Response to the "Notice of Disapproval of Periodic Monitoring Report for Sandia Watershed, November 7–November 19, 2007, Los Alamos National Laboratory, EPA ID No: NM0890010515, HWB-LANL-08-015"
Dated October 29, 2008

INTRODUCTION

To facilitate review of this response, the New Mexico Environment Department's (NMED's) comments are included verbatim. Los Alamos National Laboratory's (LANL's or the Laboratory's) responses follow each comment.

GENERAL COMMENTS

NMED Comment

1. *The Permittees frequently refer to the 2007 Interim Facility-Wide Groundwater Monitoring Plan (IFGMP) with the citation "(LANL 2006, 094043)." Section 7.0 does not list the 2007 Interim Facility-Wide Groundwater Monitoring Plan LA-UR-07-3271. In future submittals, the Permittees must properly identify the cited documents.*

LANL Response

1. The "2007 Interim Facility-Wide Groundwater Monitoring Plan" (IFGMP) should have been cited in place of the 2006 plan. The complete reference to the 2007 plan is below.

SPECIFIC COMMENTS

NMED Comment

1. ***Section 4.2.2, Groundwater, page 5****: Chromium was detected at 552 µg/L in unfiltered groundwater sampled from alluvial well SCA-2. The Permittees stated that the concentration is consistent with data reported from previous samplings. However, this concentration is over five times the U.S. Environmental Protection Agency Maximum Contaminant Level (100 µg/L) and it is 100 times the concentration that was previously detected at SCA-2. The Permittees must discuss the contaminants that are detected at concentrations that are not consistent with previous detections. The NMED is aware that the Sandia Canyon Investigation Report, with detailed discussions, may be submitted in the near future. However, the Permittees must briefly discuss the potential sources and the significant increase in the concentration of chromium detected in SCA-2 in the Analytical Data Results Section of the PMR.*

LANL Response

1. The Permittees have been instructed by NMED to eliminate discussion and/or interpretation of data in periodic monitoring reports (PMRs). Section XI.D of the Compliance Order on Consent states, "In general, interpretation of data shall be presented only in the background, conclusions, and recommendations sections of the reports. The other text sections of the reports shall be

reserved for presentation of facts and data without interpretation or qualifications." Discussion follows that addresses NMED's comment.

The text of the PMR for the November 7-November 19 Sandia Watershed monitoring event reads as follows:

"Several unfiltered metals results and one filtered result at alluvial wells SCA-2 and SCA-4 exceeded their respective EPA MCL screening levels, which are applicable to drinking water. These metals included beryllium, chromium, lead, and arsenic. The turbidity measurements for these wells were high: 1000 NTU and 700 NTU, respectively. Only one prior sample exists for SCA-2; the beryllium and chromium results are consistent with the earlier measurement but the lead value is greater than the earlier results (30 µg/L vs 0.7 µg/L). SCA-4 also has one prior sample event. The arsenic value is similar to the earlier measurement while the lead value is higher (38 µg/L vs 19.8 µg/L)."

The underlined sentence in the document text should have read:

"Only one prior sample exists for SCA-2; the beryllium result is consistent with the earlier measurement but the chromium and lead values are greater than the earlier results (for chromium, 552 µg/L vs 5.9 µg/L, and for lead, 30 µg/L vs 0.7 µg/L)."

Discussion:

The filtered chromium values in the SCA-2 samples from the monitoring event on November 15, 2007, and the prior event on February 13, 2007, were 10 µg/L and <5 µg/L. There is a large difference between the filtered and total chromium results for the November 15, 2007, sample. That sample also had a high turbidity of 1000 NTUs, above the 9.7 NTUs for the earlier February 13, 2007, sample. These measurements indicate that the chromium is not present as dissolved hexavalent chromium but is sediment-bound and is caused by the high sample turbidity.

NMED Comment

2. ***Section 4.2.2, Groundwater, page 5****:Bis(2-ethylhexy1)phthalate was detected at 51.2 µg/L in groundwater sampled from alluvial well SCA-4. This contaminant was not detected in the field blank, DI blank or in a prior sample event. The Permittees must briefly discuss the potential source(s) and the detection of bis(2-ethylhexy1)phthalatein SCA-4 in the Analytical Data Results Section of the PMR.*

LANL Response

2. See the response to the previous comment regarding NMED's direction not to discuss potential sources or make data interpretations in PMRs. Discussion follows that addresses NMED's comment. Bis(2-ethylhexy1)phthalate was detected only at SCA-4 in the second of five sample events carried out to date at the well. For this sample event on November 12, 2007, the field and deionized (DI) blanks were marked by the analytical laboratory as not detecting bis(2-ethylhexy1)phthalate. The analytical results for these samples were reported as <4.05 µg/L and <4.78 µg/L, respectively.

   However, these field-quality control results and the groundwater sample result were all B-qualified by the analytical laboratory, indicating that this analyte was detected in the associated analytical laboratory method blank and the sample. Following standard analytical quality assurance procedures,

the results for the field blank and DI blank were marked as nondetect as a result of the analytical laboratory contamination.

The larger result in the groundwater sample was above the threshold relative to the method blank result that would have caused it to be marked as a nondetect, but it likely also results from analytical laboratory contamination. The sample result was marked as follows in secondary validation: "the affected analytes are considered estimated and biased high because this analyte was identified in the method blank but the result was greater than 5x (10x for common lab contaminants) the method blank concentration."

NMED Comment

3. ***Table 3.4-1, Observations and Deviations, page 13****: Table 2.0-1, entitled Monitoring Locations and General Information, indicates that base flow data for the surface water sample location "Sandia below Wetlands" is not available. According to the 2007 IFGMP Table 3.3-1, base flow data for this site is monitored continuously. PMR Table 3.4-1 (Observations and Deviations) does not describe this deviation. The Permittees must explain why the datum is missing or why a relevant portion of continuously monitored data is not available. The Permittees must provide a replacement Table 3.4-1.*

LANL Response

3. Base-flow measurements were unavailable for the station "Sandia below Wetlands" because of technical problems (operator error) in the field. A revised Table 3.4-1 containing an explanation of the missing base-flow measurement at "Sandia below Wetlands" is included in this response.

NMED Comment

4. ***Table 3.4-1, Observations and Deviations, page 13:*** *In place of results from groundwater sampled from two screens in the well R-12, that is awaiting rehabilitation, data are presented from wells R-35a and R-35b. PMR Table 3.4-1 (Observations and Deviations) does not describe this deviation. The Permittees must explain the reason(s) for substitutions. The Permittees must provide a replacement Table 3.4-1.*

LANL Response

4. Wells R-35a and R-35b were scheduled for quarterly sampling in the 2007 IFGMP and were not substituted for well sampling results at R-12. Well R-12 was undergoing well rehabilitation during the November 2007 sampling event as noted below in the revised Table 3.4-1. Well R-12 is now being sampled on a quarterly schedule as noted in the 2008 IFGMP.

NMED Comment

5. ***Appendix G, Analytical Reports and Previously Unreported Data:*** *This appendix does not include previously unreported analyses of tritium in groundwater that was sampled between June 4 and 24, 2007. Those results were not available for inclusion in the Sandia Watershed February 13–25, 2007 and June 4–24, 2007 Periodic Monitoring Report. The NMED is aware that the Permittees would not report nondetects. However, it is not clear if the tritium data are still not available, if the results were nondetects or if they were inadvertently not included with the current report. The Permittees must provide the tritium data or an explanation for their omission.*

LANL Response

5. Tritium results for the sampling interval from June 4 to June 24, 2007, exist in LANL's water quality database and are included in one revised Appendix G table, 08-1220, in this response. Data were unavailable for inclusion in the July 2008 submittal of the Sandia PMR for the November 7–November 19, 2007, monitoring event.

REFERENCES

LANL (Los Alamos National Laboratory), July 2008. "Periodic Monitoring Report for Sandia Watershed, November 7–November 19, 2007," Los Alamos National Laboratory document LA-UR-08-4698, Los Alamos, New Mexico. (LANL 2008, 102819)

LANL (Los Alamos National Laboratory), May 2007. "2007 Interim Facility-Wide Groundwater Monitoring Plan," Los Alamos National Laboratory document LA-UR-07-3271, Los Alamos, New Mexico. (LANL 2007, 096665)

Table 3.4-1
Observations and Deviations

Location	Deviation	Cause	Comments
Sampling Problems			
SCI-1	An abbreviated analytical suite was collected at this location.	Well was purged dry on 11/16/2007.	Complete analytical suite will be collected when sufficient water is present.
SCA-1, SCA-3	No data are included in this report for these locations.	The locations were not sampled on 11/13/07 because they were dry.	Locations will be sampled when sufficient water is present.
SCA-5	No data are included in this report for this location.	The location was not sampled on 11/14/07 because it was dry.	Location will be sampled when sufficient water is present.
SCO-1, SCO-2	No data are included in this report for these locations.	The locations were not sampled on 11/12/07 because they were dry.	Locations will be sampled when sufficient water is present.
Technical Problems			
Sandia below Wetlands	Base flow measurement unavailable.	Operator error/technical difficulties.	Problem has been resolved and base flow measurements will be collected during the next scheduled sampling event.
Well Rehabilitation			
R-12	No data are included in this report for this location.	Well is undergoing rehabilitation.	Well will be sampled after completion of rehabilitation.

Previously Unreported Tritium Results: June 4–24, 2007
(Appendix G, 08-1220)

Location	Port	Method	Date	Field Prep	Matrix	Field QC Type	Lab Sample Type	Symbol	Result	Unit	1-s TPU	MDA	Lab Qualifier	Secondary Qualifier Code	Secondary Reason Code	Lab
Middle Sandia Canyon at terminus of persistent baseflow	n/a	LLEE	6/19/2007	UF	WP	—	CS	—	31.93	pCi/L	0.9579	0.28737	—	—	—	UMTL
R-10	P1A	LLEE	6/19/2007	UF	WG	—	CS	<	0.15965	pCi/L	0.28737	0.28737	—	U	R5	UMTL
R-10	P2A	LLEE	6/19/2007	UF	WG	—	CS	<	0.12772	pCi/L	0.28737	0.28737	—	U	R5	UMTL
R-10a	Single	LLEE	6/19/2007	UF	WG	—	CS	<	0.06386	pCi/L	0.28737	0.28737	—	U	R5	UMTL
R-10a	Single	LLEE	6/19/2007	UF	WG	FD	CS	<	0.25544	pCi/L	0.28737	0.28737	—	U	R5	UMTL
R-11	Single	LLEE	6/13/2007	UF	WG	—	CS	—	11.65445	pCi/L	0.38316	0.28737	—	—	—	UMTL
SCA-4	Single	LLEE	6/18/2007	UF	WG	—	CS	—	61.9442	pCi/L	1.9158	0.28737	—	—	—	UMTL
SCA-4	Single	LLEE	6/18/2007	UF	WG	FB	CS	—	0.60667	pCi/L	0.28737	0.28737	—	J	RWQ2	UMTL
SCI-1	Single	LLEE	6/15/2007	UF	WG	—	CS	—	145.2815	pCi/L	4.7895	0.28737	—	—	—	UMTL
SCI-1	Single	LLEE	6/15/2007	UF	WG	EQB	CS	—	0.60667	pCi/L	0.28737	0.28737	—	J	RWQ2	UMTL
SCI-1	Single	LLEE	6/15/2007	UF	WG	EQB	RE	<	0.09579	pCi/L	0.28737	0.28737	—	U	R5	UMTL
Sandia below Wetlands	n/a	LLEE	6/13/2007	UF	WS	—	CS	—	26.8212	pCi/L	0.89404	0.28737	—	—	—	UMTL
South Fork of Sandia Canyon at E122	n/a	LLEE	6/13/2007	UF	WS	—	CS	—	21.36117	pCi/L	0.70246	0.28737	—	—	—	UMTL
South Fork of Sandia Canyon at E122	n/a	LLEE	6/13/2007	UF	WS	FD	CS	—	21.16959	pCi/L	0.70246	0.28737	—	—	—	UMTL