

April 20, 2011

Mr. Bryan C. Bower, Director
U.S. Department of Energy
West Valley Demonstration Project
10282 Rock Springs Road
West Valley, NY 14171-9799

Dear Mr. Bower:

SUBJECT: New York State Energy Research and Development Authority (NYSERDA) Comments on the *Phase 1 Characterization Sampling and Analysis Plan West Valley Demonstration Project, Revision 1*

NYSERDA is providing the enclosed comments on the Department of Energy's (DOE) *Phase 1 Characterization Sampling and Analysis Plan West Valley Demonstration Project, Revision 1*, dated March 31, 2011.

NYSERDA respectfully requests that DOE provide a written response to the enclosed comments.

Any questions regarding the enclosed comment package should be directed to Andrea Mellon (716) 942-9960 extension 4054.

Sincerely,

WEST VALLEY SITE MANAGEMENT PROGRAM



Paul J. Bembia, Director

ALM/amd

Enclosure:

1. NYSERDA Comments on the *Characterization Sampling and Analysis Plan West Valley Demonstration Project, Rev. 1*, Dated March 31, 2011.

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Messr. Bryan Bower

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NYSERDA Comments on the *Phase 1 Characterization Sampling and Analysis Plan West Valley Demonstration Project, Rev. 1*

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1.	1	General Comment	NYSERDA	The West Valley Demonstration Project (WVDP) Phase 1 Characterization Sampling and Analysis Plan (CSAP) identifies that subsurface soil contamination exists in a number of Waste Management Areas (WMAs), but that the extent of this contamination is unknown. At some point, the other sources of subsurface contamination (buried contamination and contaminated groundwater) need to be evaluated to ensure that those areas are identified and characterized.	
2.	General Comment	General Comment	NYSERDA	<p>The predominant focus of the WVDP Phase 1 CSAP is to obtain samples from each WMA, which will provide additional information for all areas. This process does not necessarily ensure that all areas will be adequately characterized for decommissioning purposes. NYSERDA believes that additional sampling will eventually need to be done to ensure that all areas have been adequately characterized for the purposes of making Phase 2 decisions or in preparation for the Phase 2 Final Status Survey Plan (FSSP). WMA 5, for example, is known to have subsurface contamination, but the only subsurface sampling required is the area surrounding buried infrastructure. Contingent sampling is possible, but only if contamination has been detected in the surface soils.</p> <p>NYSERDA believes that a second CSAP and FSSP will be needed to support the Phase 2 decisions for the remaining WMAs.</p>	
3.	General Comment	General Comment	NYSERDA	The WVDP Phase 1 CSAP identifies that additional documents (e.g., the Phase 1 Decommissioning Plan Waste Management Plan, the Quality Assurance Project Plan, etc.) are planned. It is anticipated that these documents will provide additional detail about the Phase 1 areas (i.e., soil segregation and waste disposal pathways). NYSERDA requests an opportunity to review and comment on these supplemental documents.	
4.	General Comment	General Comment	NYSERDA	The use of the Gamma Walkover Survey (GWS) in areas where saturated soils exist may be problematic and could lead to a	

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				large measurement error. NYSERDA recommends a field walkover inspection clearly delineating the wetlands or ponded areas, or areas where soil saturation is possible. If after a field walkover inspection areas are identified as having the potential for higher levels of saturated soils, then NYSERDA recommends the completion of additional systematic surface and subsurface sampling.	
5.	General Comment	General Comment	NYSERDA	The GWS is not the most optimum tool for selecting subsurface sample locations "to maximize the possibility that contamination will be encountered," as subsurface soils and infrastructure may have been backfilled with clean fill. The process of subsurface sampling along buried infrastructure is best performed systematically.	
6.	General Comment	General Comment	NYSERDA	The CSAP repeatedly refers to "area[s] where standing water or saturated soil conditions prevent GWS data collection." How these "areas" are defined is unknown. To the reader, it appears that the CSAP assumes these areas to be relatively small, discrete areas, as a maximum of five surface samples is called for. In reality, these areas may be very large, contiguous areas (e.g., the Erdman Brook valley). In such cases, a much larger number of samples would be more indicative of the areas sampled. It is recommended that the text "and at most five" be removed from each discussion of the Surface Soil Sampling in Wetlands. The sampling density of 200m ² should reference the number of samples in a saturated "area."	
7.	40	Para. 1	NYSERDA	Due to the variations in historical operations, it is likely that the concentrations of each of the radionuclides of interest (ROIs) vary by site location. Therefore, NYSERDA recommends that a second sample be collected immediately downstream of the EQ-1 discharge to Erdman Brook.	
8.	15	Section 3.2/ Lines 6-9	NYSERDA	This section states that "DOE and/or its contractors will maintain an administrative record of characterization activities, including electronic and hardcopy documents, data sets, and related information such as maps, diagrams, geologic logs, field	

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				notebooks, and photographs.” NYSERDA requests the opportunity to review, and possibly obtain copies of these records.	
9.	40	Para. 2	NYSERDA	Due to the expected "bathtub ring" of contamination (as described in Section J.7, 5th paragraph) from sediments surrounding the stream channel centerline, NYSERDA recommends that systematic sampling be conducted laterally outward orthogonal to the stream centerline extending to the potential high watermark during a flood event such as the August 2009 event.	
10.	56	Section 7.1/ Para. 3/ Lines 7-8	NYSERDA	The text states that remedial action survey identified for WMA 2 will be submitted for quick-turnaround analysis of Sr-90. Please explain the technical basis for solely analyzing for Sr-90, when Cs-137 and off-site analysis for all 18 ROIs are identified in the remedial support surveys for WMA 1?	
11.	57	Section 7.1/ Para. 1/Lines 5-6	NYSERDA	The remedial action survey identified for the 476 foundation pilings in WMA 1 will be submitted for quick-turnaround analysis of Sr-90. Please explain the technical basis for solely analyzing for Sr-90, when Cs-137 and off-site analysis for all 18 ROIs are identified in the remedial support surveys for WMA 1?	
12.	63	Section 8.3/ Para. 2/Line 8-10	NYSERDA	This section states that “If the application for the rule described above results in an unacceptably high rate of false positive ‘hits’ for Pu-239, the comparison process may be modified to also account for measurement uncertainty.” Clarify what constitutes “unacceptably high rate of false positive ‘hits’? Also, please explain why Pu-239 may require a different statistical approach (i.e., the 95% UTL or three-times-uncertainty rule).	
13.	65	Section 9.1/ Items #1&2	NYSERDA	It may be worthwhile to note that a comprehensive high-resolution Light Detection and Ranging (LiDAR) topographic survey and orthophotography was conducted in November 2010, and will be used to support CSAP activities.	
14.	67	Section 9.3/ Para. 2	NYSERDA	To ensure that datasets are spatially rectified to a projected coordinate system and usable across computing platforms,	

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				electronic maps need to be delivered in ESRI ARCmap documents, with associated layer files, in addition to being delivered in AutoCAD .dwg format.	
15.	79	Section 11.1/Para. 1	NYSERDA	Based on the extent of perennially saturated soils in the valleys of Erdman Brook and Frank's Creek, an estimation of "accessible portions of the site" for GWS of 140 acres is likely an overestimation. This "accessible area" may be as small as 110 acres. As previously mentioned (see General Comment #4, to achieve the proper interpretation of the GWS data, it would be beneficial to conduct a soil moisture measurement immediately before or during the GWS at each measurement location.	
16.	A-19	Sect. A.9.5/ 1 st Bullet	NYSERDA	What is the technical basis for sampling only two locations of buried infrastructure in WMA 1, when all other WMAs identify three sampling locations?	
17.	D-2	Section D-3/ Para. 3	NYSERDA	The "scarring" in the 1966 aerial photograph that "potentially indicates limited disposal operations" is not within the boundary of the CDDL as drawn on all CSAP maps. To incorporate the "scarred" area, the CDDL boundary needs to be expanded.	
18.	E-11	Section E.7/ 5 th Bullet	NYSERDA	The fifth bullet states that the subsurface soils in WMA 5 may be contaminated by subsurface releases from the Process Building, and that the western and northern extent of these subsurface soil impacts is unknown. Yet, the required sampling for WMA5 only consists of buried infrastructure soil sampling below one meter. Based on surface soil results, there are 18 contingent samples identified. It is NYSERDA's opinion that the number of subsurface soil samples may not be sufficient to adequately characterize WMA 5.	
19.	E-11	Section E.7/ 6 th Bullet	NYSERDA	The sixth bullet identified that low-levels of Sr-90 and H-3 groundwater contamination exist in the eastern half of WMA 5. The potential sources of this contamination include hardstand spills, WMA 3, buried infrastructure or other undocumented releases. Yet, the required sampling for WMA5 only consists of buried infrastructure soil sampling below one meter. Based on surface soil results, there are 18 contingent samples identified. It	

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				is NYSERDA's opinion that the number of subsurface soil samples may not be sufficient to adequately characterize WMA 5.	
20.	F-7	Section F.4.3.1/ Para. 2	NYSERDA	This paragraph states ". . . radiation levels from soil contamination hampered the project." Was the line repair made? What is the current status of this broken sewage line?	
21.	F-13	Section F.9.3	NYSERDA	Due to the current activities and the addition of a potentially clean backfill, it may be beneficial to conduct the systematic surface and subsurface sampling at and around the Contractor Access Hardstand and Low-Level Radioactive Waste Rail Packaging and Staging Area (as identified in Figure F.1 for WMA 6), regardless of the GWS results, as these areas are currently being used for waste storage.	
22.	F-16	Section F.9.4/2 nd Bullet	NYSERDA	This section describes the collection of soil cores around the New Sewage Treatment Facility, yet no known contamination or suspected release is mentioned for this area. Please clarify the sampling rationale.	
23.	F-40	Figure F.16	NYSERDA	Clarify the reason for the "possibly > background" classification around and leading from the New Sewage Treatment Facility as there is no known contamination or suspected releases identified for this area. Similarly, why is the area around and leading from the Old Sewage Treatment Facility not classified as "possibly > background" given the significant contamination known to exist in that area? Also, correct the typographical error in the key. "Possibly > bakcground" should be amended to read "Possibly > background."	
24.	G-3	Section G.1/WVDP Caissons/ Para. 2	NYSERDA	In addition to the volume, it would be helpful to know the type of waste (e.g., vessels, equipment, PPE, etc.) placed in the Caisson 1.	
25.	G-7	Section G.4.2	NYSERDA	Being in such close proximity to the SDA, it is suggested that WMA 8 be included in the Potentially Affected WMAs.	

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26.	G-22	Figure G.2	NYSERDA	Assuming that “radiologically controlled” means roped off (fenced) and posted, it is unclear why half of the NDA cover is radiologically controlled and the other half is not. Please clarify why the NDA is not radiologically controlled. [Resolution of this comment may affect Figure 7 on P. 79 and Figure J.1 on p. J-19.]	
27.	H-2	Section H.2/ Para. 2	NYSERDA	For informational consistency between appendices, suggest adding the following sentences to the end of the paragraph. “Groundwater flows vertically through the unweathered Lavery Till to the Kent Recessional Sequence. The Kent Recessional Sequence is more permeable and does transport groundwater in a northeasterly direction, discharging to Buttermilk Creek.”	
28.	J-1	Section J.2/ Para. 3/ Line 7	NYSERDA	Replace “ <i>west/northwest</i> ” with “ <i>north/northeast</i> .”	
29.	J-1	Section J.2/ Para 4/Line 1	NYSERDA	<p>A few man-made features currently exist in WMA 12 South:</p> <ul style="list-style-type: none"> (1) A buried natural gas line services the West Valley Demonstration Project. The line crosses Frank’s Creek on the east side of the SDA, then crosses Erdman Brook just north of the SDA, and continues across WMA 12 to WMA 1. (2) An actively used, buried leachate transfer line is used to transfer leachate from the NDA interceptor trench (WMA 7) to the Liquid Waste Treatment Facility (WMA 2). The transfer line crosses Erdman Brook northwest of the NDA and continues in a northerly direction to WMA 2. (3) In 2009, NYSERDA and DOE completed erosion mitigation work on Erdman Brook and part of Lagoon Road Creek, just to the northwest of the NDA and SDA. The work included the realignment of the stream channel, grading of a knickpoint, lining the new channel with geotextile and placing medium stone fill on top. The work was necessary to keep surface water 	

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				flow in a central channel to ensure continued stability of the North Slope of the SDA.	
30.	J-1	Section J.2/ Para. 4/ Lines 1-3	NYSERDA	Records indicate that WMA 12 was disturbed by Nuclear Fuel Services (NFS) during disposal operations at the SDA (1963-1969). From the historical photographs, trucks and heavy equipment could access the northern trenches of the SDA using a road (presumably called Lagoon Road) that crossed over Erdman Brook just west of what is now known as Lagoon Road Creek. While it is unclear if trucks carrying waste used this road, the road was built by NFS for the purpose of accessing the SDA and most likely the NDA, too. Historical photographs from 1980 show that significant re-grading work was completed in the Erdman Brook corridor northwest of the SDA and NDA, and show Lagoon Road no longer in place. In addition, historical photographs also show that some of the soil excavated from the trenches (for the purpose of disposal at the SDA) was pushed over the side of the embankment that is currently known as the North Slope. <i>[NYSERDA can provide the historical photographs referenced in this comment, should DOE decide they want them]</i>	
31.	J-2	Section J.4.1/ Para. 2/ Line 1	NYSERDA	Insert “and Frank's Creek” after “. . . and banks of Erdman Brook).”	
32.	J-2	Section J.4.1/ Para. 3/ Line 1	NYSERDA	Suggest changing "possible" to "known" as there is a known area of radiological contamination on the east side of WMA 12 south extending from WMA 7 to the Erdman Brook channel.	
33.	J-4	Section J.4.4/ Para. 2	NYSERDA	See Comment #20.	
34.	J-5	Section J.5/ 4th Bullet	NYSERDA	Was this hot-spot marked? With the hot spot being located so close to the stream channel, GWS may not be appropriate to locate is or characterize its extent. It is suggested that systematic surface soil sampling be conducted for this area.	
35.	J-6	Section J.5/ Last Para.	NYSERDA	Qualify "groundwater" with "shallow" in this context.	

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36.	J-7	Section J.7/ Para 3	NYSERDA	This section states "Any soil contamination present is expected to be limited to surface soils." Given the interpretation of the air photos, this is not a reasonable expectation. Clearly, there was a significant amount of soil pushed out of an area of known contamination, which would infer an expectation that contamination exists below 1m. Therefore, it would seem logical to sample to depth in this area, regardless of the sample results from WMA2 along the boundary of WMA 12 South.	
37.	J-8	Section J.7/ Para. 1	NYSERDA	This section states "Because Erdman Brook and Frank's Creek are primarily eroding features . . . one would not expect to see contamination extending more than one meter into the subsurface." This expectation does not seem realistic as the knickpoint scour pools (often deeper than 1m) observed on these stream systems are routinely filled with deposited sediments when the knickpoints migrate upstream.	
38.	J-8	Section J.7/ Para. 1	NYSERDA	This section states "Because Erdman Brook and Frank's Creek are primarily eroding features . . . one would not expect to see contamination extending more than one meter into the subsurface." There is significant photographic evidence that large areas of the Erdman Brook valley were reworked with heavy equipment in 1980, which may have spread contamination across the valley and to a depth greater than 1m. It is suggested that systematic subsurface sampling of Erdman Brook Valley be conducted.	
39.	J-9	Section J.9.2/ 1st Bullet	NYSERDA	Perennially saturated soils may constitute 50 percent of the surface area of WMA 12 South. Given the fact that GWS is not appropriate for these areas, and the fact that large areas of the Erdman Brook valley were reworked with heavy equipment in 1980, it is suggested that systematic surface soil sampling occur in these areas.	
40.	J-10	Section J.9.2/ 3rd bullet	NYSERDA	This section states ". . . other than to address area too wet to perform a gamma walkover survey." It should be noted that these areas include groundwater seep areas downslope from WMA 2 that are likely contaminated and too wet for GWS to be	

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				appropriate.	
41.	J-13	Section J.9.4/ 2 nd Bullet	NYSERDA	Frank's Creek and Erdman Brook sediments should be sampled at least every 10m, not 30m, and, given the "bathtub ring" effect, lateral bounding samples should also be collected. (See Comment #9.)	
42.	K-1	Section K-2/ Para. 2	NYSERDA	A more accurate description of the surface drainage for WMA 12 North would be stated as it drains to the southwest through NP-1 gully into Quarry Creek.	
43.	K-8	Section K.9.3	NYSERDA	Figures D-4 and D-5 (p. D-20 and D-21) indicate a road leading from the "scarred" area in WMA 12 North to the Lagoons in WMA2. Given that materials may have been transported to/from WMA 2 and significant reworking of surface soils in WMA 12 North has occurred, it is suggested that a systematic subsurface sampling be conducted in WMA 12 North.	