs for this alternative are over 20 times higher than Alternative 2 and approximately twice that of Alternatives 3A and 3B. The total cost would require a significant funding commitment from the government.

Other disadvantages include the potential short-term impacts to both the worker and the public related to uncovering the Subunit A residues (K-65, L-30, L-50, and F-32 residues) and R-10 residues, as well as the complexity of segregating and size-reducing the Subunit B building materials. These issues result in the need to design significant controls into the alternative to address these concerns. This alternative has the greatest amount of worker and transportation risk due to the large volume of waste being handled and off-site transportation of residues and other materials. Although a similar remediation effort was successfully implemented at the Fernald K-65 Project, including successful cement stabilization of the residues, there are enough differences at the IWCS to acknowledge that there are implementability unknowns with this alternative.”

Excavation of Subunits B and C results in a high volume of materials that must be shipped off-site. The selected mode of off-site transportation is bimodal. Wastes will be loaded into trucks at the site, transported via truck to a rail line, and shipped to the disposal facility via rail (Appendix I). The volume of Subunit C is approximately twice that of Subunits A and B. Because of the increase in the volume of wastes being handled, there is a greater potential for construction-type accidents for Alternative 4 compared to Alternatives 3A and 3B.

The estimated time to complete Alternative 4 is 8 years. The time related to post-construction regulatory documents is not included in this estimate. The estimated durations in Figure 4-4 are based on the productivity assumptions used in the cost estimation presented in Appendix J.

Alternative 4	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
Design and Planning	■	■	■						
Infrastructure			■	■					
Subunit B/C Removal to Access Subunit A			■						
Subunit A Retrieval/Stabilization/Disposal				■	■	■			
Subunit C Excavation/Disposal					■	■	■		
Subunit B Excavation/Disposal							■	■	
Facility D&D							■	■	
Site Restoration								■	

Figure 4-4. Sequencing of Activities for Alternative 4

Exhibit B

DOE Referral Letters for VP H' and VP X



Department of Energy

Washington, DC 20585

September 22, 2014

[REDACTED]
Deputy Commanding General for Civil and Emergency Operations
Headquarters, U.S. Army Corps of Engineers
441 G Street NW
Washington, D.C. 20314-1000

Dear [REDACTED]:

The U.S. Army Corps of Engineers (USACE) notified the U.S. Department of Energy (DOE) by letter dated August 17, 2005, that USACE had identified unassessed radiological contamination on Vicinity Property H Prime (VP-H') at the Niagara Falls Storage Site (NFSS) near Lewiston, New York. USACE requested that DOE review records of the cleanup of this property to determine if investigation and cleanup was required.

The NFSS and associated vicinity properties are within the original boundary of the former Lake Ontario Ordnance Works, a portion of which was used in support of Manhattan Engineer District and U.S. Atomic Energy Commission activities. DOE designated VP-H' for cleanup under the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1984. DOE removed assessed residual radioactive contamination from this property in 1984 to the extent necessary to comply with remedial action guidelines established for the site. In 1991, DOE certified that radiological conditions on VP-H' conformed to the cleanup standards and listed the property as a completed FUSRAP site.

DOE has reviewed records of site characterization, remediation, and verification, as well as the information provided by USACE and has found that:

- DOE identified numerous small sources during the verification survey in the area of the Contaminated Material Storage Area (CMSA) pads. Several individual biased samples exceeded the cleanup guideline for radium-226, but the average radium-226 concentration was less than the guideline.
- Radioactive slag was found in the area. This material was used extensively in Niagara County for road base and railroad ballast. Officials of the New York Department of Environmental Conservation indicated that their agency was responsible for managing it. If slag was found co-mingled with FUSRAP-eligible waste, it would be removed and disposed of along with FUSRAP waste.
- USACE measured gamma activity in 2005 at levels up to 8 times higher than background in the areas of potential contamination that USACE delineated. These measurements indicated that gamma sources were on the property at levels that may exceed guidelines.
- The radium-226 and total uranium concentrations in USACE sample CMSA 7-0 exceeded the numerical guidelines established for the DOE remediation work at the site. The sample appeared to represent FUSRAP-eligible waste because it contained less uranium than radium-226, which was consistent with uranium-processing residues at this location.



- The radium-226 concentration in sample CMSA Pad 8-0 exceeded the radium-226 guideline for surface soil.
- The USACE measurements did not provide the information needed to determine if average concentrations of radium-226 and uranium exceeded the cleanup criteria for VP-H'.

Article III.B.1.b. of the *Memorandum of Understanding Between the U.S. Department Of Energy and the U.S. Army Corps of Engineers Regarding Program Administration and Execution of the Formerly Utilized Sites Remedial Action Program (FUSRAP)* (MOU) stipulates that for sites remediated by DOE before 1997 (i.e., "completed" sites), DOE "Shall request USACE to conduct additional FUSRAP cleanup in a manner consistent with those procedures described in Article III section D, FUSRAP ELIGIBILITY (NEW SITES)."

DOE concludes that unassessed contamination exceeding cleanup guidelines might remain on VP-H'. Therefore, in accordance with Article III.B.1.b. of the MOU, DOE refers NFSS VP-H' to USACE for assessment and, if needed, remediation.

Article III.D.1.a of the MOU provides that DOE "Shall perform historical research and provide a FUSRAP eligibility determination, with historical references, as to whether a site was used for activities which supported the Nation's early atomic energy program." NFSS VP-H' was previously found to be eligible and was remediated under FUSRAP, and the site was included on the list of Completed FUSRAP Sites in Attachment A of the MOU.

In accordance with MOU Article I.F.13, if USACE concurs that evaluation and, if needed, remediation is required, the status of NFSS VP-H' will change to "active," and all appropriate provisions of the MOU shall apply.

We appreciate USACE's assistance and will continue to work cooperatively with your staff in carrying out the terms of the MOU. Please contact [REDACTED] if you need further information in this matter.

Sincerely,

[REDACTED]

Director
Office of Legacy Management

cc:

[REDACTED], USACE-Buffalo District
 [REDACTED], USACE-HQ, CEMP-CEP
 [REDACTED], HQUSACE, CECW-IP
 [REDACTED], DOE-GC-51 (e)
 [REDACTED], DOE (e)
 [REDACTED], DOE (e)
 [REDACTED], DOE (e)
 [REDACTED], Stoller (e)

File: LM 0010.05 (rc grand junction)

**Department of Energy**

Washington, DC 20585

September 22, 2014

[REDACTED]
Deputy Commanding General for Civil and Emergency Operations
Headquarters, U.S. Army Corps of Engineers
441 G Street NW
Washington, DC 20314-1000

Dear [REDACTED]:

The U.S. Army Corps of Engineers (USACE) encountered unassessed residual radiological contamination while removing structures associated with a former wastewater treatment plant on Vicinity Property X (VP-X) at the Niagara Falls Storage Site (NFSS) near Lewiston, New York. This letter is to inform you that the U.S. Department of Energy (DOE) is referring VP-X to USACE for assessment and, if needed, remediation.

The NFSS and associated vicinity properties are within the original boundary of the former Lake Ontario Ordnance Works, a portion of which was used in support of Manhattan Engineer District and U.S. Atomic Energy Commission activities. DOE designated VP-X for cleanup under the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1984. DOE removed assessed residual radioactive contamination from VP-X in 1984 and certified that radiological conditions on this property conformed to the cleanup guidelines in 1991. In 2010, DOE performed a desktop review of the remediation documentation and current land use at NFSS vicinity properties in response to stakeholder concerns. All FUSRAP material at the completed sites, including VP-X, was remediated to meet DOE guidelines for unrestricted use. This report also concluded that if undiscovered contamination is identified, the DOE would refer the property to USACE for investigation and possible remediation.

In 2011, USACE conducted intrusive work at the former wastewater treatment plant to mitigate physical hazards. Radiological release surveys conducted on process pipes revealed elevated beta activities in scale on the pipe interiors. Samples of the scale were collected and analyzed. Information provided by USACE demonstrates that the following conditions exist:

- Elevated uranium activities that exceed the volumetric radionuclide guideline established for the DOE remediation work were detected on some of the process pipes.
- The extent of elevated uranium activity has not been determined.
- Health risk was not assessed with regard to the elevated uranium detected in piping associated with the former wastewater treatment plant.



[REDACTED]

-2-

Article III.B.1.b. of the *Memorandum of Understanding Between the U.S. Department Of Energy and the U.S. Army Corps of Engineers Regarding Program Administration and Execution of the Formerly Utilized Sites Remedial Action Program (FUSRAP) (MOU)* stipulates that for sites remediated by DOE before 1997 (i.e., "completed" sites), DOE "Shall request USACE to conduct additional FUSRAP cleanup in a manner consistent with those procedures described in Article III section D, FUSRAP ELIGIBILITY (NEW SITES)."

DOE concludes that unassessed contamination exceeding cleanup guidelines might remain on VP-X. Therefore, in accordance with Article III.B.1.b., of the MOU, DOE refers NFSS VP-X to USACE for assessment and, if needed, remediation.

Article III.D.1.a of the MOU provides that DOE "Shall perform historical research and provide a FUSRAP eligibility determination, with historical references, as to whether a site was used for activities which supported the Nation's early atomic energy program." NFSS VP-X was previously found to be eligible and was remediated under FUSRAP, and the site was included on the list of Completed FUSRAP Sites in Attachment A of the MOU.

In accordance with MOU Article I.F.13, if USACE concurs that evaluation and, if needed, remediation is required, the status of NFSS VP-X will change to "active" and all appropriate provisions of the MOU shall apply.

We appreciate USACE's assistance and will continue to work cooperatively with your staff in carrying out the terms of the MOU. Please contact [REDACTED] if you need further information on this matter.

[REDACTED]

Director
Office of Legacy Management

cc:

[REDACTED], USACE-Buffalo District
[REDACTED], USACE-HQ, CEMP-CEP
[REDACTED], HQUSACE, CECW-IP
[REDACTED], DOE-GC-51 (e)
[REDACTED], DOE (e)
[REDACTED], DOE (e)
[REDACTED], DOE (e)
[REDACTED], Stoller (e)

File: LM 0010.05 (rc grand junction)

Exhibit C

Waste Management, Inc. (WM) Q4 2015 Earnings Call February 18, 2016 10:00 am ET²⁶

“**Michael Hoffman** (Analyst - Stifel Nicolaus): p.11

Okay. All right. And then the one in-the-weeds question around the industrial side is you do operate five hazardous waste landfills. What has the trend been volume-wise there?

Jim Trevathan (COO):

It has been as we ended the year, and as you saw, some of the petrochemical plants gearing up some with a low -- their low feedstock costs, it has been okay. We have done fine at both AEREON in Alabama, Lake Charles in Louisiana. Kettleman has got the new permit in online and adding some volume. So overall, that business is doing well for us. It is not, as you know, a huge part of our total revenue, but it is an important part because it differentiates us from those large -- four of those large customers with capability to handle everything from their trash and recycling to their hazardous waste. And they like our balance sheet, as we just talked about. And our capabilities are full for them. So it is a good part of our Company and we expect to grow it.

David Steiner (WM President, CEO):

You know, it has been very nice for us, Michael. And frankly, if I look at the various pieces of the business and think can they get better or worse? This is one that I think can get better, both organically just because of the growth in the volumes, but we can also extend the reach of these landfills. Right now, we have got fairly limited reach without transfer capabilities. And over time, if we can improve those transfer capabilities, we can extend the reach of our hazardous landfills and both grow volumes because we see growth in overall volumes, but also because we can extend our reach and take volumes out of further-away geography.”

The following was presented by Waste Management, Inc. (CFO James C. Fish) at Gabelli and J.P. Morgan investor conference on March 3 and March 9, 2016, four months after CWM Model City closed.

Note: It is a color slide printed in black-and-white. The easier to view color slide can be seen at <http://investors.wm.com/phoenix.zhtml?c=119743&p=irol-calendarPast> under archived events.

²⁶ <http://www.thestreet.com/story/13464452/1/waste-management-wm-earnings-report-q4-2015-conference-call-transcript.html>

Waste Management, Inc.

Gabelli Waste & Environmental Services Symposium

MARCH 5, 2015

THINK GREEN:

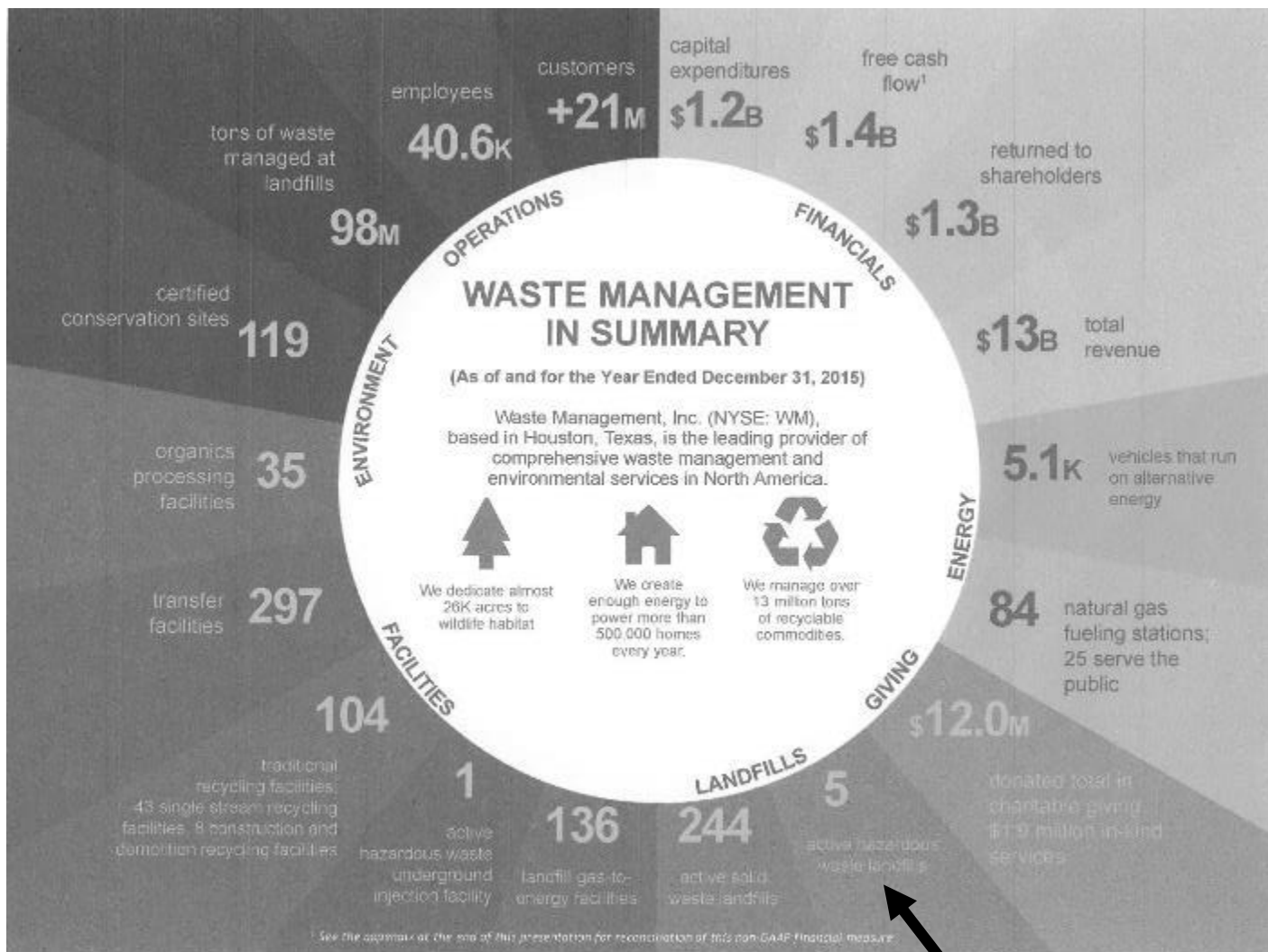


Waste Management, Inc.

J.P. Morgan Aviation, Transportation, and Industrials Conference

MARCH 9, 2015

THINK GREEN:



“5 active hazardous waste landfills”

Amy H. Witryol
 4726 Lower River Rd.
 Lewiston, NY 14092

April 22, 2016

Hon. Daniel P. O’Connell
 Administrative Law Judge
 Office of Hearings and Mediation Services
 625 Broadway, 1st Floor
 Albany, New York, 12233-1550 by email and by First Class U.S. Mail

RE: Errata - Request to Reconvene Issues Conference in the matter of CWM Chemical Services, LLC
 RMU-2

Dear Judge O’Connell,

Below is a list of Errata for my April 21st submission on the above-referenced matter. A replacement page for the first item was emailed yesterday and will be included with the mailed hardcopy of this letter.

Page and para	Correction
p.1	March 9 <u>April 21</u>
p.6 para 3	the Corps anticipates excavation of roughly 50,000 cubic yards, ^s far in excess of <u>less than</u> what CWM applications
p.9 para 2	problems into <u>a</u> future Corrective Action plan neither a Siting Board nor an ALJ nor a Commissioner-designee would ever see.
p.10 para 2	DEC-approved soil excavation, which differs dramatically from Army Corps investigation and remediation.
p.11 ftnote ¹⁸	did not conduct e the survey
p.11 para 8	There would <u>be</u> no reason other than RMU-2 that could compel a publicly held company to justify <u>expense</u> w that would otherwise be unnecessary.
p.12 para 3	The 2014 Feasibility Study (<u>on VP X</u>) for the Corps DERPFDUS program demonstrates that <u>the</u> Corps is not relying on Cs-137 there to detect KAPL waste

Thank you.

Sincerely,

Amy Witryol

cc: Service List

Amy Witryol
4726 Lower River Rd.
Lewiston, NY 14092

April 21, 2016

Hon. Daniel P. O'Connell
Administrative Law Judge
Office of Hearings and Mediation Services
625 Broadway, 1st Floor
Albany, New York, 12233-1550 by email and by First Class U.S. Mail

RE: Request to Reconvene Issues Conference in the matter of CWM Chemical Services, LLC RMU-2

Dear Judge O'Connell,

Pursuant to your Memorandum of March 25, 2016, enclosed is a request to reconvene the Issues Conference to evaluate new information not already addressed by post-petition submissions.

Radiation:

Issue #1: Army Corps of Engineers *Proposed Plan* to remove all contents of the Interim Waste Containment Structure at the Niagara Falls Storage Site, adjacent to CWM, issued Dec. 2015. Removal of high-activity residues, upwind and upgradient of CWM will increase short-term risk according to the Corps (during the project construction period c.2021-2027)

Issue #2: Department of Energy (DOE) referral to the Corps to reopen Vicinity Property (VP) H' located on CWM and Vicinity Property X adjacent to CWM.

- a) These are the first VPs to be reopened further evidencing 1980's DOE surveys and remediation were inadequate (as NYS Dept. of Health concluded in 2005 over the objections of CWM and DEC staff.) Corps remediation standards are exponentially better than DEC soil excavation standards.
- b) Knolls Atomic Power Laboratory reactor (KAPL) waste was handled on both of these VPs

Environmental Justice/Compliance:

Issue #3 EPA and DEC failed to initiate timely consultation with the Tuscarora Nation about CWM as early as possible in the process pursuant to EJ guidance for both. DEC did not disclose the Tuscarora's Oct. 2015 letter to both EPA and DEC until my FOIL of Jan. 2016. The letter is not posted on DEC webpages for CWM.

Issue #4: RMU-1 closed Nov. 17, 2015.

- a) The baseline for traffic and noise is therefore, -0-, not RMU-1 volume.
- b) CWM's parent still tells investors it operates "5 active hazardous waste landfills."

A copy of this letter and memo are being mailed to the Service List.

Thank you.

Sincerely,



Amy Witryol