

June 25, 2010

Ms. Katherine Streit
U.S. Nuclear Regulatory Commission
Region III
2443 Warrenville Road
Lisle, IL 60532-4351

**SUBJECT: ORISE CONTRACT NO. DE-AC05-06OR23100
REVISED LETTER REPORT FOR ANALYTICAL RESULTS FOR FIVE SWIPE SAMPLES
FROM ANALYTICAL BIO-CHEMISTRY LABS, COLUMBIA, MISSOURI; [INSPECTION
REPORT NO. 030-05154/2010001]
(RFTA NO. 10-001) DCN: 2014-LR-01-1**

Dear Ms. Streit:

The Oak Ridge Institute for Science and Education (ORISE) received five swipe samples on May 24, 2010, from Analytical Bio-Chemistry Labs in Columbia, MO. The samples were analyzed as "URGENT" according to the 303 form supplied with the samples. The ORISE AP2 method was used for these analyses. The original letter report was submitted on June 7, 2010. You questioned the reported data due to the identification of unexpected tritium (H-3) on three of the smear samples. ORISE laboratory staff reviewed the data and supporting calculations again and identified an error in the carbon-14 (C-14) efficiency calculation. An internal nonconformance, NC 2010-14, was initiated to document the resolution of the problem and to establish a corrective action plan. The samples were re-analyzed using the ORISE AP6 method. This method ensures the separation of H-3 and C-14 into different scintillation cocktails. This analysis verified the activity of C-14 and confirmed the absence of H-3 in the samples. We will be evaluating our AP2 procedure to take into account the need for isolation of C-14 and H-3 when both are shown to be present in our sample results.

The sample identification numbers are presented in Table 1. The revised H-3 results for the swipe samples are presented in Table 2 and the revised C-14 results for the swipe samples are presented in Table 3. The pertinent procedure references are included with the data tables.

ORISE's Quality Control (QC) requirements were met for these analyses. The QC files are available for your review upon request. We apologize for any inconvenience that the efficiency miscalculation may have caused and are working through our nonconformance system to ensure that this will not happen on future analyses. 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:bf

Enclosures

c: T. Carter, NRC/FSME/DWMEP T-8F5 S. Roberts, ORISE
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File 2014

Distribution approval and concurrence:	Initials:
Technical Review	ENB
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TABLE 1
SAMPLE IDENTIFICATIONS
AND COLLECTION DATA
ANALYTICAL BIO-CHEMISTRY LABS
COLUMBIA, MO

ORISE Sample ID	NRC Region III Sample ID	Collection Date	Collection Time
20140R0001-1	10-01-01	05/19/10	3:00
20140R0001-2	10-01-02	05/19/10	3:05
20140R0001-3	10-01-03	05/19/10	3:10
20140R0001-4	10-01-04	05/19/10	3:12
20140R0001-5	10-01-05	05/19/10	3:15

REVISED TABLE 2
CONCENTRATION OF TRITIUM
IN SWIPE SAMPLES
BY LIQUID SCINTILLATION ANALYSIS
AP6, REVISION 18; CP4 REVISION 3
ANALYTICAL BIO-CHEMISTRY LABS
COLUMBIA, MO

ORISE Sample ID	NRC Region III Sample ID	Concentrations, TPU's, and MDCs ^a (pCi/sample)			
20140R0001-1	10-01-01	-10	±	160 ^b	, 280
20140R0001-2	10-01-02	-10	±	160	, 280
20140R0001-3	10-01-03	10	±	160	, 280
20140R0001-4	10-01-04	70	±	160	, 280
20140R0001-5	10-01-05	20	±	160	, 280

^aThe MDCs are after the comma.

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

REVISED TABLE 3
CONCENTRATION OF CARBON-14
IN SWIPE SAMPLES
BY LIQUID SCINTILLATION ANALYSIS
AP6, REVISION 18; CP4 REVISION 3
ANALYTICAL BIO-CHEMISTRY LABS
COLUMBIA, MO

ORISE Sample ID	NRC Region III Sample ID	Concentrations, TPU's, and MDCs ^a (pCi/sample)			
20140R0001-1	10-01-01	20	±	130 ^b	, 220
20140R0001-2	10-01-02	-30	±	130	, 220
20140R0001-3	10-01-03	390	±	150	, 220
20140R0001-4	10-01-04	7,800	±	1,100	, 200
20140R0001-5	10-01-05	-60	±	130	, 220

^aThe MDCs are after the comma.

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