

ORISE
OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION

July 19, 2006

Mr. William Snell
U.S. Nuclear Regulatory Commission
Region III
2443 Warrenville Road
Lisle, IL 60532-4351

**SUBJECT: ANALYTICAL RESULTS FOR THIRTY-SEVEN WATER SAMPLES,
BATCH TWO, FROM THE VICINITY OF LaSALLE STATION, LaSALLE,
ILLINOIS.
[INSPECTION REPORT NO. 050-00373/2006-004] (RFTA NO. 06-001)**

Dear Mr. Snell:

The Oak Ridge Institute for Science and Education (ORISE) received Batch two, consisting of 37 water samples, June 23, 2006 which were collected in the vicinity of LaSalle Station in LaSalle, Illinois. The original shipment contained 42 samples, but there was sample breakage during transient with five of the samples being returned to the licensee without being delivered to the laboratory. The five samples that were returned to the licensee by the carrier were: L-06-2-10, L-06-2-18, L-06-2-19, L-06-2-22, and L-06-2-23. The laboratory staff was instructed to keep the sample identifications assigned to each sample by you and to proceed with the requested analyses for the 37 samples received. The 37 water samples were analyzed for tritium using a liquid scintillation analyzer. Sample L-06-2-09 had a statistically positive result for tritium. ORISE reanalyzed this sample to confirm the result. The result of the reanalysis was statistically equal to the first analysis. The chain-of-custody identified seven water samples to be analyzed by gamma spectroscopy (GS). The sample identifications and collection data are presented in Table 1. The GS data are presented in Table 2. The tritium data are presented in Table 3. The pertinent procedure references are provided in the specific tables.

ORISE's Quality Control (QC) requirements were met for these analyses. The QC files are available for your review upon request. My contact information is listed below. You may also contact Wade Ivey at 865.576.9184 with any questions or comments.

Sincerely,



Dale Condra, Manager
Laboratory

RDC:WPI:ess

Enclosure

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TABLE 1

SAMPLE IDENTIFICATIONS
AND COLLECTION DATA
LaSALLE STATION
LaSALLE, ILLINOIS

ORISE Sample ID	NRC Region III Sample ID	Collection Date	Collection Time
1700W0005	L-06-2-01	05/04/2006	3:45 PM
1700W0006	L-06-2-02	05/05/2006	10:45 AM
1700W0007	L-06-2-03	05/05/2006	3:55 PM
1700W0008	L-06-2-04	05/05/2006	4:00 PM
1700W0009	L-06-2-05	05/09/2006	9:15 AM
1700W0010	L-06-2-06	05/24/2006	10:50 AM
1700W0011	L-06-2-07	05/23/2006	11:45 AM
1700W0012	L-06-2-08	05/26/2006	11:40 AM
1700W0013	L-06-2-09	05/26/2006	11:15 AM
1700W0014	L-06-2-11	05/26/2006	10:15 AM
1700W0015	L-06-2-12	05/25/2006	8:45 AM
1700W0016	L-06-2-13	05/26/2006	1:00 PM
1700W0017	L-06-2-14	05/25/2006	11:30 AM
1700W0018	L-06-2-15	05/30/2006	11:06 AM
1700W0019	L-06-2-16	05/30/2006	1:25 PM
1700W0020	L-06-2-17	05/24/2006	11:13 AM
1700W0021	L-06-2-20	05/24/2006	1:00 PM
1700W0022	L-06-2-21	05/23/2006	1:45 PM
1700W0023	L-06-2-24	05/25/2006	11:00 AM
1700W0024	L-06-2-25	05/25/2006	11:15 AM
1700W0025	L-06-2-26	05/24/2006	1:30 PM
1700W0026	L-06-2-27	04/12/2006	1:30 PM
1700W0027	L-06-2-28	04/12/2006	10:05 AM
1700W0028	L-06-2-29	04/12/2006	10:20 AM
1700W0029	L-06-2-30	04/12/2006	10:40 AM
1700W0030	L-06-2-31	04/12/2006	10:50 AM
1700W0031	L-06-2-32	04/12/2006	11:00 AM
1700W0032	L-06-2-33	04/12/2006	11:20 AM
1700W0033	L-06-2-34	04/12/2006	11:30 AM

TABLE 1 (continued)

SAMPLE IDENTIFICATIONS
AND COLLECTION DATA
DRESDEN GENERATING STATION
DRESDEN, ILLINOIS

ORISE Sample ID	NRC Region III Sample ID	Collection Date	Collection Time
1700W0034	L-06-2-35	04/12/2006	11:40 AM
1700W0035	L-06-2-36	04/12/2006	11:50 AM
1700W0036	L-06-2-37	04/12/2006	12:10 PM
1700W0037	L-06-2-38	04/12/2006	12:20 PM
1700W0038	L-06-2-39	04/12/2006	12:30 PM
1700W0039	L-06-2-40	04/12/2006	12:50 PM
1700W0040	L-06-2-41	04/12/2006	1:10 PM
1700W0041	L-06-2-42	04/12/2006	1:20 PM

TABLE 2
CONCENTRATIONS OF SELECTED
GAMMA EMITTING RADIONUCLIDES
IN SELECTED WATER SAMPLES
BY GAMMA SPECTROSCOPY CP1, REVISION 15
LaSALLE STATION
LaSALLE, ILLINOIS

ORISE Sample ID	NRC Region III Sample ID	Radionuclide Concentrations ^a (pCi/L)			
		Co-58	Co-60	Cs-134	Cs-137
1700W0009	L-06-2-05	-0.1 ± 8.1 ^b	-12.0 ± 7.6	3.3 ± 5.4	0.3 ± 5.2
1700W0018	L-06-2-15	0.4 ± 6.5	-10 ± 11	0.7 ± 5.6	-10 ± 12
1700W0021	L-06-2-20	-0.6 ± 5.8	0.5 ± 4.5	2.7 ± 4.9	2.6 ± 4.0
1700W0024	L-06-2-25	4.4 ± 8.1	0.9 ± 6.6	-3.5 ± 6.3	-0.7 ± 5.1
1700W0029	L-06-2-30	-6 ± 11	-6.3 ± 7.9	5.0 ± 5.7	1.3 ± 5.3
1700W0034	L-06-2-35	1 ± 10	-10 ± 11	-1.6 ± 5.6	-11 ± 12
1700W0039	L-06-2-40	-3.3 ± 9.0	4.2 ± 4.7	0.4 ± 4.8	5.2 ± 4.2

^aThe range of MDCs for the selected radionuclides is 7.1 pCi/L to 18 pCi/L.

^bUncertainties represent the 95% confidence level, based on total propagated uncertainties.

TABLE 3

CONCENTRATIONS OF TRITIUM
IN WATER SAMPLES
BY LIQUID SCINTILLATION ANALYSIS
AP2, REVISION 15; CP4, REVISION 3
LaSALLE STATION
LaSALLE, ILLINOIS

ORISE Sample ID	NRC Region III Sample ID	Tritium Concentrations, TPUs, and MDCs ^a (pCi/L)			
1700W0005	L-06-2-01	20	±	100 ^b	(180)
1700W0006	L-06-2-02	130	±	110	(180)
1700W0007	L-06-2-03	10	±	100	(180)
1700W0008	L-06-2-04	-80	±	100	(180)
1700W0009	L-06-2-05	-190	±	110	(200)
1700W0010	L-06-2-06	80	±	100	(180)
1700W0011	L-06-2-07	0 ^c	±	100	(180)
1700W0012	L-06-2-08	50	±	100	(180)
1700W0013	L-06-2-09	1,240	±	140	(180)
1700W0014	L-06-2-11	20	±	100	(180)
1700W0015	L-06-2-12	90	±	110	(180)
1700W0016	L-06-2-13	120	±	110	(180)
1700W0017	L-06-2-14	20	±	100	(180)
1700W0018	L-06-2-15	-110	±	110	(200)
1700W0019	L-06-2-16	10	±	100	(180)
1700W0020	L-06-2-17	40	±	100	(180)
1700W0021	L-06-2-20	-90	±	110	(200)
1700W0022	L-06-2-21	110	±	110	(180)
1700W0023	L-06-2-24	-10	±	100	(180)
1700W0024	L-06-2-25	-170	±	110	(200)
1700W0025	L-06-2-26	220	±	110	(180)
1700W0026	L-06-2-27	120	±	110	(180)
1700W0027	L-06-2-28	0	±	100	(180)
1700W0028	L-06-2-29	70	±	100	(180)
1700W0029	L-06-2-30	-120	±	110	(200)
1700W0030	L-06-2-31	-50	±	120	(200)
1700W0031	L-06-2-32	-30	±	120	(200)
1700W0032	L-06-2-33	160	±	120	(200)

TABLE 3 (continued)

CONCENTRATIONS OF TRITIUM
 IN WATER SAMPLES
 BY LIQUID SCINTILLATION ANALYSIS
 AP2, REVISION 15; CP4, REVISION 3
 LaSALLE STATION
 LaSALLE, ILLINOIS

ORISE Sample ID	NRC Region III Sample ID	Tritium Concentrations, TPUs, and MDCs ^a (pCi/L)			
1700W0033	L-06-2-34	0	±	120	(200)
1700W0034	L-06-2-35	-60	±	110	(200)
1700W0035	L-06-2-36	-180	±	110	(200)
1700W0036	L-06-2-37	-150	±	110	(200)
1700W0037	L-06-2-38	-110	±	110	(200)
1700W0038	L-06-2-39	-160	±	110	(200)
1700W0039	L-06-2-40	-10	±	120	(200)
1700W0040	L-06-2-41	-120	±	110	(200)
1700W0041	L-06-2-42	-130	±	110	(200)

^aMDCs are in parentheses.

^bUncertainties represent the 95% confidence level, based on total propagated uncertainties.

^cZero values are due to rounding.