



CONNECTICUT YANKEE ATOMIC POWER COMPANY

HADDAM NECK PLANT

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U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
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Haddam Neck Plant
Annual Radiological Environmental Operating Report

In accordance with the requirements of Section 2.6.1 of Appendix C of the Quality Assurance Program (QAP) for the Haddam Neck Plant (HNP) and the Radiological Effluent Monitoring and Offsite Dose Calculation Manual, an implementing document of the QAP, the Annual Radiological Environmental Operating Report is enclosed.

If you should have any questions regarding this submittal, please contact me at (860) 267-3196.

Sincerely,



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4-26-07
Date

Enclosure: Annual Radiological Environmental Operating Report

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**ANNUAL RADIOLOGICAL ENVIRONMENTAL
OPERATING REPORT**

HADDAM NECK STATION

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

JANUARY 1, 2006 - DECEMBER 31, 2006

DOCKET NO. 50-213

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CONNECTICUT YANKEE ATOMIC POWER COMPANY
Haddam, Connecticut

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1 EXECUTIVE SUMMARY

The Radiological Environmental Monitoring Program (REMP) for the Haddam Neck Plant was continued for the period January through December 2006, in compliance with the Connecticut Yankee Quality Assurance Program (CYQAP) and the Radiological Effluent Monitoring and Off-Site Dose Calculation Manual (REMODOCM). This annual report was prepared by the Connecticut Yankee Atomic Power Company (CYAPCO). Sample collection and preparation activities were performed by Normandeau Associates and CYAPCO personnel. Laboratory analyses were performed by Framatome ANP Environmental Laboratory (FANPEL), a subsidiary of AREVA and by CYAPCO.

Thermoluminescent dosimeters (TLDs) were used to measure direct gamma exposure in the vicinity of the station and as far away as 12.5 miles. Radiochemical and radiological counting analyses of samples were performed to detect the presence of any station related radioactivity. ISFSI TLDs located in the area around the site boundary showed no significant change in exposure rate in 2006 over the baseline measurements.

Samples included river water, bottom sediment, shellfish and fish. In evaluating the results of these analyses it is necessary to consider the variability of natural and man-made sources of radioactivity, distribution in the environment and uptake in environmental media. This variability is dependent on many factors including station release rates, past spatial variability of radioactive fallout from nuclear weapons tests and on-going redistribution of fallout, contribution from cosmogenic radioactivity, and ground water dynamics. Any one of these factors could cause significant variations in measured levels of radioactivity. Therefore, these factors need to be considered in order to properly explain any variations in radiation detected and to distinguish between natural and station related radioactivity.

Haddam Neck was permanently shutdown in 1996. Activities in 2006 at the Haddam Neck station were focused on site decontamination and facility decommissioning. Even though the station is no longer generating power, decommissioning activities in 2006 included the processing and final discharge of liquids containing radioactivity. Monitoring continued for any release of liquid for the first ten months of 2006. The levels of radioactivity released post-operation are significantly lower than released during plant operation. The radiological monitoring of the environment through this program will continue to assure the health and safety of the public and workers are maintained at all times.

2 INTRODUCTION

2.1 General Plant Site Information

The Connecticut Yankee plant is located in the town of Haddam, Middlesex County, Connecticut, at a point 22 miles south-southeast of Hartford, Connecticut; 25 miles northeast of New Haven, Connecticut; and 16 miles north of Long Island Sound. The site consists of approximately 525 acres and is situated on the east bank of the Connecticut River at an area known as Haddam Neck. The elevation of the site property varies from 10 to 300 feet above sea level, with the area occupied by plant facilities ranging between 10 and 21 feet above sea level. The minimum distance from the reactor containment to the site boundary is approximately 1700 feet.

The plant was designed as a single unit pressurized water reactor which sustained its initial chain reaction in July 1967, with commercial operation beginning in January 1968 and a gross power output of 590 Mw (e). After 28 years of operation, the CY Board of Directors voted in 1996 to permanently close and decommission the power plant. Following two years of planning and preparation, actual decommissioning began in 1998 and was underway during 2006 for which this radiological environmental monitoring report covers.

2.2 Program Design

The Radiological Environmental Monitoring Program for the Haddam Neck Station was designed with specific objectives.

- To provide an early indication of the appearance or accumulation of any radioactive material in the environment caused by Haddam Neck Station activities.
- To provide assurance to regulatory agencies and the public that the environmental impact for Haddam Neck Station is known and within anticipated limits.
- To verify the adequacy and proper functioning of station effluent controls and monitoring systems.

These objectives continue to be in force throughout the decommissioning activities at the Haddam Neck Station site. Due to the shutdown status of the plant and the relatively low quantities of radioactive material now on the site, some of the objectives have shifted in degree of importance from the past and continues to change as decommissioning progresses.

The radiological environmental monitoring program continued without modification following the plant shutdown in 1996. The program scope was reduced in 2000 and again in 2005 primarily to reflect the significant reduction of radionuclide source. The onsite radionuclide inventory continues to decrease yearly with the shipments to off-site facilities and radioactive decay. The completion of the Fuel Transfer Project has resulted in a significant reduction of available source term that could interact with the environment.

The program was developed to meet the intent of the NRC Regulatory Guide 4.1, Programs for Monitoring Radioactivity in the Environs of Nuclear Power Plants; NRC Regulatory Guide 4.8, Environmental Technical Specifications for Nuclear Power Plants; the NRC Branch Technical Position of November 1979, An Acceptable Radiological Environmental Monitoring Program; and NRC NUREG-0472, Radiological Effluent Technical Specifications for PWRs.

The environmental TLD program was developed using NRC Regulatory Guide 4.13, Performance, Testing and Procedural Specifications for Thermoluminescence Dosimetry: Environmental Applications. The quality assurance program was designed using the guidance given in NRC Regulatory Guide 4.15, Quality Assurance for Radiological Monitoring Programs (Normal Operations) - Effluent Streams and the Environment.

The sampling requirements of the REMODCM are given in Table E-1 of the ODCM and Table 2.1 of this report. The identification of the required sampling locations is given in Appendix G of the ODCM and Table 2.2 of this report. The monitoring locations are shown graphically in Figures 2.1 and 2.2.

2.3 Monitoring Zones

The REMP is designed to allow comparison of levels of radioactivity in samples from the area potentially influenced by the plant to levels found in areas not influenced by the plant. The first area monitoring locations are designated as indicators and the second area monitoring locations are designated as controls. The distinction between the two areas, for a particular pathway, is based on relative direction from the plant, river flow, and distance. Analysis of survey data from the two areas is used to differentiate between radiation due to plant activities and other sources such as atmospheric nuclear weapons test fallout or seasonal variations in the natural background.

2.4 Pathways Monitored

Four pathway categories; airborne, waterborne, ingestion, and direct radiation were formally monitored by the REMP. Most of these categories were monitored in 2006 by the collection of one or more sample types listed and described below. Some of these samples were eliminated in March of 2005 with the completion of the Fuel Transfer Project which resulted in a significant reduction of available source term that could interact with the environment.

Waterborne Pathway: River Water*
Sediment Sampling*

Ingestion Pathway: Fish and Shellfish Sampling*

Direct Radiation: TLD Monitoring
ISFSI TLD Monitoring

*Sampling requirements changed during 2006

2.5 Descriptions of Monitoring Pathways

Sample types and frequency of analysis are given in Table 2.1. The sample locations are listed in Table 2.2 and shown in Figure 2.1 and Figure 2.2. The program as described in this report includes both required samples as specified in the REMODCM and any extra samples.

2.5.1 Air Sampling

The sampling requirement for air particulate was eliminated on March 31, 2005 with the completion of the Fuel Transfer Project.

2.5.2 River Water Sampling

River water samples are collected from two sampling locations, an indicator and control station. When CYAPCO elected to self-perform REMP sampling beginning in July 2005, each biweekly river sample was analyzed for gamma emitting nuclides and tritium in lieu of compositing. All sample results were less than the required lower limit of detection (LLD). One sample (Station 30-C Harbor River) identified Co-60 which can be attributed to background due to counting errors.

2.5.3 Well Water Sampling

The sampling requirement for well water was eliminated on March 31, 2005 with the completion of the Fuel Transfer Project and the elimination of the use of the associated wells

2.5.4 Sediment Sampling

Shoreline sediment samples were from three locations, one near the plant discharge, one downstream and one control station, upstream from the plant. This sampling requirement was changed to annually due to the limited number of discharges and to ensure one additional sample will be taken upon the completion of the Spent Fuel Pool draindown and discharge. A grab sample is collected from each location; dried at the FANPEL and analyzed for gamma-emitting radionuclides.

2.5.5 Milk Sampling

Milk sampling is no longer a requirement of the REMODCM unless indicated by the annual Land Use Census and dose calculations. The sampling requirement for milk was eliminated on March 31, 2005 with the completion of the Fuel Transfer Project.

2.5.6 Fish Sampling

Fish samples were formally collected semiannually from three river locations, two indicator stations from the vicinity of the intake and discharge and one control station north of the plant. This sampling requirement was changed to annually due to the limited number of discharges and to ensure one additional sample was taken upon the completion of the Spent Fuel Pool drain down and discharge. The species typically collected are bullheads, perch and /or catfish. The edible portions of the fish are analyzed for gamma-emitting radionuclides.

2.5.7 Shellfish Sampling

Shellfish samples were formally collected semiannually from two river locations. This sampling requirement was changed to annually due to the limited number of discharges and to ensure one additional sample was taken upon the completion of the Spent Fuel Pool draindown and discharge. The shellfish is shucked and the muscle portions are analyzed by gamma isotopic analysis.

2.5.8 Food Product Sampling

The sampling requirement for food sampling was eliminated on March 31, 2005 with the completion of the Fuel Transfer Project.

2.5.9 Broad Leaf Vegetation

The sampling requirement for broad leaf vegetation was eliminated on March 31, 2005 with the completion of the Fuel Transfer Project.

2.5.10 ISFSI Sediment and Water Sampling

This sample point was eliminated from the ISFSI REMP in 2005. Although not required for REMP, three sets of water samples from the ISFSI were taken in May, August and October during 2006 and the results were less than the required lower limit of detection (LLD). In addition a water sample was taken from Dibble Creek (57-IF) which were also less than the required lower limit of detection (LLD). Sediment samples from Dibble Creek (57-IF) were not taken in 2006.

2.5.11 TLD Monitoring

Direct gamma radiation exposure is continuously monitored with the use of Panasonic UD-801AS1 thermoluminescent dosimeters (TLDs). TLDs are posted at fourteen REMODCM required locations and at nine extra locations. The extra locations are mostly within the site boundary and are not part of the REMP. Their function is to monitor the potential impact of on-site activities such as the movement or storage of decommissioned components on site boundary exposure rates.

2.5.12 ISFSI TLD Monitoring

Eight sampling locations (six indicator locations and two extra locations) are associated with the Independent Spent Fuel Storage Installation (ISFSI). These sample locations are specific to the ISFSI and are beyond the standard REMP that has been in operation over the life of the power plant's license. These quarterly TLD locations are located in the area surrounding the facility at distances that approximated the site boundary to support future determinations that direct and scatter dose from ISFSI operations remain in compliance with offsite dose limits to the public.

**2.0 Table 2.1- Required Sampling Frequency & Type of Analysis
(REMODCM Table E-1)**

Exposure Pathway and/or Sample	Number of Locations	Sampling & Collection Frequency	Type of Analysis
1a. Gamma Exposure – Environmental TLD ⁽²⁾	14	Quarterly	Gamma Dose - Quarterly
1b. Gamma Exposure – ISFSI TLD ⁽²⁾	5	Quarterly	Gamma Dose - Quarterly
2. Bottom Sediment ⁽¹⁾	3	Annual	Gamma Isotopic
3. River Water ⁽¹⁾	2	Quarterly Sample - Indicator is continuous composite; Control is composite of six consecutive grab samples collected biweekly	Gamma Isotopic and Tritium - Quarterly
4. Fish (edible portion) – bullheads and, when available, perch or other edible fish ⁽¹⁾	3	Annual	Gamma Isotopic - Annual
5. Shellfish ⁽¹⁾	2	Semiannual	Gamma Isotopic - Annual

(1) Not required after bulk SFP liquid had been released (4/24/06), except for ISFSI related samples. One final set of canal related discharge samples was obtained after bulk SFP liquid was released.

(2) After 12/31/06 only ISFSI related TLDs will be placed and collected.

3.0 Table 2.2 - Environmental Monitoring Program Sampling Types and Locations

Exposure Pathway (Sample Type Designation)	Location Number ¹	Location Name	Distance From Release Point ² (miles)	Direction From Release Point ²
Airborne				
Not Applicable revised in 2005				
Waterborne				
a. River (WR)	28-I	CT River-E. Haddam Bridge	1.8	SE
	30-C	CT River – Middletown	9.0	NW
b. Well Water *(WW)	Not Applicable revised in 2005			
c. Bottom Sediment *(SE)	28-I	CT River-E. Haddam Bridge	1.8	SE
	29-I	Vicinity of Discharge	Within 0.3 Miles	
	30-C	CT River – Middletown	9.0	NW
ISFSI				
a. Bottom Sediment **(IF)	57-IF	Dibble Creek Sediment Sample	0.1	SE
	58-IF	ISFSI Pad Enclosure Soil Sample	0.0	N/A
b. ISFSI Water **(WG)	57-IF	Dibble Creek Water Sample	0.1	SE
	58-IF	ISFSI Drain Pipe Outflow	0.0	N/A
Ingestion				
a. Fruits & Vegetables *(TF)	Not Applicable revised in 2005			
b. Fish *(FH)	26-I	CT River-Near Intake	1.0	WNW
	29-I	Vicinity of Discharge	Within 0.3 miles	
	30-C	CT River - Middletown	7.6	NW
c. Shellfish *(SF)	27-C	CT River-Higganum Light	4.0	WNW
	31-I	Mouth of Salmon River	0.8	ESE

¹ I=Indicator C=Control IF=ISFSI

² The release points are the stack for terrestrial locations and the end of the discharge canal for aquatic locations.

* Sample requirements changed during the year as previously indicated.

** Not required by REMP

Table 2.2 - Environmental Monitoring Program Sampling Types and Locations
(continued)

Exposure Pathway (Sample Type Designation)	Location Number ¹	Location Name	Distance From Release Point ² (miles)	Direction From Release Point ²
Direct Radiation				
TLD	1-I	On-site - Mouth of Discharge Canal	1.1	ESE
	2-I	Haddam-Park Rd.	0.8	S
	3-I	Haddam-Jail Hill Rd.	0.8	WSW
	4-I	Haddam-Ranger Rd.	1.8	SW
	5-I	On-site-Injun Hollow Rd.	0.4	NW
	6-I	On-site-Substation	0.5	NE
	7-I	Haddam	1.8	SE
	8-I	East Haddam	3.1	ESE
	9-I	Higganum	4.3	WNW
	10-I	Hurd Park Rd.	2.8	NNW
	11-C	Middletown	9.0	NW
	12-C	Deep River	7.1	SSE
	13-C	North Madison	12.5	SW
	14-C	Colchester	10.5	NE
	40-X	Near Intake Structure	0.1	SSW
	41-X	Picnic Area	0.3	WNW
	42-X	Environmental Trail	0.1	NW
	43-X	Moodus - Rts 149 & 151	2.5	ENE
	44-X	Shailerville, Horton Rd.	1.0	SE
	45-X	Old Waste Gas Sphere Fence	0.1	E
	46-X	Discharge Canal Fence	0.2	SE
	47-X	Visitor Info Center	0.1	WNW
	48-IF	Onsite Met Tower Shack	0.4	WSW
	52-IF	Schmidt Cemetery Onsite	0.5	NNE
	53-IF	ISFSI Haul Route Onsite	0.2	SSW
	54-IF	Rt. 149 Salmon River	1.0	ESE
	55-IF	HV Tower NW of Pad	0.4	NW
	56-IF	Burrow Pit On-Site	0.2	E

¹ I=Indicator C=Control X=Extra (not part of REMP) IF=ISFSI Indicator

² The release points are the stack for terrestrial locations and the end of the discharge canal for aquatic locations

**Table 2.3 - Environmental Lower Limit of Detection (LLD) Sensitivity Requirements
(REMODCM Table E-3)**

Analysis	Water (pCi/l)	Airborne Particulate or Gas (pCi/m ³)	Fish (pCi/kg wet)	Milk (pCi/l)	Food Products (pCi/kg/wet)	Sediment (pCi/kg dry)
Gross Beta		0.01				
H-3	2000					
Mn-54	15		130			
Co-60	15		130			150
Zn-65	30		260			
Cs-134	15	0.05	130	15	60	150
Cs-137	18	0.06	150	18	80	180

**Table 2.4 - Reporting Levels for Radioactivity Concentrations in Environmental Samples
(REMODCM Table E-2)**

Analysis	Water (pCi/l)	Airborne Particulates or Gases (pCi/m ³)	Fish (pCi/kg wet)	Milk (pCi/l)	Vegetables (pCi/kg,wet)	Shellfish (pCi/kg,wet)
H-3	20000					
Mn-54	1000		30000			140000
Co-60	300		10000			50000
Zn-65	300		20000			80000
Cs-134	30	10	1000	60	1000	5000
Cs-137	50	20	2000	70	2000	8000

Figure 2.1 – Haddam Neck Sampling Locations

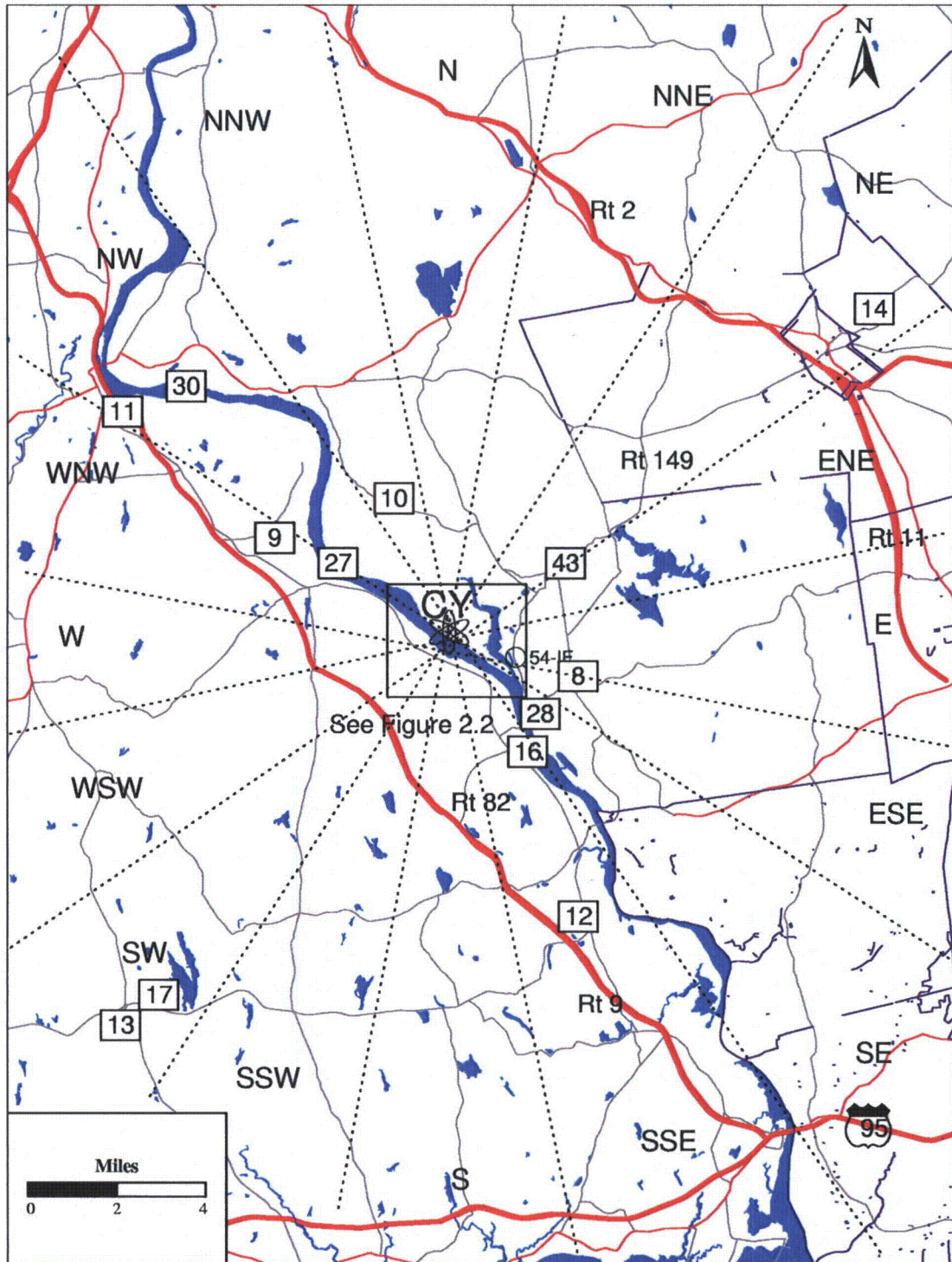
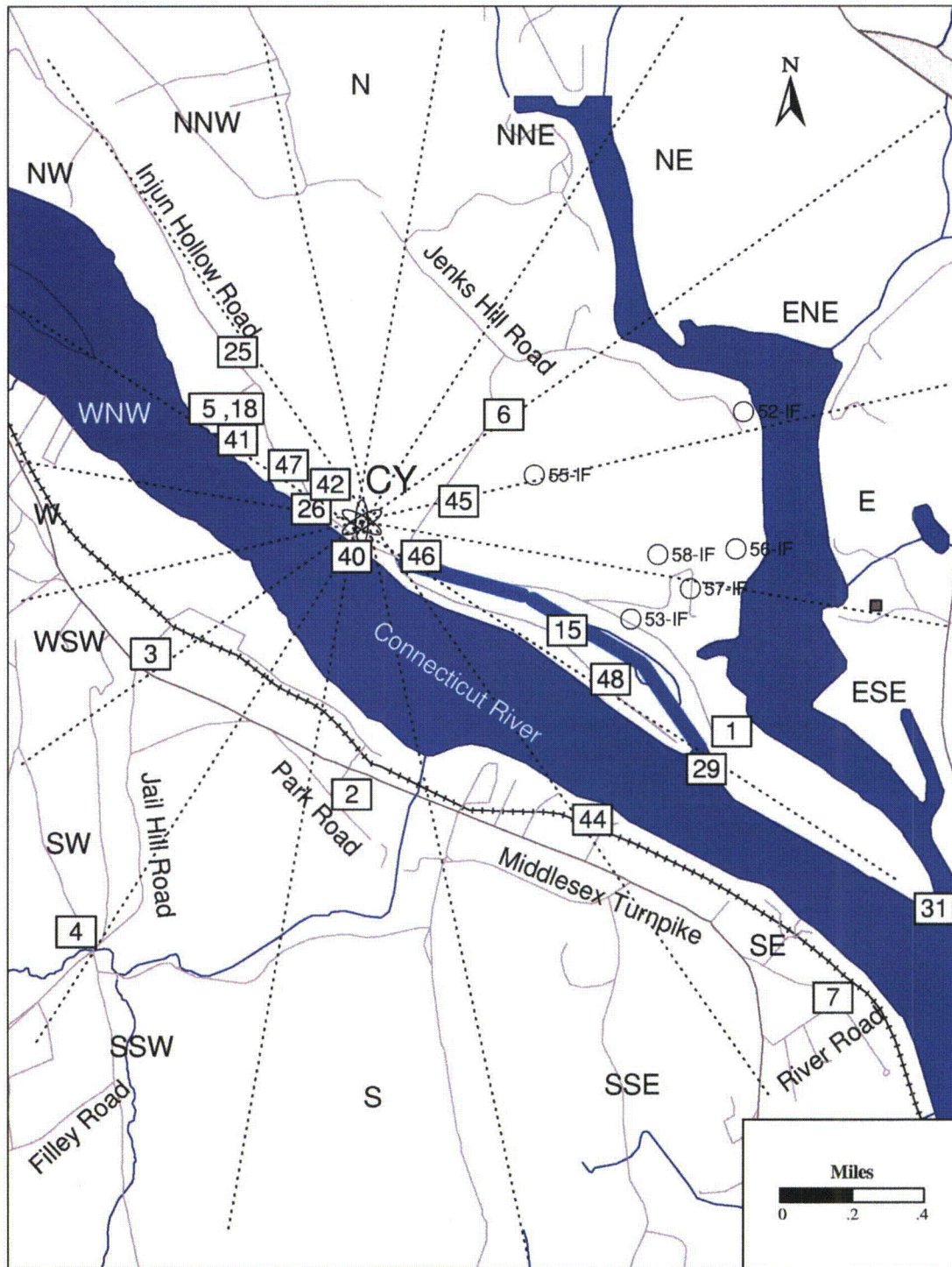


Figure 2.2 – Haddam Neck Sampling Locations



2.6 Samples Collected During 2006

The following table summarizes the number of samples of each type collected during the 2006 reporting period:

Sample Type	Number of Samples Analyzed in 2006	Number of Analyses by Station Type		
		Indicator	Control	Extra
Gamma Exposure environmental TLD	88	40	16	32
ISFSI TLD	44	32	4	8
Air Particulate*	N/A	N/A	N/A	-
Fish**	6	4	2	-
Bottom Sediment**	3	2	1	-
Shellfish**	2	1	1	-
ISFSI Sediment*	N/A	N/A	N/A	-
River Water**	50	25	25	-
Well Water*	N/A	N/A	N/A	-
Total All Types	193	104	49	40

* Not required by REMP

**Sample requirements changed during the year as previously indicated.

3 RADIOLOGICAL DATA SUMMARY TABLES

This section summarizes the analytical results of the environmental samples that were collected during 2006. These results, shown in Table 3.1, are presented in a format similar to that prescribed in the NRC's Radiological Assessment Branch Technical Position on Environmental Monitoring (Reference 1). The results are ordered by sample media type and then by radionuclide for the pathways described in Section 2.3. The units for each media type are also given. Table 3.2 provides the same information for TLD direct radiation measurements.

The left-most column contains the radionuclide of interest, the total number of analyses for that radionuclide in 2006, and the number of measurements which exceeded the Reporting Levels found in Table 2.4. The latter are classified as "Non-routine" measurements. The second column lists the required Lower Limit of Detection (LLD) for those radionuclides, which have detection capability requirements specified in Table 2.3. The absence of a value in this column indicates that no LLD is specified in the REMODCM for that radionuclide in that media. The target LLD for any analysis performed is typically 30-40 percent of the most restrictive required LLD.

With the exception of Table 3.1 River Water (WR) samples and ISFSI Water (WI), for each media type and radionuclide, the remaining three columns summarize the data for the following categories of monitoring locations: (1) the Indicator stations, which are within the range of influence of the plant and which could conceivably be affected by plant activities; (2) the station which had the highest mean concentration during 2006, and (3) the Control stations, which are beyond the influence of the plant. Direct radiation monitoring stations (using TLDs) are grouped into Indicator and Control stations. The WR and WI samples were self performed by CY and results were less than the lower limit of detection (LLD).

In each of these columns, for each radionuclide, the following are given:

- The mean value of all concentrations including negative values and values that are not considered "detectable".
- The lowest and highest concentration.
- The number of detectable measurements divided by the total number of measurements.

A sample is considered to yield a "detectable measurement" when the concentration exceeds three times its associated standard deviation. The standard deviation on each measurement represents only the random uncertainty associated with the radioactive decay process (counting statistics), and not the propagation of all possible uncertainties in the analytical procedure.

The radionuclides reported in this section represent those that: 1) had a Reporting Level listed in Table E-2 of the REMODCM or, a LLD requirement in Table E-3 of the REMODCM or 2) had a positive measurement of radioactivity, whether it was naturally-occurring or man-made; or 3) were of specific interest for any other reason. The radionuclides that are routinely analyzed and reported by the FANPEL in a gamma spectroscopy analysis are: Ac/Th-228, Ag-108m, Ag-110m, Ba-140, Be-7, Ce-141, Ce-144, Co-57, Co-58, Co-60, Cr-51, Cs-134, Cs-137, Fe-59, I-131, K-40, La-140, Mn-54, Nb-95, Ru-103, Ru-106, Sb-124, Sb-125, Se-75, Zn-65 and Zr-95. The radionuclides that are routinely analyzed and reported by CYAPCO in a gamma spectroscopy analysis are: Co-58, Co-60, Cs-134, Cs-137, Mn-54 and Zn-65.

Data from direct radiation measurements made by TLDs are provided in Table 3.2 in a format essentially the same as above. The complete listing of quarterly TLD data is provided in Table 3.3.

Table 3.1
Radiological Environmental Program Summary
Connecticut Yankee Nuclear Power Co., Haddam Neck Station

MEDIUM: Air Particulates (AP) UNITS: pCi/cubic meter

Radionuclides (No. Analyses) Non-Routine*	Required LLD	Indicator Stations	Station With Highest Mean		Control Stations
		Mean Range No. Detected**	Station	Mean Range No. Detected**	Mean Range No. Detected**

Monitoring Not Required

Table 3.1
Radiological Environmental Program Summary
Connecticut Yankee Nuclear Power Co., Haddam Neck Station
(January - December 2006)

MEDIUM: Fish (FH) UNITS: pCi/kg

Radionuclides (No. Analyses) Non-Routine*	Required LLD	Indicator Stations		Station With Highest Mean		Control Stations
		Mean Range No. Detected**	Station	Mean Range No. Detected**	Mean Range No. Detected**	
Mn-54	(6)	130	-7.5E -1	26-I(BF)	9.1E 0	-7.2E 0
	(0)		(-3.0 - 9.1)E 0 (0/ 4)		n/a (one sample taken) (0/ 1)	(- 7.8 - -6.60)E 0 (0/ 2)
Co-58	(6)		-1.17E 1	26-I(PF)	-1.0E 1	2.75E 0
	(0)		(-1.5 - -1.0)E 1 (0/ 4)		n/a (one sample taken) (0/ 1)	(1.2 - 4.3)E 0 (0/ 2)
Fe-59	(6)		-7.5E 0	29-I(BF)	1.5E 1	6.5E 0
	(0)		(-4.5 - 1.5)E 1 (0/ 4)		n/a (one sample taken) (0/ 1)	(0.0 - 1.3)E 1 (0/ 2)
Co-60	(6)	130	-1.03 E 1	29-I(BF)	3.5E 0	8.6E 0
	(0)		(-32.0 - 3.5)E 0 (0/ 4)		n/a (one sample taken) (0/ 1)	(0.51 - 1.21)E 1 (0/ 2)
Zn-65	(6)	260	-1.2 E 1	29-I(BF)	0.0E 1	-1.85E 1
	(0)		(-2.2 - 0.0)E 1 (0/ 4)		n/a (one sample taken) (0/ 1)	(-2.0 - -1.7)E 1 (0/ 2)
Cs-134	(6)	130	2.75E 0	29-I(PF)	1.16E 1	9.6E 0
	(0)		(-5.0 - 11.6)E 0 (0/ 4)		n/a (one sample taken) (0/ 1)	(0.6 - 1.32)E 1 (0/ 2)
Cs-137	(6)	150	1.95E 1	29-I(BF)	3.57E 1	1.35E 1
	(0)		(0.9 - 3.57)E 1 (1/ 4)		n/a (one sample taken) (1/ 1)	(1.15 - 1.52)E 1 (1/ 2)

* Non-Routine refers to radionuclides that exceeded the Reporting Levels in ODCM Table E-2

** The fraction of sample analyses yielding detectable measurements (i.e. >3 standard deviations) is shown in parentheses.

Table 3.1
Radiological Environmental Program Summary
Connecticut Yankee Nuclear Power Co., Haddam Neck Station
(January - December 2006)

MEDIUM: Sediment (SE) UNITS: pCi/kg dry

Radionuclides (No. Analyses) Non-Routine*	Required LLD	Indicator Stations	Station With Highest Mean		Control Stations
		Mean Range No. Detected**	Station	Mean Range No. Detected**	Mean Range No. Detected**
Mn-54	(2)	1.05E 1	29-I	2.7E 1	4.1E 1
(0)		(-0.6 - 2.7)E 1 (0/ 2)		n/a (one sample taken) (0/ 1)	n/a (one sample taken) (0/ 1)
Co-58	(2)	-1.1E 1	28-I	1.4E 1	-8.5E 0
(0)		(-3.6 - 1.4)E 1 (0/ 2)		n/a (one sample taken) (0/ 1)	n/a (one sample taken) (0/ 1)
Fe-59	(2)	1.0E 1	29-I	3.3E 1	-5.3E 1
(0)		(-1.3 - 3.3)E 1 (0/ 2)		n/a (one sample taken) (0/ 1)	n/a (one sample taken) (0/ 1)
Co-60	(2)	9.1 E 1	29-I	1.75E 2	-3.2E 1
(0)	150	(0.07 - 1.75)E 2 (1/ 2)		n/a (one sample taken) (1/ 1)	n/a (one sample taken) (0/ 1)
Zn-65	(2)	-1.35E 1	29-I	4.2E 1	2.0E 1
(0)		(-6.9 - 4.2)E 1 (0/ 2)		n/a (one sample taken) (0/ 1)	n/a (one sample taken) (0/ 1)
Cs-134	(2)	1.0E 0	29-I	1.3E 1	-1.0E 1
(0)	150	(-1.1 - 1.3E 1) (0/ 2)		n/a (one sample taken) (0/ 1)	n/a (one sample taken) (0/ 1)
Cs-137	(2)	1.84E 2	29-I	2.67E 2	1.54E 2
(0)	180	(1.01 - 2.67)E 2 (2/ 2)		n/a (one sample taken) (1/ 1)	n/a (one sample taken) (0/ 1)

* Non-Routine refers to radionuclides that exceeded the Reporting Levels in ODCM Table E-2

** The fraction of sample analyses yielding detectable measurements (i.e. >3 standard deviations) is shown in parentheses.

Table 3.1
Radiological Environmental Program Summary
Connecticut Yankee Nuclear Power Co., Haddam Neck Station
(January - December 2006)

MEDIUM: Shell Fish (SF) UNITS: pCi/kg wet

Radionuclides (No. Analyses) Non-Routine*	Required LLD	Indicator Stations	Station With Highest Mean		Control Station
		Mean Range No. Detected**	Station	Mean Range No. Detected**	Mean Range No. Detected**
Mn-54 (2) (0)	130	-1.90E 0 n/a (One Station) (0/ 1)	31	n/a (One Station)	0.0E 0 n/a (One Station) (0/ 1)
Co-58 (2) (0)		-2.70E 0 n/a (One Station) (0/ 1)	31	n/a (One Station)	-4.6E 0 n/a (One Station) (0/ 1)
Fe-59 (2) (0)		1.4E 1 n/a (One Station) (0/ 1)	31	n/a (One Station)	4.0E 0 n/a (One Station) (0/ 1)
Co-60 (2) (0)	130	1.3E 0 n/a (One Station) (0/ 1)	31	n/a (One Station)	-3.3E 0 n/a (One Station) (0/ 1)
Zn-65 (2) (0)	260	1.8E 1 n/a (One Station) (0/ 1)	31	n/a (One Station)	1.3E 1 n/a (One Station) (0/ 1)
Zr-95 (2) (0)		2.0E 0 n/a (One Station) (0/ 1)	31	n/a (One Station)	1.2E 1 n/a (One Station) (0/ 1)
I-131 (2) (0)		1.0E 1 n/a (One Station) (0/ 1)	31	n/a (One Station)	-1.4E 1 n/a (One Station) (0/ 1)
Cs-134 (2) (0)	130	-3.4E 0 n/a (One Station) (0/ 1)	31	n/a (One Station)	-1.3E 0 n/a (One Station) (0/ 2)
Cs-137 (2) (0)	150	-3.8E 0 n/a (One Station) (0/ 1)	31	n/a (One Station)	-1.1E 0 n/a (One Station) (0/ 1)

* Non-Routine refers to radionuclides that exceeded the Reporting Levels in ODCM Table E-2

** The fraction of sample analyses yielding detectable measurements (i.e. >3 standard deviations) is shown in parentheses.

Table 3.1
Radiological Environmental Program Summary
Connecticut Yankee Nuclear Power Co., Haddam Neck Station

MEDIUM: ISFSI Sediment (SI) UNITS: pCi/kg dry

Radionuclides (No. Analyses) Non-Routine*	Required LLD	Indicator Stations	Station With Highest Mean		Control Stations
		Mean Range No. Detected**	Station	Mean Range No. Detected**	Mean Range No. Detected**

Monitoring Not Required

Table 3.1
Radiological Environmental Program Summary
Connecticut Yankee Nuclear Power Co., Haddam Neck Station

MEDIUM: ISFSI Water (WI) UNITS: pCi/liter

Radionuclides (No. Analyses) Non-Routine*	Required LLD	Indicator Stations		Station With Highest Mean		Control Stations	
		Mean Range No. Detected**		Station	Mean Range No. Detected**	Mean Range No. Detected**	

Monitoring Not Required

H-3	(15) (0)	2000
Mn-54	(15) (0)	15
Co-58	(15) (0)	
Co-60	(15) (0)	15
Zn-65	(15) (0)	30
Cs-134	(15) (0)	15
Cs-137	(15) (0)	18

**No gamma emitting radionuclides or H-3 were detected in 2006 and all samples were counted to less than the required Lower Limit of Detection (LLD).
Monitoring Not Required by REMP**

• Non-Routine refers to radionuclides that exceeded the Reporting Levels in ODCM Table E-2

** The fraction of sample analyses yielding detectable measurements (i.e. >3 standard deviations) is shown in parentheses.

Table 3.1
Radiological Environmental Program Summary
Connecticut Yankee Nuclear Power Co., Haddam Neck Station
(January - December 2006)

MEDIUM: River Water (WR) UNITS: pCi/liter

Radionuclides (No. Analyses) Non-Routine*	Required LLD	Indicator Stations	Station	Indicator Stations	Control Stations
		Actual Values Mean Range No. Detected**	(1 Indicator --- Station)	--LLD Values----- Mean Range No. Detected**	Actual Values----- Mean Range No. Detected**
H-3	(15) (0)	2000	No gamma emitting radionuclides or H-3 were detected in 2006 and all samples were counted to less than the required Lower Limit of Detection (LLD).		
Mn-54	(15) (0)	15			
Co-58	(15) (0)				
Co-60	(15) (0)	15			
Zn-65	(15) (0)	30			
Cs-134	(15) (0)	15			
Cs-137	(15) (0)	18			

• Non-Routine refers to radionuclides that exceeded the Reporting Levels in ODCM Table E-2

** The fraction of sample analyses yielding detectable measurements (i.e. >3 standard deviations) is shown in parentheses.

Table 3.1
Radiological Environmental Program Summary
Connecticut Yankee Nuclear Power Co., Haddam Neck Station

MEDIUM: Well Water (WW) UNITS: pCi/liter

Radionuclides (No. Analyses) Non-Routine*	Required LLD	Indicator Stations	Station With Highest Mean		Control Stations
		Mean Range No. Detected**	Station	Mean Range No. Detected**	Mean Range No. Detected**

Monitoring Not Required

Table 3.2 Environmental TLD Measurements 2006

ENVIRONMENTAL TLD DATA SUMMARY
 CONNECTICUT YANKEE NUCLEAR POWER STATION
 (JANUARY - DECEMBER 2005)
 (uR/hr)

<u>INDICATOR TLDs</u>	<u>CONTROL TLDs</u>	<u>HIGHEST MEAN (14-C)</u>	<u>EXTRA TLDs</u>	<u>ISFSI TLDs</u>
MEAN RANGE (NO. MEASUREMENTS)*	MEAN RANGE (NO. MEASUREMENTS)*	MEAN RANGE (NO. MEASUREMENTS)*	MEAN RANGE (NO. MEASUREMENTS)*	MEAN RANGE (NO. MEASUREMENTS)*
5.98 ± 0.30	6.17 ± 0.32	7.77 ± 0.35	16.9 ± 0.72	6.34 ± 0.33
5.1 - 7.09	4.85 - 8.11	7.65 - 8.11	5.3 - 113.07	4.77 - 7.47
40	16	4	40	32

* Each "measurement" is based typically on quarterly readings from five TLD elements. Units are micro-R per hour.

Table 3.3

ENVIRONMENTAL TLD MEASUREMENTS
2006
(Micro-R per hour)

Sta. No.	Description	1ST QUARTER		2ND QUARTER		3RD QUARTER		4TH QUARTER		ANNUAL
		EXP.	S.D.	EXP.	S.D.	EXP.	S.D.	EXP.	S.D.	AVE. EXP.
CY-1-I	Onsite Discharge Can	5.43	± 0.33	7.00	± 0.49	5.29	± 0.34	6.11	± 0.25	5.96
CY-2-I	Haddam Park Road	5.16	± 0.17	6.02	± 0.39	5.36	± 0.34	5.99	± 0.33	5.75
CY-3-I	Haddam Jail Hill Rd.	6.31	± 0.20	6.48	± 0.24	5.71	± 0.31	6.44	± 0.25	6.19
CY-4-I	Haddam Ranger Road	5.10	± 0.18	5.74	± 0.33	5.3	± 0.62	5.54	± 0.30	5.42
CY-5-I	Onsite Injun Hol Rd.	6.54	* 0.20	6.78	± 0.22	6.37	± 0.31	6.46	± 0.53	6.54
CY-6-I	Onsite Substation	6.15	± 0.21	6.49	± 0.28	5.64	± 0.28	6.54	± 0.30	6.21
CY-7-I	Haddam	6.04	± 0.27	6.48	± 0.27	6.6	± 0.31	6.39	± 0.25	6.38
CY-8-I	East Haddam	6.09	± 0.22	6.67	± 0.26	5.76	± 0.30	6.31	± 0.25	6.21
CY-9-I	Higganum	6.10	± 0.32	6.41	± 0.36	5.88	± 0.35	6.48	± 0.28	6.22
CY-10-I	Hurd Park Road	6.72	± 0.27	7.09	± 0.28	6.01	± 0.29	6.56	± 0.39	6.60
CY-11-C	Middletown	5.11	± 0.26	5.71	± 0.38	4.85	± 0.30	5.53	± 0.25	5.30
CY-12-C	Deep River	6.02	± 0.22	6.6	± 0.37	5.83	± 0.29	6.25	± 0.29	6.18
CY-13-C	North Madison	4.94	± 0.40	6.02	± 0.24	5.07	± 0.25	5.78	± 0.40	5.45
CY-14-C	Colchester	7.65	± 0.30	8.11	± 0.42	7.66	± 0.39	7.64	± 0.28	7.77
CY-40-X	Near Intake Structur *	6.16	± 0.18	5.91	± 0.24	5.32	± 0.28	5.56	± 0.22	5.74
CY-41-X	Picnic area	5.30	± 0.17	5.8	± 0.27	5.57	± 0.39	5.63	± 0.24	5.58
CY-42-X	Environmental Trail	9.57	± 0.38	11.61	± 0.56	9.66	± 0.46	8.51	± 0.46	9.84
CY-43-X	Moodus-Rts 149&151	6.93	± 0.29	7.3	± 0.29	7.42	± 0.55	7.08	± 0.33	7.18
CY-44-X	Shailerville Horton Rd. Old Waste Gas Sphere*	5.76	± 0.30	6.29	± 0.44	6.25	± 0.29	6.12	± 0.23	6.11
CY-45-X	(on fence)	7.21	± 0.24	9.39	± 0.33	8.59	± 0.70	8.4	± 0.56	8.40
CY-46-X	Discharge Canal Fen *	9.11	± 0.60	6.24	± 0.38	5.99	± 0.39	6.29	± 0.33	6.91
CY-47-X	Visitor Info Center	6.52	± 0.24	6.64	± 0.25	6.73	± 0.34	6.6	± 0.28	6.62
CY-48-X	Met Shack	5.16	± 0.50	5.7	± 0.30	5.14	± 0.26	4.77	± 0.21	5.19
CY-50-X	ISFSI Pad SE End Fen	95.01	± 5.07	111.6	± 3.37	113.07	± 4.31	104.69	± 3.54	106.09
CY-51-X	ISFSI Monitoring ST Schmidt Cemetery	6.18	± 0.27	6.62	± 0.28	6.37	± 0.33	6.25	± 0.26	6.36
CY-52-IF	Onsite** ISFSI Haul Route	5.86	± 0.19	6.59	± 0.51	6.42	± 0.62	6.31	± 0.34	6.30
CY-53-IF	Onsite**	6.66	± 0.21	6.12	± 0.30	7.45	± 0.43	6.92	± 0.29	6.79
CY-54-IF	RT 149 Salmon River**	6.23	± 0.22	6.84	± 0.38	6.74	± 0.38	6.59	± 0.27	6.60
CY-55-IF	HV Tower NW of Pad**	6.67	± 0.32	7.47	± 0.38	6.82	± 0.39	7.02	± 0.29	7.00
CY-56-IF	Burrow Pit Onsite**	6.28	± 0.32	6.79	± 0.38	6.91	± 0.33	6.9	± 0.28	6.72

* Extra TLD locations not required by the REMODCM (x)

** ISFSI TLD Locations

4 ANALYSIS OF ENVIRONMENTAL RESULTS

4.1 Sampling Program Deviations

The Radiological Effluent Monitoring Manual (REMM) states in Section E.1 that the environmental sampling and analysis program shall be conducted as specified in Table E-1 for locations shown in Appendix G of the ODCM. Deviations are permitted from the required sampling schedule if specimens are unobtainable due to hazardous conditions, seasonal unavailability, malfunction of automatic sampling equipment or other legitimate reasons. If specimens are unobtainable due to sampling equipment malfunction, every effort shall be made to complete corrective action prior to the end of the next sampling period.

All deviations from the sampling schedule shall be documented in the Annual Radiological Environmental Operating Report pursuant to Section F.1 of the REMM. The following deviations are noted for the 2006 sampling program:

- Table E-1 states that 4 sediment samples are required annually. Three of the samples were taken (28-I, 29-I & 30-C) in 2006. Sediment sample for Dibble Creek (57-IF) was not taken in 2006 but is not part of the REMP program.
- Tritium sample data could not be located for River Water at station 30-C for 9/28, 11/15 & 11/29/2006. There are gamma analysis for Station 30-C on these dates all of which were less than the LLD. These samples were no longer required by the REMP program since they were after the final discharge of bulk fuel pool liquid had been released which was April 24 2006.
- Tritium sample data could not be located for River Water at station 28-I for 9/28, 10/18, 11/15 & 11/29/2006. There are gamma analysis for Station 28-I on these dates all of which were less than the LLD. These samples were no longer required REMP program since they were after the final discharge of bulk fuel pool liquid had been released which was April 24 2006.

There were no missed samples required by the REMP program for 2006.

4.2 Comparison of Achieved LLD with Requirements

Table E-3 of the REMODCM (Table 2.3 in this report) lists the required Lower Limits of Detection (LLDs) for routine environmental sample analyses. On occasion, an LLD is not achieved due to situations such as a low sample volume. In such a case, the REMODCM requires the identification and discussion of the contributing factors in the Annual Radiological Environmental Operating Report. At the FANPEL, the target LLD for any analysis is typically 30-40 percent of the most restrictive required LLD.

For each analysis having an LLD requirement, the *a posteriori* or after the fact LLD (or minimum detectable concentration-MDC) calculated for that analysis was compared with the required *a priori* LLD. More than 50 analyses were performed with a specified LLD requirement for 2006. All the samples analyzed met the required detection limits.

4.3 Results Compared Against Reporting Levels

The REMODCM Section E requires the written notification to the NRC within 30 days whenever a Reporting Level in ODCM Table E-2 is exceeded (Table 2.4 in this report). Reporting Levels are the environmental concentrations that relate to the ALARA design dose objectives of 10 CFR 50, Appendix I. It should be noted that environmental concentrations are averaged over calendar quarters for the purposes of this comparison, and that Reporting Levels apply only to measured levels of radioactivity due to plant effluents. During 2006, no Reporting Levels were exceeded.

4.4 Data Analysis by Media Type

The 2006 REMP data for each media type are discussed below categorized by pathway. Graphical plots of monitoring data are also shown in Figures 4.1 to 4.10. With respect to data plots, all values are plotted, whether they are "detectable" or "non-detectable."

4.4.1 River Water

River water composite samples were collected biweekly during most of 2006. The composites were analyzed for gamma radionuclides and H-3. No gamma emitting radionuclides or H-3 were detected in 2006 and all samples were counted down to the lower limit of detection.

4.4.2 Bottom Sediment

The REMODCM was changed in 2005 and sample frequency for sediment was reduced from semiannual to annual. Data from previous sampling events is included below. Figure 4.1 shows that historically, Cs-137 has been detected at both the control and indicator locations indicating that the likely source is weapons fallout. One of the samples collected at the indicator station in the vicinity of the discharge also contained Co-60. The level of Co-60 measured in 2006 is bounded by concentrations observed in previous years as shown in Figure 4.2. No other indications of station related radioactivity were observed in this sample media. In addition the sample results that were lost by FANPEL during 2005 were never located so Figure 4.2 will not indicate a sample point in 2005.

Figure 4.1

CS-137 IN SEDIMENT

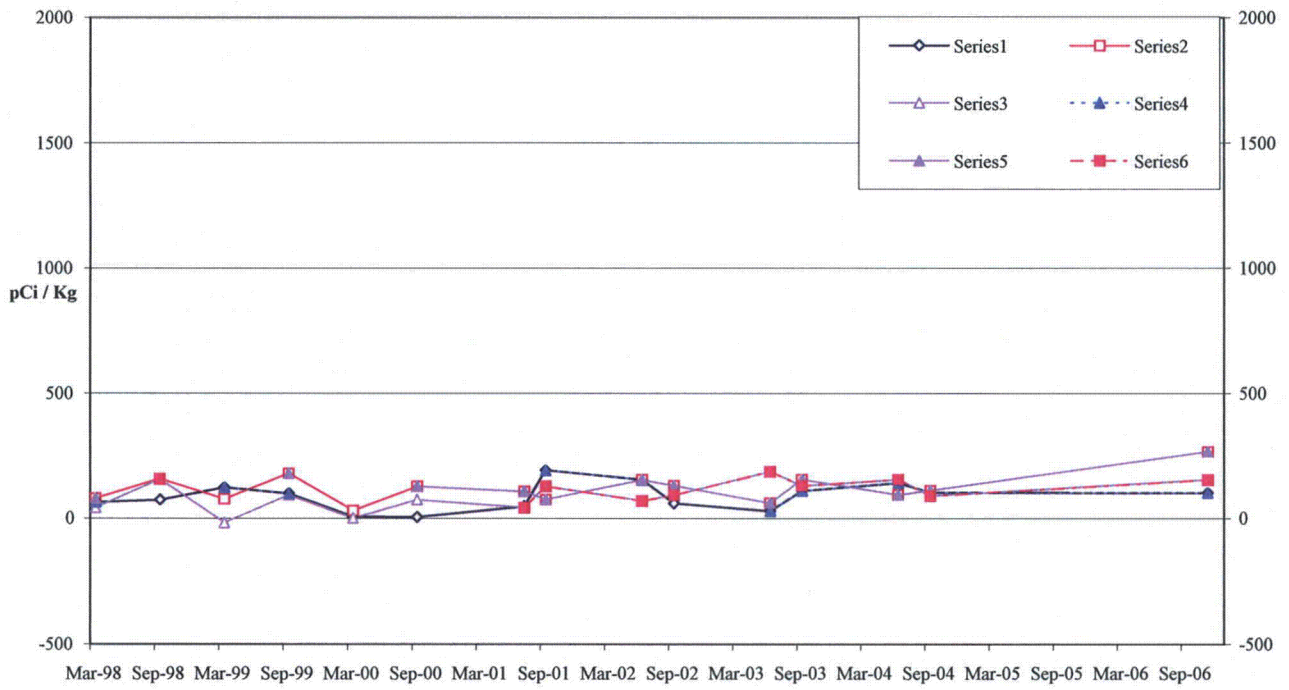
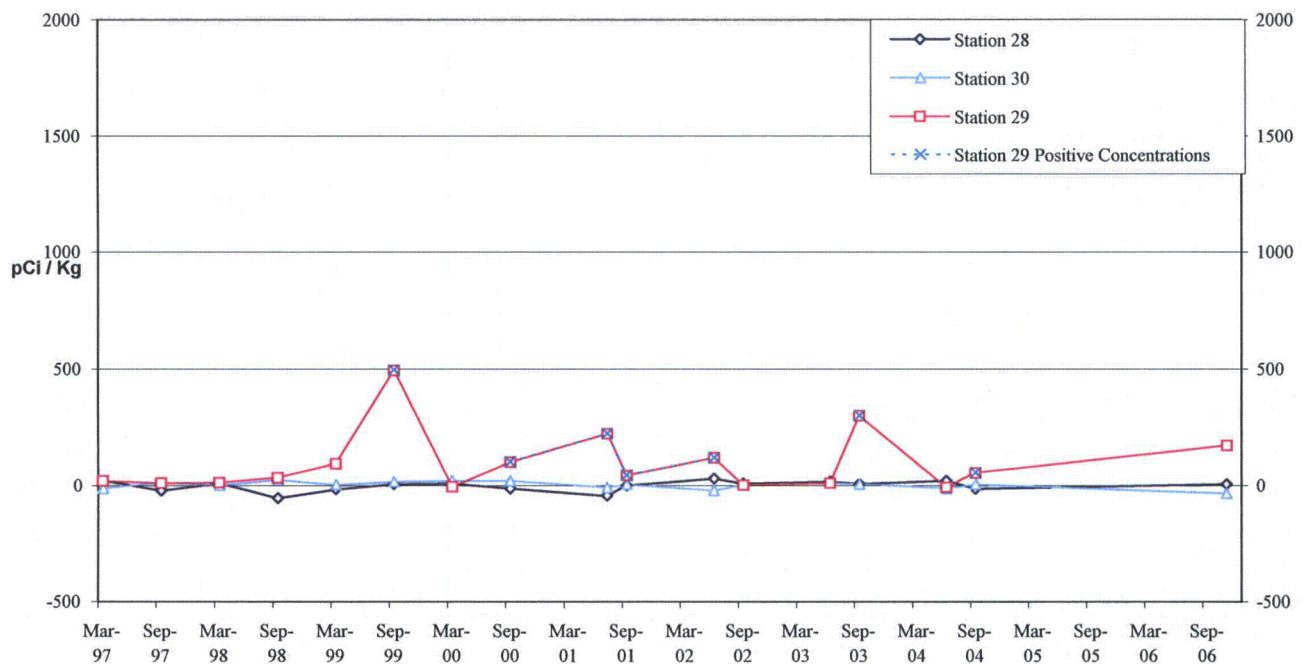


Figure 4.2
CO-60 IN SEDIMENT



4.4.3 Shellfish

Shellfish samples were collected annually from two locations. Naturally occurring K-40 was detected in two control samples. No other gamma emitting radionuclides were detected in the samples.

4.4.4 Fish

Multiple fish samples were collected annually at three locations. The species collected in 2006 were bottom feeders and predator fish. Cs-137 and K-40 were detected in the samples from indicator station 29-I and all control station samples. No Cs-137 was detected in the bottom feeder fish sample from the control sample location.

4.4.5 Gamma Exposure Rate

Direct radiation is continuously measured at 14 locations surrounding Haddam Neck Station and at nine extra on-site locations with thermoluminescent dosimeters (TLDs). The extra on-site locations are not part of the REMP but are used to monitor the impact of on-site decommissioning activities on the site boundary doses. All TLDs were collected quarterly for readout at the FANPEL.

Tables 3.2 and 3.3 show the mean exposure rates for the Indicator and Control categories did not vary significantly in 2006. As shown in Figure 4.3, there is a distinct annual cycle at both indicator and control locations. The lowest point of the cycle occurs during the winter months. This is due primarily to the attenuating effect of the snow cover on radon emissions and on direct irradiation by naturally-occurring radionuclides in the soil. Differing amounts of these radionuclides in the underlying soil, rock or nearby building materials result in different radiation levels between one field site and another.

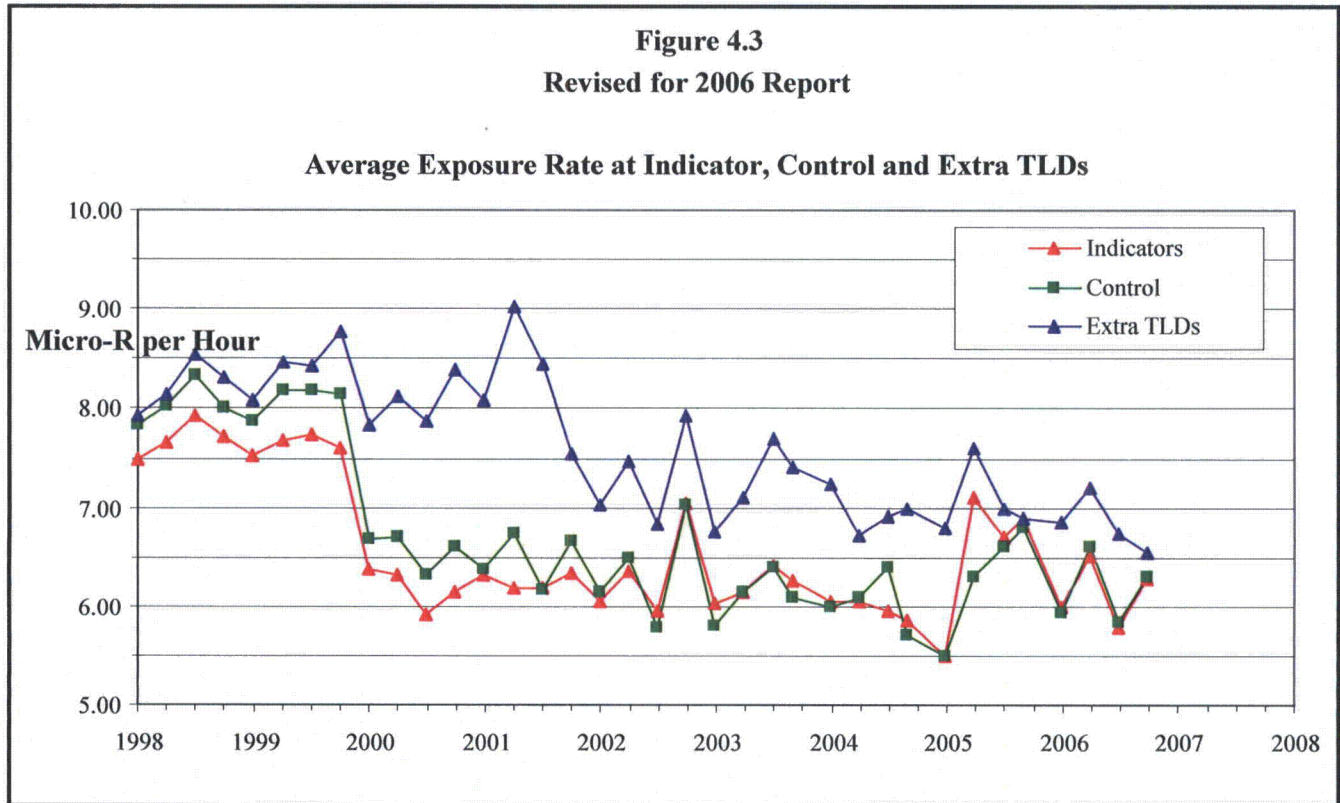


Figure 4.4 shows the exposure rate at all the Indicator TLD locations. There was a slight overall increase in average exposure rate during the latter part of 2005. CYAPCO began self performing REMP field work in July 2005. It is suspected that onsite storage during the time between TLD shipment arrival and TLD dissemination may account for the slight increase. In 2000, the TLDs (Victoreen glass bulb $\text{CaF}_2(\text{Mn})$) which had historically been used to measure direct radioactivity around Connecticut Yankee for over 20 years were replaced with Panasonic model UD-804 AS1 TLD. The changeover occurred in February of 2000. The Victoreen glass bulb type TLDs were subject to inherent self-irradiation which was experimentally measured for each dosimeter. This correction for field dosimeters averaged approximately $1 \mu\text{R/hr}$. In general, the new Panasonic monthly dosimeters show an average decrease in measured exposure rate by $\sim 20\%$ compared to the historical average determined by the Victoreen monthly dosimeters.

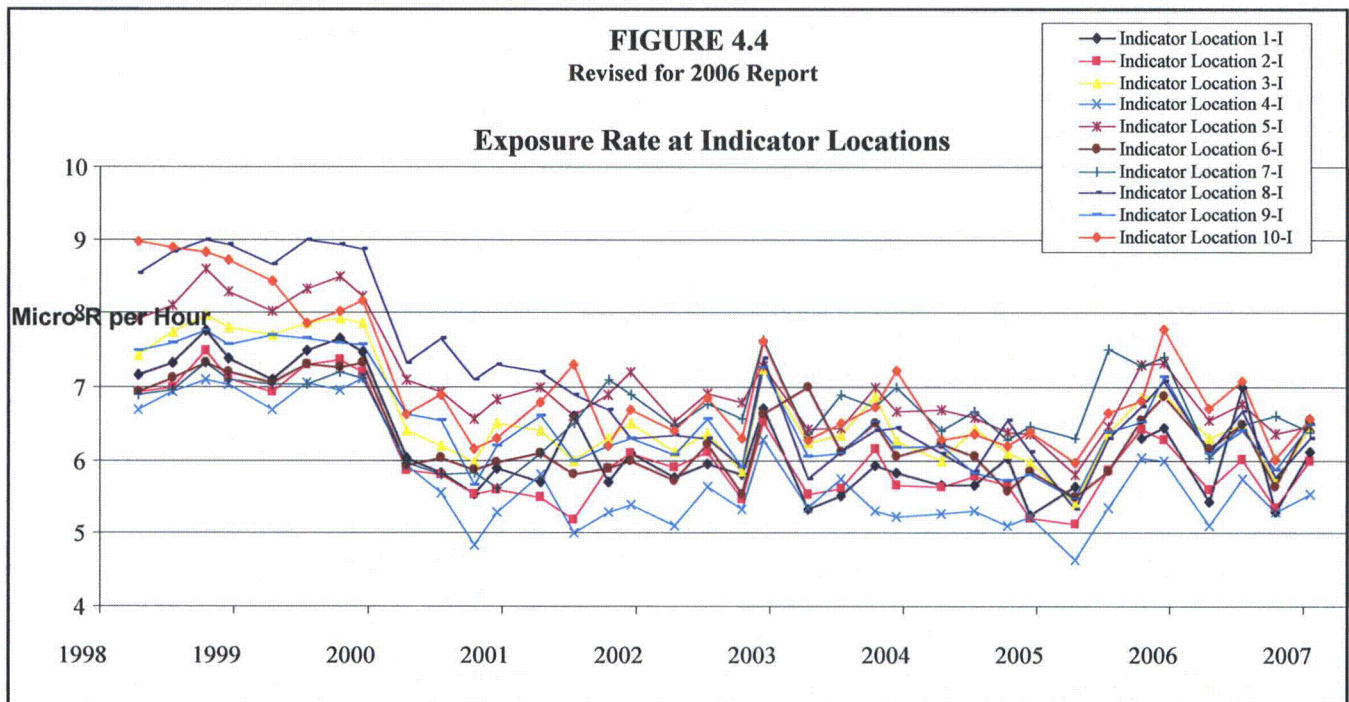
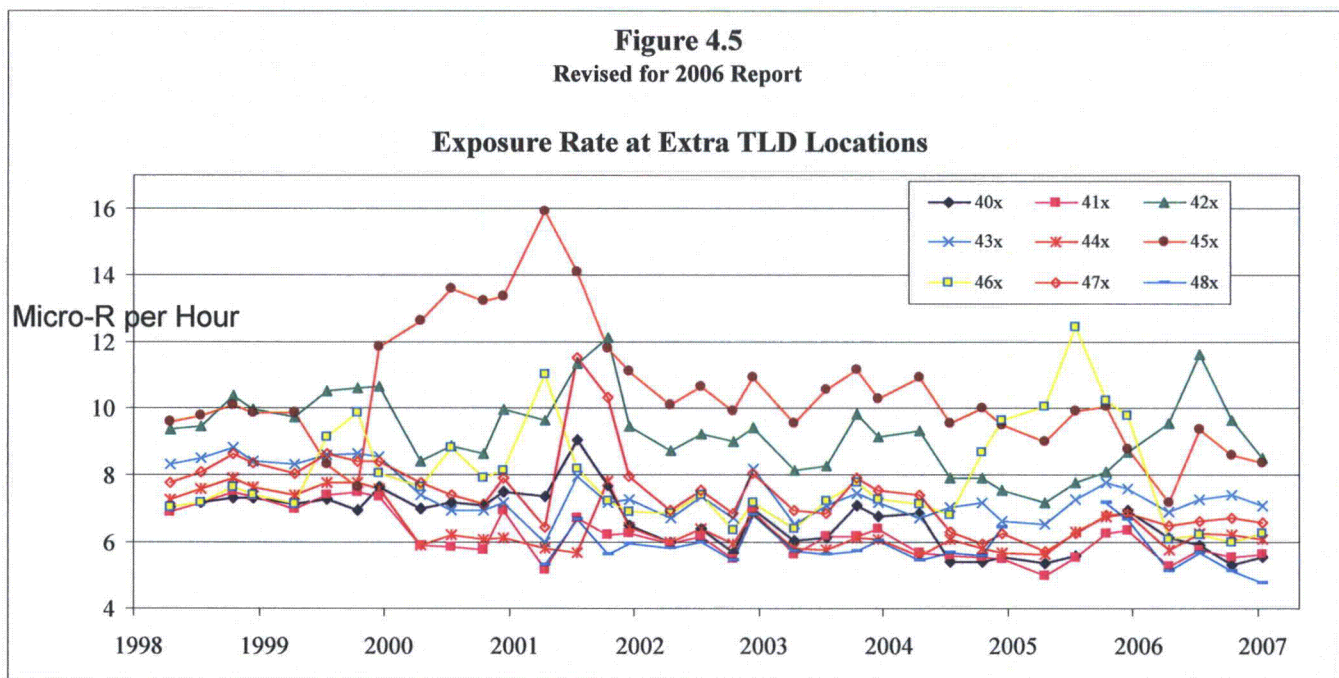


Figure 4.5 shows the exposure rate at the nine Extra TLD locations used to monitor more closely on-site decommissioning activities. TLD #42X showed an increase in exposure rate during 2006. This TLD was affected by the storage of Radioactive Material in the northeast corner of the former waste processing area located on the east side of the parking lot. TLD #46X showed an increase in exposure rate during 2005. This TLD is located on the north canal fence. Over the course of decommissioning, radioactive material storage area locations frequently changed. During 2005, #46X was located near a large radioactive materials storage area. An increased exposure rate was observed at on-site location #45-X throughout the 2000 and into 2002. This increase was noted toward the end of 1999, coincident with the removal of the steam generators and pressurizer from containment. These components were temporarily stored in the Southeast corner of the Industrial Area 700 feet from location #45-X. The increase in exposure rate due to these components is a localized effect and does not affect an increase in exposure beyond the owner controlled area. The steam generators, reactor head and pressurizer were shipped off site between the second and fourth quarter of 2002. TLD measurements throughout the year demonstrate the general variations in background radiation between the various on-site and off-site locations and include gamma exposure from all sources of radioactivity.



4.4.6 ISFSI Gamma Exposure Rate

In the second quarter of 2003, additional sampling locations associated with the placement on-site of an Independent Spent Fuel Storage Installation (ISFSI) were selected for the purpose of collecting baseline background information prior to the transfer of spent fuel from the main plant to the ISFSI. These new locations are specific to the ISFSI and are beyond the standard REMP that has been in operation over the life of the power plant's license. These TLD locations are located in the area surrounding the facility at distances that approximated the site boundary to support future determinations that direct and scatter dose from ISFSI operations remain in compliance with offsite dose limits to the public.

Figures 4.6 and 4.7 compare the ISFSI TLD results with the baseline measurements taken before the first ISFSI canister was placed on the storage facility on April 20, 2004. The 2005 REMP Report in Figure 4.6 included exposure rates from TLD data that is mounted on the ISFSI Restricted Area Fence. This data indicated a large increase in exposure rates at the time ISFSI canisters were transferred to the ISFSI. This location should not have been included in the average rates since it is not representative of the site boundary. Figure 4.6 has been revised to remove the ISFSI fence data for 2005.

Figure 4.6 also indicates a slight decrease in exposure rates in the first quarter (March) for 2004, 2005 and 2006 which is probably due to snow cover.

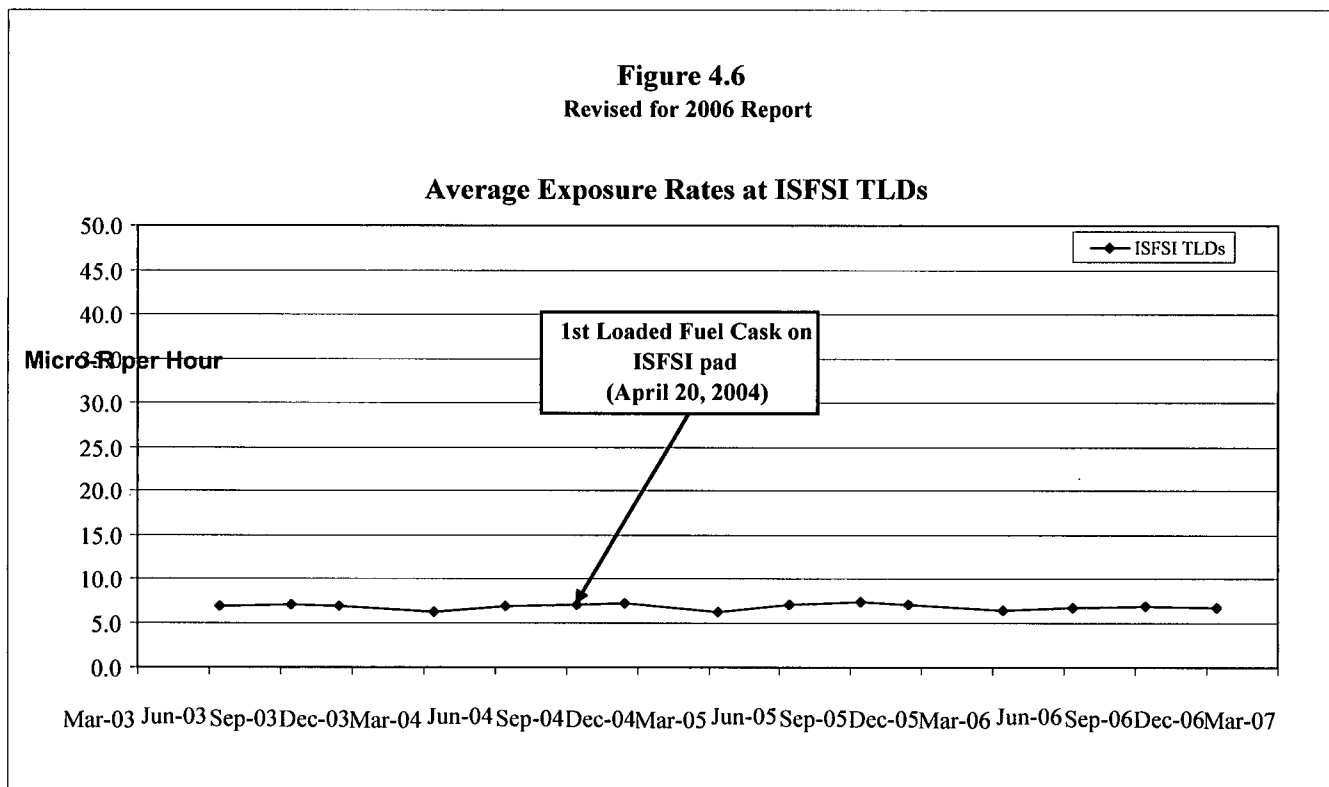
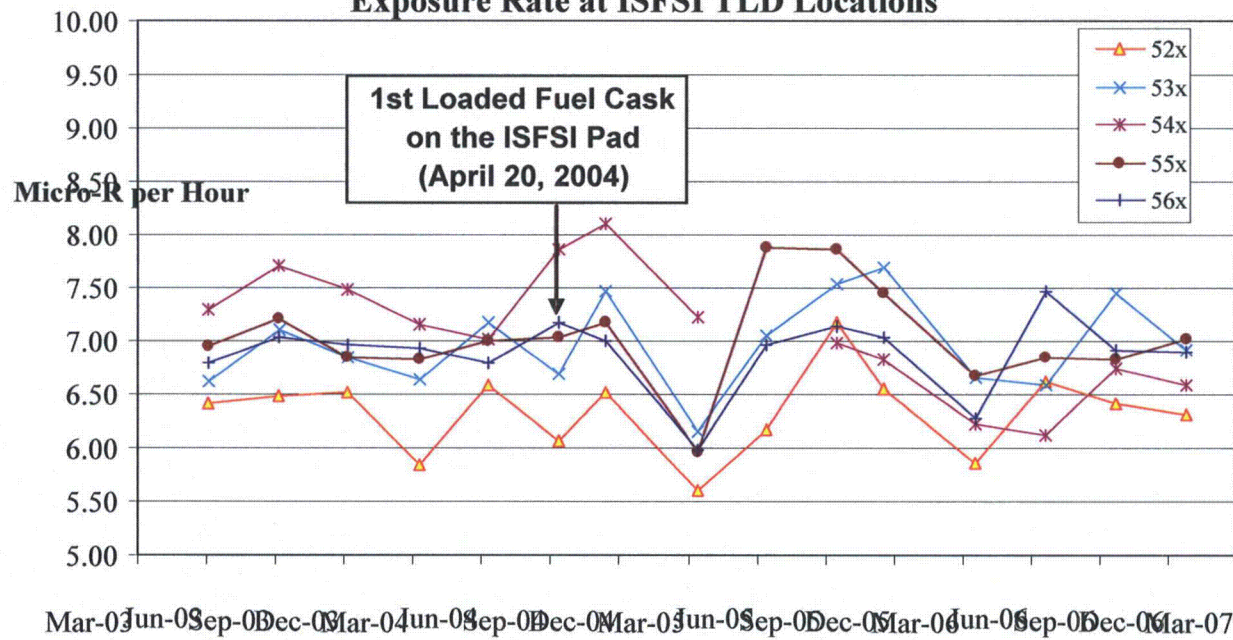


Figure 4.7
 Revised for 2006 Report
Exposure Rate at ISFSI TLD Locations



5 OFF-SITE DOSE EQUIVALENT COMMITMENTS

The purpose of this section is to evaluate off-site dose consequences (dose equivalent commitments) associated with the stations' radioactive liquid and airborne effluents. The method utilizes Regulatory Guide 1.109 / REMODCM models and actual measurements of the concentrations of radioactivity in environmental media to compute the dose consequences resulting from the consumption of these foods.

The standards for the maximum dose to an individual of the general public, taken from 40CFR190, is 25 mRem to the whole body, 75 mRem to the thyroid and 25 mRem to any other organ. These standards are a fraction of the average USA background radiation of 300 mRem per year given in NCRP94.

Historically, Cs-137 (mostly from weapons fallout) was identified in the bottom sediment in the area of the plant discharge. Although some may be attributable to plant related operations in past years, these samples represent a pathway that is not involved with a significant exposure to the public.

Cs-137 was detected in Bottom Feeder fish caught from Indicator Station 29-I. The Cs-137 activity for this sample was greater than the three times one sigma counting uncertainty but less than the required MDC. The measured MDC on this sample was greater than 5 times lower than the required MDC of 150 pCi/L. While Cs137 is an isotope associated with Plant activities, the Cs-137 concentrations detected in the fish most likely came from Cs137 present in the sediment from weapons fallout as the measured concentrations of Cs-137 in the control sample and one of the indicator fish were nearly identical. The Cs-137 activity measured in the fish samples does not represent a significant ingestion dose from (fish, shellfish, water) for 2006.

Low levels of Co-60 was detected in the canal discharge sediment sample (29-I) which does not represent a significant dose for 2006.

References

1. USNRC Radiological Assessment Branch Technical Position, "An Acceptable Radiological Environmental Monitoring Program," Revision 1, November 1979.
2. NCRP Report No. 94, Exposure of the Population in the United States and Canada from Natural Background Radiation, National Council on Radiation Protection and Measurements, 1987.
3. Ionizing Radiation: Sources and Biological Effects, United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR), 1982 Report to the General Assembly.
4. Kathren, Ronald L., Radioactivity and the Environment - Sources, Distribution, and Surveillance, Harwood Academic Publishers, New York, 1984.
5. NRC Generic Letter 89-01, Subject: Implementation of Programmatic Controls for Radiological Effluent Technical Specifications in the Administrative Controls Section of the Technical Specifications and the Relocation of Procedural Details of RETS to the Offsite Dose Calculation Manual or to the Process Control Program, dated January 31, 1989.

APPENDIX A

LAND USE CENSUS FOR 2006

2006 Land Use Census Assessment

Due to the current status of the Decommissioning Project, the Land Use Census is not expected to change in a manner that would affect the Radiological Environmental Monitoring Program. The most recent Land Use Census conducted in 2004 will remain in effect until superseded. During the course of the Decommissioning Project an updated Land Use Census can be obtained at any time as requested or needed. The results of the current applicable Land Use Census are included in this report in compliance with REMODCM Section E-2. The locations identified during the Census are listed in Table A-1. In 2004, Normandeau Associates conducted the Land Use Census and verified the distance and direction for all residence with a portable Global Positioning System (GPS). Pursuant to REMODCM Section E-2, any sampling changes resulting from the Land Use Census must be noted in this report. No changes with the REMP were needed based on this Land Use Census.

TABLE A.1
LAND USE CENSUS LOCATIONS

SECTOR	NEAREST RESIDENCE Km
N	1.18
NNE	1.74
NE	1.69
ENE	1.75
E	2.12
ESE	2.75
SE	1.34
SSE	1.20
S	1.04
SSW	0.93
SW	1.03
WSW	1.22
W	1.40
WNW	0.64
NW	1.09
NNW	1.55

APPENDIX B

Quality Assurance Program



March 8, 2007
EL 020/07

TO: Distribution

FROM: J. M. Raimondi

SUBJECT: AREVA NP Environmental Laboratory
Dosimetry Services Semi-Annual Quality Assurance Status Report
(July - December 2006)

Attached for your information and review is the Semi-Annual Status Report covering the AREVA NP Environmental Laboratory's (E-LAB) Quality Assurance Programs for environmental, extremity, and personnel dosimetry processing for the second half of 2006. During this semi-annual period, 99.3% (545/549) of the individual dosimeters, evaluated against the E-LAB internal performance criteria (high-energy photons only), met the criterion for accuracy and 99.6% (547/549) met the criterion for precision. In addition, 100% (92/92) of the dosimeter sets evaluated against the internal tolerance limits met these criteria.

Please contact Chris Shelton at (508) 573-6663 or me at (508) 573-6651 if you have any questions.

A handwritten signature in black ink, appearing to read 'J. M. Raimondi', is written over a horizontal line.

J. M. Raimondi
Manager, Environmental Laboratory

CAS/cas
Attachment

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G. Harper - AREVA NP
N. Hansen - Southern California Edison
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J. Geyster - Entergy/VY

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M. Strum - AREVA NP
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J. Bundick - Indiana Michigan

AREVA NP INC.

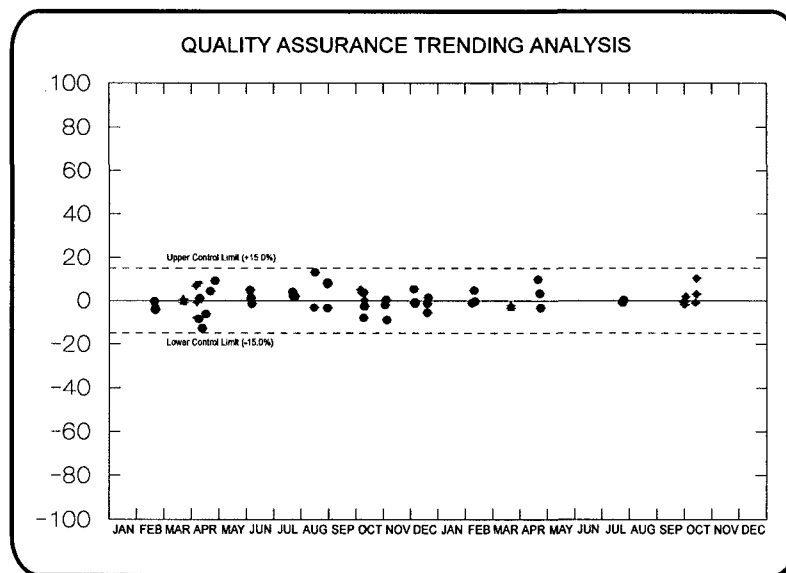
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DOSIMETRY SERVICES SEMI-ANNUAL QUALITY ASSURANCE STATUS REPORT

July - December 2006



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**AREVA NP
ENVIRONMENTAL LABORATORY**

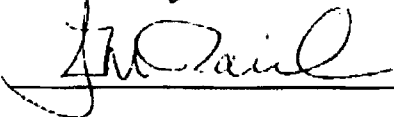
DOSIMETRY SERVICES

SEMI-ANNUAL QUALITY ASSURANCE STATUS REPORT

July - December 2006

EL 020/07

Prepared By:  Date: 3/8/2007

Approved By:  Date: 3/9/07

**AREVA NP
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EXECUTIVE SUMMARY

Routine quality control (QC) testing was performed for dosimeters issued by the AREVA NP Environmental Laboratory (E-LAB) Dosimetry Services. The dosimeter types included Panasonic 808 and 814 whole body dosimeters, Thermo Electron extremity dosimeters, and Panasonic environmental dosimeters. QC dosimeters were irradiated in-house as well as by a third party. All testing methods used by the accredited third-party tester conform to ANSI N13.11-2001 (Reference 1) or ANSI N13.32-1995 (Reference 2).

During this semi-annual period, 99.3% (545/549) of the individual dosimeters, evaluated against the E-LAB internal performance acceptance criteria (high-energy photons only), met the criterion for accuracy and 99.6% (547/549) met the criterion for precision (Table 1). In addition, 100% (92/92) of the dosimeter sets evaluated against the internal tolerance limits met E-LAB acceptance criteria (Table 2). Table 3 lists the third party testing results for this semi-annual period. Trending graphs, which evaluate each dosimeter type, dose depth and performance statistic for high-energy photon irradiations are given in Appendix A.

Appendix B contains the current National Voluntary Laboratory Accreditation Program (NVLAP) Certificate of Accreditation and Scope of Accreditation.



I. INTRODUCTION

The TLD systems at the AREVA NP Environmental Laboratory (E-LAB, NVLAP Code 100524) are calibrated and operated to ensure consistent and accurate evaluation of TLDs. The quality of the dosimetric results reported to E-LAB clients is ensured by the NVLAP for dosimetry processing, independent third-party performance testing by Battelle Pacific Northwest Laboratories, in-plant performance testing, and in-house performance testing by the QA Officer and Dosimetry Services.

Standard test methods for in-plant testing of Panasonic whole body and extremity dosimeters are described in the E-LAB report entitled "In-Plant External Dosimetry Quality Assurance Testing Program" (Reference 3). This protocol provides standard test methods that may be used at plant sites utilizing E-LAB dosimeters. The plants have developed their own dosimetry test procedures modeled after Reference 3.

The purpose of the dosimetry quality assurance program is to provide performance documentation of the routine processing of E-LAB dosimeters. Performance testing provides a statistical measure of the bias and precision of dosimetry processing against a reliable standard, which in turn points out any trends or performance changes. Two programs are used:

A. QC Program

Dosimetry quality control tests are performed on E-LAB Panasonic 808 and 814 whole body dosimeters, combination Panasonic 808/814 neutron dosimeters, Thermo Electron extremity, and Panasonic environmental dosimeters. These tests include:

- third-party testing,
- in-plant testing program conducted by various users of E-LAB dosimetry, and
- the in-house testing program conducted by the E-LAB QA Officer.

Results of these tests are described in this report.

Excluded from this report are instrumentation checks conducted by Dosimetry Services and client-initiated QC checks. Although instrumentation checks represent an important aspect of the quality assurance program, they are not included as process checks because the doses are known by the processors. Instrumentation checks represent between 5-10% of the TLDs processed.

B. QA Program

An internal assessment of Dosimetry Services activities is conducted annually by the Laboratory Quality Assurance Officer (Reference 4). The purpose of the assessment is to review analytical procedures, results, materials or components to identify opportunities to improve or enhance processes and/or services.



II. PERFORMANCE EVALUATION CRITERIA

A. Performance Statistics

All evaluation criteria are taken from the "Dosimetry Services Quality System Manual," Reference 5.

1. Bias

- a. For each dosimeter tested, the measure of bias is the percent deviation of the reported result relative to the delivered dose. The percent deviation relative to the delivered dose is calculated as follows:

$$\frac{(H'_i - H_i)}{H_i} 100$$

where:

H'_i = the corresponding reported dose for the i th dosimeter (i.e., the reported dose)

H_i = the dose delivered to the i th irradiated dosimeter (i.e., the delivered dose)

- b. For each group of test dosimeters, the mean bias is the average percent deviation of the reported result relative to the delivered dose. The mean percent deviation relative to the delivered dose is calculated as follows:

$$\sum \left(\frac{(H'_i - H_i)}{H_i} \right) 100 \left(\frac{1}{n} \right)$$

where:

H'_i = the corresponding reported dose for the i th dosimeter (i.e., the reported dose)

H_i = the dose delivered to the i th irradiated test dosimeter (i.e., the delivered dose)

n = the number of dosimeters in the test group

2. Precision

For a group of test dosimeters irradiated to a given dose, the measure of precision is the percent deviation of individual results relative to the mean reported dose. At least two values are required for the determination of precision. The measure of precision for the i th dosimeter is:



$$\left(\frac{(H'_i - \bar{H})}{\bar{H}} \right) 100$$

where:

H'_i = the reported dose for the i th dosimeter (i.e., the reported dose)

\bar{H} = the mean reported dose; i.e., $\bar{H} = \sum H'_i \left(\frac{1}{n} \right)$

n = the number of dosimeters in the test group

3. American National Standards Institute Performance Statistics

The American National Standards Institute (ANSI) provides a method of characterizing the performance of protection dosimetry in "Personnel Dosimetry Performance - Criteria for Testing" (Reference 1).

- a. The performance in a given test category is considered adequate if for the shallow and/or deep dose equivalents (or the absorbed dose):

$$|B| + S \leq L$$

where:

B = the bias of the performance quotient

S = the standard deviation of the performance quotient

L = the tolerance level

- b. The bias of the values of the performance quotient, \bar{P} is set equal to the average of these values:

$$B = \bar{P} = \left(\frac{1}{n} \right) (\sum P_i)$$

where:

The performance quotient, P_i , for the i th dosimeter is defined as:

$$P_i = \frac{[H'_i - H_i]}{H_i}$$

and:

H'_i = the corresponding reported dose equivalent for the i th dosimeter (i.e., the reported dose)



H_i = the dose delivered to the i th irradiated dosimeter (i.e., the delivered dose)

- c. The standard deviation of the values of the performance quotient, P_i , is:

$$S = \left[\frac{\sum (P_i - \bar{P})^2}{(n-1)} \right]^{1/2}$$

where:

$n-1$ represents the unbiased sample population, where the summation is performed over all n values of P_i for a particular test in a given radiation category, and for a particular phantom depth (shallow or deep).

B. Tolerance Limits

1. E-LAB Internal Limits

Tolerance limits for bias and precision applied to in-house and accredited third party testing were adopted on November 13, 1987.

These criteria are only applied to individual test dosimeters irradiated with high-energy photons (Cs-137 or Co-60) and are as follows:

Dosimeter Type	Tolerance Limits	
	Bias	Precision
Panasonic Whole Body	± 18.5%	± 16.1%
Extremity	± 32.6%	± 27.2%
Panasonic Environmental	± 20.1%	± 12.8%

The results of dosimeters evaluated against these criteria are summarized in Table 1. Trending graphs for a particular badge type or depth can be found in Appendix A.

2. Additional Internal Tolerance Limits

Further performance testing control limits were added in 1998 to evaluate the sum of bias and precision values for all irradiation categories, not just for high-energy photons. A ±30% tolerance limit was applied to the sum of the bias and precision values for all whole body and environmental dosimeters, while a ±50% tolerance limit was applied for extremity dosimeters. Dosimeters processed during this semi-annual period were



evaluated against these criteria and the results are shown in Table 2 and Appendix A.

3. American National Standards Institute Tolerance Level (L)

The tolerance level, L, given in Reference 1, is: (a) 0.3 in the accident category I; and (b) 0.4 in the protection categories II through VI. ANSI N13.11-2001 (Reference 1) includes additional limits on the Performance Quotient Limit (PQL) for Categories II, IV, and V for deep and shallow depths and Category III for shallow depth only. This criterion requires that no more than one of fifteen dosimeters tested in each category may have a bias that exceeds the tolerance level (L).

C. QC Investigation Criteria

E-LAB Manual 120 (Reference 5) specifies when an investigation is required due to a QC analysis that has failed the E-LAB bias criteria. The criteria are as follows:

1. No investigation is necessary when an individual QC result falls outside the QC performance criteria for accuracy.
2. Investigations are initiated when the mean of a QC processing batch is outside the performance criterion for bias.

D. Reporting of Analytical Results

The following result reporting guidelines apply to dosimetry services:

1. All results are to be reported in a timely fashion.
2. If the QA Officer determines that an investigation is required for a process, the results shall be issued as normal. If the QC results, prompting the investigation, have a mean bias from the known of greater than $\pm 20\%$ for environmental dosimetry and greater than $\pm 30\%$ for personnel dosimetry, the results shall be issued with a note indicating that they may be updated in the future, pending resolution of a QA issue.
3. Environmental dosimetry results do not require updating if the investigation has shown that the mean bias between the original results and the corrected results, based on applicable correction factors from the investigation, does not exceed $\pm 20\%$.
4. Personnel dosimetry results do not require updating if the investigation has shown that the mean bias between the original results and the corrected results, based on applicable correction factors from the investigation, does not exceed $\pm 30\%$.



III. DATA SUMMARY FOR REPORTING PERIOD JULY-DECEMBER 2006

A. General Discussion

Results of performance tests conducted for each type of dosimeter are summarized and discussed in the following sections. Summaries of the performance tests for the reporting period are given in Tables 1 through 3 and Figures 1 through 31. Results are presented only for performance tests conducted under well-characterized conditions. Where appropriate, results are reported for three depths (7 mg/cm², 300 mg/cm², and 1000 mg/cm²) and plotted for the six-month period July-December 2006.

Table 1 provides a summary of individual dosimeter results evaluated against the E-LAB internal acceptance criteria for high-energy photons only. During this semi-annual period, 99.3% (545/549) of the individual dosimeters, evaluated against these criteria met the tolerance limits for accuracy and 99.6% (547/549) met the criterion for precision.

Table 2 provides a summary of the |B| + S results for each group (N=6) of dosimeters evaluated against the internal tolerance criteria. The data in Table 2 is tabulated by badge type and applies to all ANSI-required and non-required categories (see Table 3). Overall, 100% (92/92) of the dosimeter sets evaluated against the internal tolerance performance criteria met these criteria.

Table 3 presents the third-party testing results for dosimeters processed during this semi-annual period. NVLAP-required results are shown within the shaded outlined area of Table 3, which also includes non-required test results.

B. Result Trending

1. Panasonic Whole Body Dosimeters

One of the main benefits of performing quality control tests on a routine basis is to identify trends or performance changes. Trends or changes are best illustrated in the form of trending graphs where performance is tracked over time. The results of Panasonic 808 and 814 whole body dosimeters performance tests are presented in Figures 1 through 24 for Category II irradiations. The results are evaluated against each of the performance criteria listed in Section II, namely: individual dosimeter bias, individual dosimeter precision, and |B| + S. Results are also evaluated for mean bias in accordance with the investigation criteria given in Section II.C.

All of the results presented in Figures 1 through 24 are fade corrected to the irradiation date and plotted sequentially by processing date. This allows assessment of performance without the confounding effect of the variation in number of days between readout and irradiation. Therefore, the results include any bias produced by the fade algorithm.



If fade is not corrected to the date of irradiation, the possibility of a bias due to signal fading exists. When Dosimetry Services processes a TLD, the software calculates a fade correction using one half the number of days between the processing date and the anneal date. The use of the midpoint for fade correction can bias the results of performance tests of TLDs irradiated at either the beginning or end of a wear period. Results for performance tests conducted near the beginning of the period will be biased low and those irradiated near the end of a period will be biased high, assuming there are no other system biases.

In some cases (i.e., when TLDs are irradiated at the end of the wear period and fade corrected to the midpoint) the results of the performance test may fall outside of the control limits even though the system is performing correctly. Therefore, to allow the assessment of performance test results without the TLD signal confounding the data, all Panasonic 808 and 814 test results presented in the tables have been fade corrected to the actual date of irradiation.

Figures 1 through 3 depict the individual bias of each of 24 Panasonic 808 dosimeters, evaluated at three different depths, and plotted sequentially according to processing date. The failure rate was 4.2% (1/24) for the shallow depth, 0% (0/24) for the eye and deep depths (Figures 1-3). The failure rate for individual precision was 0% (0/24) for the shallow, eye, and deep depths (Figures 4-6). The failure rate for the mean bias was 0% (0/4) for all three depths (Figures 7-9). Finally, Figures 10-12 depict the $|B| + S$ statistic for each group of 808 dosimeters at each depth. All test sets (4 at each depth) met the internal tolerance criteria of $|B| + S < 0.3$.

Figures 13 through 15 depict the individual bias of each of the 131 Panasonic 814 dosimeters, evaluated at three different depths, versus the date of processing. The failure rate was 0% (0/131) for the shallow, eye and deep depths. The failure rate for individual precision was 0% (0/131) for the shallow, eye, and deep depths (Figures 16-18). The failure rate for mean bias at all three depths (Figures 19-21) was 0%. As shown in Figures 22-24, 100% of the 22 Panasonic 814 test sets, evaluated at each depth, met the internal tolerance criteria of $|B| + S < 0.3$.



2. Extremity Dosimeters

Extremity results plotted in Figures 25 -28 are for performance tests conducted at the E-LAB and an accredited third-party testing organization. For all individual extremity TLDs, evaluated during this semi-annual period, 8.3% (3/36) failed the E-LAB limit for bias of $\pm 32.6\%$ (Figure 25). The failure rate was 5.6% (2/36) for precision (tolerance limit $\pm 27.2\%$) as shown in Figure 26. None of the 6 TLD test sets (n=6) were outside the mean bias limit as shown in Figure 27. For the same reporting period, 100% of the 6 extremity QC test sets met the internal tolerance criteria for bias and precision ($|B| + S$, Figure 28).

3. Panasonic Environmental Dosimeters

The trending results of performance tests of Panasonic environmental dosimeters are presented in Figures 29-31. For individual Panasonic environmental TLDs, 100% of the 48 tests came within the E-LAB bias and precision tolerance limits (Figures 29 and 30). All 8 Panasonic environmental TLD test sets (mean bias, n=6) were reported within the internal tolerance criteria for bias (Figure 31).

IV. STATUS OF E-LAB CONDITION REPORTS (CR)

During this semi-annual period, there were two E-LAB Condition Reports (CR 06-17 and CR 06-18) issued for administrative deficiencies that affect the dosimetry program. CR 06-17 was generated for missed procedure required reading training. Two supervisory personnel failed to read the Panasonic dosimeter receipt inspection procedure. The required training has been completed and a new training matrix put into place to prevent recurrence. CR 06-18 was generated for the failure to document client contract reviews on the required form. A review was conducted to identify and correct all contract files. No technical or quality requirements were missed as a result of this oversight. A new procedure has been drafted to control contract reviews and interim controls are in place to prevent recurrence.

V. STATUS OF AUDITS/ASSESSMENTS

A. Internal

AREVA NP Internal Quality Assurance Assessment, 06-03, was conducted during the second half of 2006. The annual assessment of the dosimetry program noted that equipment has been adequately maintained and QC activities have been conducted as required. The decision to drop NVLAP certification for extremity dosimetry was identified to clients. CR 07-02 was generated during the assessment for four administrative items that were noted to be deficient: 1) no cross-reference between QA Manual 120 and NIST Handbook 150 exists, 2) biennial testing of all NVLAP-accredited dosimetry categories must be independent of NVLAP test sets, 3) company name on Procedure 1046 forms not updated to AREVA NP, and 4) system anomaly flag was not set properly for client-requested investigation.



B. External

No external audits of dosimetry processing activities were performed this reporting period.

VI. UPDATED PROCEDURES ISSUED DURING JULY - DECEMBER 2006

A list of Dosimetry Services Section procedures, which were updated during this semi-annual period, is included in Table 4.

VII. CONCLUSION AND RECOMMENDATIONS

Inter and intra-laboratory quality control evaluations continue to indicate the whole body, environmental, and extremity dosimetry processing programs at the E-LAB satisfy the criteria specified in the Dosimetry QA Manual. The E-LAB demonstrated the ability to meet all applicable acceptance criteria with a frequency of greater than 99%.

VIII. REFERENCES

1. American National Standard for Dosimetry - Personnel Dosimetry Performance Criteria for Testing, ANSI N13.11-2001, American National Standards Institute, Inc., 1430 Broadway, New York, New York 10018.
2. American National Standard for Performance Testing of Extremity Dosimeters, ANSI N13.32-1995, Health Physics Society, 1313 Dolley Madison Blvd., Suite 402, McLean, VA 22101.
3. "In-Plant External Dosimetry Quality Assurance Testing Program," E-LAB, Revision 2, December 1986.
4. AREVA NP Environmental Laboratory Quality Control and Audit Assessment Schedule, 2006.
5. E-LAB Manual No.120, Dosimetry Services Quality System Manual, Rev. 12, December 20, 2006.

TABLE 1

PERCENTAGE OF INDIVIDUAL ANALYSES WHICH PASSED E-LAB INTERNAL CRITERIA
July-December 2006 ⁽¹⁾

Dosimeter Type	Number of Dosimeters	Shallow (7 mg/cm ²)		Eye (300 mg/cm ²)		Deep (1000 mg/cm ²)	
		% Passed Bias Tolerance Limit ⁽²⁾	% Passed Precision Tolerance Limit ⁽³⁾	% Passed Bias Tolerance Limit ⁽²⁾	% Passed Precision Tolerance Limit ⁽³⁾	% Passed Bias Tolerance Limit ⁽²⁾	% Passed Precision Tolerance Limit ⁽³⁾
Panasonic 808 Whole Body	24	95.8	100	100	100	100	100
Panasonic 814 Whole Body	131	100	100	100	100	100	100
Extremity	36	91.7	94.4	N/A	N/A	N/A	N/A
Panasonic Environmental	48	100 (free in air)	100 (free in air)	N/A	N/A	N/A	N/A

⁽¹⁾ This table summarizes results of all depths for performance tests conducted by E-LAB and the Third-party tester for High Energy Photons.

CONTROL LIMITS FOR E-LAB DOSIMETRY PERFORMANCE TESTS -
APPLICABLE TO INDIVIDUAL TEST DOSIMETERS IRRADIATED TO HIGH ENERGY PHOTONS

Dosimeter Type	Tolerance Limits	
	Bias	Precision
Panasonic Whole Body	± 18.5%	± 16.1%
Extremity	± 32.6%	± 27.2%
Panasonic Environmental	± 20.1%	± 12.8%

⁽²⁾ The percent deviation of individual results from the delivered dose is used to measure bias.

⁽³⁾ The percent deviation of individual results from the mean reported dose is used to measure precision.



TABLE 2
 PERCENTAGE OF MEAN ANALYSES (N=6) WHICH PASSED TOLERANCE CRITERIA
 July-December 2006 ⁽¹⁾

Dosimeter Type	Shallow (7 mg/cm ²)		Eye (300 mg/cm ²)		Deep (1000 mg/cm ²)	
	Number of Evaluations	% Passed Tolerance Limit ⁽²⁾	Number of Evaluations	% Passed Tolerance Limit ⁽²⁾	Number of Evaluations	% Passed Tolerance Limit ⁽²⁾
Panasonic 808 Whole Body	4	100	4	100	4	100
Panasonic 814 Whole Body	22	100	22	100	22	100
Extremity	6	100	N/A	N/A	N/A	N/A
Panasonic Environmental ⁽³⁾	8	100	N/A	N/A	N/A	N/A

- ⁽¹⁾ This table summarizes results of all depths for performance tests conducted by E-LAB and the Third-party tester.
- ⁽²⁾ The mean percent deviation of individual results from the delivered dose is used to determine the bias. The standard deviation of the individual results relative to the mean bias is added to this value to determine the overall performance (|B|+S).
- ⁽³⁾ Environmental dosimeter results are free in air.



TABLE 3

SUMMARY OF THIRD PARTY QC RESULTS FOR
SECOND HALF OF 2006
(NVLAP Required and Non-Required Categories)

Dosimeter Type	Exposure Period	NVLAP Category ⁽¹⁾	Shallow (7 mg/cm ²) ⁽²⁾		Deep (1000 mg/cm ²) ⁽²⁾		Eye (300 mg/cm ²) ⁽²⁾	
			Bias% ^(3,4) ± Std. Dev.%	B + S	Bias% ^(3,4) ± Std. Dev.%	B + S	Bias% ^(3,4) ± Std. Dev.%	B + S
808	FH/2006	II.A	4.6 ± 3.6	0.082	2.3 ± 5.6	0.079	3.3 ± 4.1	0.073
808	SH/2006	II.A	0.8 ± 2.7	0.035	0.1 ± 3.2	0.033	-0.3 ± 2.8	0.031
814	FH/2006	II.A	1.8 ± 1.8	0.036	-0.7 ± 3.7	0.044	0.9 ± 1.8	0.026
814	SH/2006	II.A	4.0 ± 2.9	0.069	1.7 ± 5.5	0.072	2.6 ± 2.9	0.055
Extremity	2006	IV.A	-17.0 ± 13.4	0.303	N/A	N/A	N/A	N/A
Environ. ⁽⁵⁾	FH/2006	II	7.5 ± 2.4	0.099	N/A	N/A	N/A	N/A
Environ. ⁽⁵⁾	SH/2006	II	4.0 ± 1.0	0.050	N/A	N/A	N/A	N/A

- (1) 808 & 814 NVLAP Category II.A = Photons, General (shaded portion denotes NVLAP-accredited, NVLAP Code 100524)
Extremity NVLAP Category IV.A = High Energy Photons (Cs-137)
Environmental Category II = Photons
- (2) Reported results are fade corrected to the date of irradiation for whole body dosimeter types other than extremity and environmental.
- (3) The bias (B) is calculated as the mean of the percent deviations of individual results from the delivered dose.
- (4) The standard deviation (S) is calculated from the deviation of individual biases from the mean bias.
- (5) Results are expressed as the delivered exposure (not dose) for environmental results.



TABLE 4

UPDATED INSTRUMENTATION GROUP DOSIMETRY SERVICES
PROCEDURES ISSUED DURING JULY - DECEMBER 2006

PROC.	TITLE	REV.	EFFECTIVE DATE	REVISION SUMMARY
715	Preparation of Tolerance Charts	19	07/19/06	Updated company name and format. Updated balance tolerance chart generation to include use of new certified weights, increase range of weight checks and incorporate ASTM tolerances into acceptance
750	Laboratory Training and Qualification Guideline	14	10/10/06	Updated company name and format. Added qualifications for Database Administrator.
780	Purchasing Controls	2	07/20/06	Updated company name and format.



APPENDIX A
DOSIMETRY QUALITY CONTROL TRENDING GRAPHS
JULY - DECEMBER 2006



APPENDIX A

DOSIMETRY QUALITY CONTROL TRENDING GRAPHS July - December 2006

1. 808 Category II (High-Energy Photons) Individual Bias at the Shallow Depth Dose
2. 808 Category II (High-Energy Photons) Individual Bias at the Eye Depth Dose
3. 808 Category II (High-Energy Photons) Individual Bias at the Deep Depth Dose
4. 808 Category II (High-Energy Photons) Individual Precision at the Shallow Depth Dose
5. 808 Category II (High-Energy Photons) Individual Precision at the Eye Depth Dose
6. 808 Category II (High-Energy Photons) Individual Precision at the Deep Depth Dose
7. 808 Category II (High-Energy Photons) Mean Bias at the Shallow Depth Dose
8. 808 Category II (High-Energy Photons) Mean Bias at the Eye Depth Dose
9. 808 Category II (High-Energy Photons) Mean Bias at the Deep Depth Dose
10. 808 Category II (High-Energy Photons) Mean Bias Plus Standard Deviation (B+S) at the Shallow Depth Dose
11. 808 Category II (High-Energy Photons) Mean Bias Plus Standard Deviation (B+S) at the Eye Depth Dose
12. 808 Category II (High-Energy Photons) Mean Bias Plus Standard Deviation (B+S) at the Deep Depth Dose
13. 814 Category II (High-Energy Photons) Individual Bias at the Shallow Depth Dose
14. 814 Category II (High-Energy Photons) Individual Bias at the Eye Depth Dose
15. 814 Category II (High-Energy Photons) Individual Bias at the Deep Depth Dose
16. 814 Category II (High-Energy Photons) Individual Precision at the Shallow Depth Dose
17. 814 Category II (High-Energy Photons) Individual Precision at the Eye Depth Dose
18. 814 Category II (High-Energy Photons) Individual Precision at the Deep Depth Dose
19. 814 Category II (High-Energy Photons) Mean Bias at the Shallow Depth Dose
20. 814 Category II (High-Energy Photons) Mean Bias at the Eye Depth Dose
21. 814 Category II (High-Energy Photons) Mean Bias at the Deep Depth Dose



APPENDIX A

DOSIMETRY QUALITY CONTROL TRENDING GRAPHS July - December 2006

22. 814 Category II (High-Energy Photons) Mean Bias Plus Standard Deviation (B+S) at the Shallow Depth Dose
23. 814 Category II (High-Energy Photons) Mean Bias Plus Standard Deviation (B+S) at the Eye Depth Dose
24. 814 Category II (High-Energy Photons) Mean Bias Plus Standard Deviation (B+S) at the Deep Depth Dose
25. Extremity Category IV (High-Energy Photons) Individual Bias at the Shallow Depth Dose
26. Extremity Category IV (High-Energy Photons) Individual Precision at the Shallow Depth Dose
27. Extremity Category IV (High-Energy Photons) Mean Bias at the Shallow Depth Dose
28. Extremity Category IV (High-Energy Photons) Mean Bias Plus Standard Deviation (B+S) at the Shallow Depth Dose
29. Environmental TLDs Individual Bias Cs-137
30. Environmental TLDs Precision Cs-137
31. Environmental TLDs Mean Bias Cs-137

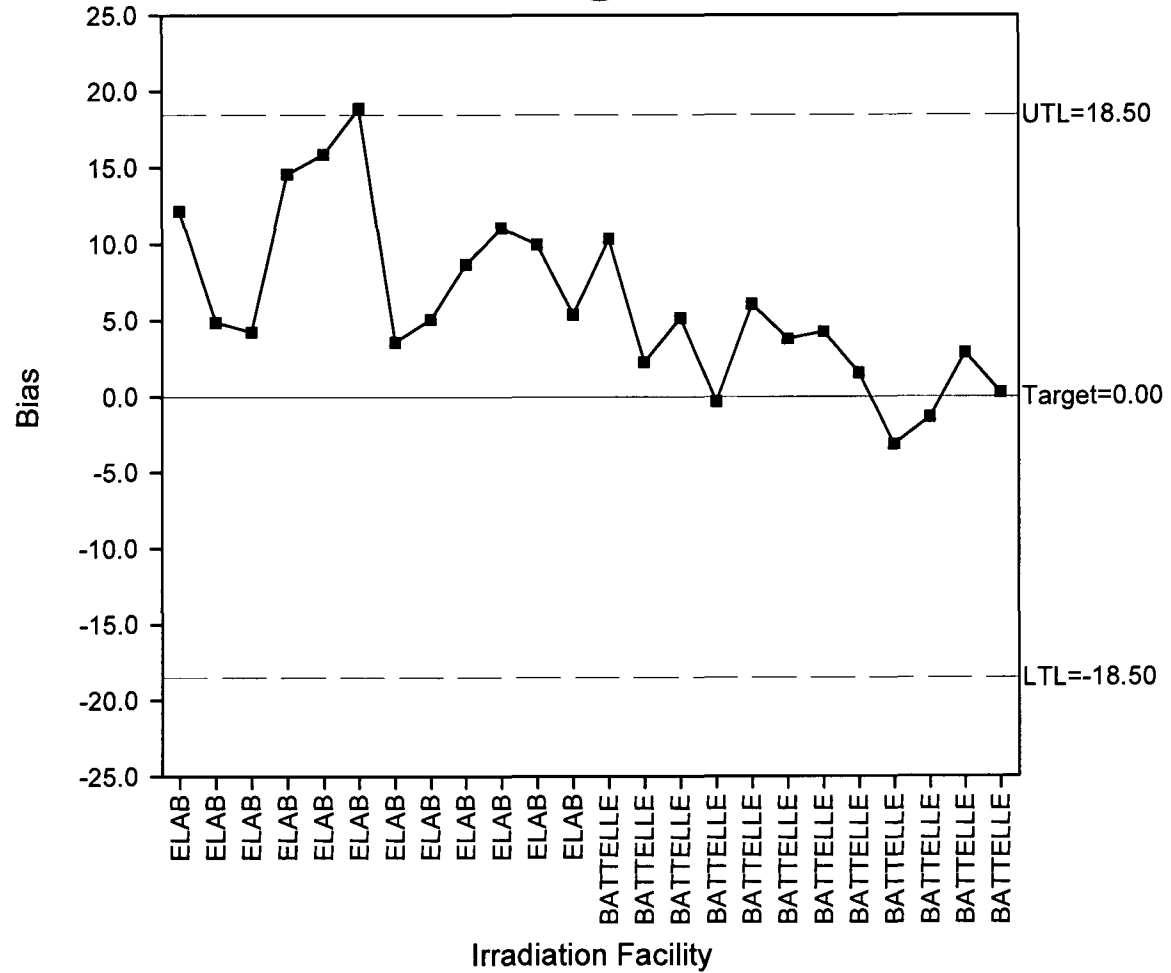
APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 July – December 2006

FIGURE 1

808 Cat II Individual Bias @ the Shallow Depth Dose

Process Statistics

Total:	24
Rows:	All
Mean:	6.121
Median:	5.000
Std Dev:	5.577
Act % out of TL:	4.17



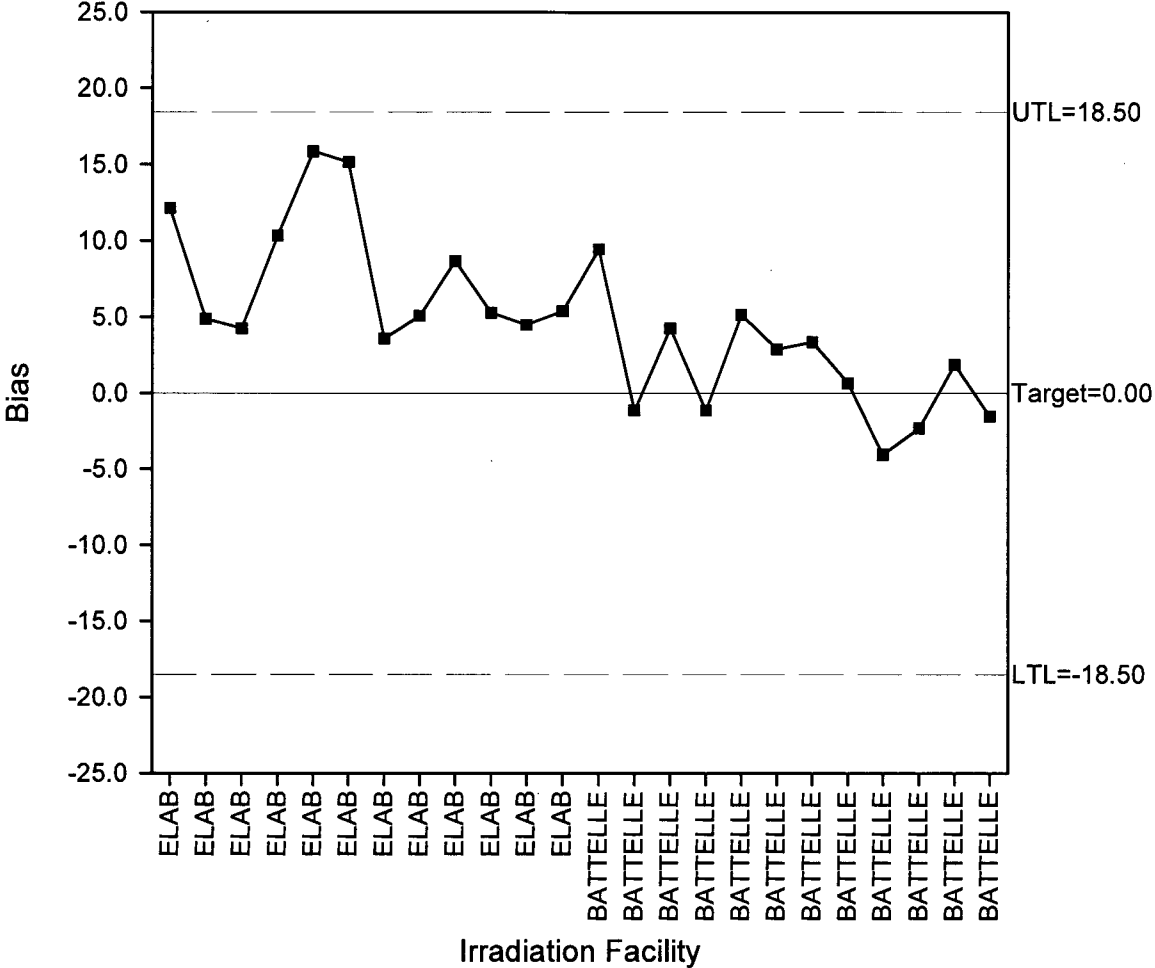
APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 July – December 2006

FIGURE 2

Process Statistics

Total:	24
Rows:	All
Mean:	4.725
Median:	4.400
Std Dev:	5.215
Act % out of TL:	0.00

808 Cat II Individual Bias @ the Eye Depth Dose



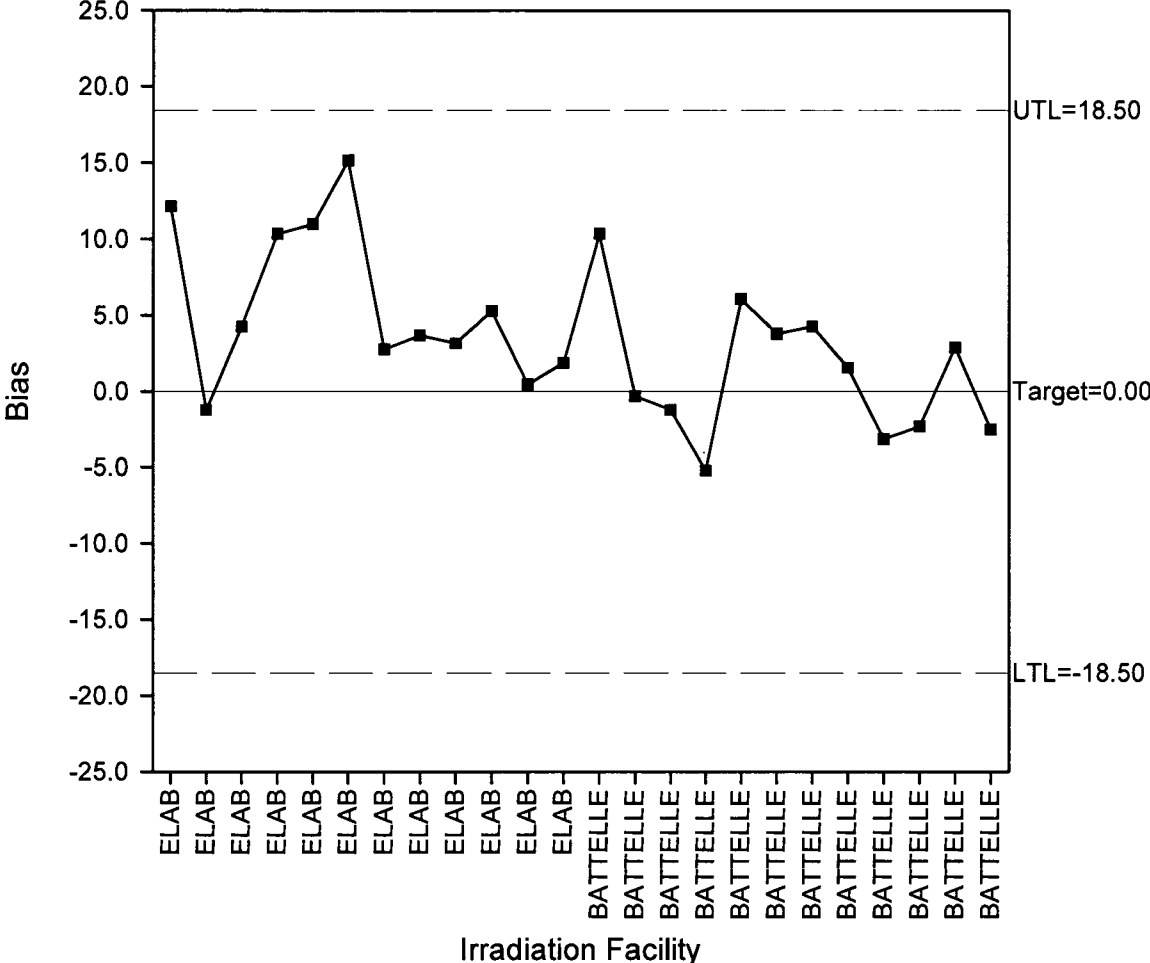
APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 July – December 2006

FIGURE 3

Process Statistics

Total:	24
Rows:	All
Mean:	3.492
Median:	3.050
Std Dev:	5.271
Act % out of TL:	0.00

808 Cat II Individual Bias @ the Deep Depth Dose



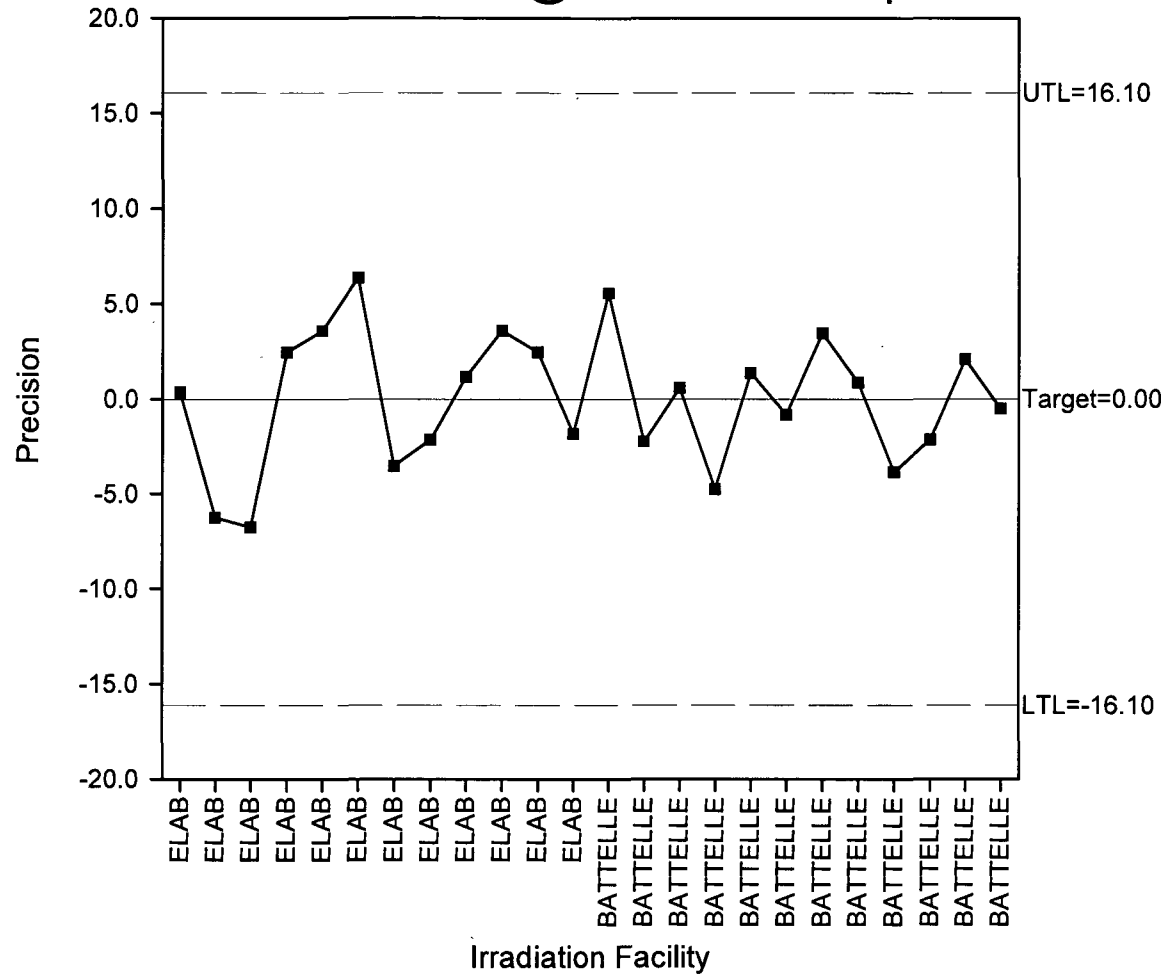
APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
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FIGURE 4

Process Statistics

Total:	24
Rows:	All
Mean:	-0.004
Median:	0.500
Std Dev:	3.502
Act % out of TL:	0.00

808 Cat II Precision @ the Shallow Depth Dose



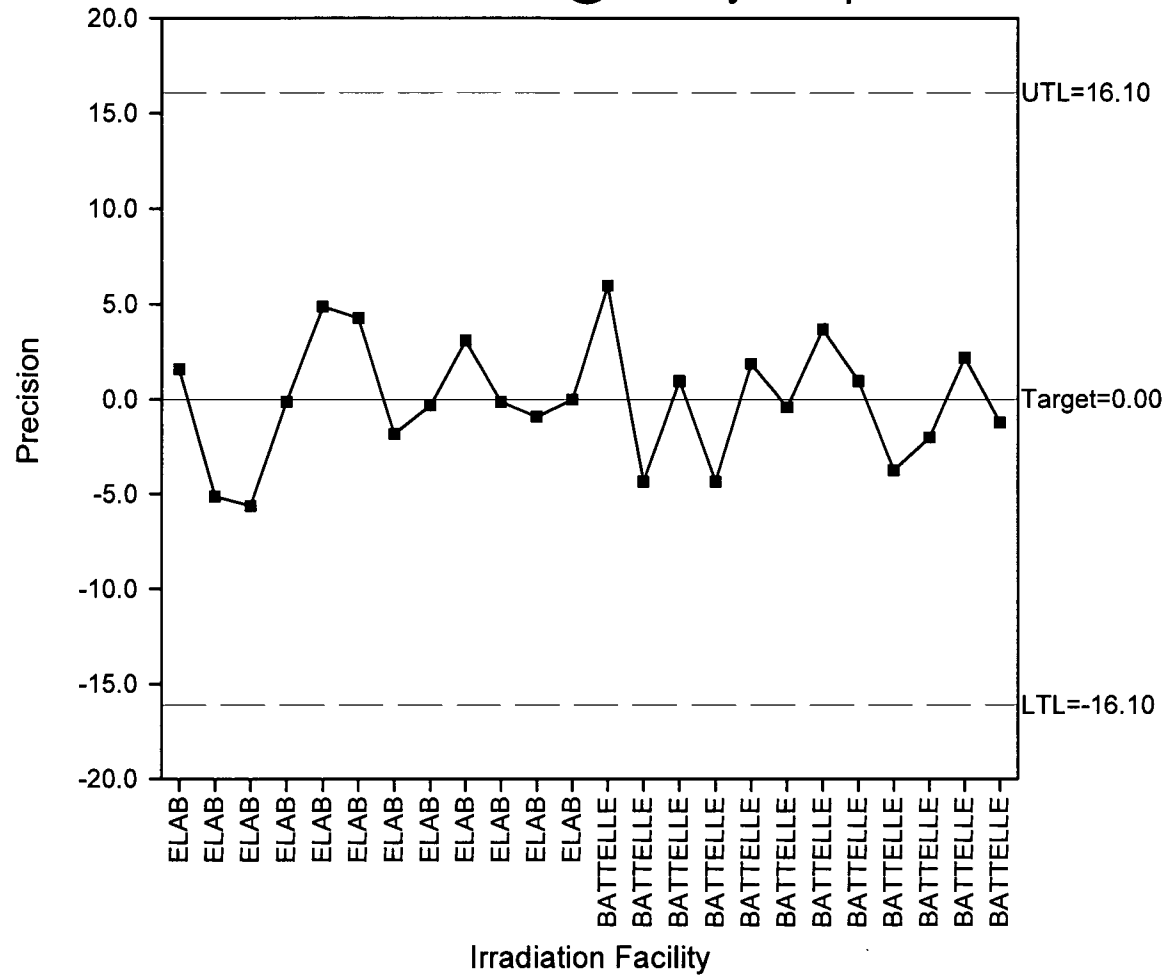
APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 July – December 2006

FIGURE 5

Process Statistics

Total:	24
Rows:	All
Mean:	-0.004
Median:	-0.100
Std Dev:	3.180
Act % out of TL:	0.00

808 Cat II Precision @ the Eye Depth Dose

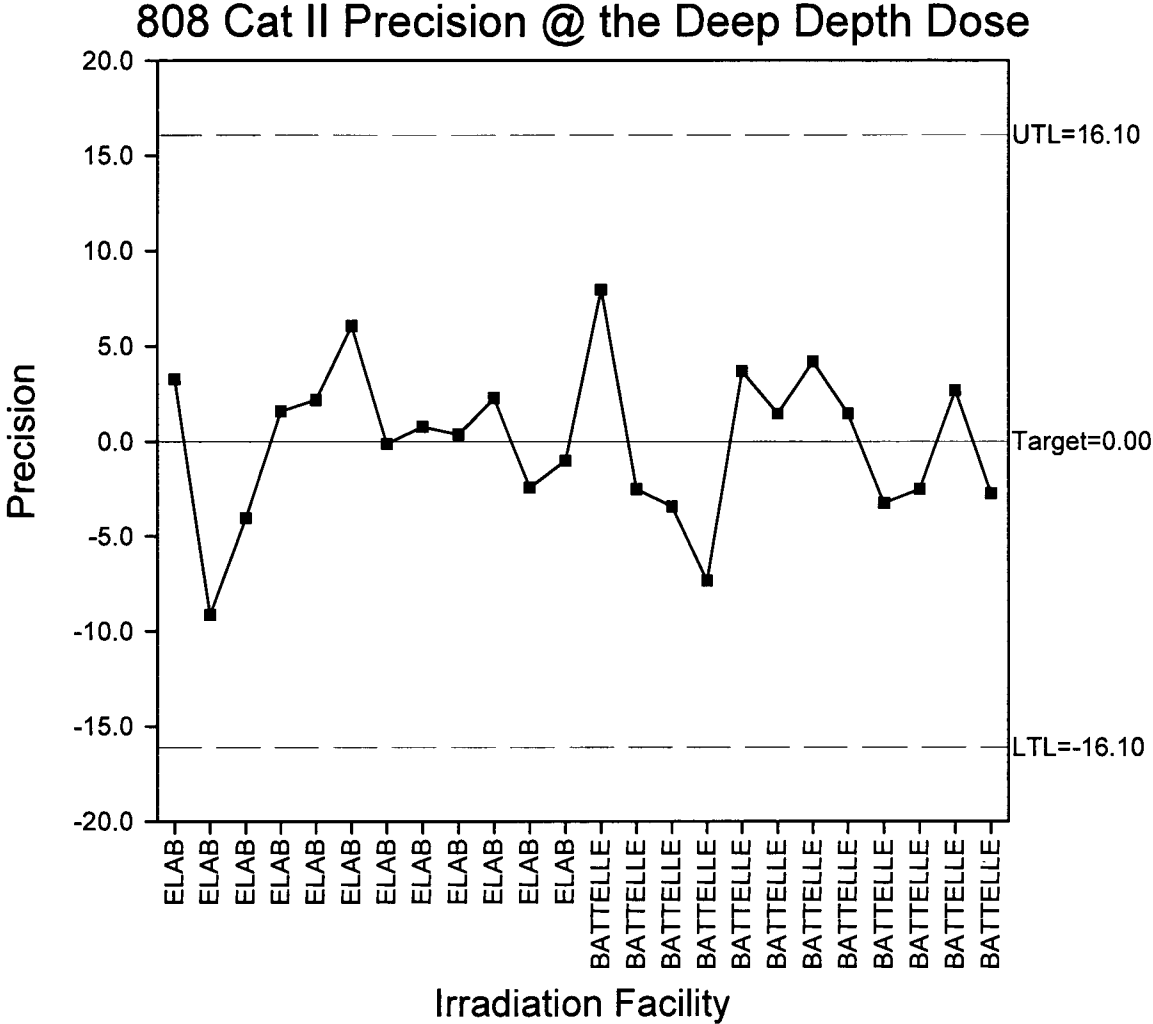


APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 July – December 2006

FIGURE 6

Process Statistics

Total:	24
Rows:	All
Mean:	0.004
Median:	0.600
Std Dev:	4.006
Act % out of TL:	0.00



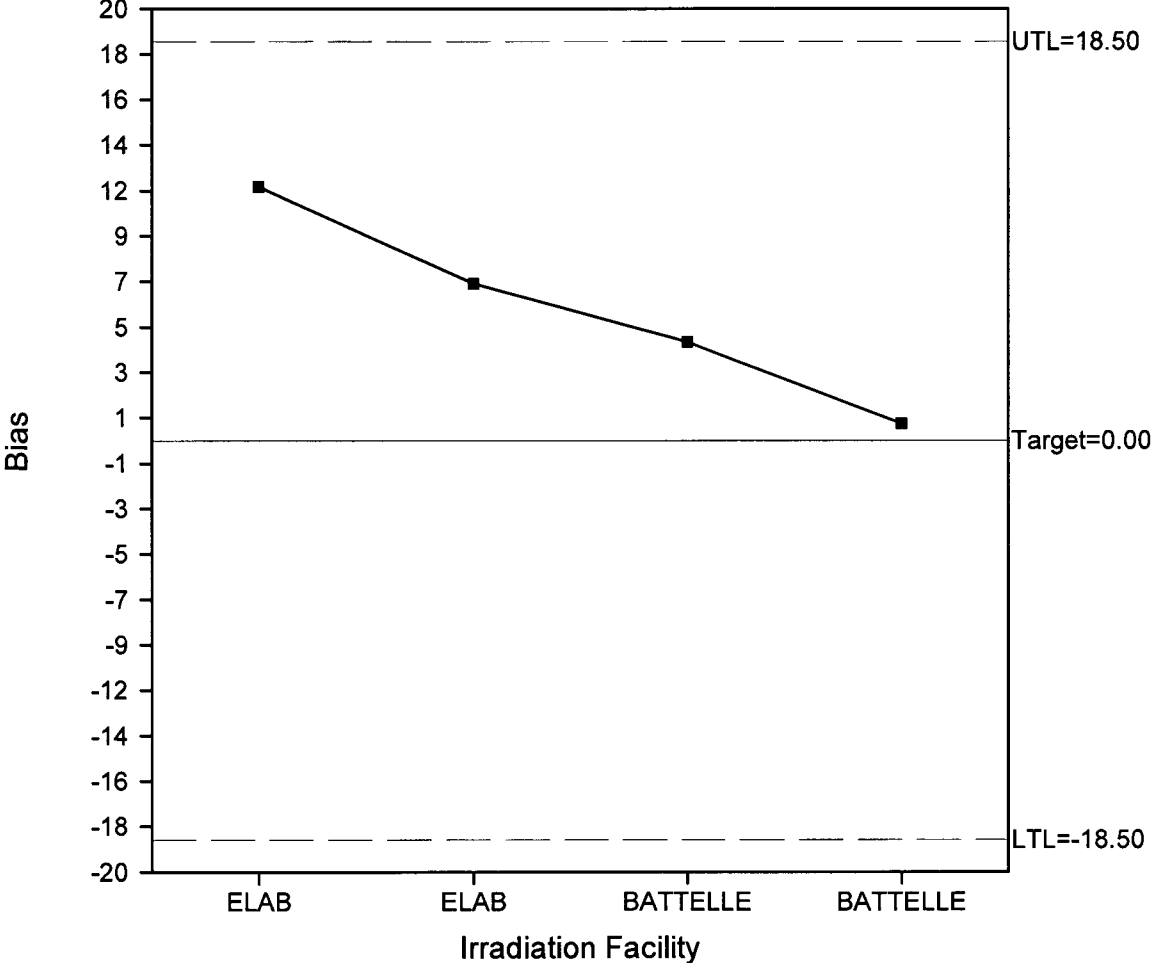
APPENDIX A
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July – December 2006

FIGURE 7

Process Statistics

Total:	4
Rows:	All
Mean:	6.125
Median:	5.950
Std Dev:	4.628
Act % out of TL:	0.00

808 Cat II Mean Bias @ the Shallow Depth Dose

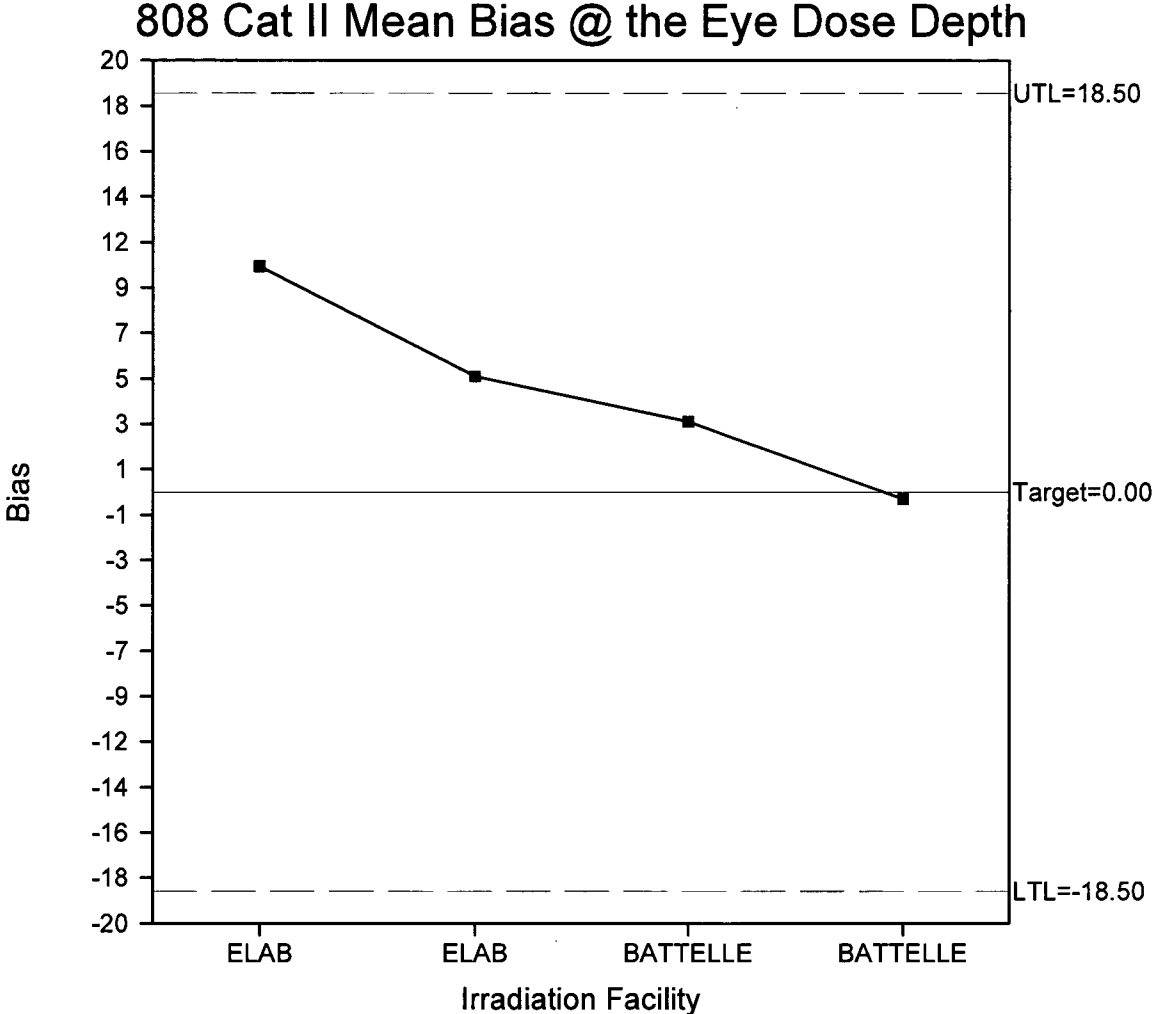


APPENDIX A
QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
July – December 2006

FIGURE 8

Process Statistics

Total:	4
Rows:	All
Mean:	4.725
Median:	4.350
Std Dev:	4.512
Act % out of TL:	0.00



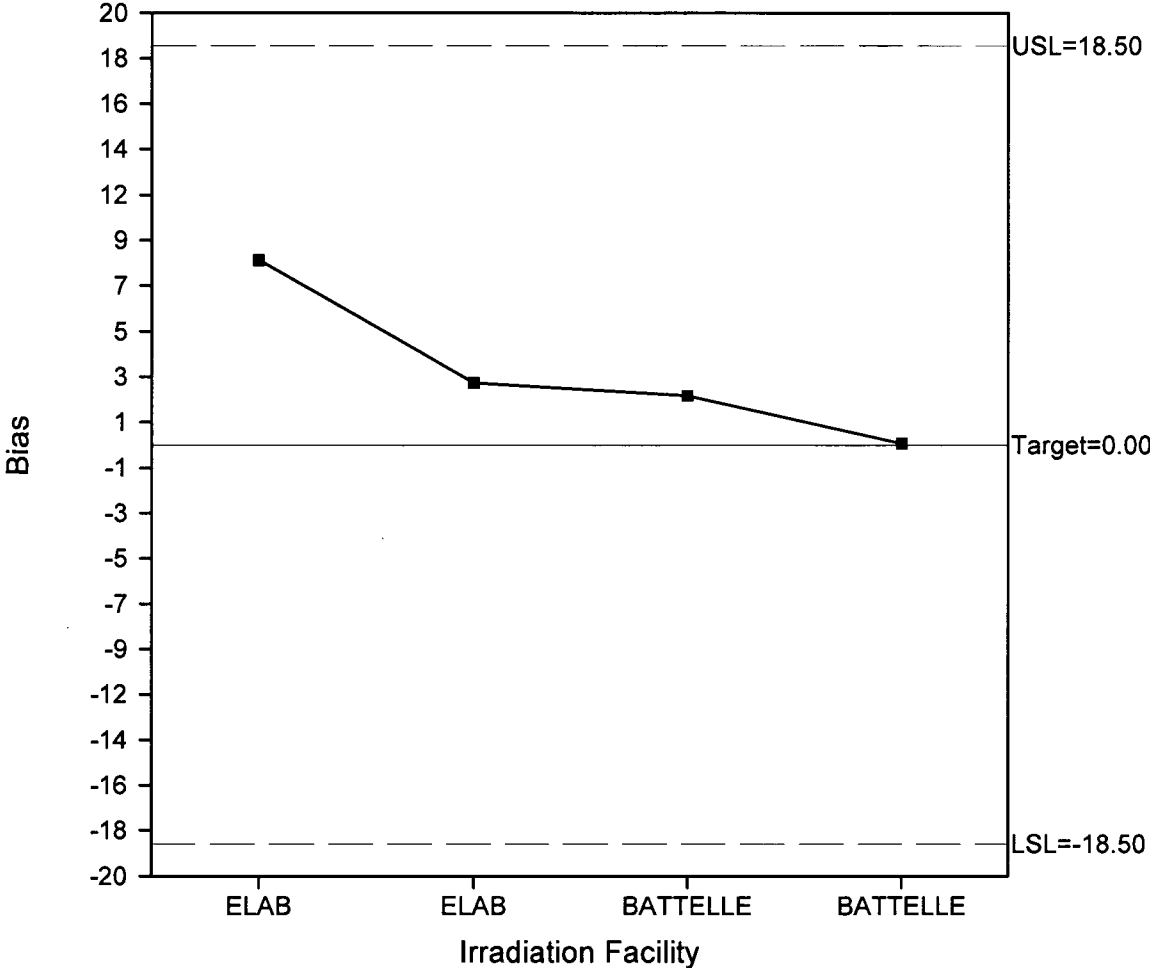
APPENDIX A
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FIGURE 9

Process Statistics

Total:	4
Rows:	All
Mean:	3.475
Median:	2.600
Std Dev:	3.622
Act % out of TL:	0.00

808 Cat II Mean Bias @ the Deep Depth Dose

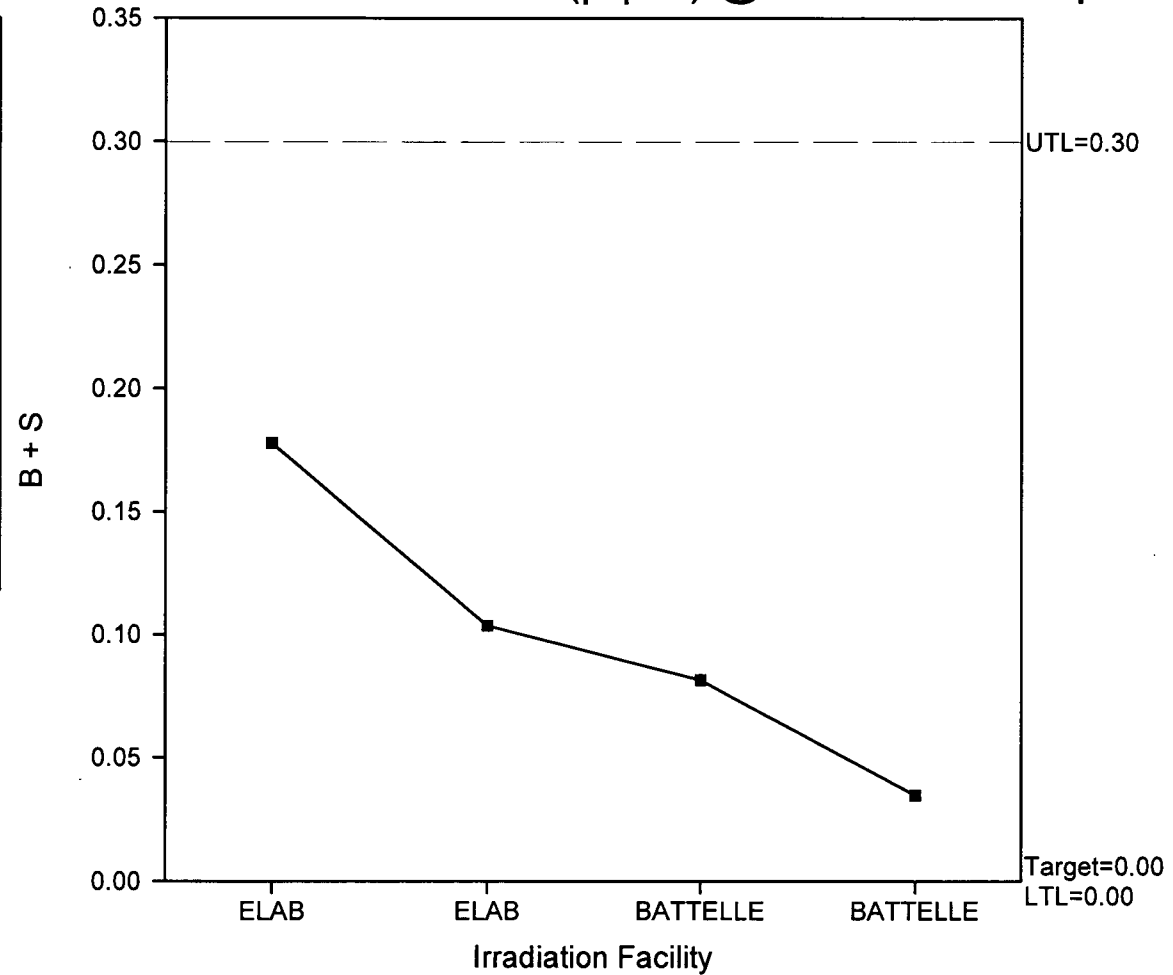


APPENDIX A
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FIGURE 10

808 Cat II Mean Bias+Std Dev. ($|B|+S$) @ the Shallow Depth Dose

Total:	4
Rows:	All
Mean:	0.100
Median:	0.093
Std Dev:	0.060
Act % out of TL:	0.00

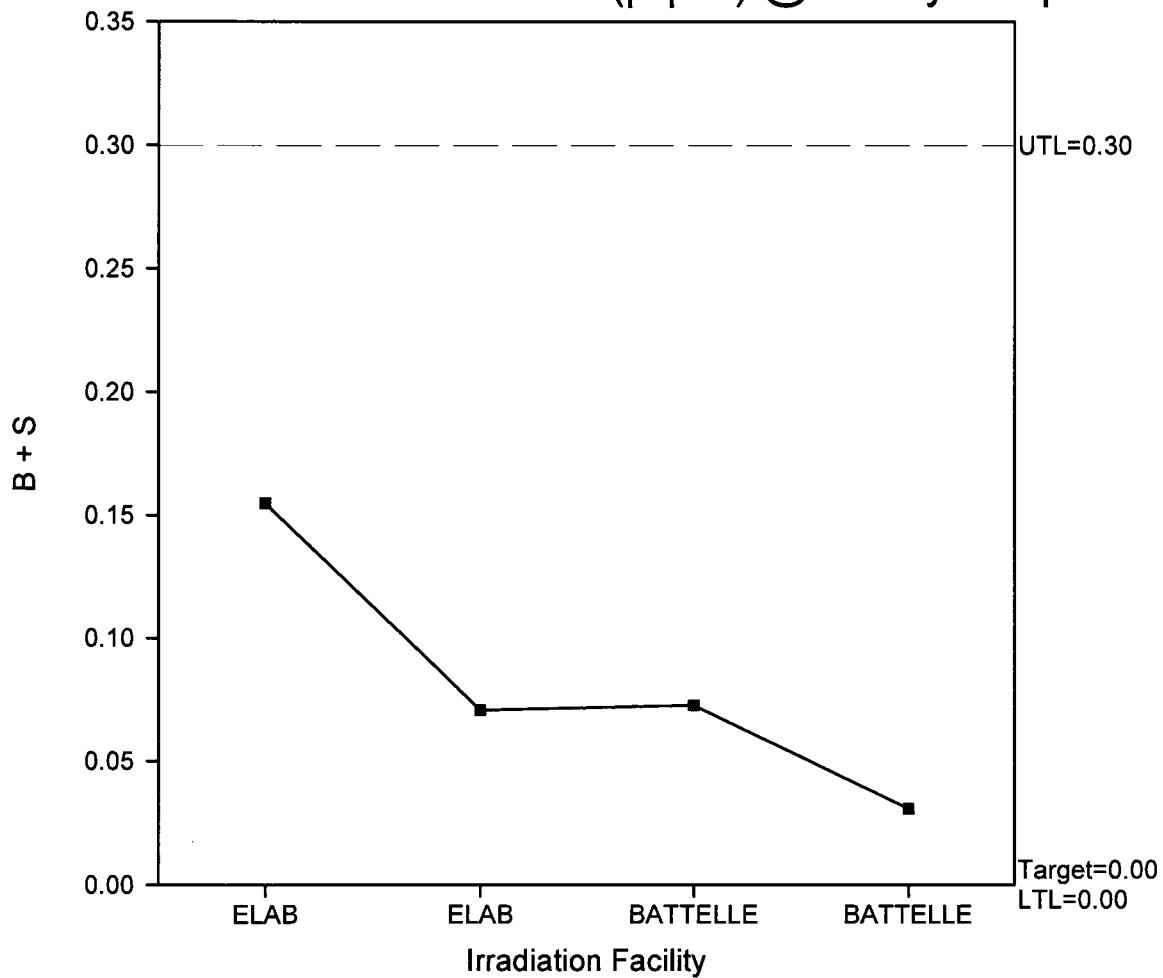


APPENDIX A
QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
July – December 2006

FIGURE 11

808 Cat II Mean Bias + Std Dev. ($|B|+S$) @ the Eye Depth Dose

Total:	4
Rows:	All
Mean:	0.082
Median:	0.072
Std Dev:	0.052
Act % out of TL:	0.00

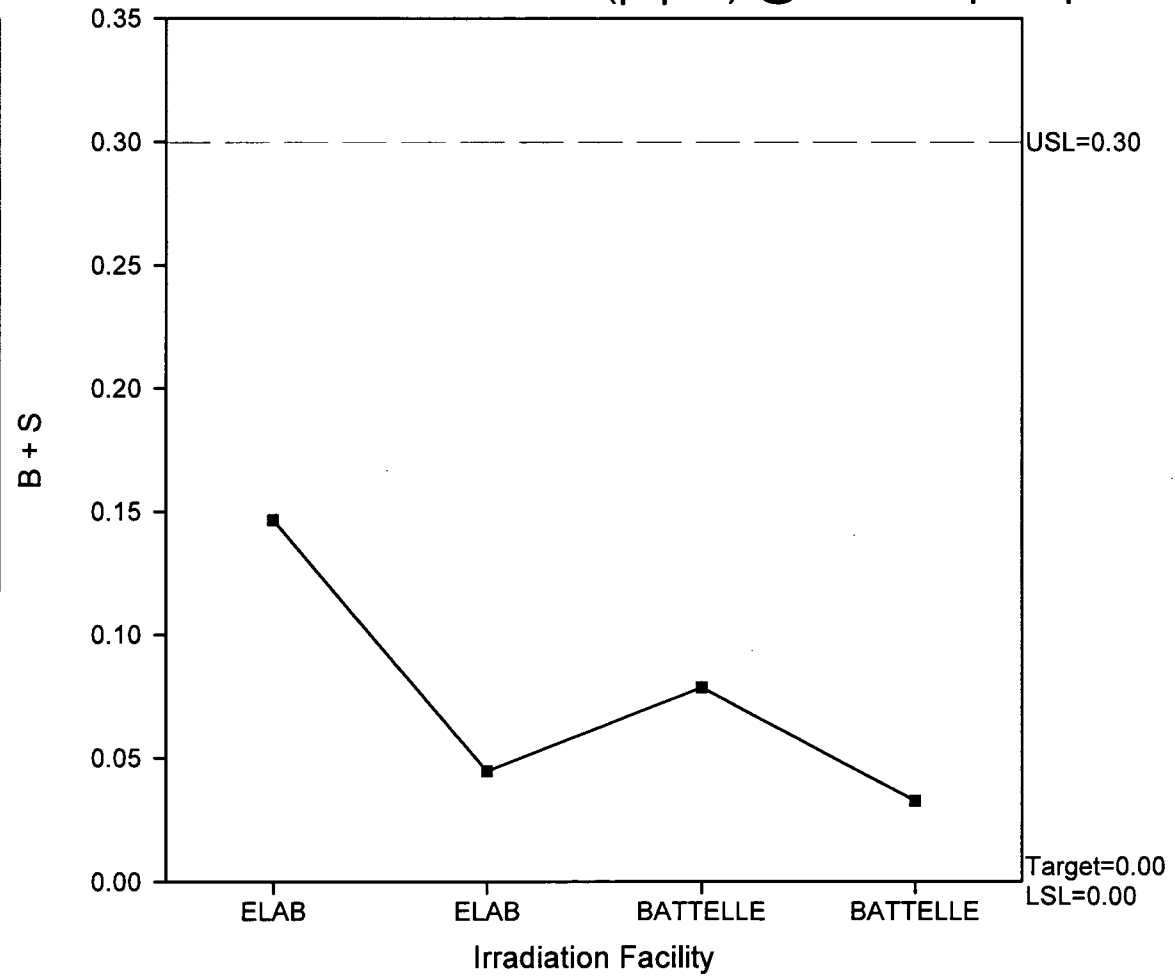


APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 July – December 2006

FIGURE 12

808 Cat II Mean Bias + Std Dev. ($|B|+S$) @ the Deep Depth Dose

Total:	4
Rows:	All
Mean:	0.076
Median:	0.062
Std Dev:	0.051
Act % out of TL:	0.00



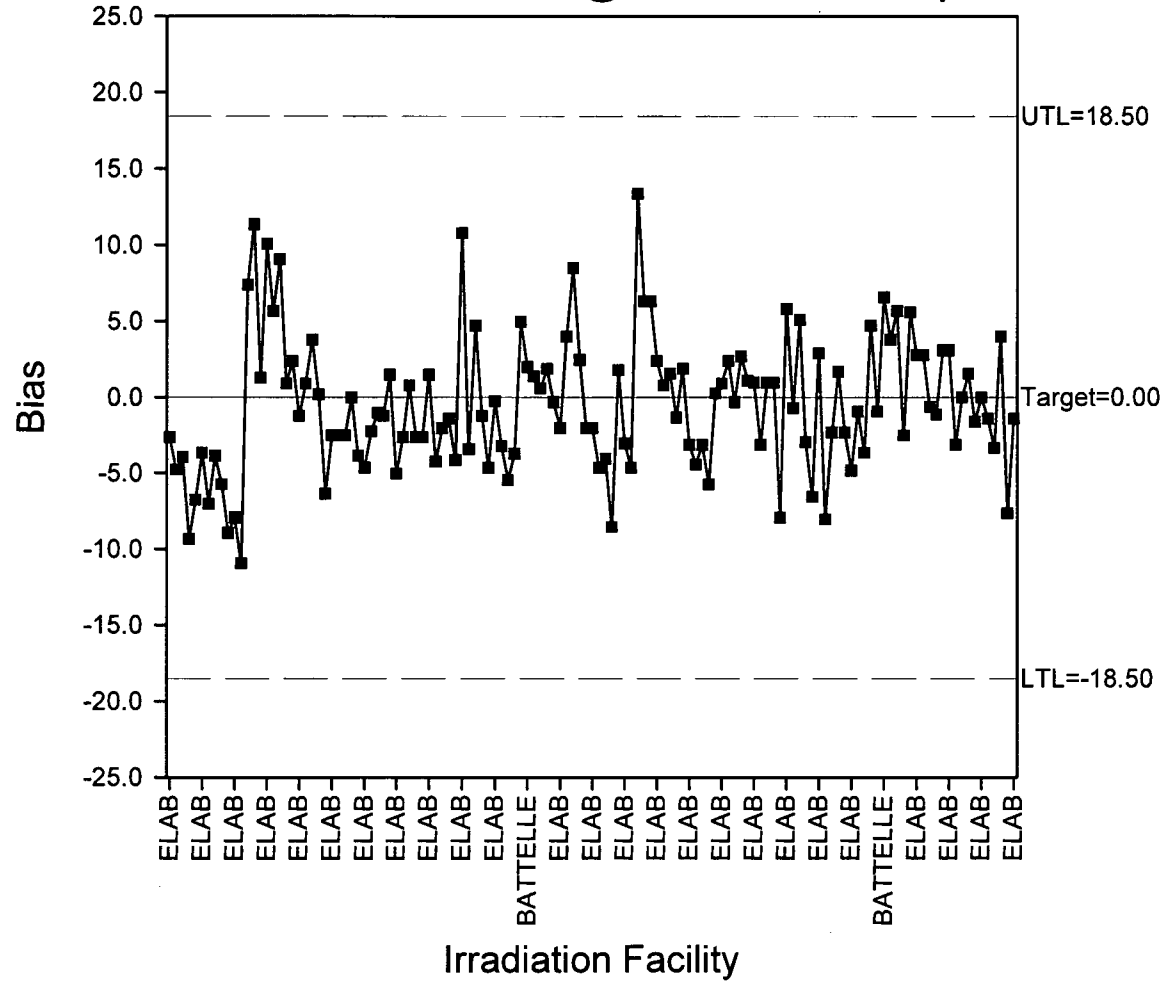
APPENDIX A
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FIGURE 13

814 Cat II Individual Bias @ the Shallow Depth Dose

Process Statistics

Total:	131
Rows:	All
Mean:	-0.472
Median:	-1.000
Std Dev:	4.476
Act % out of TL:	0.00



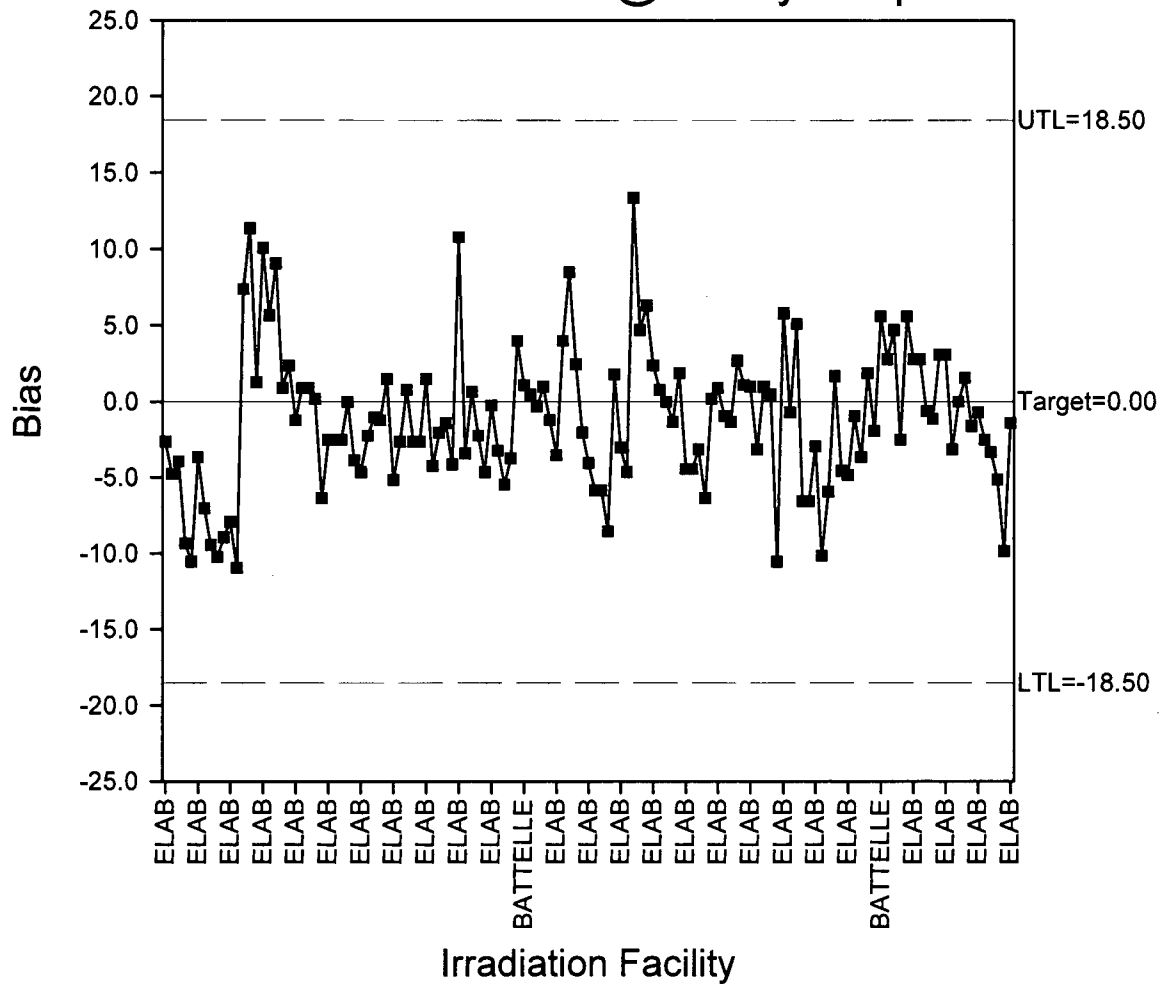
APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 July – December 2006

FIGURE 14

Process Statistics

Total:	131
Rows:	All
Mean:	-1.111
Median:	-1.300
Std Dev:	4.684
Act % out of TL:	0.00

814 Cat II Individual Bias @ the Eye Depth Dose



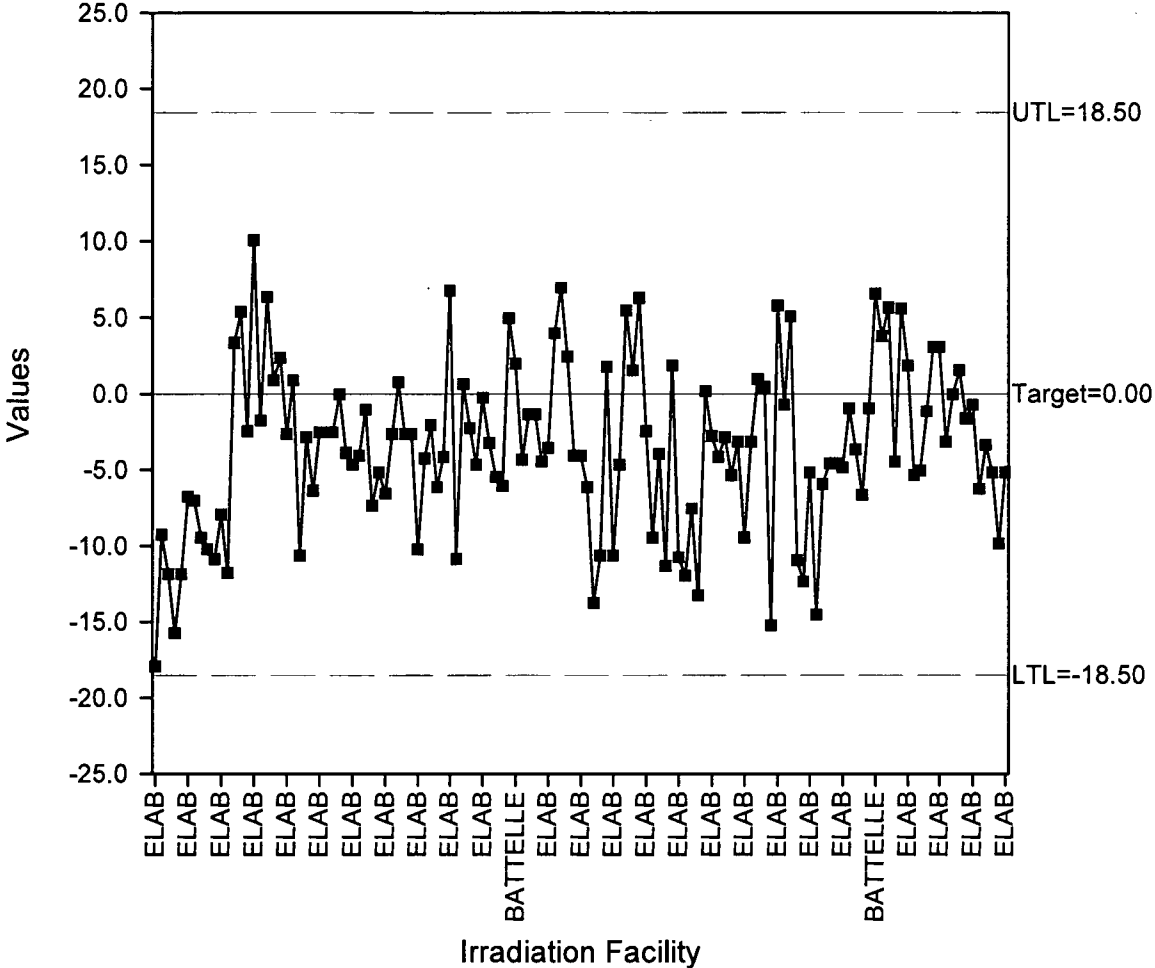
APPENDIX A
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 July – December 2006

FIGURE 15

Process Statistics

Total:	131
Rows:	All
Mean:	-3.466
Median:	-3.500
Std Dev:	5.545
Act % out of TL:	0.00

814 Cat II Individual Bias @ the Deep Depth Dose

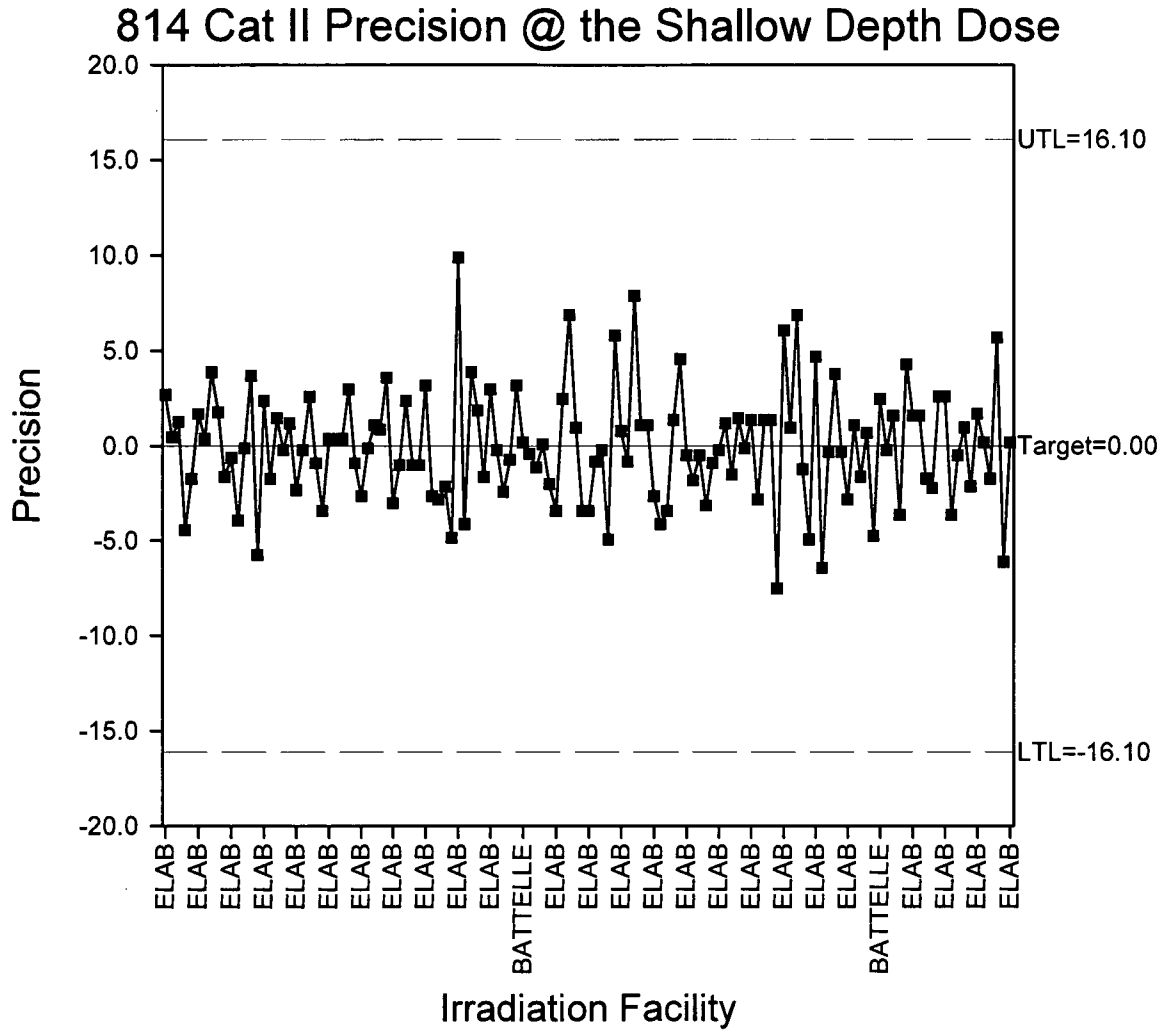


APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 July – December 2006

FIGURE 16

Process Statistics

Total:	131
Rows:	All
Mean:	0.002
Median:	-0.200
Std Dev:	3.000
Act % out of TL:	0.00



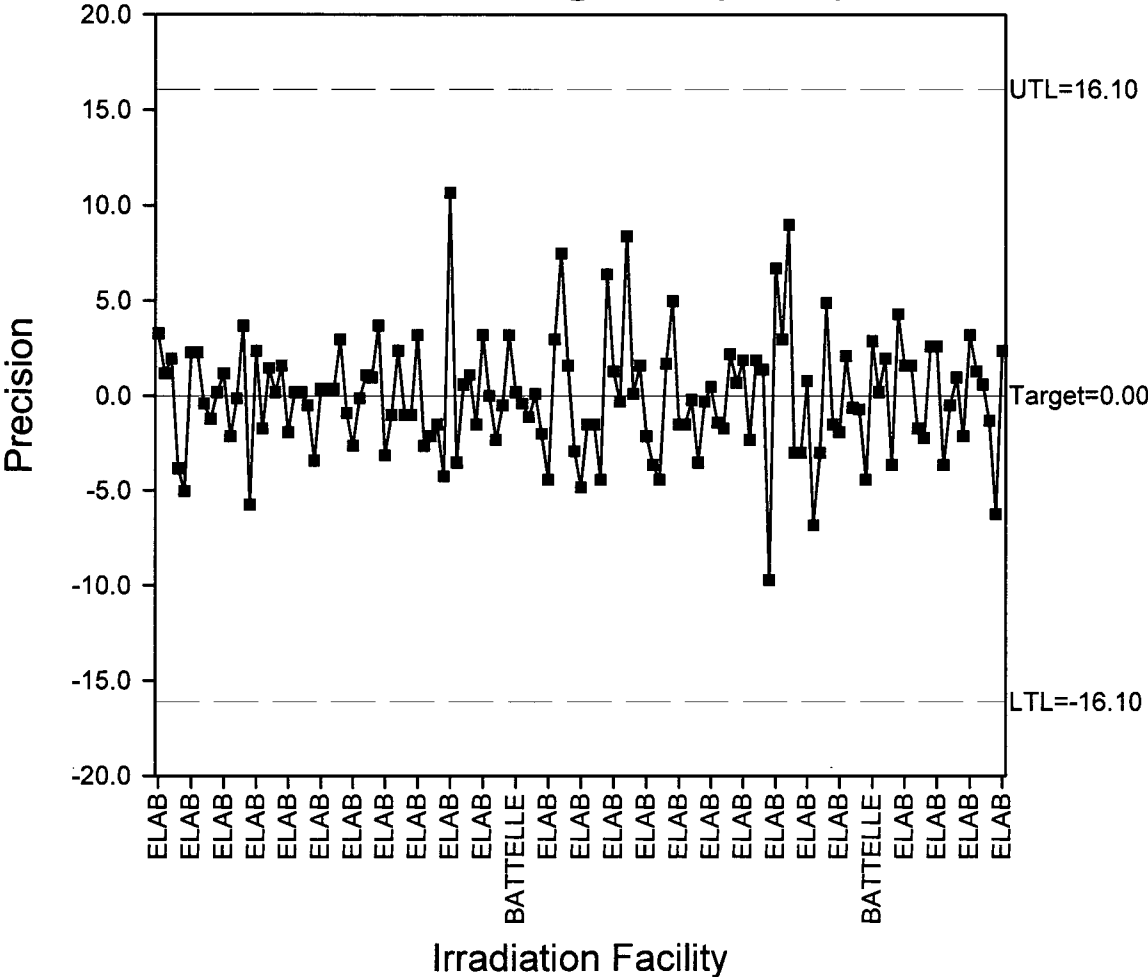
APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 July – December 2006

FIGURE 17

Process Statistics

Total:	131
Rows:	All
Mean:	-0.002
Median:	0.000
Std Dev:	3.129
Act % out of TL:	0.00

814 Cat II Precision @ the Eye Depth Dose

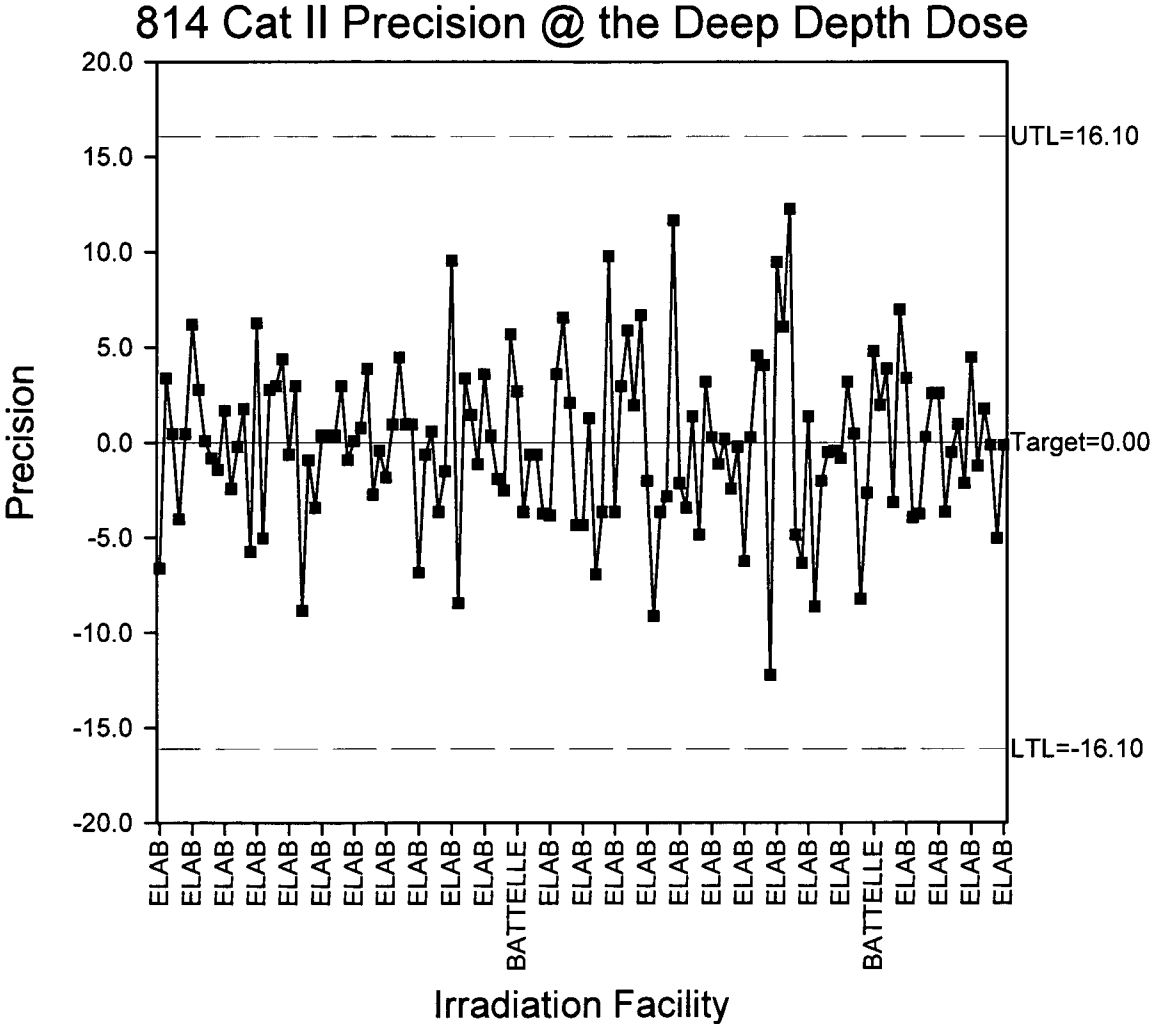


APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 July – December 2006

FIGURE 18

Process Statistics

Total:	131
Rows:	All
Mean:	-0.002
Median:	0.100
Std Dev:	4.288
Act % out of TL:	0.00



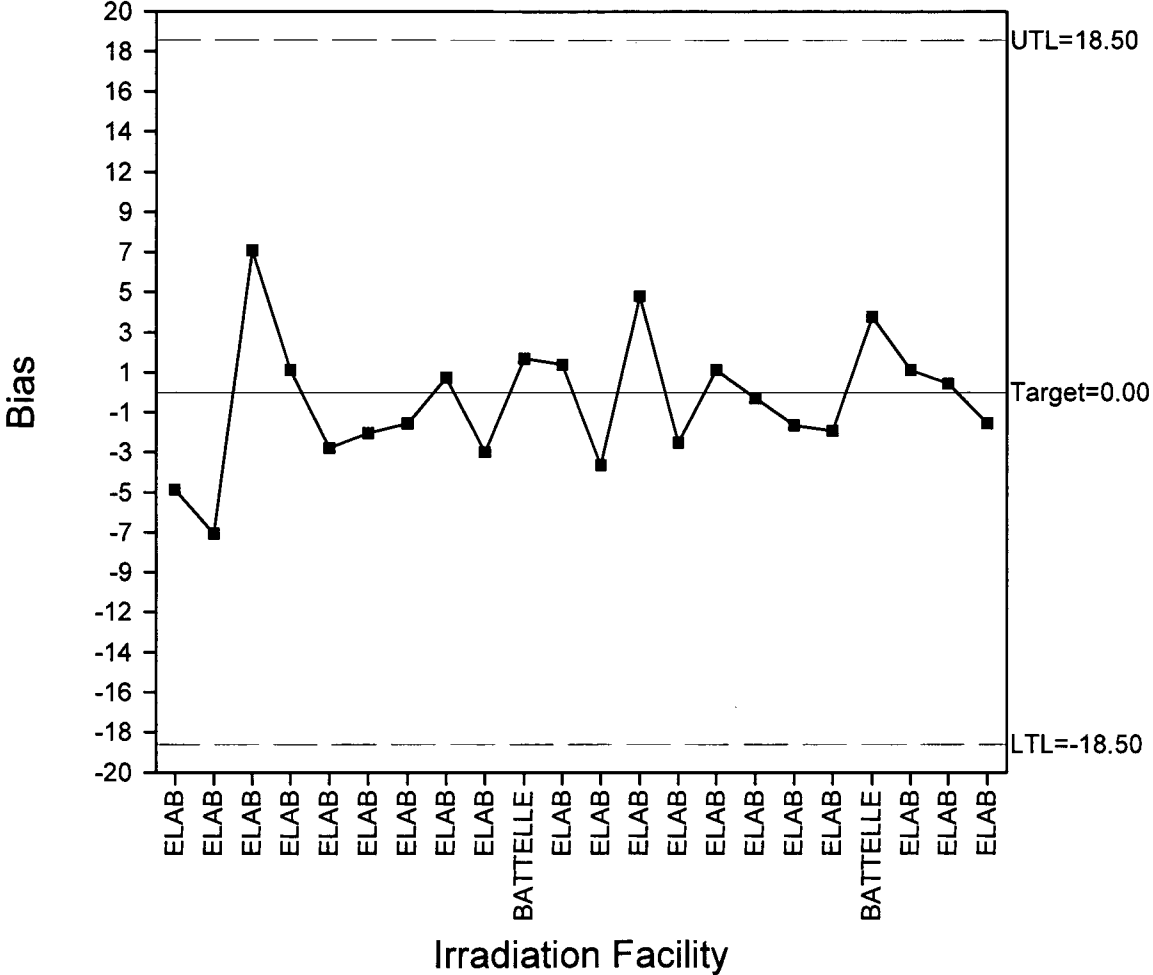
APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
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FIGURE 19

Process Statistics

Total:	22
Rows:	All
Mean:	-0.427
Median:	-0.950
Std Dev:	3.391
Act % out of TL:	0.00

814 Cat II Mean Bias @ the Shallow Depth Dose



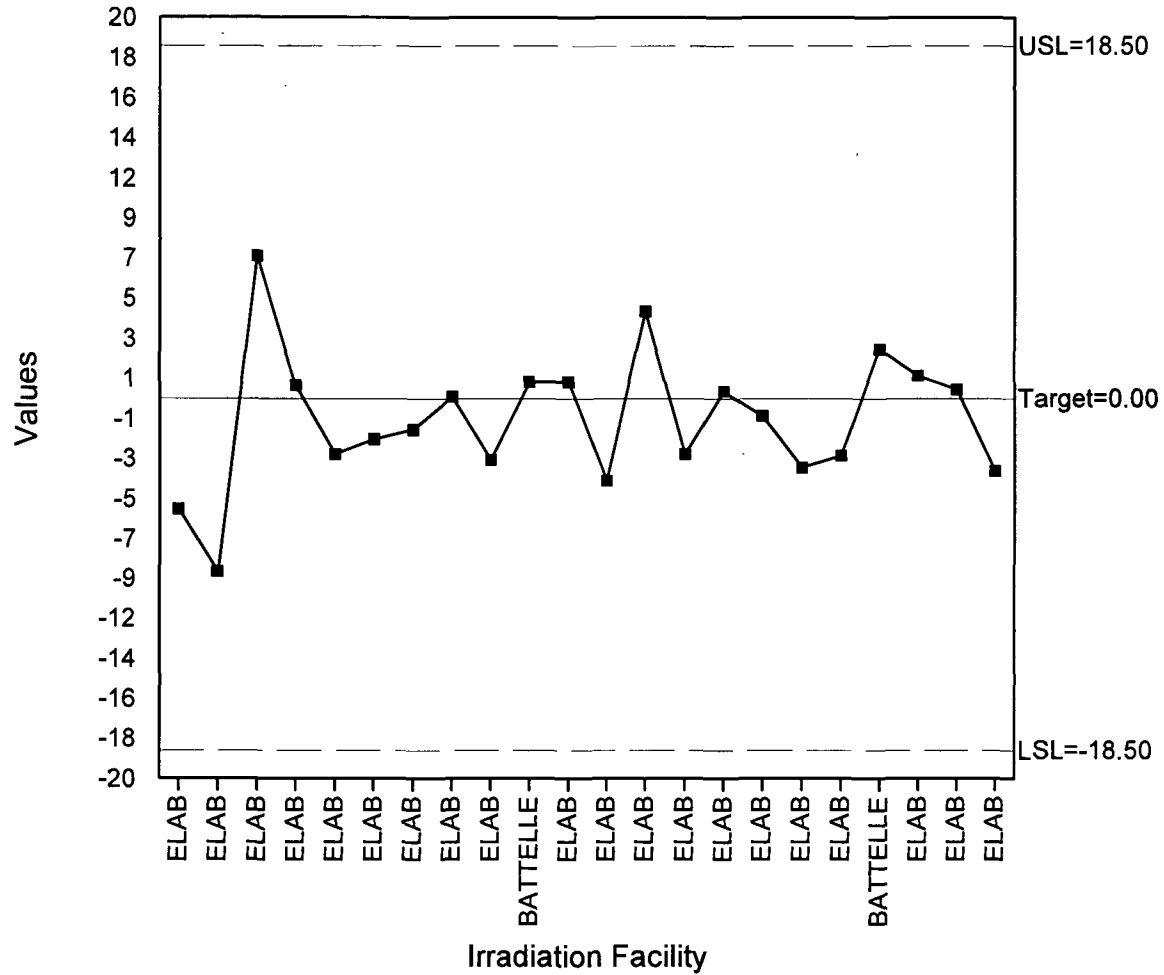
APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 July – December 2006

FIGURE 20

814 Cat II Mean Bias @ the Eye Depth Dose

Process Statistics

Total:	22
Rows:	All
Mean:	-1.082
Median:	-1.250
Std Dev:	3.576
Act % out of SL:	0.00

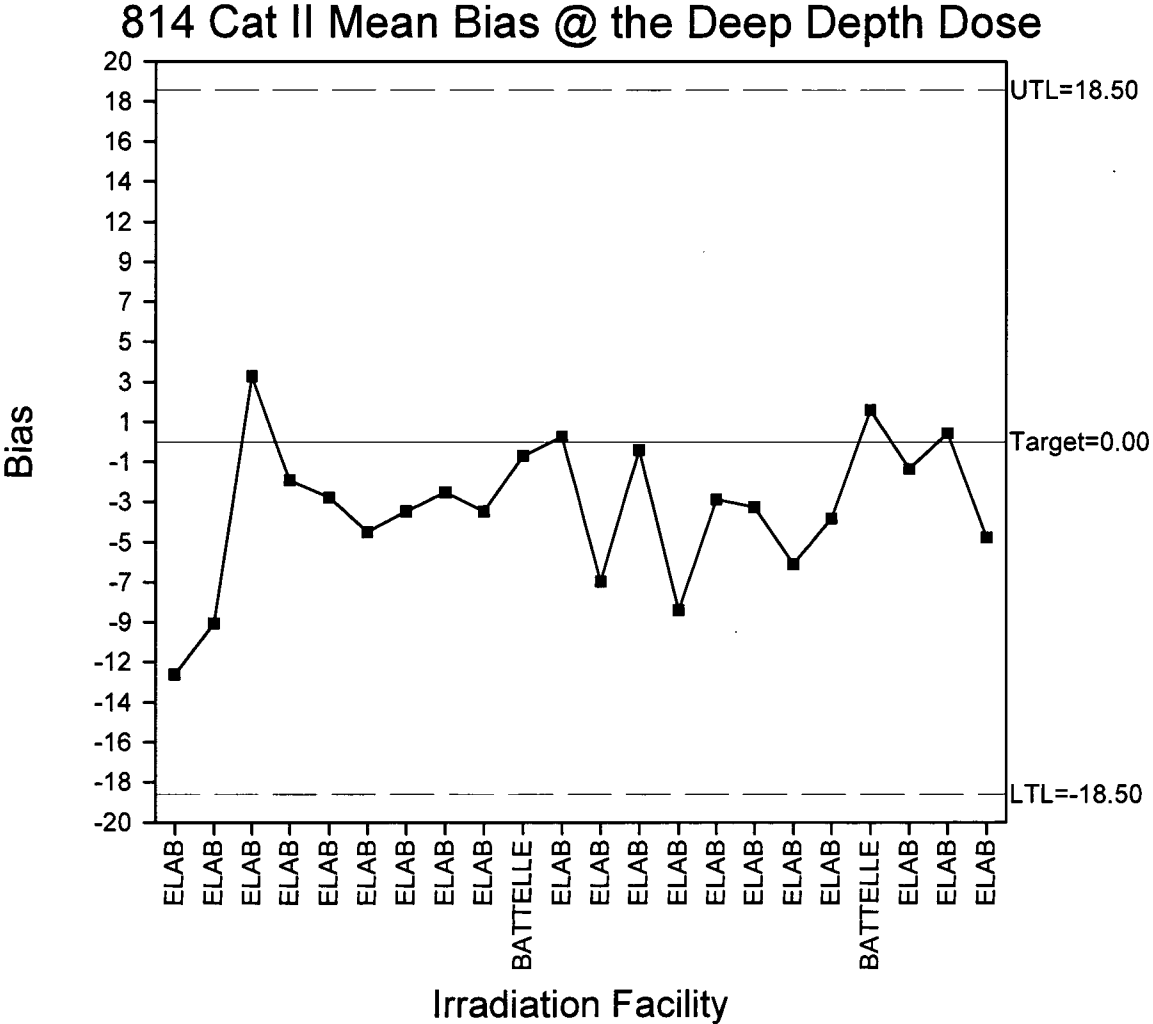


APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 July – December 2006

FIGURE 21

Process Statistics

Total:	22
Rows:	All
Mean:	-3.432
Median:	-3.200
Std Dev:	3.770
Act % out of TL:	0.00

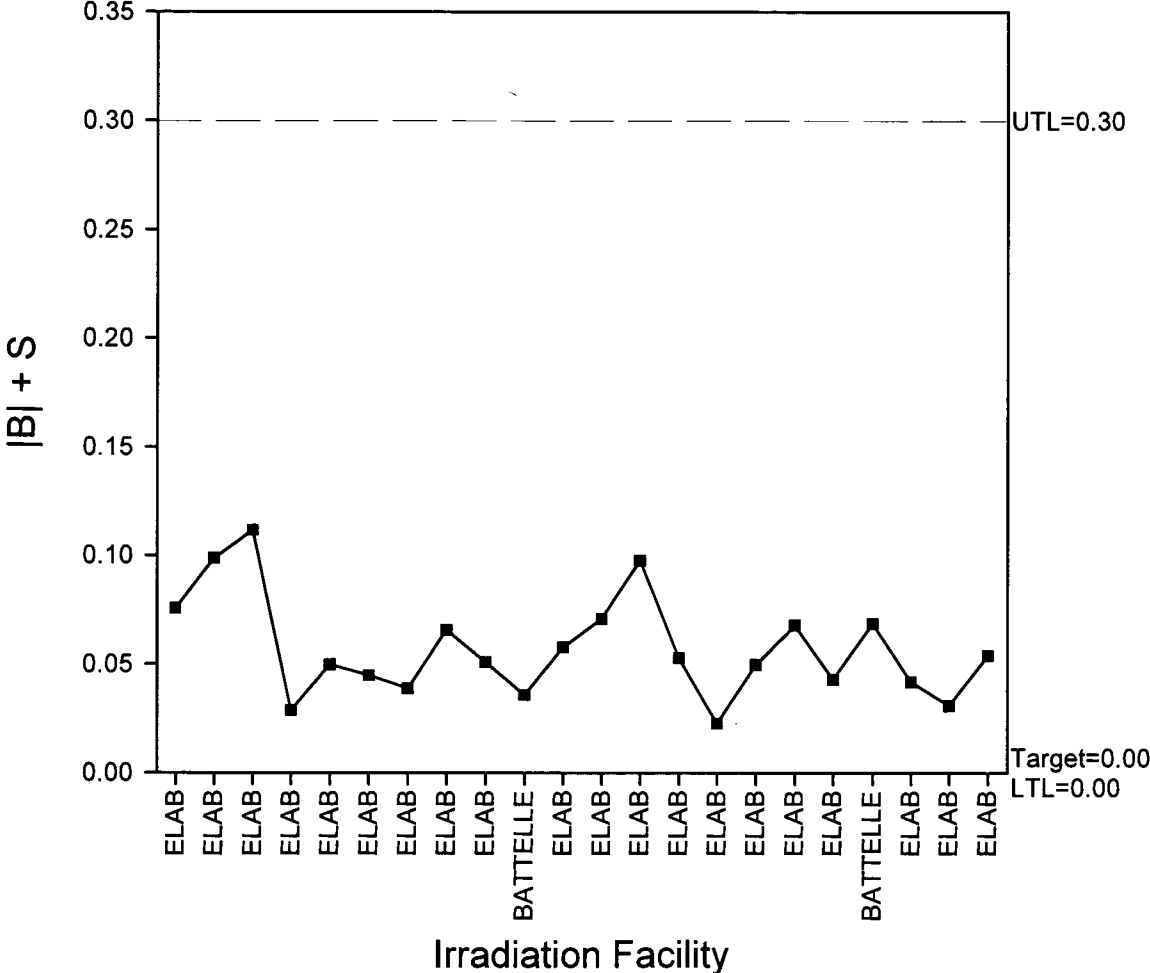


APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 July – December 2006

FIGURE 22

814 Cat II Mean Bias+Std Dev ($|B|+S$) @ the Shallow Depth Dose

Total:	22
Rows:	All
Mean:	0.057
Median:	0.052
Std Dev:	0.023
Act % out of TL:	0.00

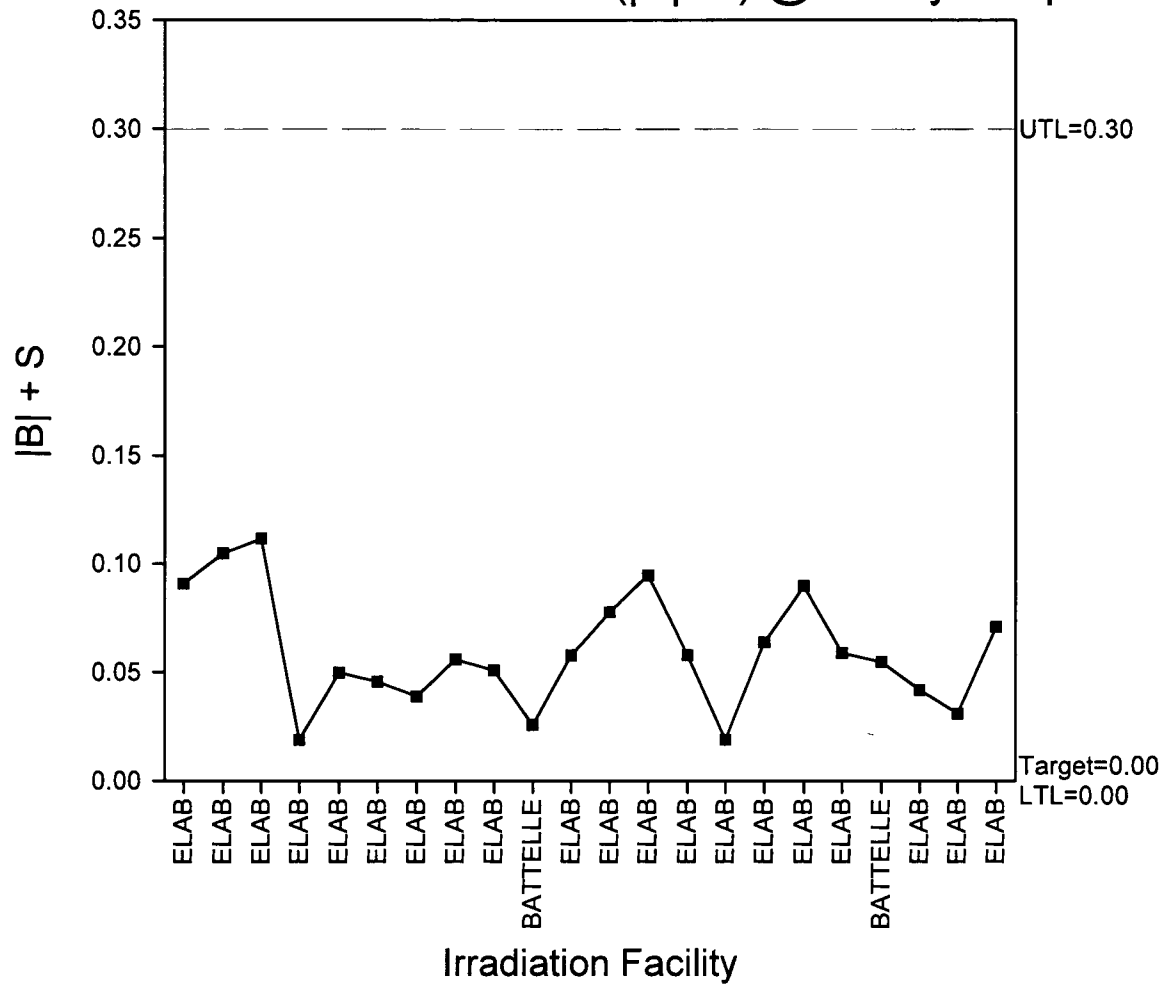


APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 July – December 2006

FIGURE 23

814 Cat II Mean Bias + Std Dev. ($|B|+S$) @ the Eye Depth Dose

Total:	22
Rows:	All
Mean:	0.060
Median:	0.057
Std Dev:	0.027
Range:	0.09
Act % out of TL:	0.00

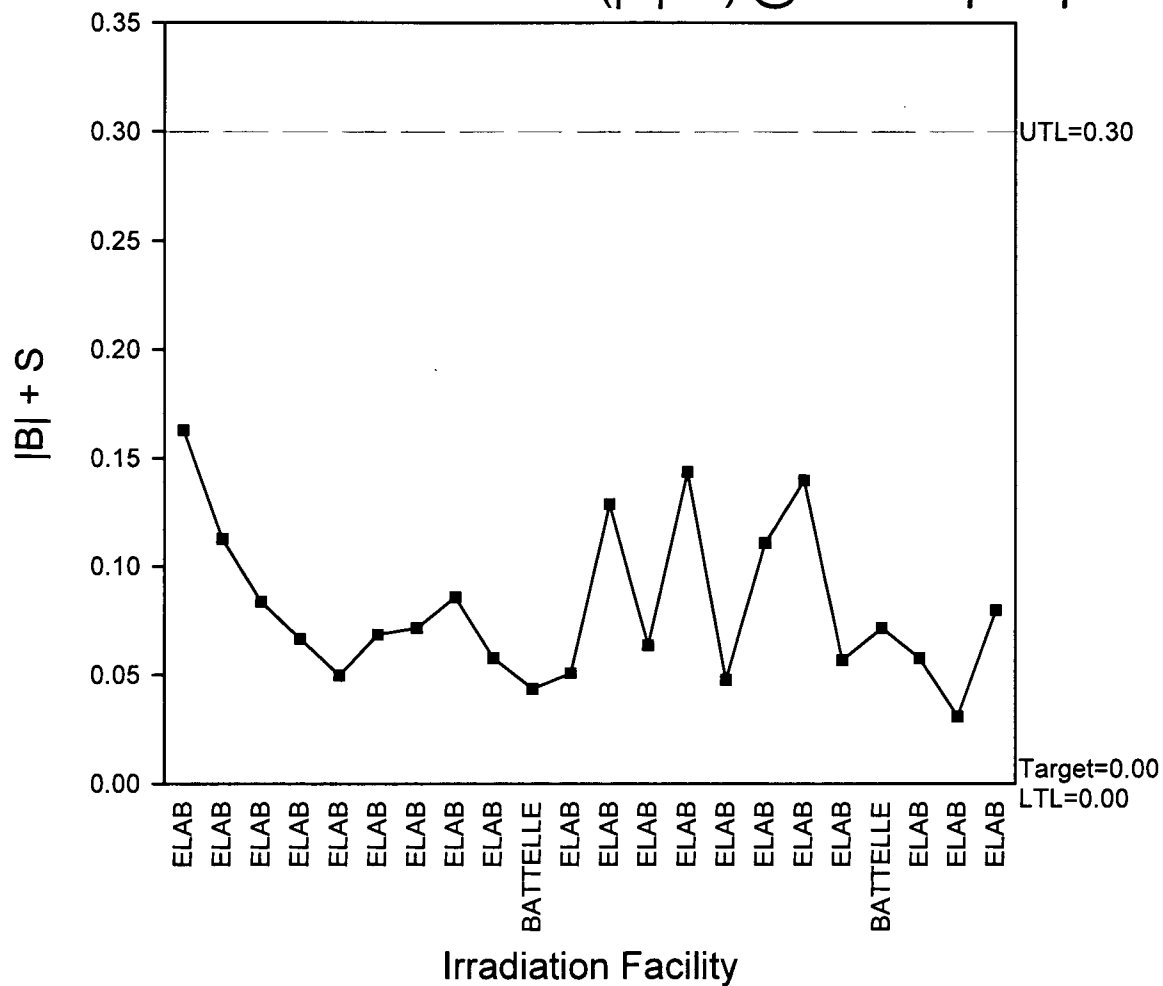


APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
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FIGURE 24

814 Cat II Mean Bias + Std Dev. ($|B|+S$) @ the Deep Depth Dose

Total:	22
Rows:	All
Mean:	0.081
Median:	0.070
Std Dev:	0.036
Act % out of TL:	0.00



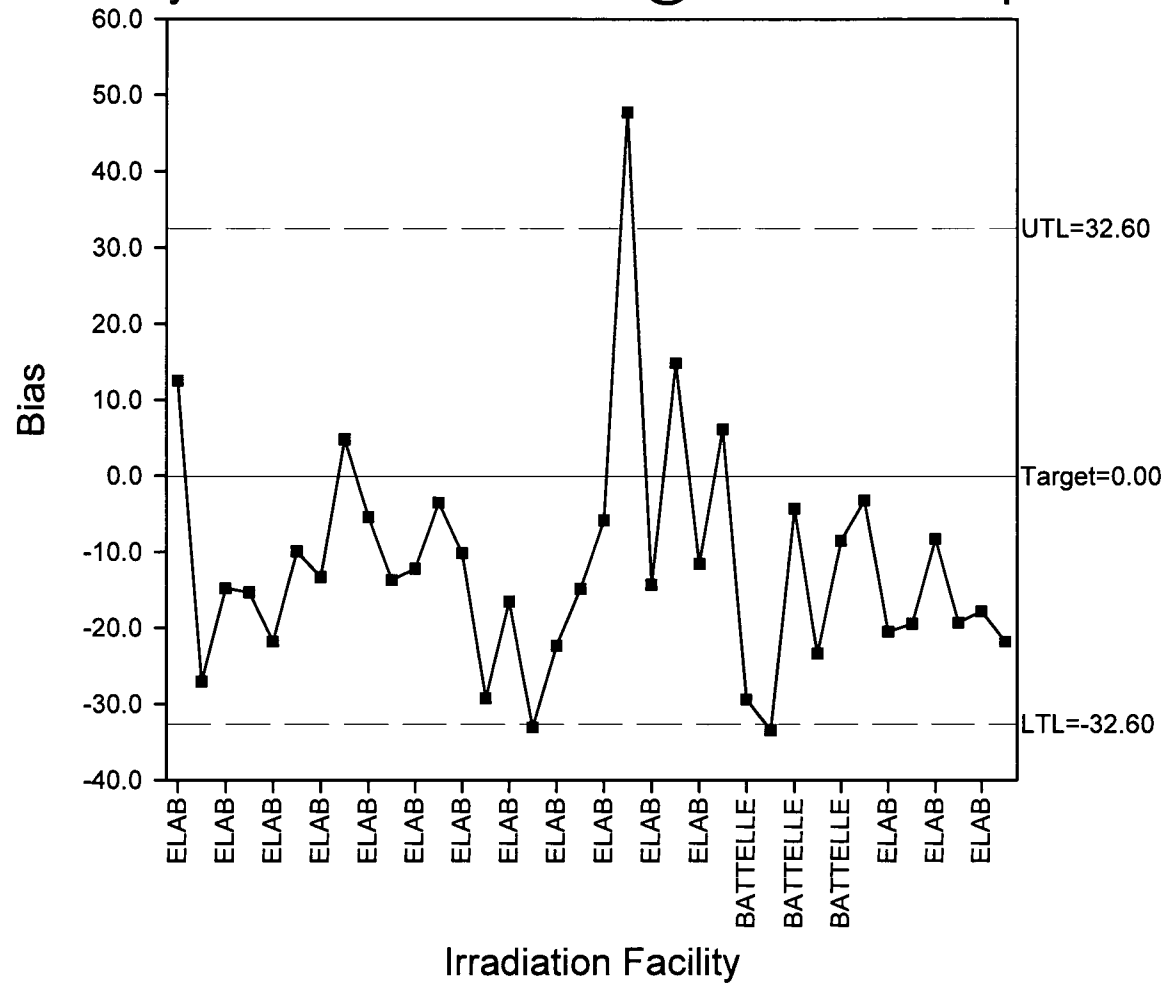
APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
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FIGURE 25

Extremity Cat IV Individual Bias @ the Shallow Depth Dose

Statistics

Total:	36
Rows:	All
Mean:	-11.533
Median:	-13.900
Std Dev:	15.354
Act % out of TL:	8.33



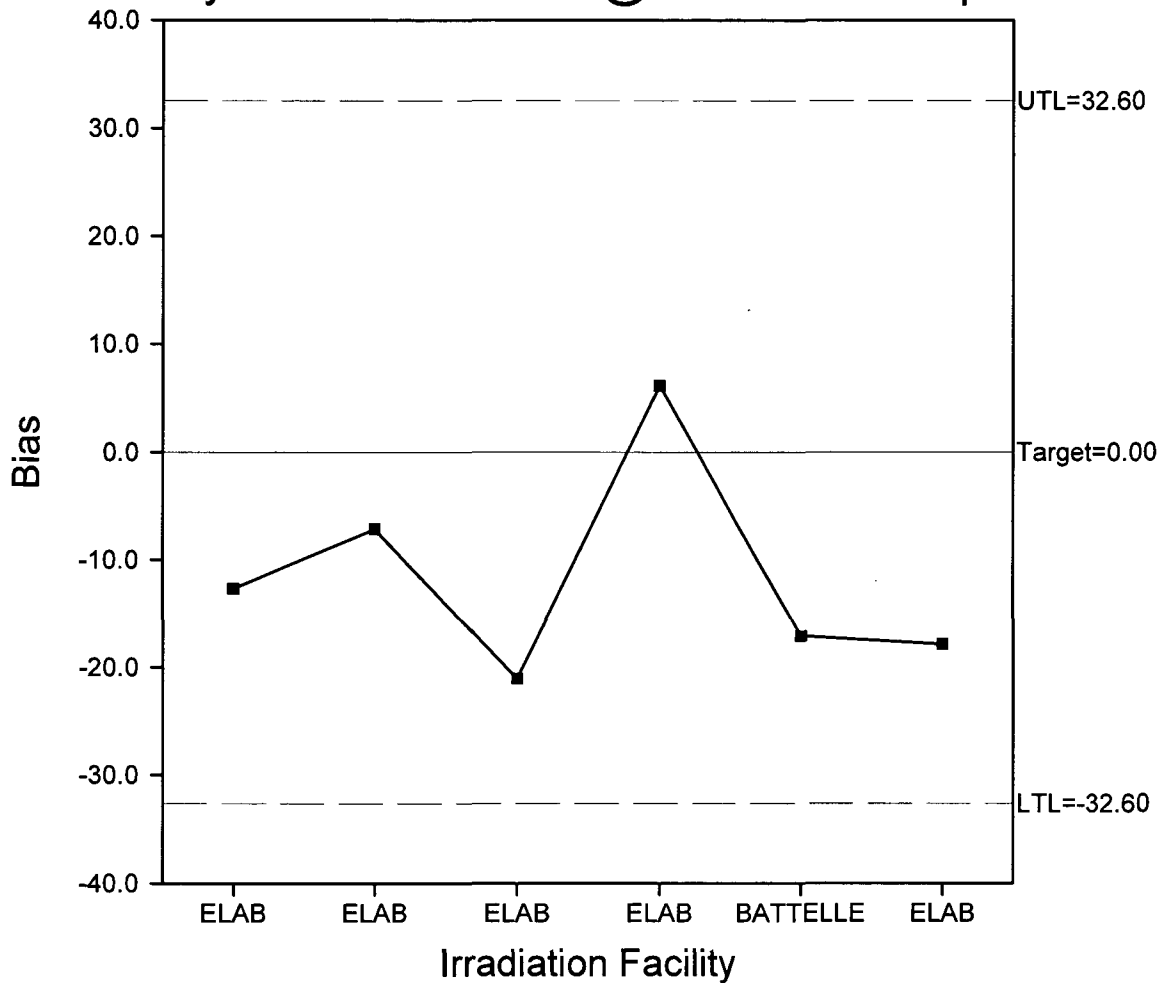
APPENDIX A
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FIGURE 27

Process Statistics

Total:	6
Rows:	All
Mean:	-11.550
Median:	-14.800
Std Dev:	9.940
Act % out of TL:	0.00

Extremity Cat IV Mean Bias @ the Shallow Depth Dose

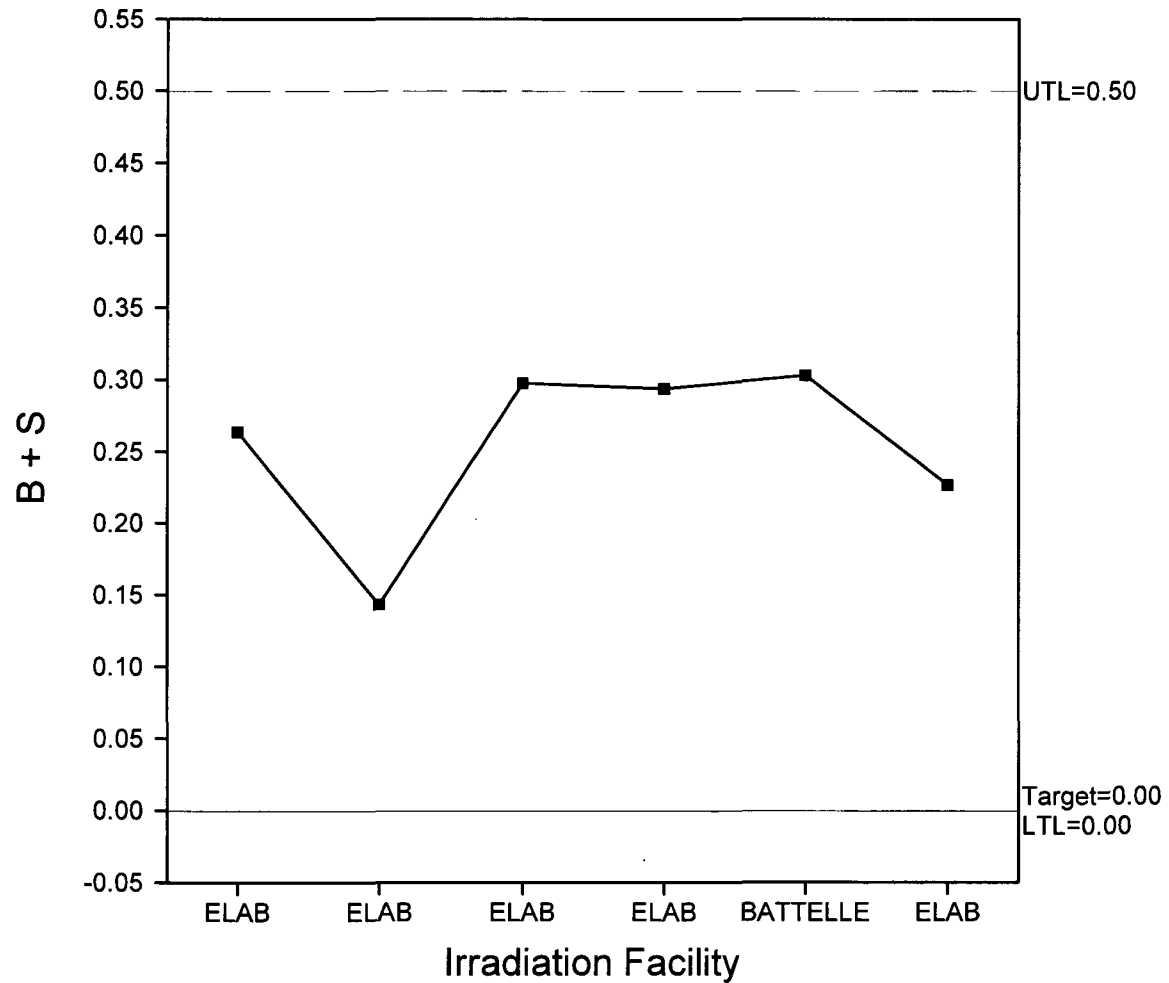


APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 July – December 2006

FIGURE 28

Extremity Cat IV Mean Bias + Std Dev. ($|B|+S$) @ the Shallow Depth Dose

Total:	6
Rows:	All
Mean:	0.255
Median:	0.279
Std Dev:	0.061
Act % out of TL:	0.00



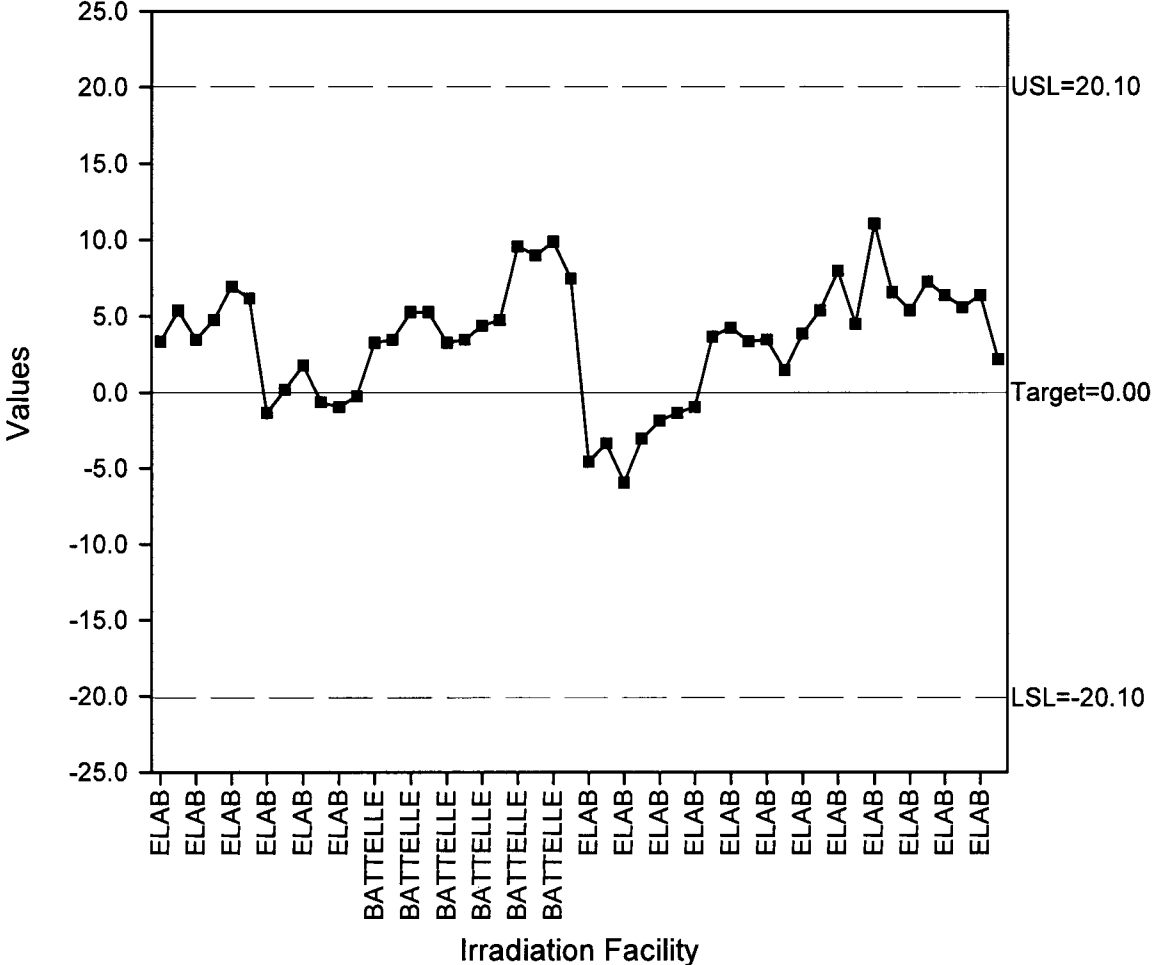
APPENDIX A
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FIGURE 29

Process Statistics

Total:	48
Rows:	All
Mean:	3.483
Median:	3.800
Std Dev:	3.844
Act % out of SL:	0.00

Environmental TLDs Individual Bias Cs-137

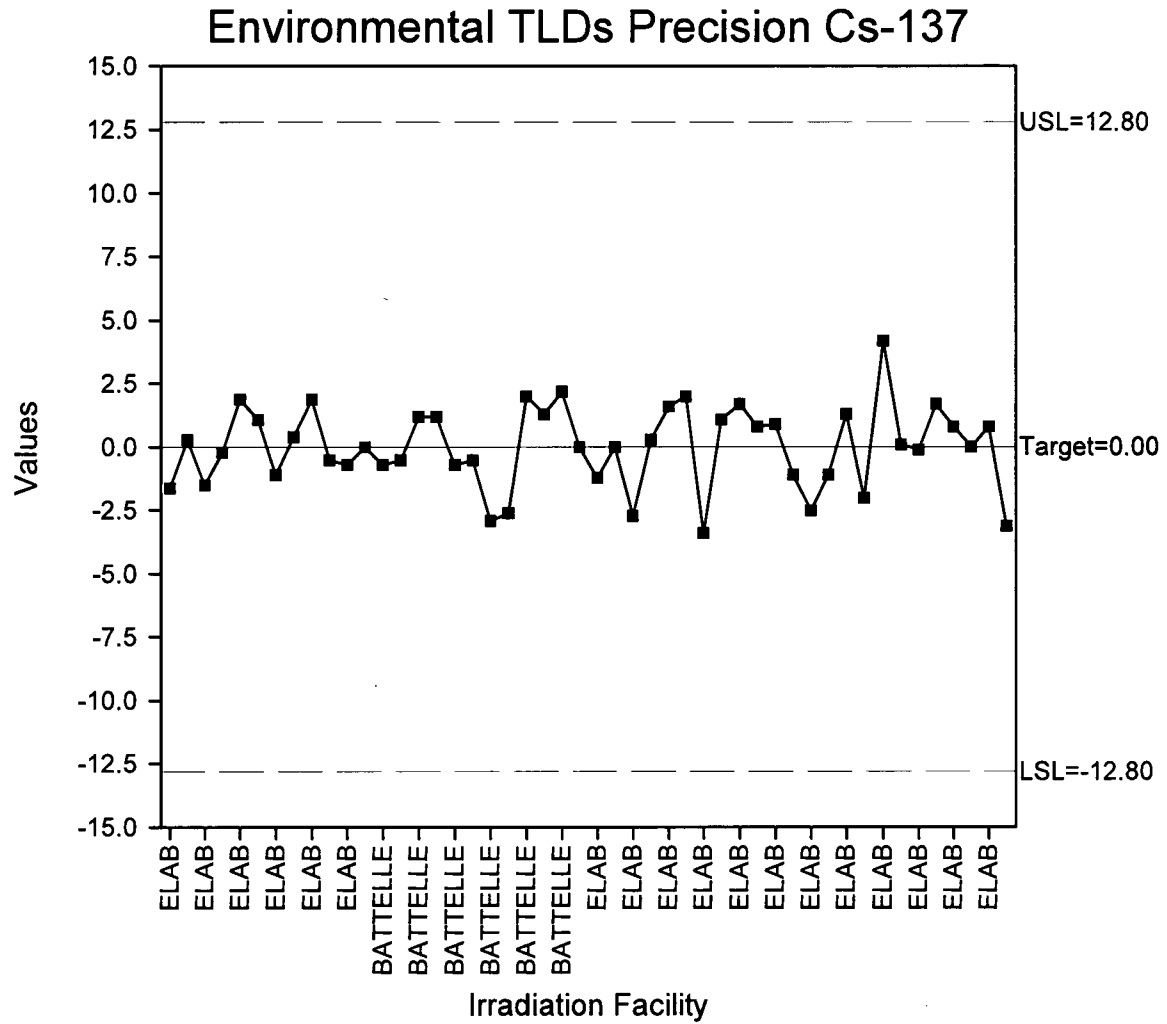


APPENDIX A
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FIGURE 30

Process Statistics

Total:	48
Rows:	All
Mean:	0.002
Median:	0.000
Std Dev:	1.623
Act % out of SL:	0.00



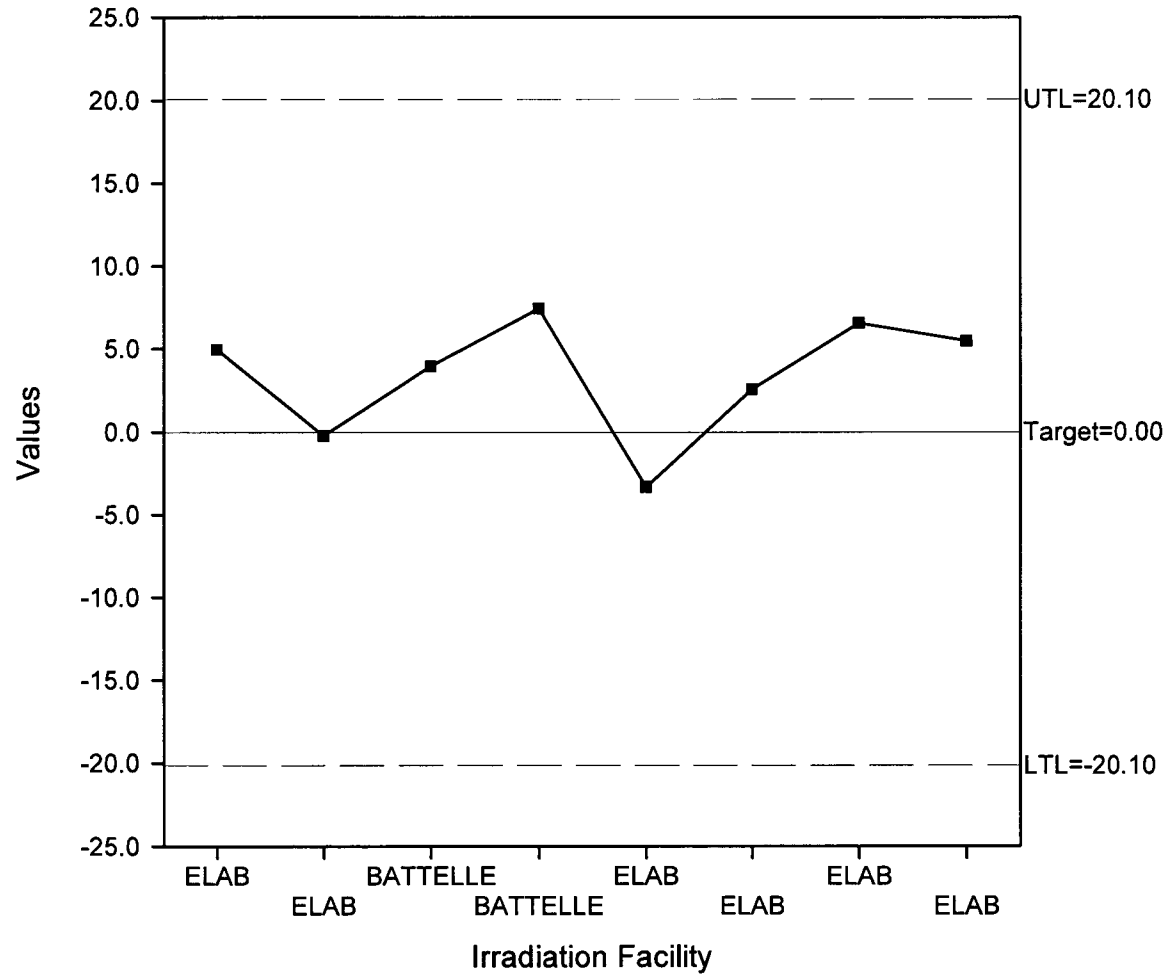
APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
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FIGURE 31

Process Statistics

Total:	8
Rows:	All
Mean:	3.462
Median:	4.500
Std Dev:	3.642
Act % out of TL:	0.00

Environmental TLDs Mean Bias Cs-137





APPENDIX B

NVLAP CERTIFICATE OF ACCREDITATION AND SCOPE OF ACCREDITATION



**National Voluntary
Laboratory Accreditation Program**



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

AREVA NP Inc. Environmental Laboratory

29 Research Drive

Westborough, MA 01581-3913

Mr. Jeffrey M. Raimondi

Phone: 508-573-6651 Fax: 508-573-6680

E-Mail: Jeffrey.Raimondi@areva.com

URL: <http://www.us.areva.com>

IONIZING RADIATION DOSIMETRY

NVLAP LAB CODE 100524-0

Scope of Accreditation:

This facility has been evaluated and deemed competent to process the radiation dosimeters listed below through employing Panasonic automatic reader model UD-710A for whole body dosimeters and a Thermo Electron Rialto XT or Toledo extremity dosimeter reader.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS N13.11-2001 and ANSI HPS N13.32-1995 through testing.

Panasonic TLD model UD-808 in a ISA model 830U holder for ANSI-N13.11-2001 categories IA, IIA, IIIA, IVA, VAB.

Panasonic TLD model 814-AS4 in a ISA model 830U holder for ANSI-N13.11-2001 categories IA, IIA, IIIA, IVA, VAB.

Panasonic dual TLD models UD808 and UD814 in a ISA model 830U holder for ANSI-N13.11-2001 category VICB.

2006-10-01 through 2007-09-30

Effective dates

For the National Institute of Standards and Technology

United States Department of Commerce
National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 100524-0

AREVA NP Inc. Environmental Laboratory
Westborough, MA

*is recognized by the National Voluntary Laboratory Accreditation Program for conformance with criteria set forth in
NVLAP accreditation documents and all requirements of ISO/IEC 17025:2005.
Accreditation is granted for specific services, listed on the Scope of Accreditation, for:*

IONIZING RADIATION DOSIMETRY

2006-10-01 through 2007-09-30

Effective dates



Dolly S. Bruce
For the National Institute of Standards and Technology



August 16, 2006
EL 115/06

TO: Distribution

FROM: J. M. Raimondi

SUBJECT: AREVA NP Environmental Laboratory
Dosimetry Services Semi-Annual Quality Assurance Status Report
(January-June 2006)

Attached for your information and review is the Semi-Annual Status Report covering the AREVA NP Environmental Laboratory's (E-LAB) Quality Assurance Programs for environmental, extremity, and personnel dosimetry processing for the first half of 2006. During this semi-annual period, 98.9% (172/174) of the individual dosimeters, evaluated against the E-LAB internal performance criteria (high-energy photons only), met the criterion for accuracy and 100% (174/174) met the criterion for precision. In addition, 100% (65/65) of the dosimeter sets evaluated against the internal tolerance limits met these criteria.

If you have any questions please contact Christopher Shelton (508) 573-6663 or me at (508) 573-6651.

A handwritten signature in black ink that reads 'J M Raimondi'.

J. M. Raimondi
Manager, Environmental Laboratory

CAS/cas
Attachment

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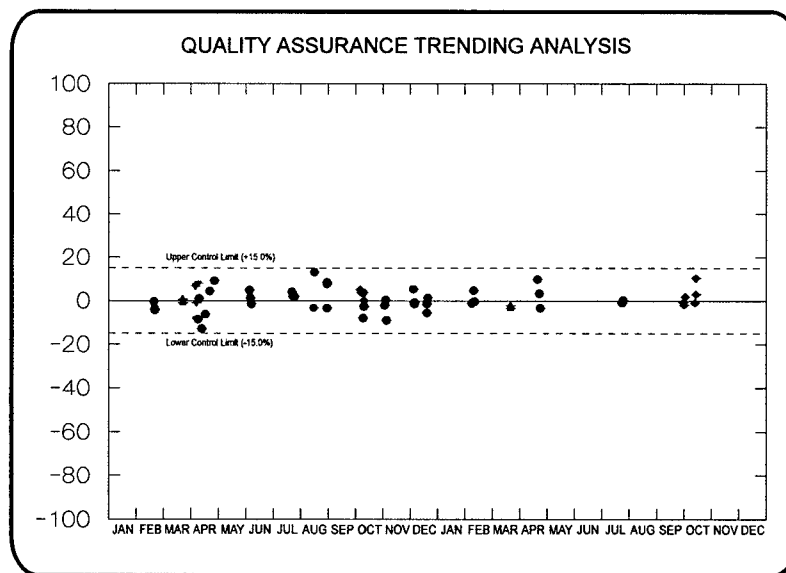
An AREVA and Siemens company

Environmental Laboratory – 29 Research Drive, Westborough, MA 01581-3913
Tel: 508 573 6650 - Fax: 508 573 6680



DOSIMETRY SERVICES SEMI-ANNUAL QUALITY ASSURANCE STATUS REPORT

January - June 2006



AREVA NP Inc.
ENVIRONMENTAL LABORATORY
29 Research Drive
Westborough, MA 01581-3913



**AREVA NP
ENVIRONMENTAL LABORATORY**

DOSIMETRY SERVICES

SEMI-ANNUAL QUALITY ASSURANCE STATUS REPORT

January-June 2006

EL 115/06

Prepared By:

A handwritten signature in black ink, appearing to be 'C. P. ...', written over a horizontal line.

Date:

08/16/06

Approved By:

A handwritten signature in black ink, 'Jeffrey McRainondi', written over a horizontal line.

Date:

08/16/06

**AREVA NP
Environmental Laboratory
29 Research Drive
Westborough, MA 01581-3913**



**AREVA NP
ENVIRONMENTAL LABORATORY**

DOSIMETRY SERVICES

SEMI-ANNUAL QUALITY ASSURANCE STATUS REPORT

January-June 2006

EL 115/06

Prepared By: _____ Date: 08/16/06

Approved By: Jeffrey McRainondi Date: 08/16/06

**AREVA NP
Environmental Laboratory
29 Research Drive
Westborough, MA 01581-3913**



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EXECUTIVE SUMMARY

Routine quality control (QC) testing was performed for each type of dosimeter issued by the AREVA NP Environmental Laboratory (E-LAB) Dosimetry Services. The dosimeter types included Panasonic 808 and 814 whole body dosimeters, combination Panasonic 808/814 neutron dosimeters, extremity dosimeters, and Panasonic environmental dosimeters. QC dosimeters were irradiated in-house as well as by a third party. All testing methods used by the accredited third-party tester conform to ANSI N13.11-2001 (Reference 1) or ANSI N13.32-1995 (Reference 2).

During this semi-annual period, 98.9% (172/174) of the individual dosimeters, evaluated against the E-LAB internal performance criteria (high-energy photons only), met the criterion for accuracy and 100% (174/174) met the criterion for precision (Table 1). In addition, 100% (65/65) of the dosimeter sets evaluated against the internal tolerance limits met these criteria (Table 2). Table 3 lists the third party testing results for this semi-annual period. Trending graphs, which evaluate each dosimeter type, dose depth and performance statistic for high-energy photon irradiations are given in Appendix A.

Appendix B contains the current Certificate of Accreditation and Scope of Accreditation.



I. INTRODUCTION

The TLD systems at the AREVA NP Environmental Laboratory (E-LAB, NVLAP Code 100524) are calibrated and operated to ensure consistent and accurate evaluation of TLDs. The quality of the dosimetric results reported to E-LAB clients is ensured by the National Voluntary Laboratory Accreditation Program (NVLAP) for dosimetry processing, independent third-party performance testing by Battelle Pacific Northwest Laboratories, in-plant performance testing, and in-house performance testing by the QA Officer and Dosimetry Services.

Standard test methods for in-plant testing of Panasonic whole body and extremity dosimeters are described in the E-LAB report entitled "In-Plant External Dosimetry Quality Assurance Testing Program" (Reference 3). This protocol provides standard test methods that may be used at plant sites utilizing E-LAB dosimeters. The plants have developed their own dosimetry test procedures modeled after Reference 3.

The purpose of the dosimetry quality assurance program is to provide performance documentation of the routine processing of E-LAB dosimeters. This testing provides a statistical measure of the bias and precision of the processing against a reliable standard, which in turn points out any trends or performance changes. Two programs are used:

A. QC Program

Dosimetry quality control tests are performed on E-LAB Panasonic 808 and 814 whole body dosimeters, combination Panasonic 808/814 neutron dosimeters, extremity, and Panasonic environmental dosimeters. These tests include: (1) third-party testing, (2) the in-plant testing program conducted by various users of E-LAB dosimetry, and (3) the in-house testing program conducted by the E-LAB QA Officer. Results of these tests (excluding client testing) are described in this report.

Excluded from this report are instrumentation checks conducted by Dosimetry Services. Although instrumentation checks represent an important aspect of the quality assurance program, they are not included as process checks because the doses are known by the processors. Instrumentation checks represent between 5-10% of the TLDs processed. In addition, client initiated quality control tests are not included in this report.

B. QA Program

An internal assessment of Dosimetry Services activities is conducted annually by the Laboratory Quality Assurance Officer (Reference 4). The purpose of the assessment is to review analytical procedures, results, materials or components that may indicate opportunities to improve or enhance processes and/or services.



II. PERFORMANCE EVALUATION CRITERIA

A. Performance Statistics

All evaluation criteria are taken from the "Dosimetry Services Quality System Manual," Reference 5.

1. Bias

- a. For each dosimeter tested, the measure of bias is the percent deviation of the reported result relative to the delivered dose. The percent deviation relative to the delivered dose is calculated as follows:

$$\frac{(H'_i - H_i)}{H_i} 100$$

where:

H'_i = the corresponding reported dose for the i th dosimeter (i.e., the reported dose)

H_i = the dose delivered to the i th irradiated dosimeter (i.e., the delivered dose)

- b. For each group of test dosimeters, the mean bias is the average percent deviation of the reported result relative to the delivered dose. The mean percent deviation relative to the delivered dose is calculated as follows:

$$\sum \left(\frac{(H'_i - H_i)}{H_i} \right) 100 \left(\frac{1}{n} \right)$$

where:

H'_i = the corresponding reported dose for the i th dosimeter (i.e., the reported dose)

H_i = the dose delivered to the i th irradiated test dosimeter (i.e., the delivered dose)

n = the number of dosimeters in the test group

2. Precision

For a group of test dosimeters irradiated to a given dose, the measure of precision is the percent deviation of individual results relative to the mean reported dose. At least two values are required for the determination of precision. The measure of precision for the i th dosimeter is:



$$\left(\frac{(H'_i - \bar{H})}{\bar{H}} \right) 100$$

where:

H'_i = the reported dose for the i th dosimeter (i.e., the reported dose)

\bar{H} = the mean reported dose; i.e., $\bar{H} = \sum H'_i \left(\frac{1}{n} \right)$

n = the number of dosimeters in the test group

3. American National Standards Institute Performance Statistics

The American National Standards Institute (ANSI) provides a method of characterizing the performance of protection dosimetry in "Personnel Dosimetry Performance - Criteria for Testing" (Reference 1).

- a. The performance in a given test category is considered adequate if for the shallow and/or deep dose equivalents (or the absorbed dose):

$$|B| + S \leq L$$

where:

B = the bias of the performance quotient

S = the standard deviation of the performance quotient

L = the tolerance level

- b. The bias of the values of the performance quotient, \bar{P} is set equal to the average of these values:

$$B = \bar{P} = \left(\frac{1}{n} \right) (\sum P_i)$$

where:

The performance quotient, P_i , for the i th dosimeter is defined as:

$$P_i = \frac{[H'_i - H_i]}{H_i}$$

and:

H'_i = the corresponding reported dose equivalent for the i th dosimeter (i.e., the reported dose)



H_i = the dose delivered to the i th irradiated dosimeter (i.e., the delivered dose)

- c. The standard deviation of the values of the performance quotient, P_i , is:

$$S = \left[\frac{\left[\sum (P_i - \bar{P})^2 \right]}{(n-1)} \right]^{\frac{1}{2}}$$

where:

$n-1$ represents the unbiased sample population, where the summation is performed over all n values of P_i for a particular test in a given radiation category, and for a particular phantom depth (shallow or deep).

B. Tolerance Limits

1. E-LAB Internal Limits

Tolerance limits for bias and precision applied to in-house and accredited third party testing were adopted on November 13, 1987.

These criteria are only applied to individual test dosimeters irradiated with high-energy photons (Cs-137 or Co-60) and are as follows:

Dosimeter Type	Tolerance Limits	
	Bias	Precision
Panasonic Whole Body	± 18.5%	± 16.1%
Extremity	± 32.6%	± 27.2%
Panasonic Environmental	± 20.1%	± 12.8%

The results of dosimeters evaluated against these criteria are summarized in Table 1. Trending graphs for a particular badge type or depth can be found in Appendix A.

2. Internal Tolerance Limits

Further performance testing control limits were added in 1998 to evaluate the sum of bias and precision values for all irradiation categories, not just for high-energy photons. A ±30% tolerance limit was applied to the sum of the bias and precision values for all whole body and environmental dosimeters, while a ±50% tolerance limit was applied for extremity dosimeters. Dosimeters processed during this semi-annual period were



evaluated against these criteria and the results are shown in Table 2 and Appendix A.

3. American National Standards Institute Tolerance Level (L)

The tolerance level, L, given in Reference 1, is: (a) 0.3 in the accident category I; and (b) 0.4 in the protection categories II through VI. ANSI N13.11-2001 (Reference 1) includes additional limits on the Performance Quotient Limit (PQL) for Categories II, IV, and V for deep and shallow depths and Category III for shallow depth only. This criterion requires that no more than one of fifteen dosimeters tested in each category may have a bias that exceeds the tolerance level (L).

C. QC Investigation Criteria

E-LAB Manual 120 (Reference 5) specifies the investigative criteria applied to a QC analysis that has failed the E-LAB bias criteria. The criteria are as follows:

1. No investigation is necessary when an individual QC result falls outside the QC performance criteria for accuracy.
2. Investigations are initiated when the mean of a QC processing batch is outside the performance criterion for bias.

D. Reporting of Analytical Results

The following guidelines were developed, applicable to reporting of results:

1. All results are to be reported in a timely fashion.
2. If the QA Officer determines that an investigation is required for a process, the results shall be issued as normal. If the QC results, prompting the investigation, have a mean bias from the known of greater than $\pm 20\%$ for environmental dosimetry and greater than $\pm 30\%$ for personnel dosimetry, the results shall be issued with a note indicating that they may be updated in the future, pending resolution of a QA issue.
3. Environmental dosimetry results do not require updating if the investigation has shown that the mean bias between the original results and the corrected results, based on applicable correction factors from the investigation, does not exceed $\pm 20\%$.
4. Personnel dosimetry results do not require updating if the investigation has shown that the mean bias between the original results and the corrected results, based on applicable correction factors from the investigation, does not exceed $\pm 30\%$.



III. DATA SUMMARY FOR REPORTING PERIOD JANUARY-JUNE 2006

A. General Discussion

In the sections that follow, the results of performance tests conducted for each type of dosimeter are summarized and discussed. Summaries of the performance tests for the reporting period are given in Tables 1 through 3 and Figures 1 through 31. Results are presented only for performance tests conducted under well-characterized conditions. Where appropriate, results are reported for three depths (7 mg/cm², 300 mg/cm², and 1000 mg/cm²) and plotted for the six-month period January-June 2006.

Table 1 provides a summary of individual dosimeter results evaluated against the E-LAB internal acceptance criteria for high-energy photons only. During this semi-annual period, 98.9% (172/174) of the individual dosimeters, evaluated against these criteria met the tolerance limits for accuracy and 100% (174/174) met the criterion for precision.

Table 2 provides a summary of the |B| + S results for each group (N=6) of dosimeters evaluated against the internal tolerance criteria. The data in Table 2 is tabulated by badge type and applies to all ANSI-required and non-required categories (see Table 3). Overall, 100% (65/65) of the dosimeter sets evaluated against the internal tolerance performance criteria met these criteria.

Table 3 presents the third-party testing results for dosimeters processed during this semi-annual period. NVLAP-required results are shown within the shaded outlined area of Table 3, which also includes non-required test results. No third-party dosimeter test sets were processed during this evaluation period due to scheduling issues. Dosimeters have been sent for third-party irradiation and will be reported in the next semiannual report. One-third of the NVLAP biennial testing for 2005 was actually processed in January 2006. These results were reported in the July-December 2005 Dosimetry Services Semi-Annual Quality Assurance Status Report.

B. Result Trending

1. Panasonic Whole Body Dosimeters

One of the main benefits of performing quality control tests on a routine basis is to point out trends or performance changes. Trends or changes are best illustrated in the form of trending graphs where performance is tracked over time. The results of performance tests of Panasonic 808 and 814 whole body dosimeters are presented in Figures 1 through 24 for Category II irradiations. The results are evaluated against each of the performance criteria listed in Section II, namely: individual dosimeter bias, individual dosimeter precision, and |B| + S. Results are also evaluated for mean bias in accordance with the investigation criteria given in Section II.C.



All of the results presented in Figures 1 through 24 are fade corrected to the irradiation date and plotted sequentially by processing date. This allows assessment of performance without the confounding effect of the variation in number of days between readout and irradiation. Therefore, the results include any bias produced by the fade algorithm.

If fade is not corrected to the date of irradiation, the possibility of a bias due to signal fading exists. When Dosimetry Services processes a TLD, the software calculates a fade correction using one half the number of days between the processing date and the anneal date. The use of the midpoint for fade correction can bias the results of performance tests of TLDs irradiated at either the beginning or end of a wear period. Results for performance tests conducted near the beginning of the period will be biased low and those irradiated near the end of a period will be biased high, assuming there are no other system biases.

In some cases (i.e., when TLDs are irradiated at the end of the wear period and fade corrected to the midpoint) the results of the performance test may fall outside of the control limits even though the system is performing correctly. Therefore, to allow the assessment of performance test results without the TLD signal confounding the data, all Panasonic 808 and 814 test results presented in the tables have been fade corrected to the actual date of irradiation.

Figures 1 through 3 depict the individual bias of each of 18 Panasonic 808 dosimeters, evaluated at three different depths, and plotted sequentially according to processing date. The failure rate was 11.1% (2/18) for the shallow depth, 5.6% for the eye depth, and 0% (0/18) for the deep depth (Figures 1-3). The failure rate for individual precision was 0% (0/18) for the shallow, eye, and deep depths (Figures 4-6). The failure rate for the mean bias was 0% (0/3) for all three depths (Figures 7-9). Finally, Figures 10-12 depict the $|B| + S$ statistic for each group of 808 dosimeters at each depth. All test sets (3 at each depth) met the internal tolerance criteria of $|B| + S < 0.3$.

Figures 13 through 15 depict the individual bias of each of 90 Panasonic 814 dosimeters, evaluated at three different depths, versus the date of processing. The failure rate was 0% (0/90) for the shallow, eye and deep depths. The failure rate for individual precision was 0% (0/90) for the shallow, eye, and deep depths (Figures 16-18). The failure rate for mean bias at all three depths (Figures 19-21) was 0%. As shown in Figures 22-24, 100% of the 15 814 test sets, evaluated at each depth, met the internal tolerance criteria of $|B| + S < 0.3$.



2. Extremity Dosimeters

Extremity results plotted in Figures 25 -28 are for performance tests conducted at the E-LAB and an accredited third-party testing organization. For all individual extremity TLDs, evaluated during this semi-annual period, 0% (0/24) failed the E-LAB limit for bias of $\pm 32.6\%$ (Figure 25). The failure rate was 0% (0/24) for precision (tolerance limit $\pm 27.2\%$) as shown in Figure 26. None of the 4 TLD test sets (n=6) were outside the mean bias limit as shown in Figure 27. For the same reporting period, 100% of the 4 extremity QC test sets met the internal tolerance criteria for bias and precision ($|B| + S$, Figure 28).

3. Panasonic Environmental Dosimeters

The trending results of performance tests of Panasonic environmental dosimeters are presented in Figures 29-31. For individual Panasonic environmental TLDs, 100% of the 42 tests came within the E-LAB bias and precision tolerance limits (Figures 29 and 30). All 7 Panasonic environmental TLD test sets (mean bias, n=6) were reported within the internal tolerance criteria for bias (Figure 31).

IV. STATUS OF E-LAB CONDITION REPORTS (CR)

During this semi-annual period, there was one E-LAB Condition Report (CR 06-04) issued for dosimetry processing activities. Release and receipt surveys for contamination failed to identify alpha contamination on three dosimeters issued to a fuel-processing facility. These dosimeters were subsequently re-issued to another client. The contamination caused false skin exposure readings on these dosimeters. Corrective actions include: 1) segregating a set of dosimeters for exclusive use at the fuel-processing facility, 2) improved radioactivity monitoring techniques at the E-LAB, 3) notification to the client of the contamination control issue, and 4) monitoring of the dosimeter inventory for contamination. All corrective actions have been completed.

V. STATUS OF AUDITS/ASSESSMENTS

A. Internal

No internal audits of dosimetry processing activities were performed this reporting period.

B. External

No external audits of dosimetry processing activities were performed this reporting period.



VI. UPDATED PROCEDURES ISSUED DURING JANUARY-JUNE 2006

A list of Dosimetry Services Section procedures, which were updated during this semi-annual period, is included in Table 4.

VII. CONCLUSION AND RECOMMENDATIONS

Inter and intra-laboratory quality control evaluations continue to indicate the whole body, environmental, and extremity dosimetry processing programs at the E-LAB satisfy the criteria specified in the Dosimetry QA Manual. The E-LAB demonstrated the ability to meet all applicable acceptance criteria with a frequency of greater than 99%.

VIII. REFERENCES

1. American National Standard for Dosimetry - Personnel Dosimetry Performance Criteria for Testing, ANSI N13.11-2001, American National Standards Institute, Inc., 1430 Broadway, New York, New York 10018.
2. American National Standard for Performance Testing of Extremity Dosimeters, ANSI N13.32-1995, Health Physics Society, 1313 Dolley Madison Blvd., Suite 402, McLean, VA 22101.
3. "In-Plant External Dosimetry Quality Assurance Testing Program," E-LAB, Revision 2, December 1986.
4. AREVA NP Environmental Laboratory Quality Control and Audit Assessment Schedule, 2006.
5. E-LAB Manual No.120, Dosimetry Services Quality System Manual, Rev. 11, January 17, 2006 and Rev. 12, June 20, 2006.

TABLE 1

PERCENTAGE OF INDIVIDUAL ANALYSES WHICH PASSED E-LAB INTERNAL CRITERIA
January-June 2006⁽¹⁾

Dosimeter Type	Number of Dosimeters	Shallow (7 mg/cm ²)		Eye (300 mg/cm ²)		Deep (1000 mg/cm ²)	
		% Passed Bias Tolerance Limit ⁽²⁾	% Passed Precision Tolerance Limit ⁽³⁾	% Passed Bias Tolerance Limit ⁽²⁾	% Passed Precision Tolerance Limit ⁽³⁾	% Passed Bias Tolerance Limit ⁽²⁾	% Passed Precision Tolerance Limit ⁽³⁾
Panasonic 808 Whole Body	18	88.9	100	94.4	100	100	100
Panasonic 814 Whole Body	90	100	100	100	100	100	100
Extremity	24	100	100	N/A	N/A	N/A	N/A
Panasonic Environmental	42	100 (free in air)	100 (free in air)	N/A	N/A	N/A	N/A

⁽¹⁾ This table summarizes results of all depths for performance tests conducted by E-LAB and the Third-party tester for High Energy Photons.

CONTROL LIMITS FOR E-LAB DOSIMETRY PERFORMANCE TESTS -
APPLICABLE TO INDIVIDUAL TEST DOSIMETERS IRRADIATED TO HIGH ENERGY PHOTONS

Dosimeter Type	Tolerance Limits	
	Bias	Precision
Panasonic Whole Body	± 18.5%	± 16.1%
Extremity	± 32.6%	± 27.2%
Panasonic Environmental	± 20.1%	± 12.8%

⁽²⁾ The percent deviation of individual results from the delivered dose is used to measure bias.

⁽³⁾ The percent deviation of individual results from the mean reported dose is used to measure precision.



TABLE 2

PERCENTAGE OF MEAN ANALYSES (N=6) WHICH PASSED TOLERANCE CRITERIA

January-June 2006 ⁽¹⁾

Dosimeter Type	Shallow (7 mg/cm ²)		Eye (300 mg/cm ²)		Deep (1000 mg/cm ²)	
	Number of Evaluations	% Passed Tolerance Limit ⁽²⁾	Number of Evaluations	% Passed Tolerance Limit ⁽²⁾	Number of Evaluations	% Passed Tolerance Limit ⁽²⁾
Panasonic 808 Whole Body	3	100	3	100	3	100
Panasonic 814 Whole Body	15	100	15	100	15	100
Extremity	4	100	N/A	N/A	N/A	N/A
Panasonic Environmental ⁽³⁾	7	100	N/A	N/A	N/A	N/A

⁽¹⁾ This table summarizes results of all depths for performance tests conducted by E-LAB and the Third-party tester.

⁽²⁾ The mean percent deviation of individual results from the delivered dose is used to determine the bias. The standard deviation of the individual results relative to the mean bias is added to this value to determine the overall performance (|B|+S).

⁽³⁾ Environmental dosimeter results are free in air.



TABLE 3

SUMMARY OF THIRD PARTY QC RESULTS FOR
FIRST HALF OF 2006
(NVLAP Required and Non-Required Categories)

Dosimeter Type	Exposure Period	NVLAP Category ⁽¹⁾	Shallow (7 mg/cm ²) ⁽²⁾		Deep (1000 mg/cm ²) ⁽²⁾		Eye (300 mg/cm ²) ⁽²⁾	
			Bias% ^(3,4) ± Std. Dev.%	B + S	Bias% ^(3,4) ± Std. Dev.%	B + S	Bias% ^(3,4) ± Std. Dev.%	B + S
808	FH/2006	II.A	(6)	(6)	(6)	(6)	(6)	(6)
814	FH/2006	II.A	(6)	(6)	(6)	(6)	(6)	(6)
Extremity	FH/2006	IV.A	(6)	(6)	(6)	(6)	(6)	(6)
Environ. ⁽⁵⁾	FH/2006	II	(6)	(6)	(6)	(6)	(6)	(6)

- (1) 808 & 814 NVLAP Category II.A = Photons, General
Extremity NVLAP Category IV.A = High Energy Photons (Cs-137)
Environmental Category II = Photons
- (2) Reported results are fade corrected to the date of irradiation for whole body dosimeter types other than extremity and environmental.
- (3) The bias (B) is calculated as the mean of the percent deviations of individual results from the delivered dose.
- (4) The standard deviation (S) is calculated from the deviation of individual biases from the mean bias.
- (5) Results are expressed as the delivered exposure (not dose) for environmental results.
- (6) These categories were not tested during this semi-annual period.

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Health Physics Supervisor Position

Organization: Environmental Restoration Group, Albuquerque NM

Description: Environmental Restoration Group, Inc. (ERG) is a small Albuquerque consulting firm specializing in decommissioning of nuclear facilities. We have a health physics supervisory position opening for a long-term decommissioning project in the Pittsburgh, PA area. The project is currently underway with a staff of four trained technicians. Responsibilities include managing the radiation protection program, performing contaminated soil excavation control monitoring using GPS technology, and assisting with managing wastes to be shipped off-site.

We are looking for a mid-level/senior health physicist who has experience implementing and managing radiation protection programs in a decommissioning setting. Successful experience in supervising personnel and dealing with other contractor/client personnel are essential. B.S. degree and CHP/ NRRPT are desirable.

Salary: ERG provides relocation expenses, a competitive salary, health insurance, and a noncontributing profit sharing retirement plan. Check us out on www.ERGOffice.com.

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TABLE 4

UPDATED INSTRUMENTATION GROUP DOSIMETRY SERVICES
PROCEDURES ISSUED DURING JANUARY-JUNE 2006

PROC.	TITLE	REV.	EFFECTIVE DATE	REVISION SUMMARY
010	Control of AREVA NP Inc. Environmental Laboratory Manuals and Procedures	20 21	03/15/06 06/19/06	- Updated company name and phone numbers in format. - Updated company name and proprietary statement.
705	Irradiation of Thermoluminescent Dosimeters for the Dosimetry Services Quality Control Program	6	01/10/06	Updated company name, updated ANSI standard reference, updated 3 rd party irradiation schedule.
1022	Generation of Element Correction Factors for Panasonic TLDS	9	03/24/06	Remove ECF test for Li element of environmental TLDS.



APPENDIX A
DOSIMETRY QUALITY CONTROL TRENDING GRAPHS
JANUARY-JUNE 2006



APPENDIX A

DOSIMETRY QUALITY CONTROL TRENDING GRAPHS January-June 2006

1. 808 Category II (High-Energy Photons) Individual Bias at the Shallow Depth Dose
2. 808 Category II (High-Energy Photons) Individual Bias at the Eye Depth Dose
3. 808 Category II (High-Energy Photons) Individual Bias at the Deep Depth Dose
4. 808 Category II (High-Energy Photons) Individual Precision at the Shallow Depth Dose
5. 808 Category II (High-Energy Photons) Individual Precision at the Eye Depth Dose
6. 808 Category II (High-Energy Photons) Individual Precision at the Deep Depth Dose
7. 808 Category II (High-Energy Photons) Mean Bias at the Shallow Depth Dose
8. 808 Category II (High-Energy Photons) Mean Bias at the Eye Depth Dose
9. 808 Category II (High-Energy Photons) Mean Bias at the Deep Depth Dose
10. 808 Category II (High-Energy Photons) Mean Bias Plus Standard Deviation (B+S) at the Shallow Depth Dose
11. 808 Category II (High-Energy Photons) Mean Bias Plus Standard Deviation (B+S) at the Eye Depth Dose
12. 808 Category II (High-Energy Photons) Mean Bias Plus Standard Deviation (B+S) at the Deep Depth Dose
13. 814 Category II (High-Energy Photons) Individual Bias at the Shallow Depth Dose
14. 814 Category II (High-Energy Photons) Individual Bias at the Eye Depth Dose
15. 814 Category II (High-Energy Photons) Individual Bias at the Deep Depth Dose
16. 814 Category II (High-Energy Photons) Individual Precision at the Shallow Depth Dose
17. 814 Category II (High-Energy Photons) Individual Precision at the Eye Depth Dose
18. 814 Category II (High-Energy Photons) Individual Precision at the Deep Depth Dose
19. 814 Category II (High-Energy Photons) Mean Bias at the Shallow Depth Dose
20. 814 Category II (High-Energy Photons) Mean Bias at the Eye Depth Dose
21. 814 Category II (High-Energy Photons) Mean Bias at the Deep Depth Dose



APPENDIX A

DOSIMETRY QUALITY CONTROL TRENDING GRAPHS January-June 2006

22. 814 Category II (High-Energy Photons) Mean Bias Plus Standard Deviation (B+S) at the Shallow Depth Dose
23. 814 Category II (High-Energy Photons) Mean Bias Plus Standard Deviation (B+S) at the Eye Depth Dose
24. 814 Category II (High-Energy Photons) Mean Bias Plus Standard Deviation (B+S) at the Deep Depth Dose
25. Extremity Category IV (High-Energy Photons) Individual Bias at the Shallow Depth Dose
26. Extremity Category IV (High-Energy Photons) Individual Precision at the Shallow Depth Dose
27. Extremity Category IV (High-Energy Photons) Mean Bias at the Shallow Depth Dose
28. Extremity Category IV (High-Energy Photons) Mean Bias Plus Standard Deviation (B+S) at the Shallow Depth Dose
29. Environmental TLDs Individual Bias Cs-137
30. Environmental TLDs Precision Cs-137
31. Environmental TLDs Mean Bias Cs-137

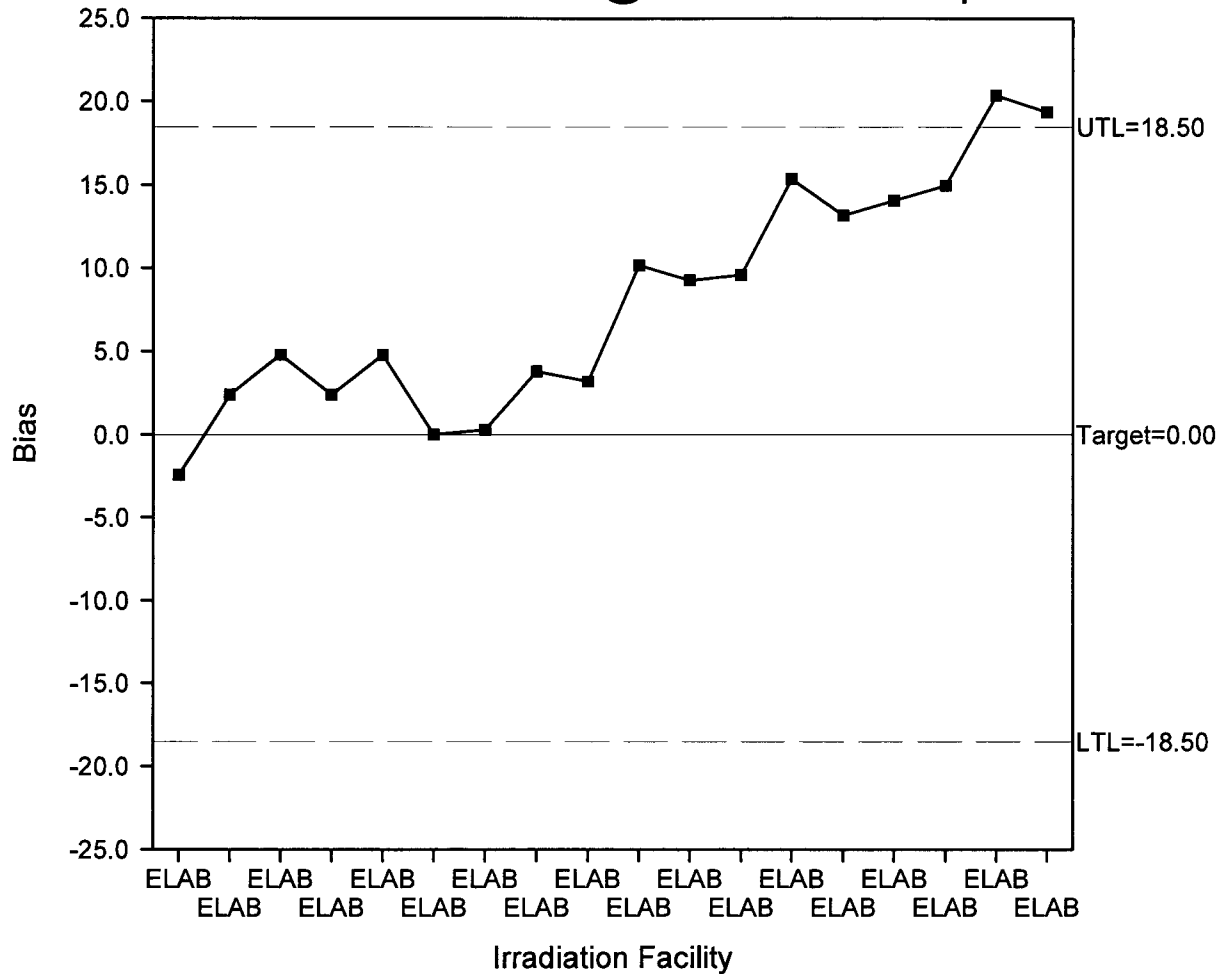
APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 January-June 2006

FIGURE 1

808 Cat II Individual Bias @ the Shallow Depth Dose

Process Statistics

Total:	18
Rows:	All
Mean:	8.106
Median:	7.050
Std Dev:	6.928
Act % out of TL:	11.11

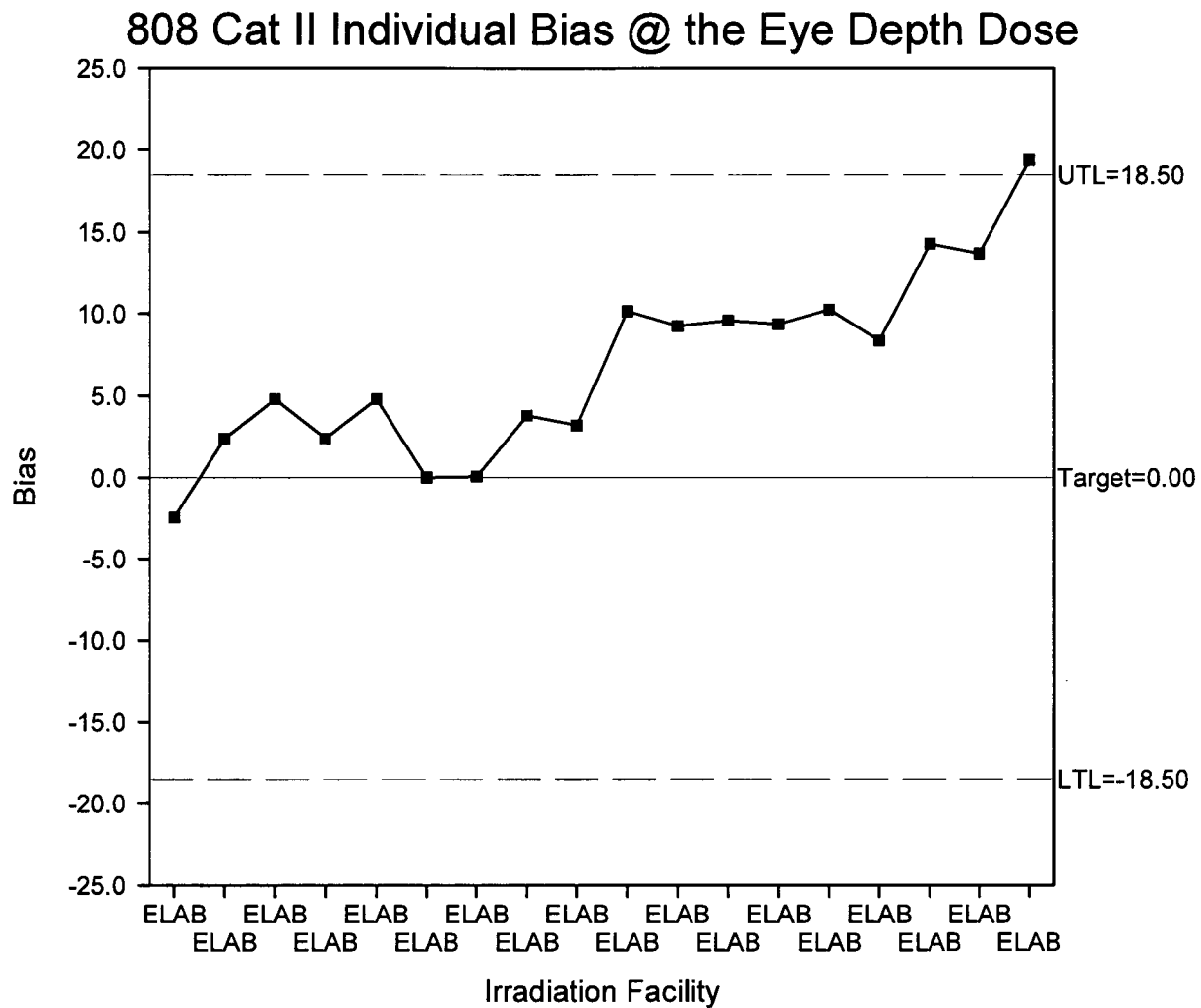


APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 January-June 2006

FIGURE 2

Process Statistics

Total:	18
Rows:	All
Mean:	6.872
Median:	6.600
Std Dev:	5.710
Act % out of TL:	5.56



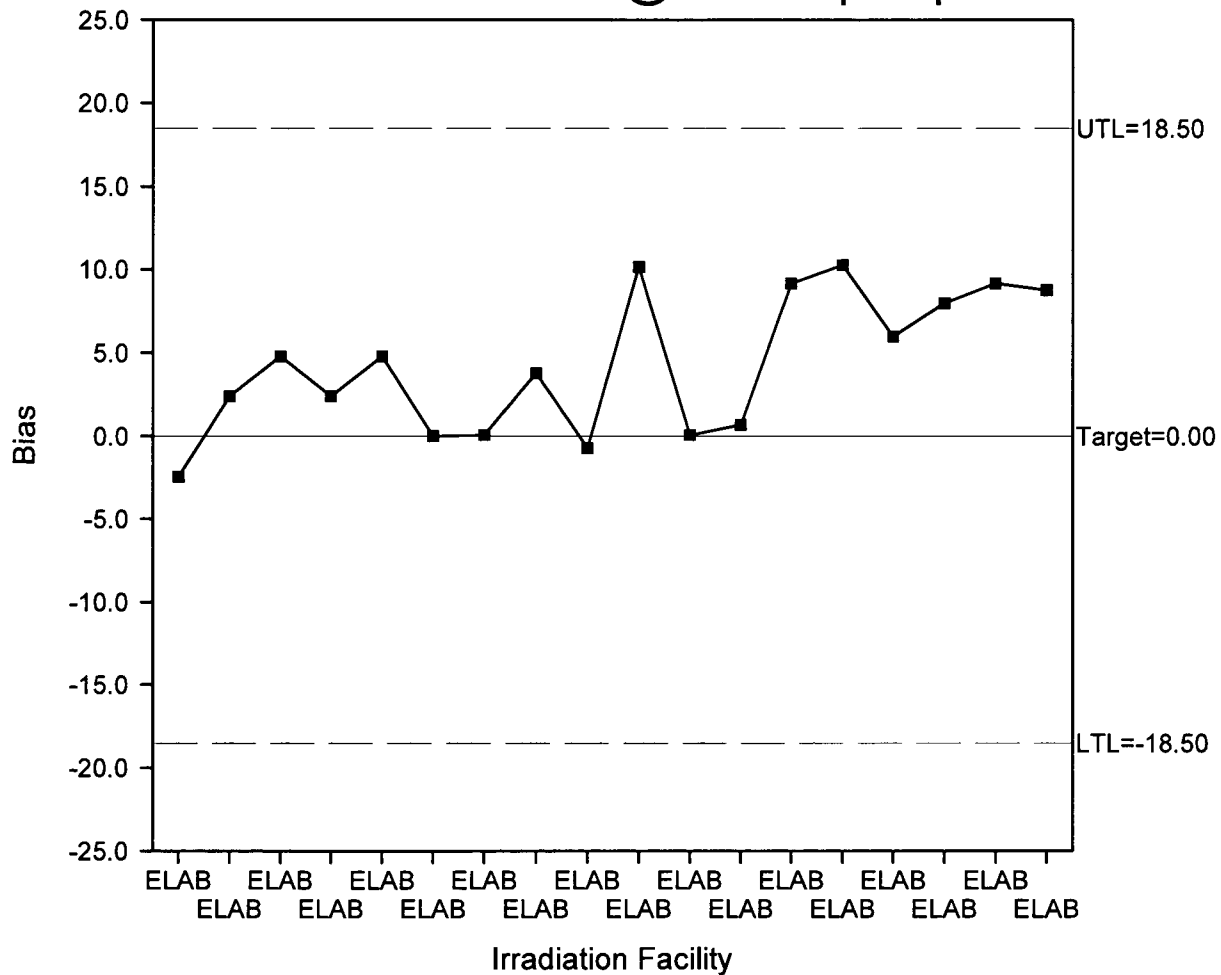
APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
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FIGURE 3

Process Statistics

Total:	18
Rows:	All
Mean:	4.317
Median:	4.300
Std Dev:	4.203
Act % out of TL:	0.00

808 Cat II Individual Bias @ the Deep Depth Dose



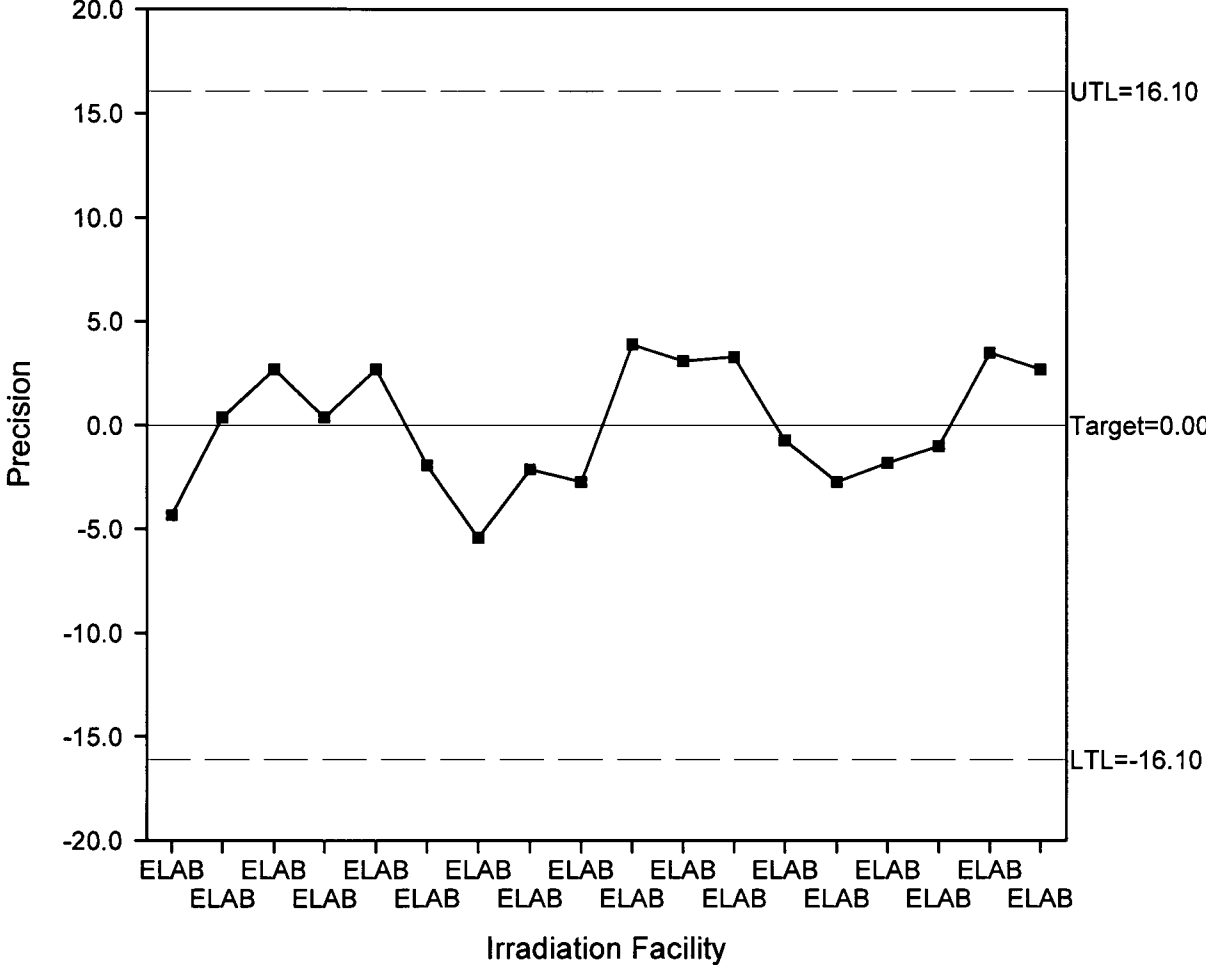
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 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
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FIGURE 4

Process Statistics

Total:	18
Rows:	All
Mean:	0.006
Median:	-0.150
Std Dev:	2.922
Act % out of TL:	0.00

808 Cat II Precision @ the Shallow Depth Dose



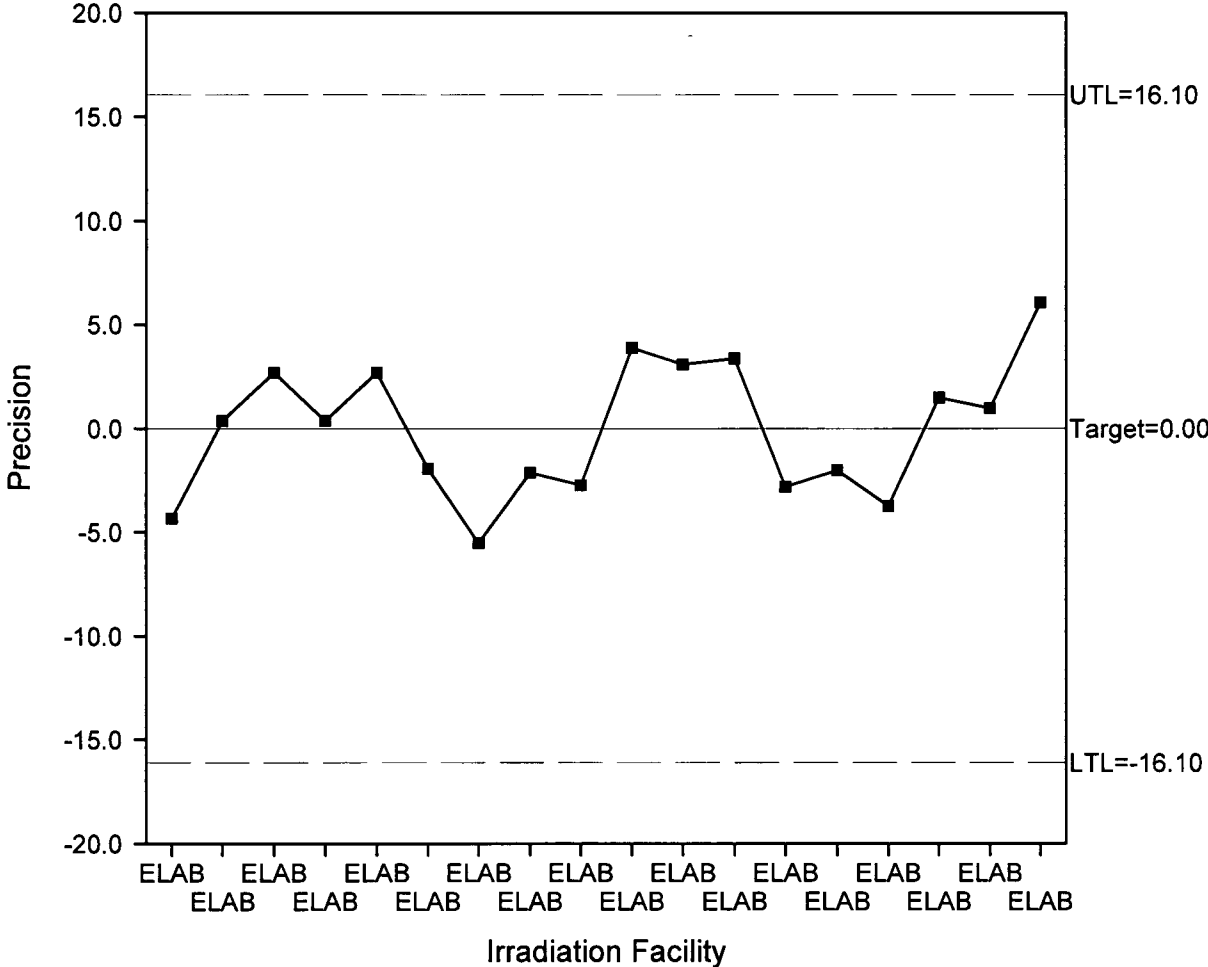
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 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
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FIGURE 5

Process Statistics

Total:	18
Rows:	All
Mean:	0.011
Median:	0.400
Std Dev:	3.266
Act % out of TL:	0.00

808 Cat II Precision @ the Eye Depth Dose

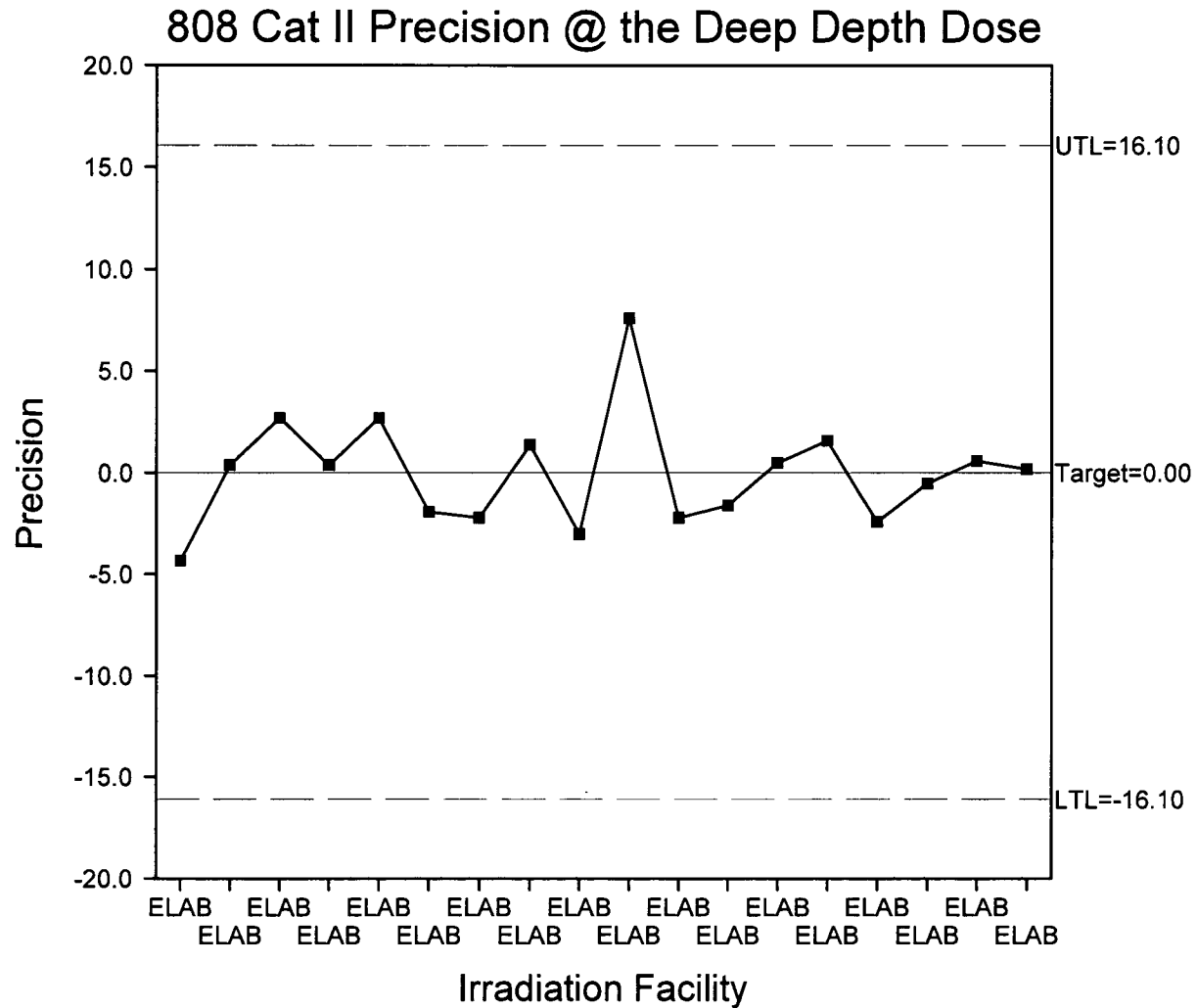


APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 January-June 2006

FIGURE 6

Process Statistics

Total:	18
Rows:	All
Mean:	-0.000
Median:	0.300
Std Dev:	2.735
Act % out of TL:	0.00



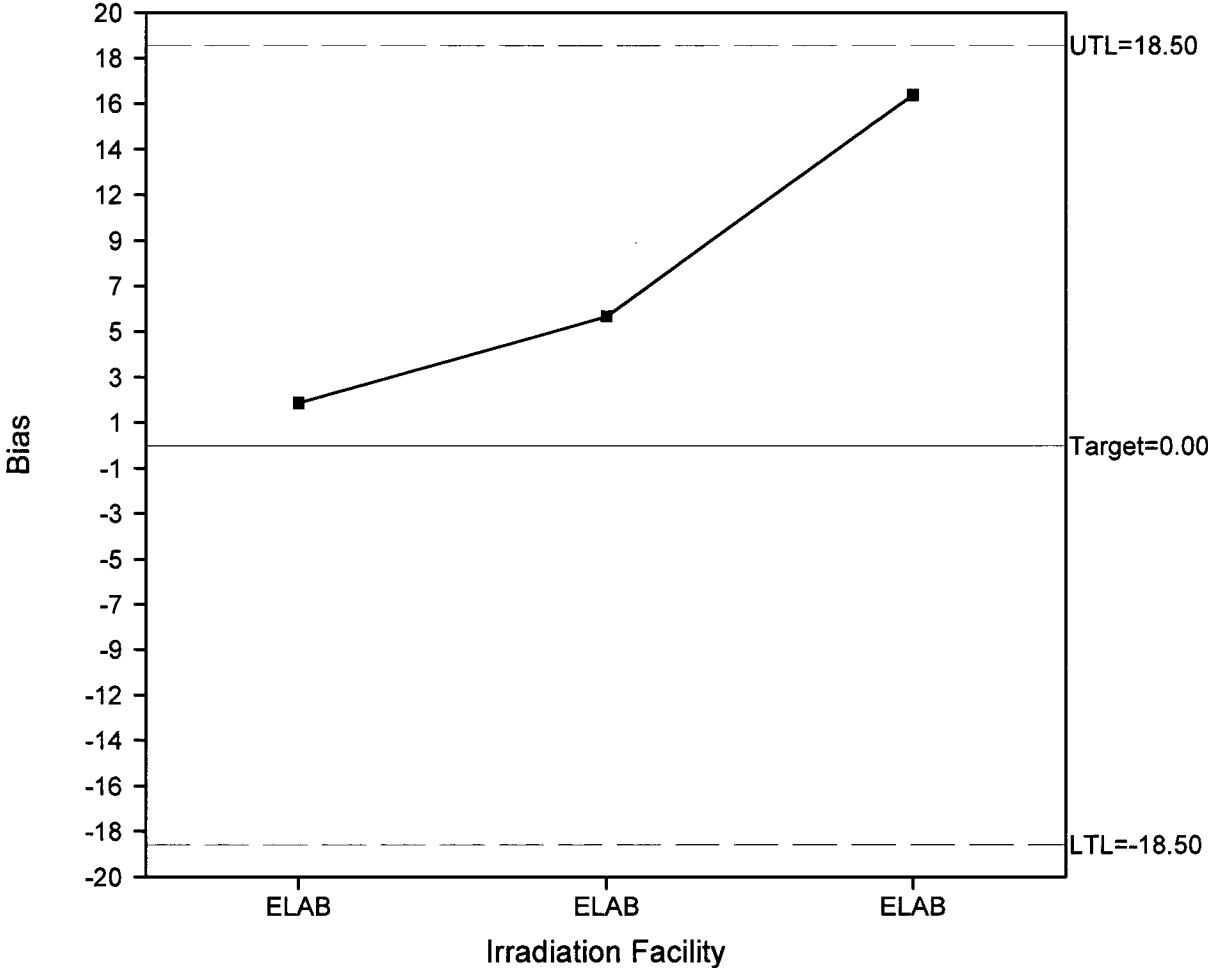
APPENDIX A
QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
January-June 2006

FIGURE 7

Process Statistics

Total:	3
Rows:	All
Mean:	8.067
Median:	6.000
Std Dev:	7.322
Act % out of TL:	0.00

808 Cat II Mean Bias @ the Shallow Depth Dose

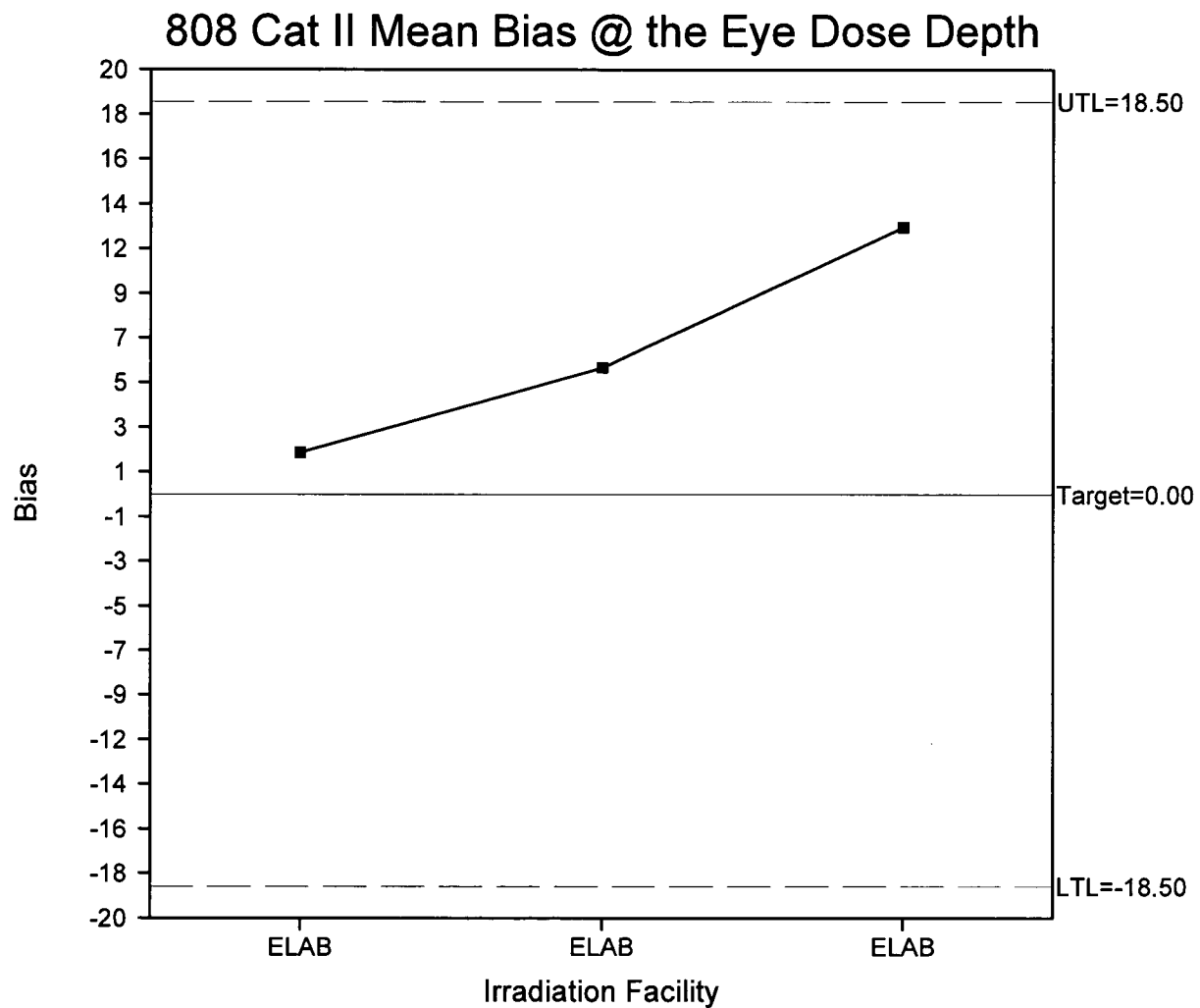


APPENDIX A
QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
January-June 2006

FIGURE 8

Process Statistics

Total:	3
Rows:	All
Mean:	6.867
Median:	6.000
Std Dev:	5.353
Act % out of TL:	0.00

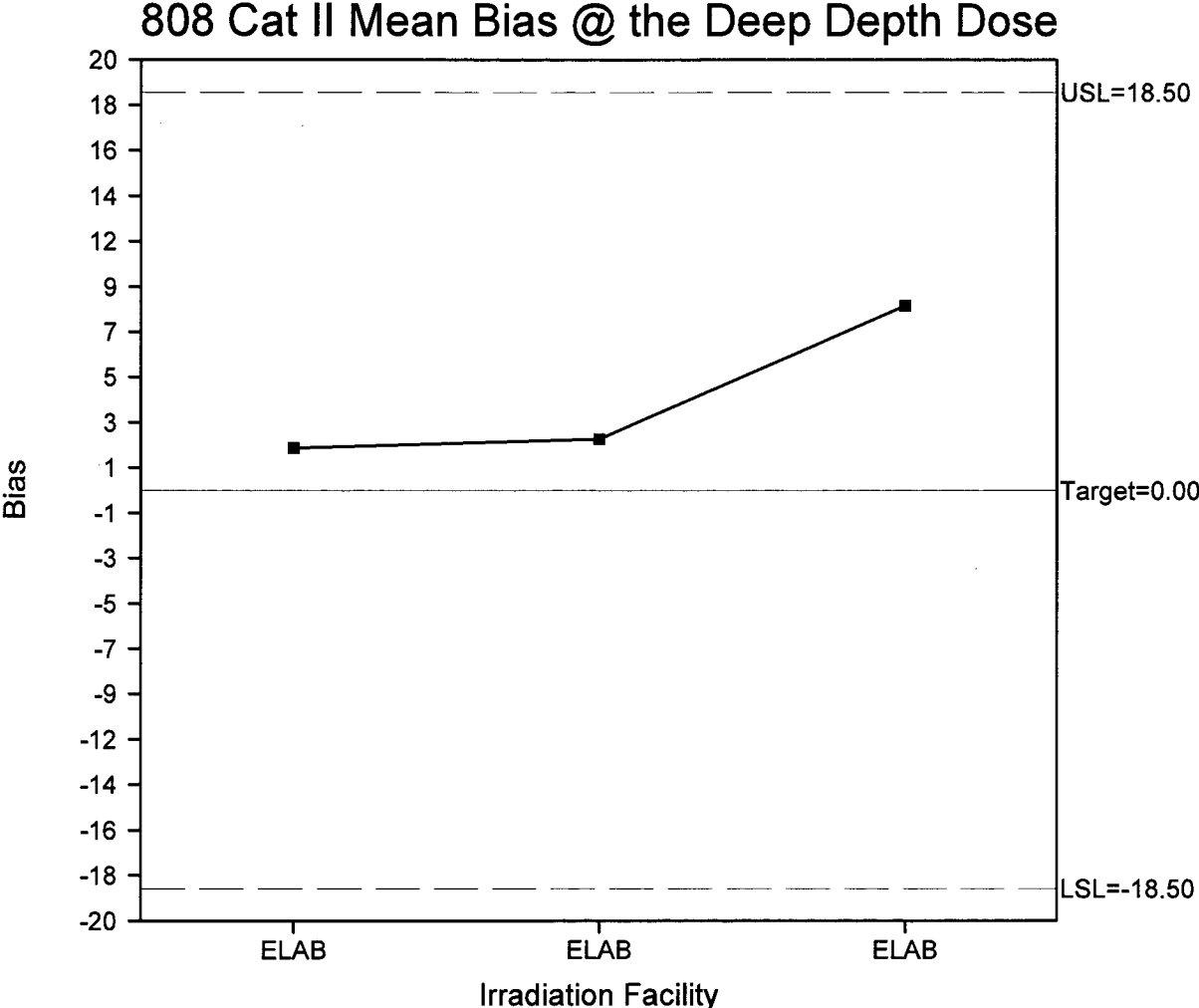


APPENDIX A
QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
January-June 2006

FIGURE 9

Process Statistics

Total:	3
Rows:	All
Mean:	4.333
Median:	2.400
Std Dev:	3.700
Act % out of TL:	0.00

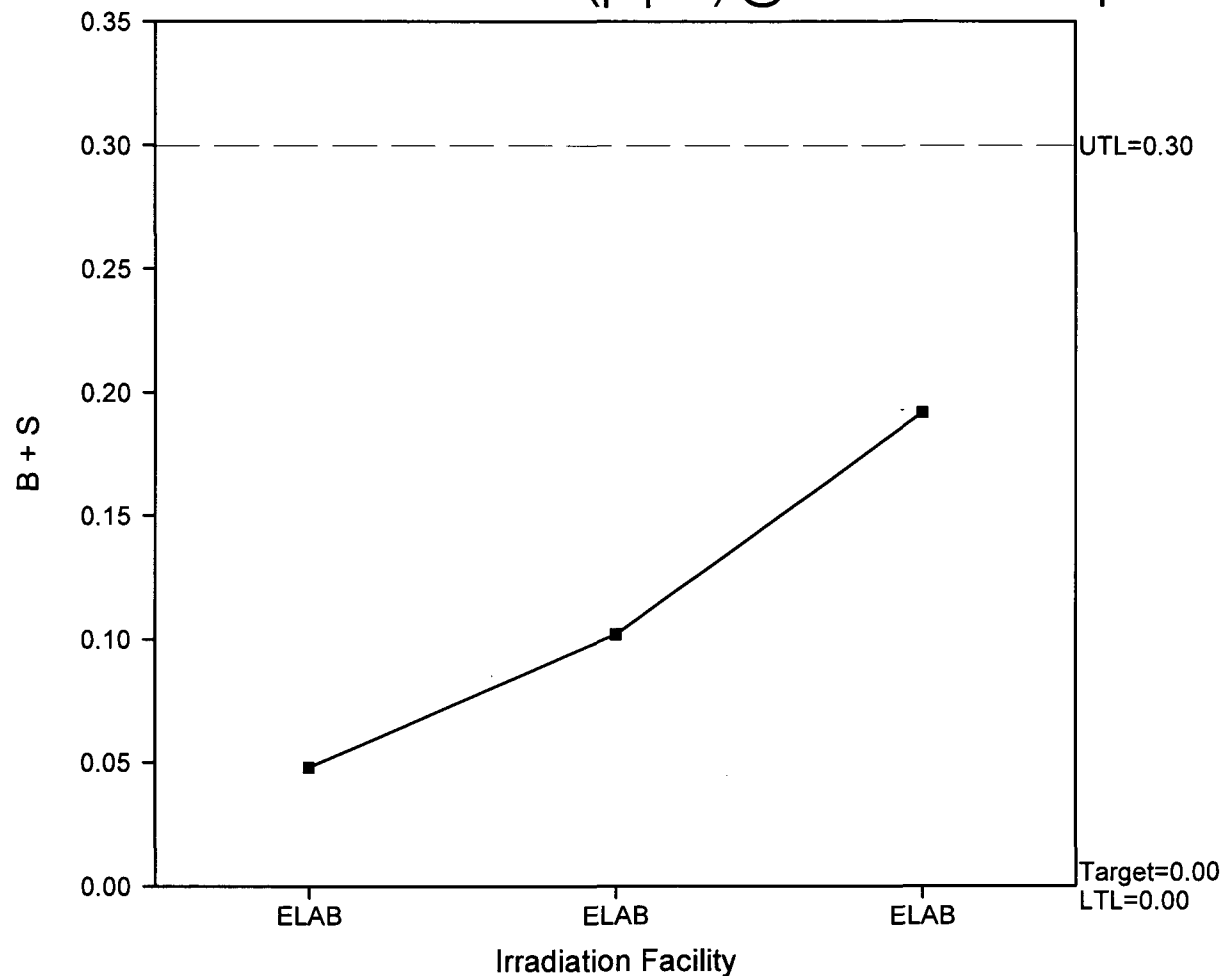


APPENDIX A
QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
January-June 2006

FIGURE 10

808 Cat II Mean Bias+Std Dev. ($|B|+S$) @ the Shallow Depth Dose

Total:	3
Rows:	All
Mean:	0.114
Median:	0.102
Std Dev:	0.073
Act % out of TL:	0.00

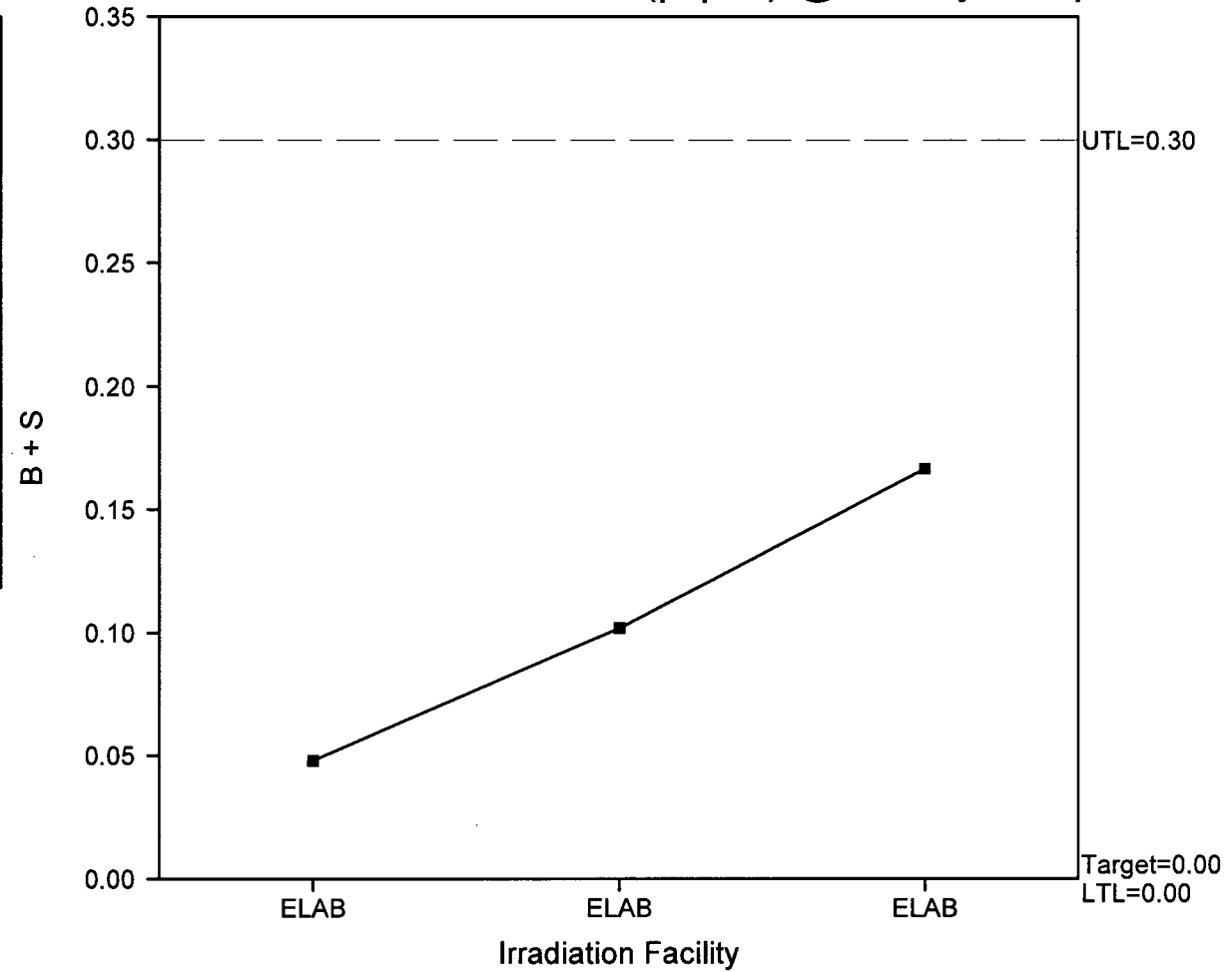


APPENDIX A
QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
January-June 2006

FIGURE 11

808 Cat II Mean Bias + Std Dev. ($|B|+S$) @ the Eye Depth Dose

Total:	3
Rows:	All
Mean:	0.106
Median:	0.102
Std Dev:	0.060
Act % out of TL:	0.00

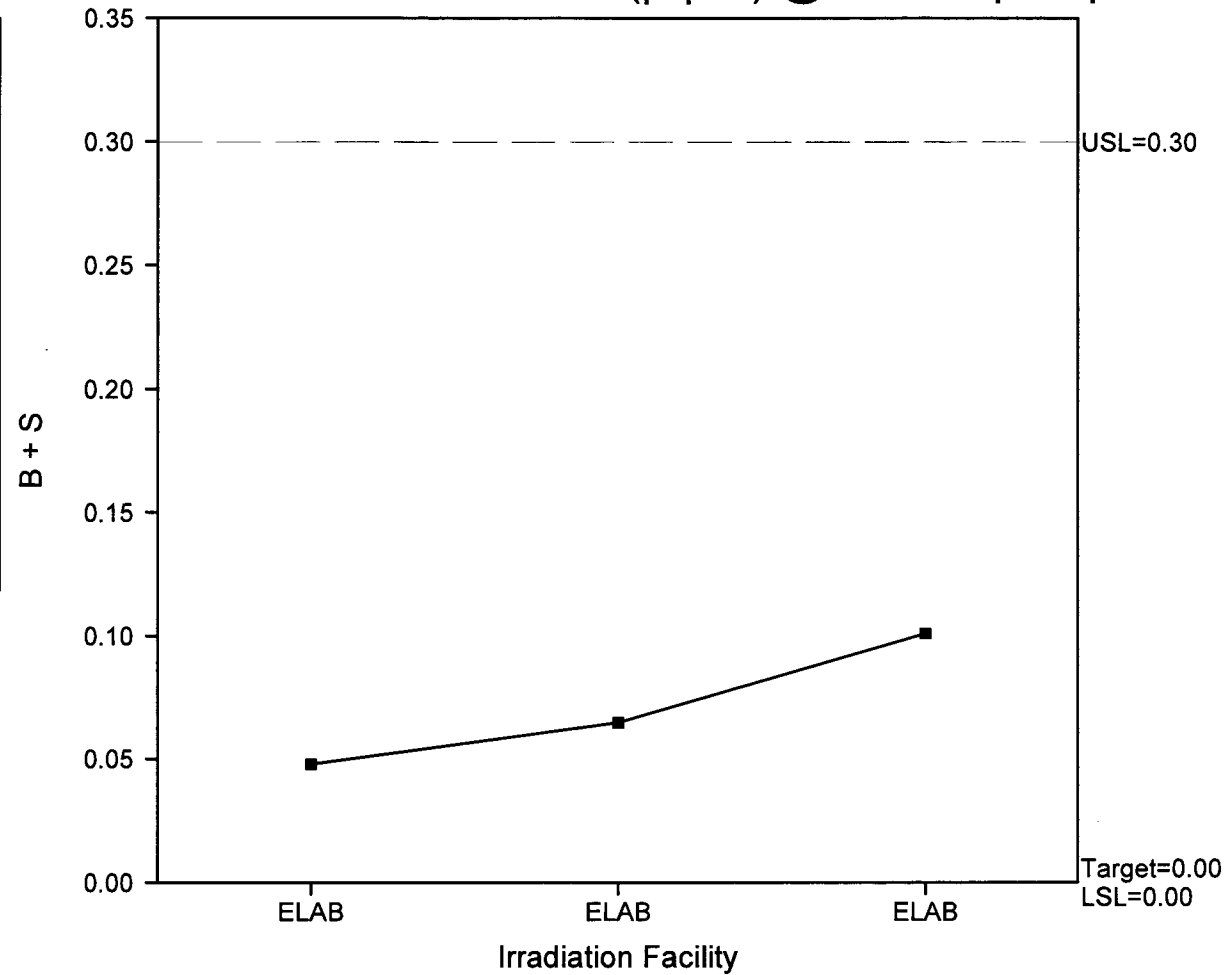


APPENDIX A
QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
January-June 2006

FIGURE 12

808 Cat II Mean Bias + Std Dev. ($|B|+S$) @ the Deep Depth Dose

Total:	3
Rows:	All
Mean:	0.071
Median:	0.065
Std Dev:	0.027
Act % out of TL:	0.00



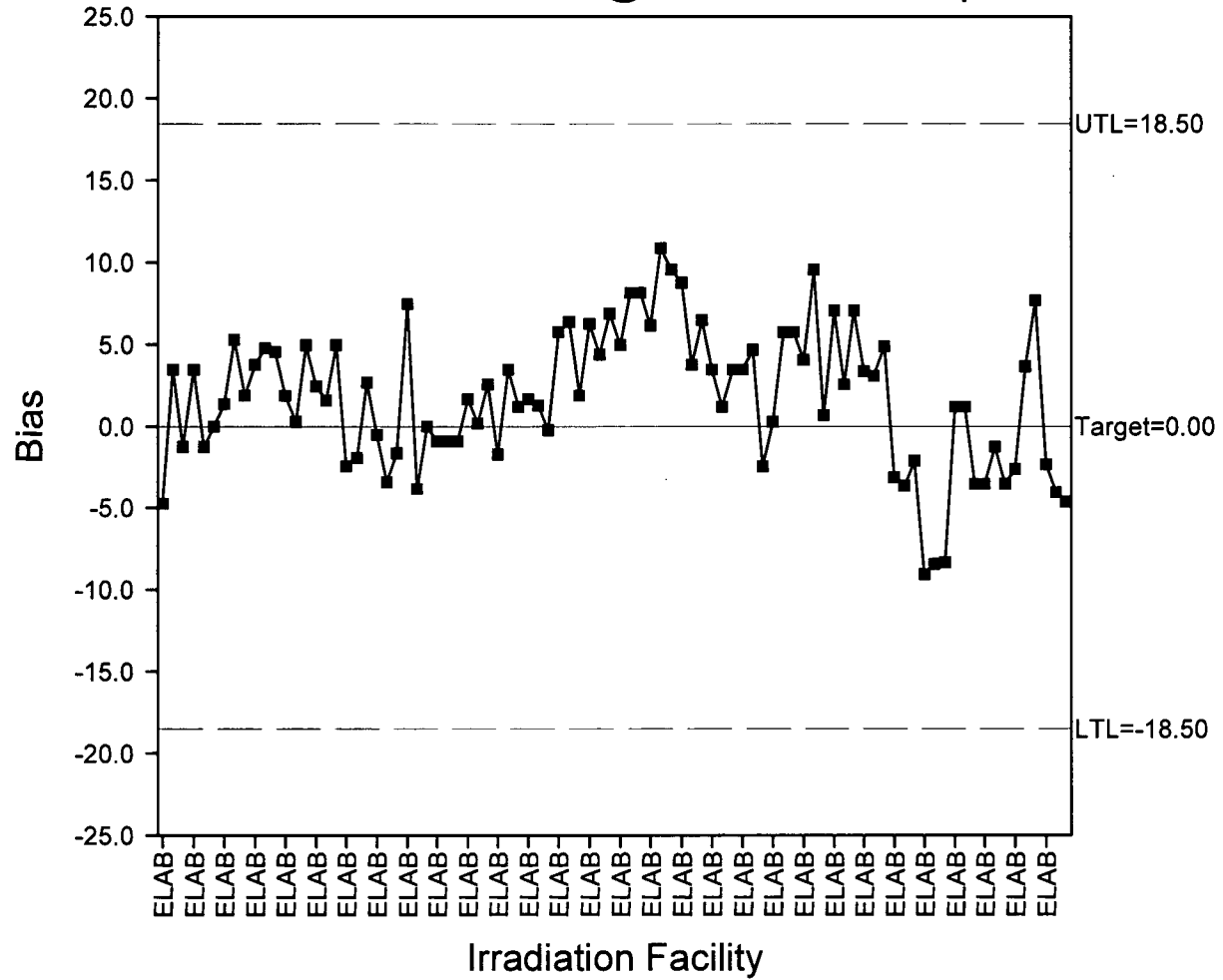
APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 January-June 2006

FIGURE 13

Process Statistics

Total:	90
Rows:	All
Mean:	1.819
Median:	1.900
Std Dev:	4.208
Act % out of TL:	0.00

814 Cat II Individual Bias @ the Shallow Depth Dose



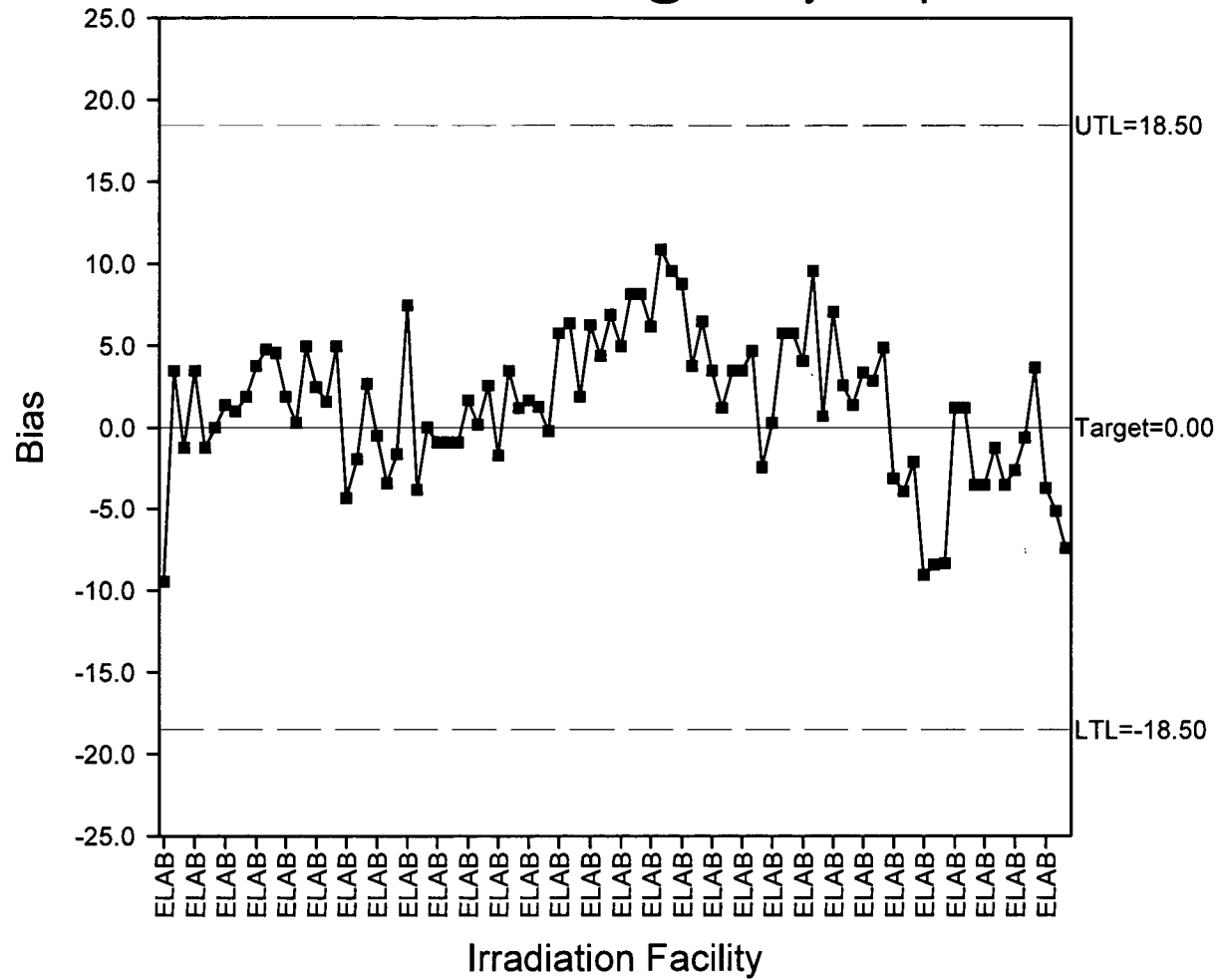
APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 January-June 2006

FIGURE 14

Process Statistics

Total:	90
Rows:	All
Mean:	1.478
Median:	1.650
Std Dev:	4.338
Act % out of TL:	0.00

814 Cat II Individual Bias @ the Eye Depth Dose



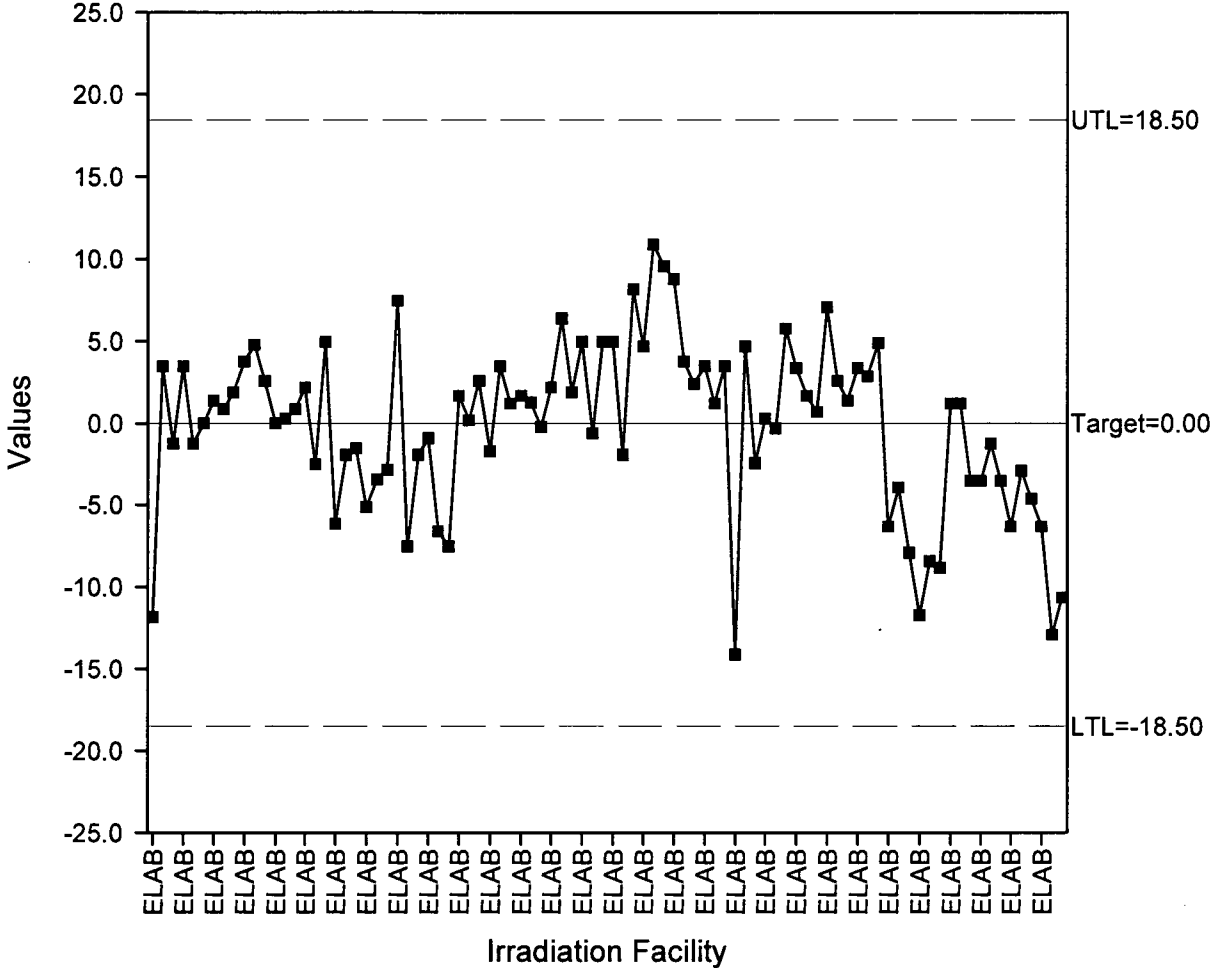
APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 January-June 2006

FIGURE 15

814 Cat II Individual Bias @ the Deep Depth Dose

Process Statistics

Total:	90
Rows:	All
Mean:	-0.128
Median:	0.900
Std Dev:	5.139
Act % out of TL:	0.00



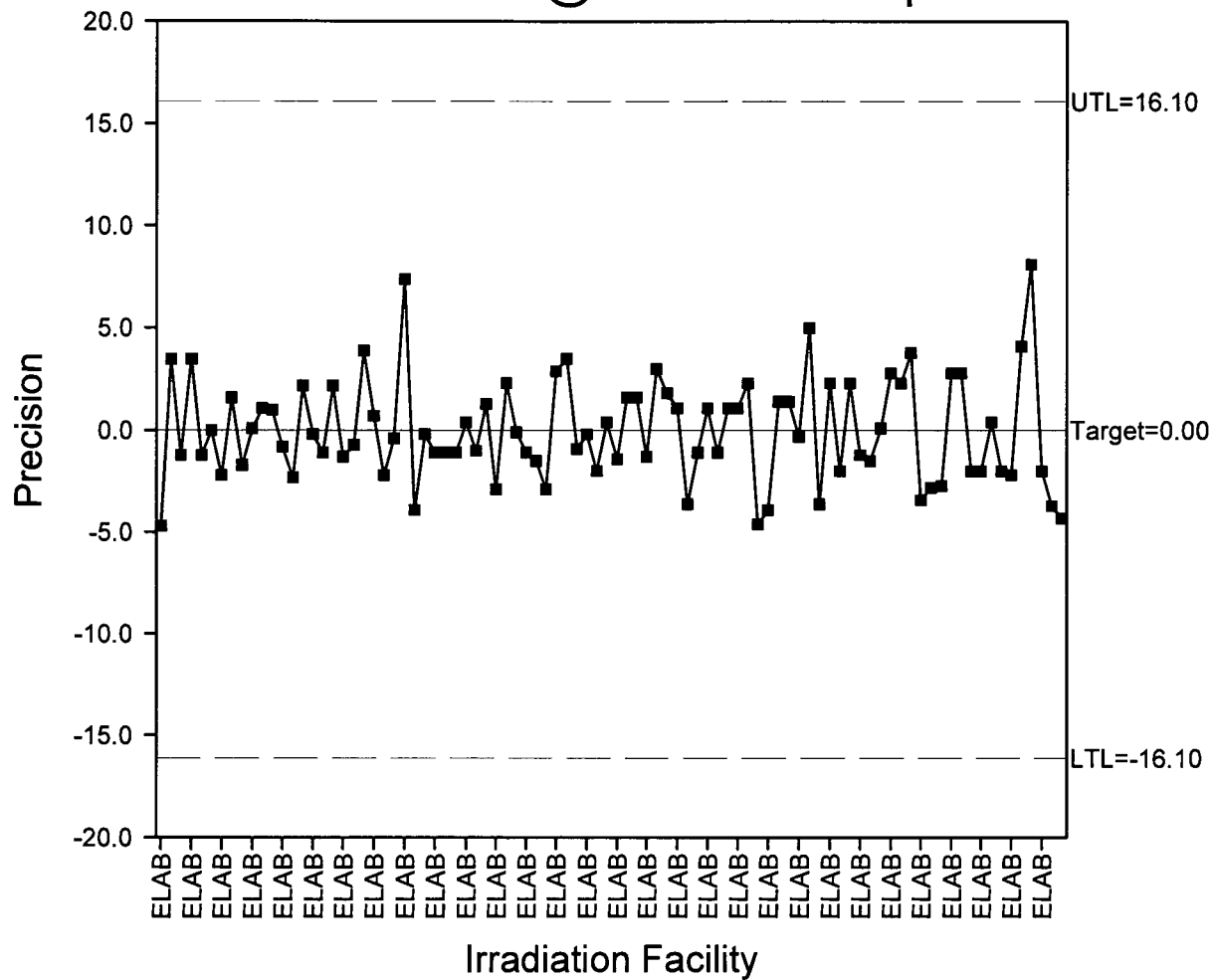
APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 January-June 2006

FIGURE 16

Process Statistics

Total:	90
Rows:	All
Mean:	-0.004
Median:	-0.250
Std Dev:	2.549
Act % out of TL:	0.00

814 Cat II Precision @ the Shallow Depth Dose

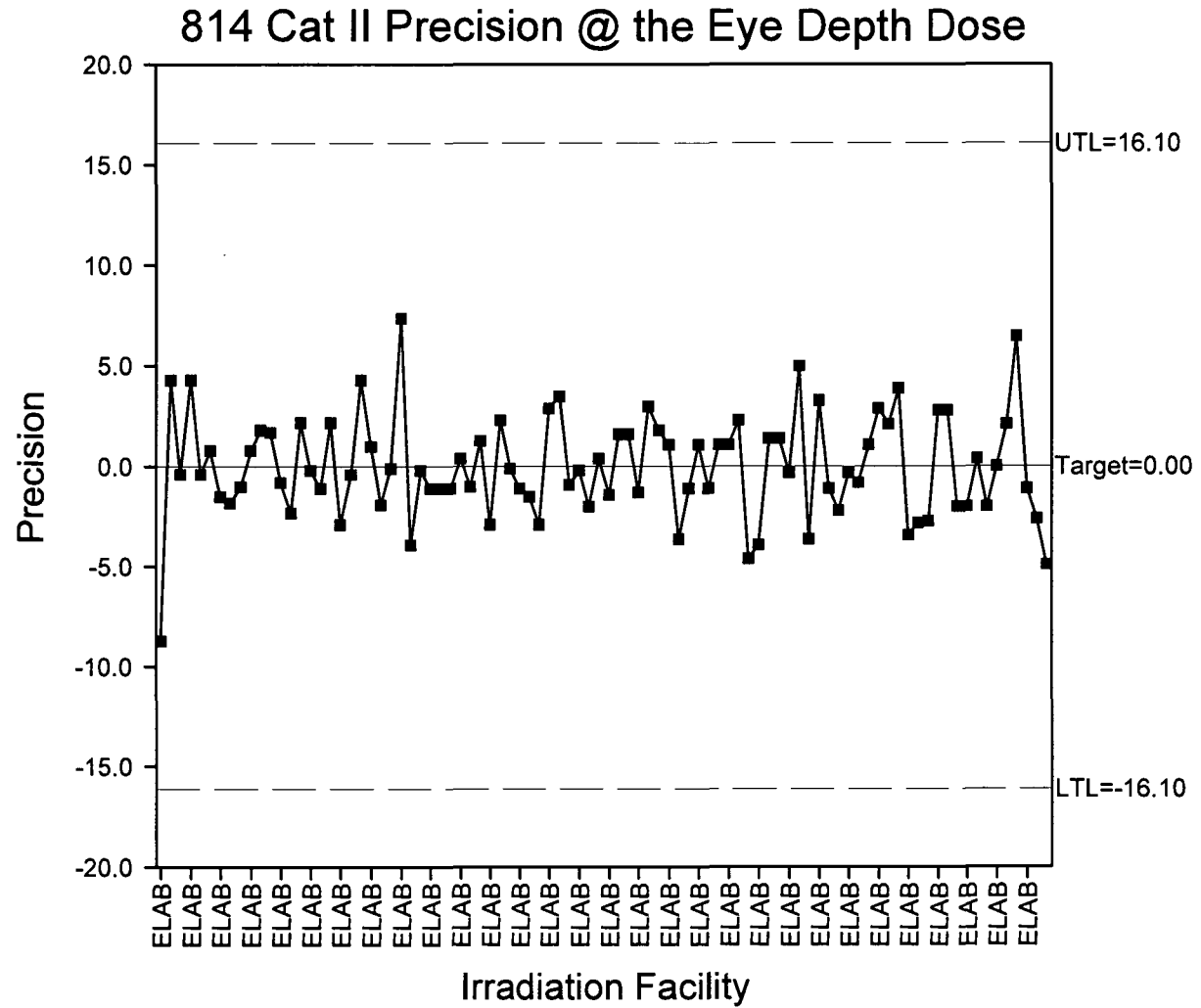


APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 January-June 2006

FIGURE 17

Process Statistics

Total:	90
Rows:	All
Mean:	-0.003
Median:	-0.250
Std Dev:	2.614
Act % out of TL:	0.00

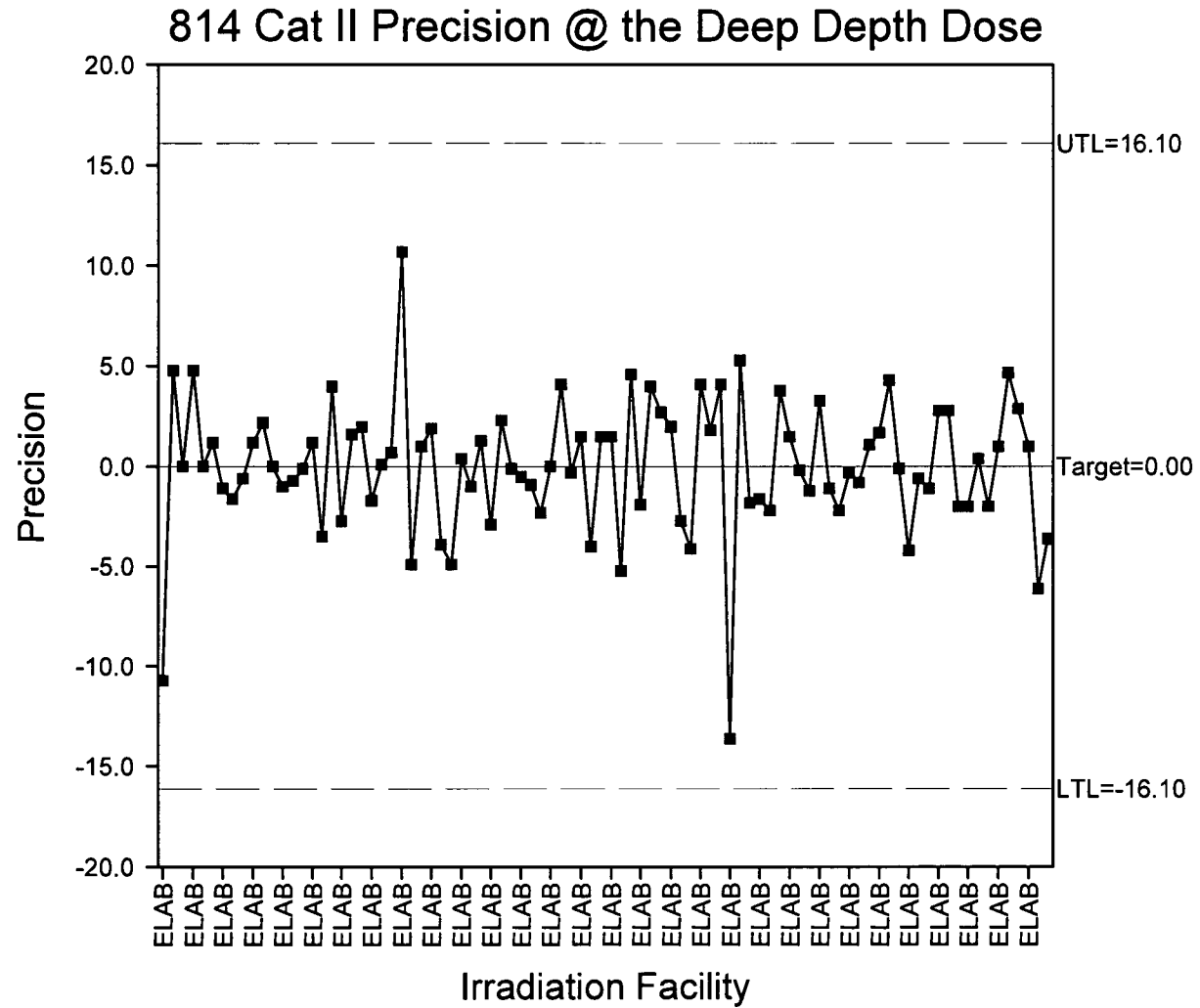


APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 January-June 2006

FIGURE 18

Process Statistics

Total:	90
Rows:	All
Mean:	-0.001
Median:	0.000
Std Dev:	3.381
Act % out of TL:	0.00



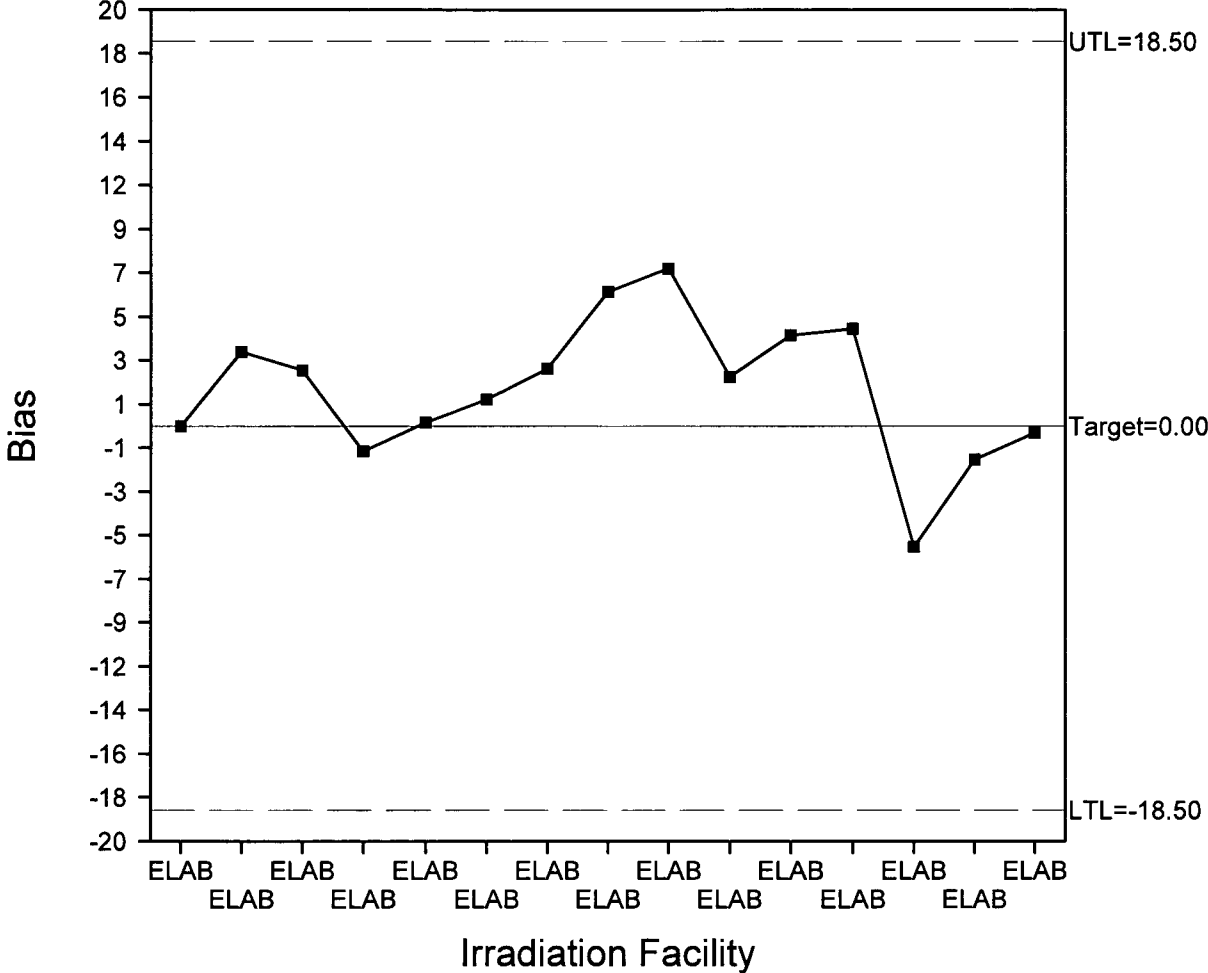
APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 January-June 2006

FIGURE 19

Process Statistics

Total:	15
Rows:	All
Mean:	1.820
Median:	2.400
Std Dev:	3.434
Act % out of TL:	0.00

814 Cat II Mean Bias @ the Shallow Depth Dose

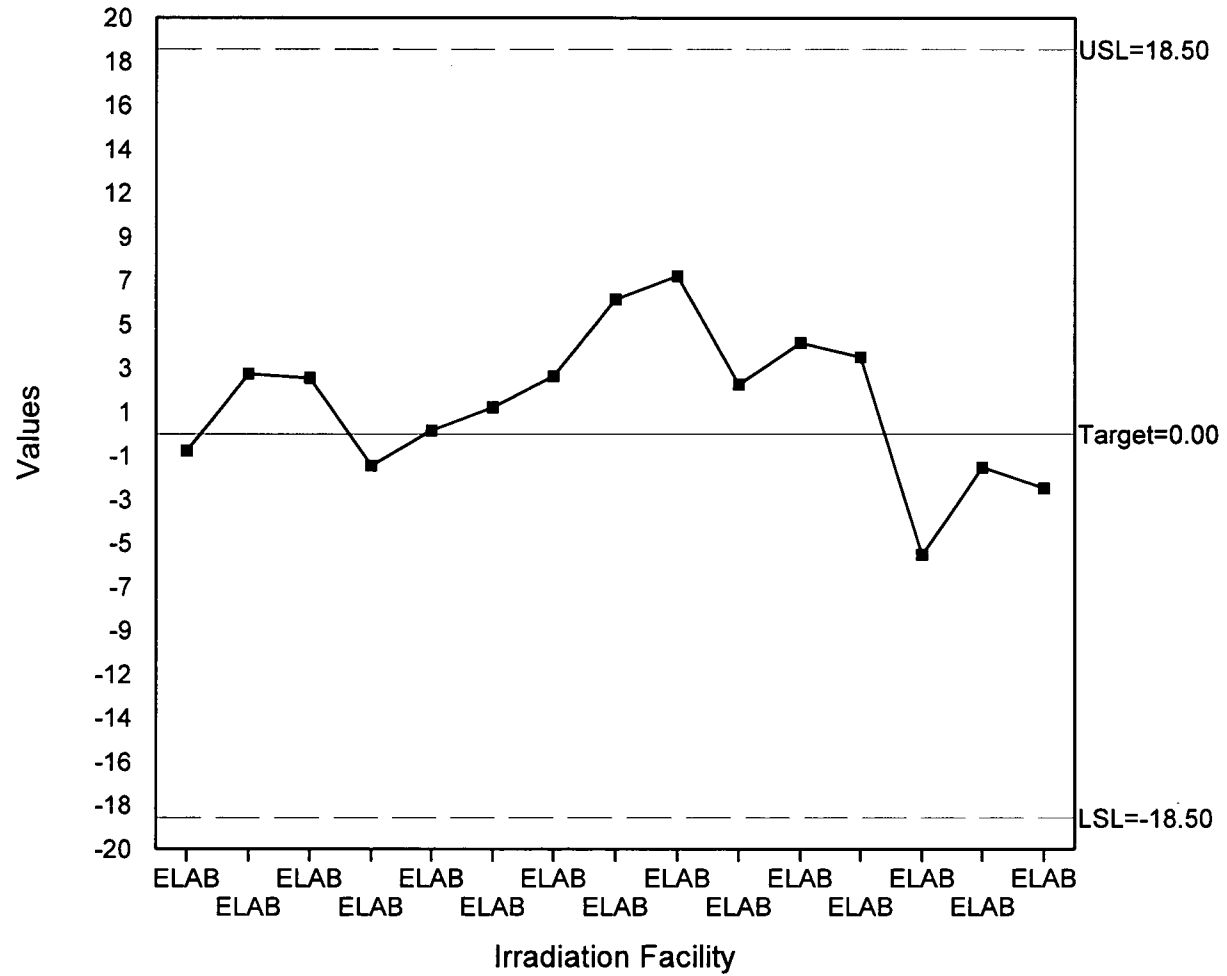


APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 January-June 2006

FIGURE 20
814 Cat II Mean Bias @ the Eye Depth Dose

Process Statistics

Total:	15
Rows:	All
Mean:	1.480
Median:	2.400
Std Dev:	3.557
Act % out of SL:	0.00



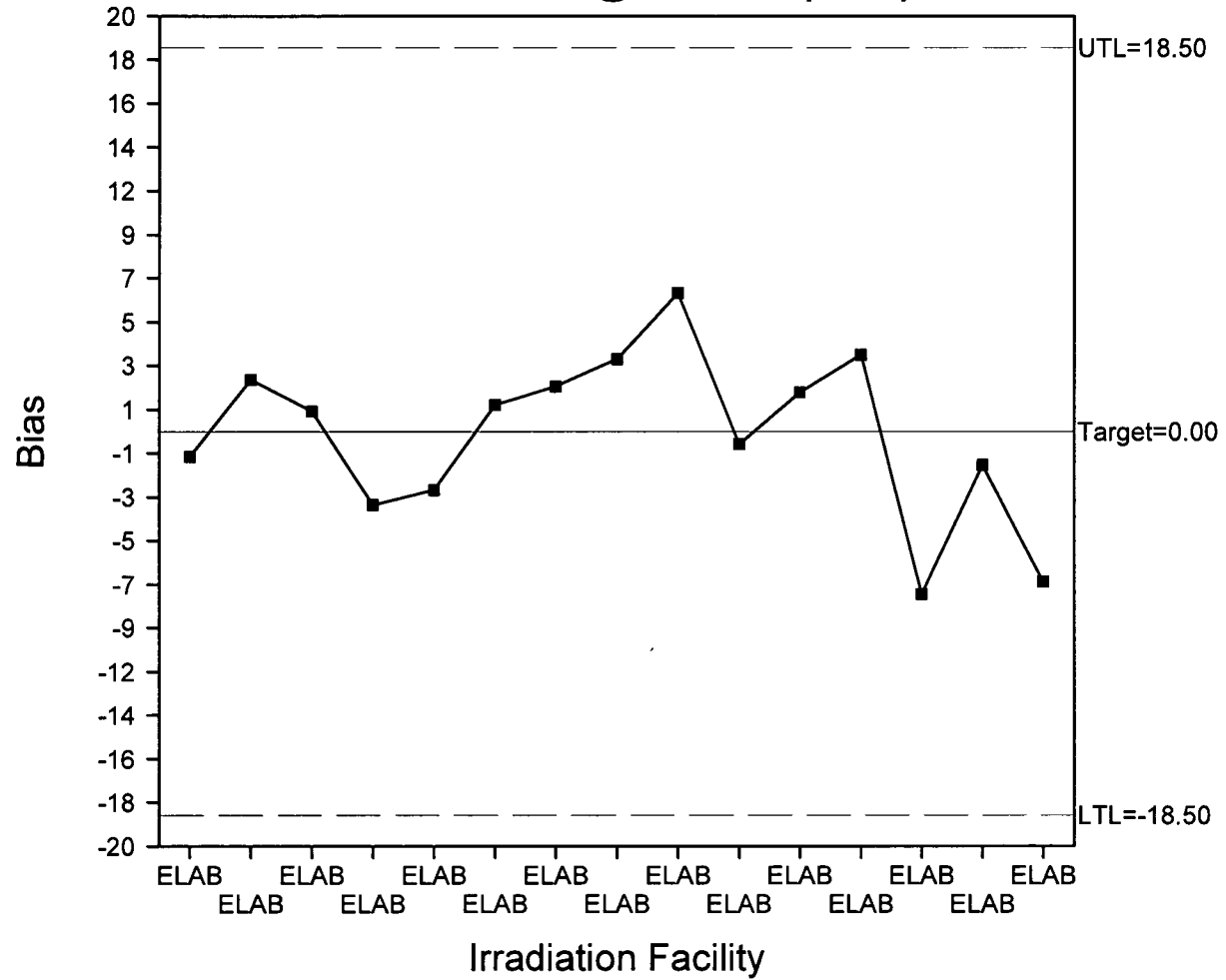
APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 January-June 2006

FIGURE 21

Process Statistics

Total:	15
Rows:	All
Mean:	-0.127
Median:	1.000
Std Dev:	4.010
Act % out of TL:	0.00

814 Cat II Mean Bias @ the Deep Depth Dose

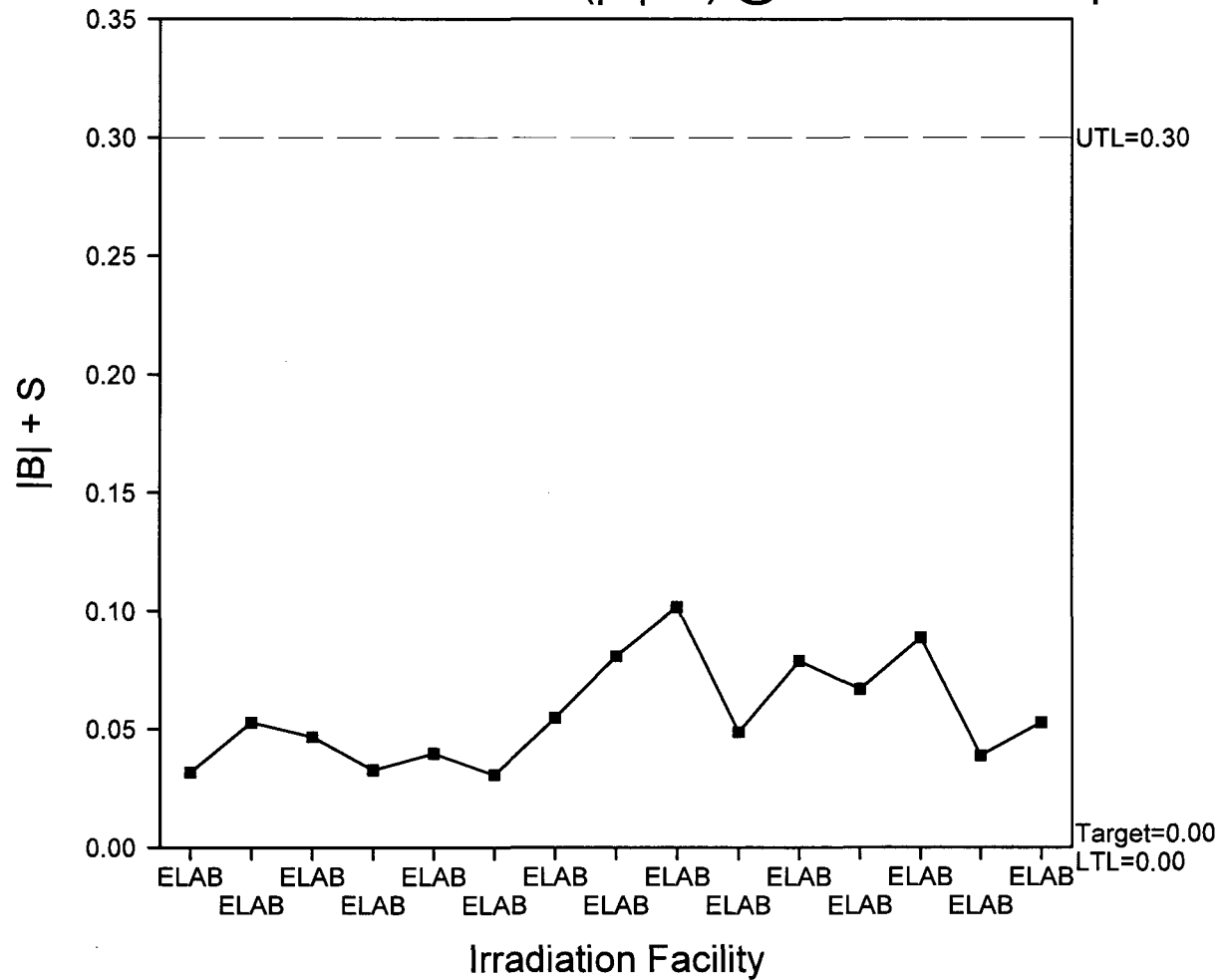


APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 January-June 2006

FIGURE 22

814 Cat II Mean Bias+Std Dev ($|B|+S$) @ the Shallow Depth Dose

Total:	15
Rows:	All
Mean:	0.057
Median:	0.053
Std Dev:	0.022
Act % out of TL:	0.00

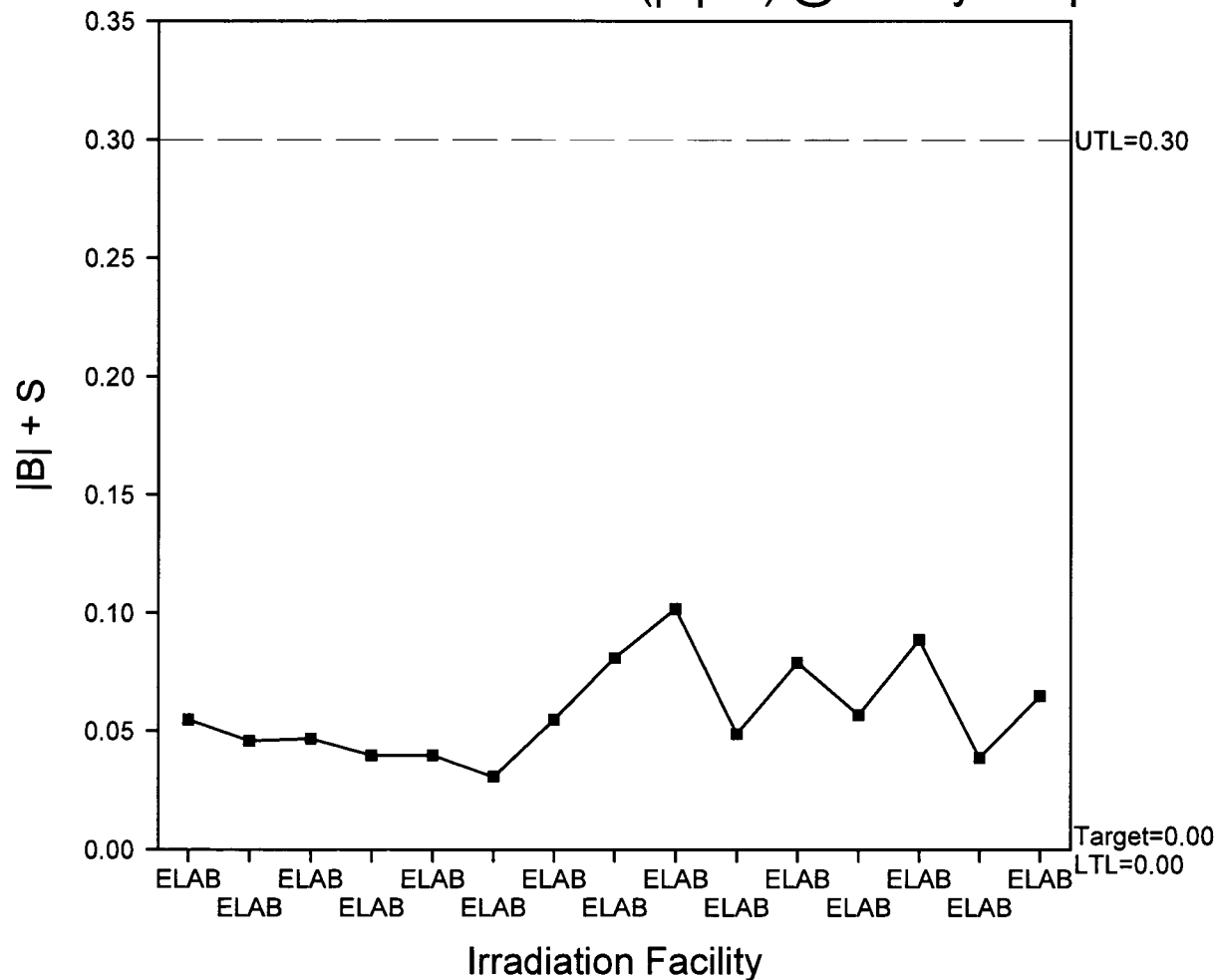


APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 January-June 2006

FIGURE 23

814 Cat II Mean Bias + Std Dev. ($|B|+S$) @ the Eye Depth Dose

Total:	15
Rows:	All
Mean:	0.058
Median:	0.055
Std Dev:	0.021
Range:	0.07
Act % out of TL:	0.00

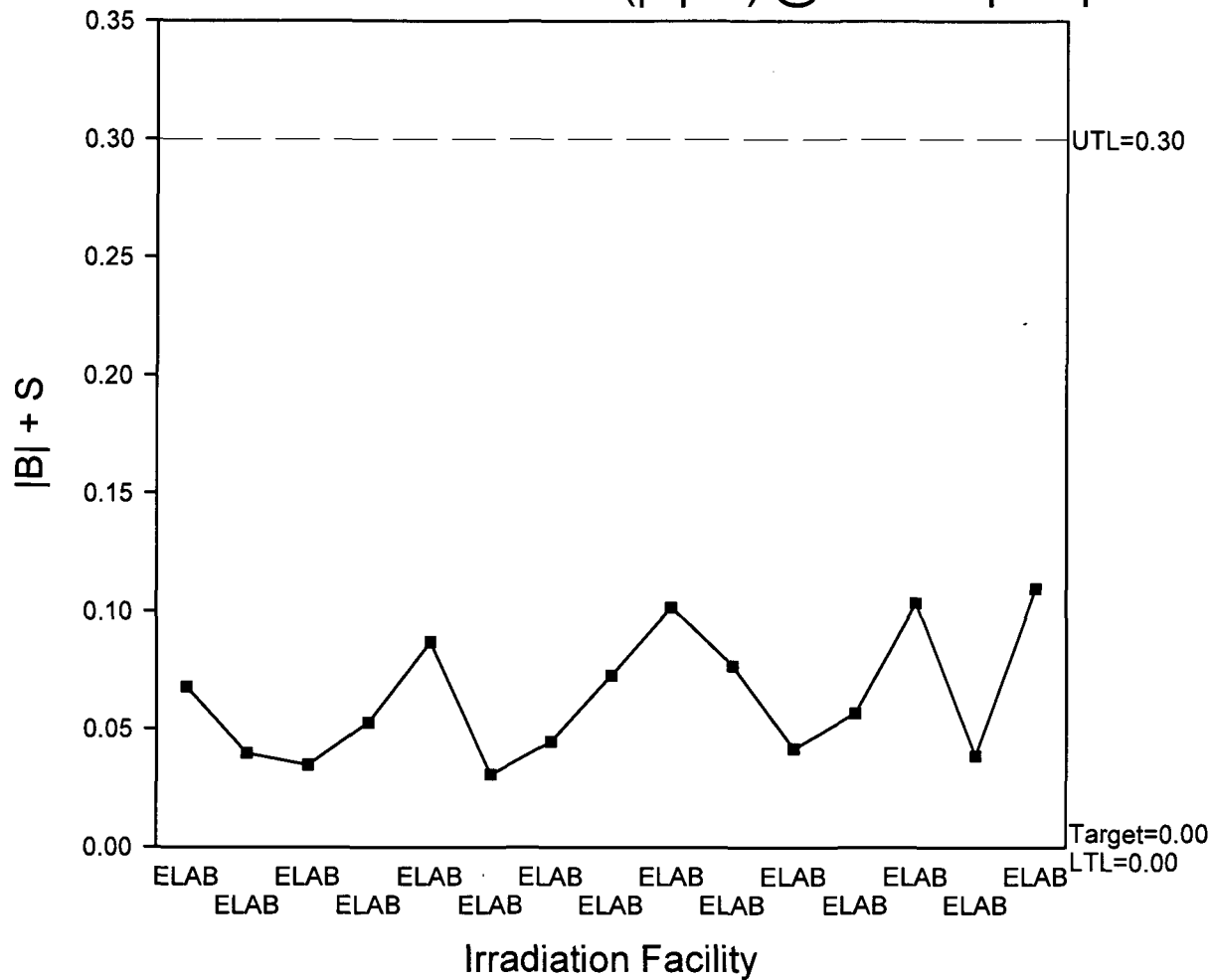


APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 January-June 2006

FIGURE 24

814 Cat II Mean Bias + Std Dev. ($|B|+S$) @ the Deep Depth Dose

Total:	15
Rows:	All
Mean:	0.064
Median:	0.057
Std Dev:	0.027
Act % out of TL:	0.00

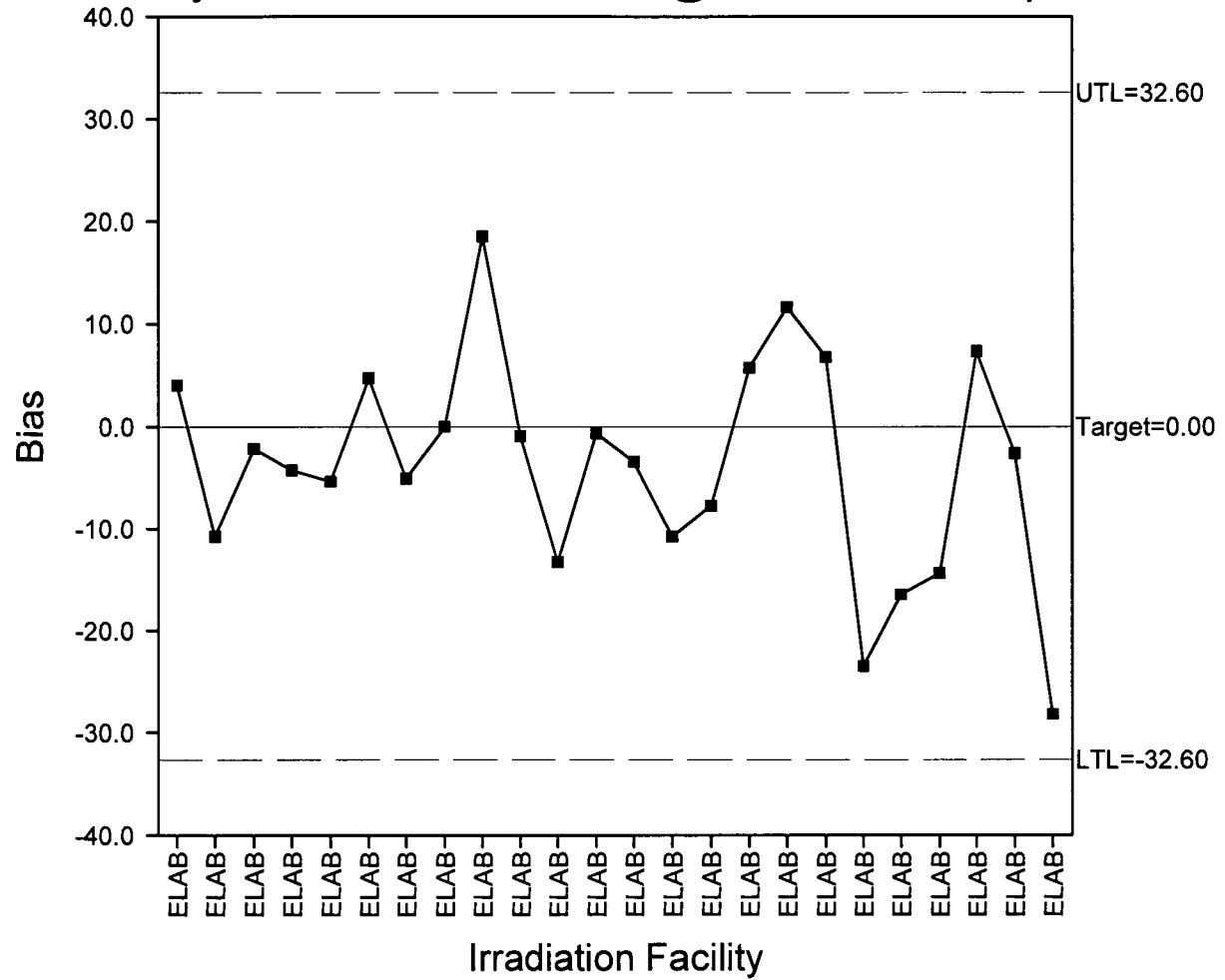


APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 January-June 2006

FIGURE 25

Extremity Cat IV Individual Bias @ the Shallow Depth Dose

Statistics	
Total:	24
Rows:	All
Mean:	-3.725
Median:	-3.000
Std Dev:	10.819
Act % out of TL:	0.00



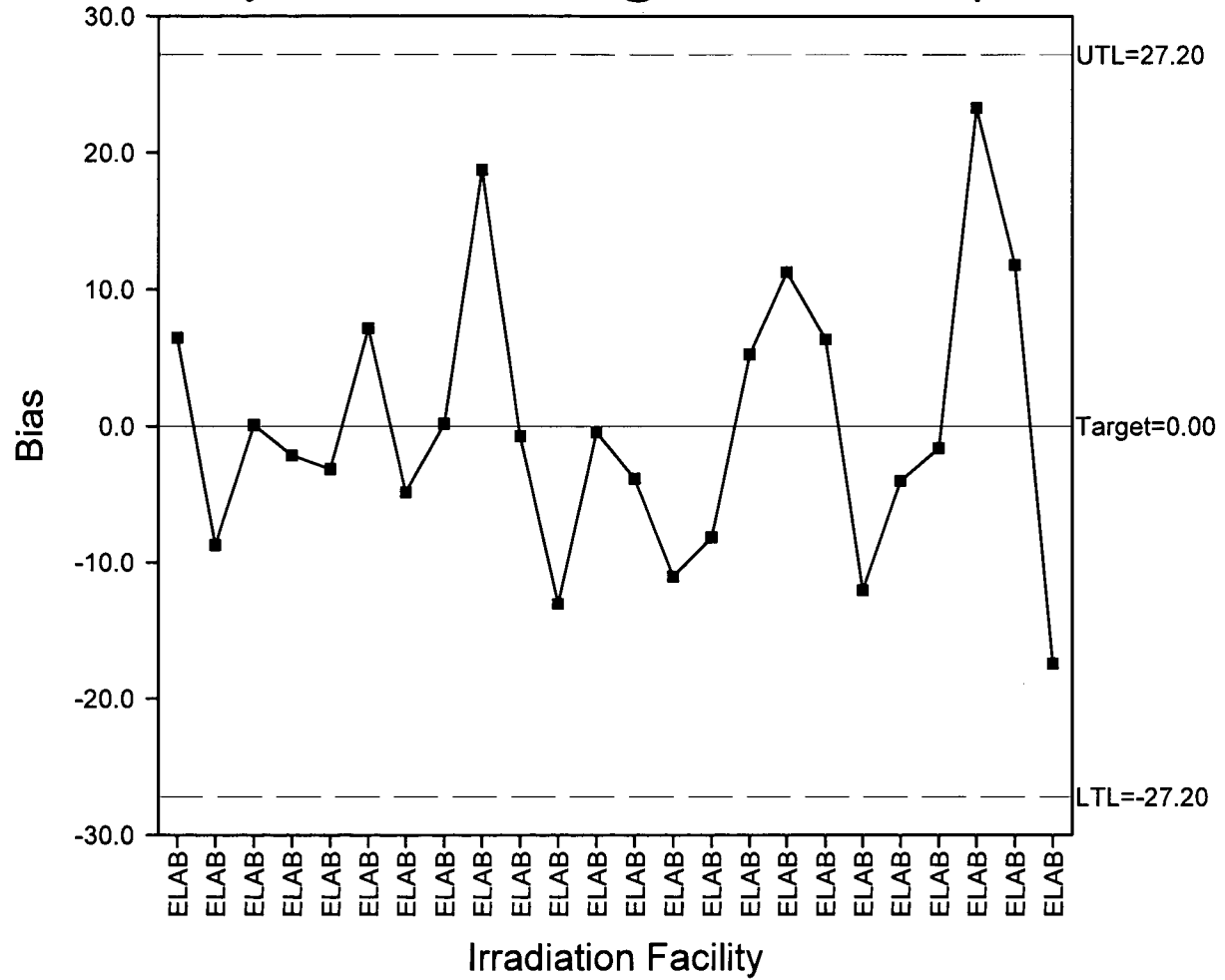
APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 January-June 2006

FIGURE 26

Process Statistics

Total:	24
Rows:	All
Mean:	0.008
Median:	-1.150
Std Dev:	9.946
Act % out of TL:	0.00

Extremity Cat IV Precision @ the Shallow Depth Dose



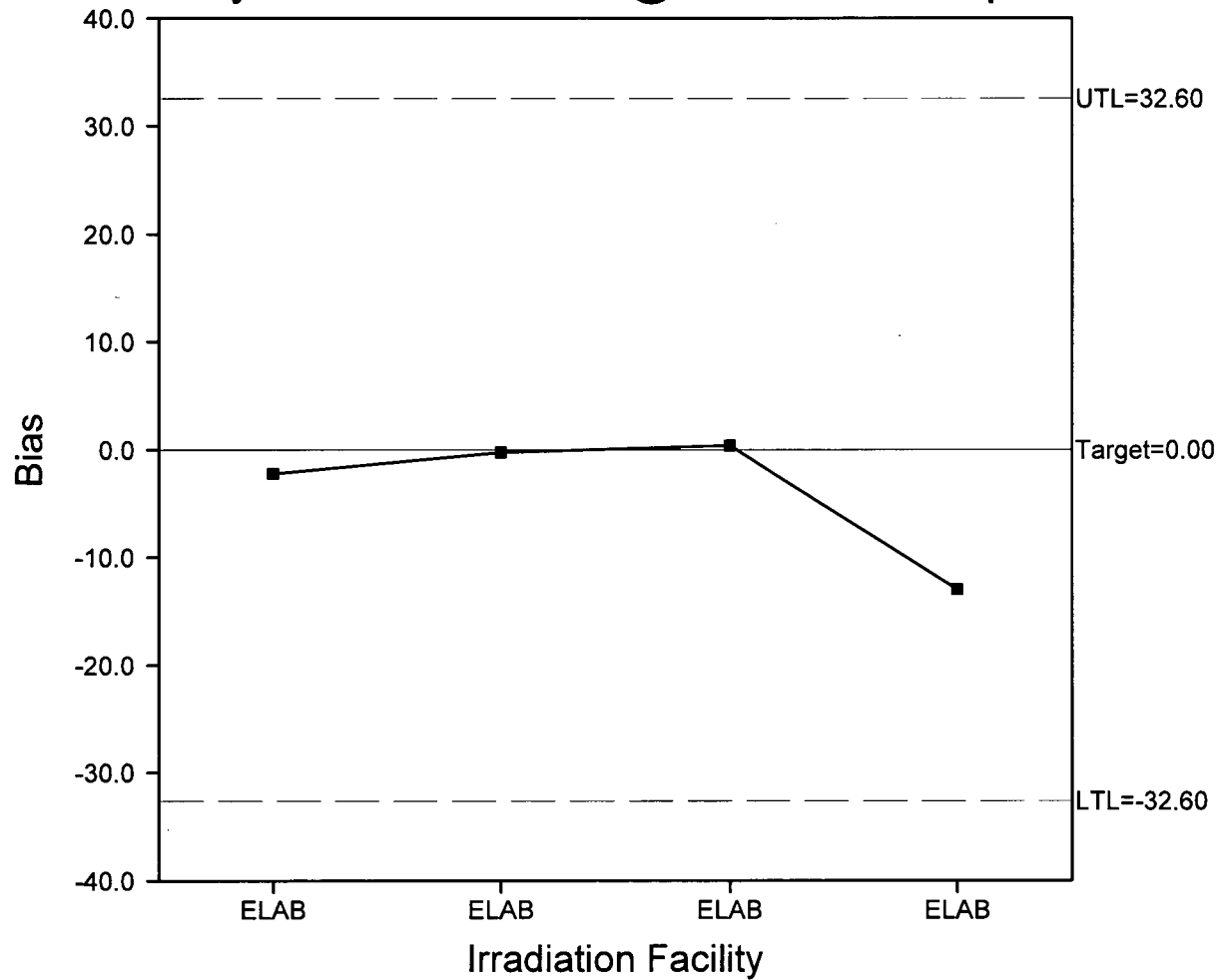
APPENDIX A
QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
January-June 2006

FIGURE 27

Process Statistics

Total:	4
Rows:	All
Mean:	-3.725
Median:	-1.200
Std Dev:	6.217
Act % out of TL:	0.00

Extremity Cat IV Mean Bias @ the Shallow Depth Dose

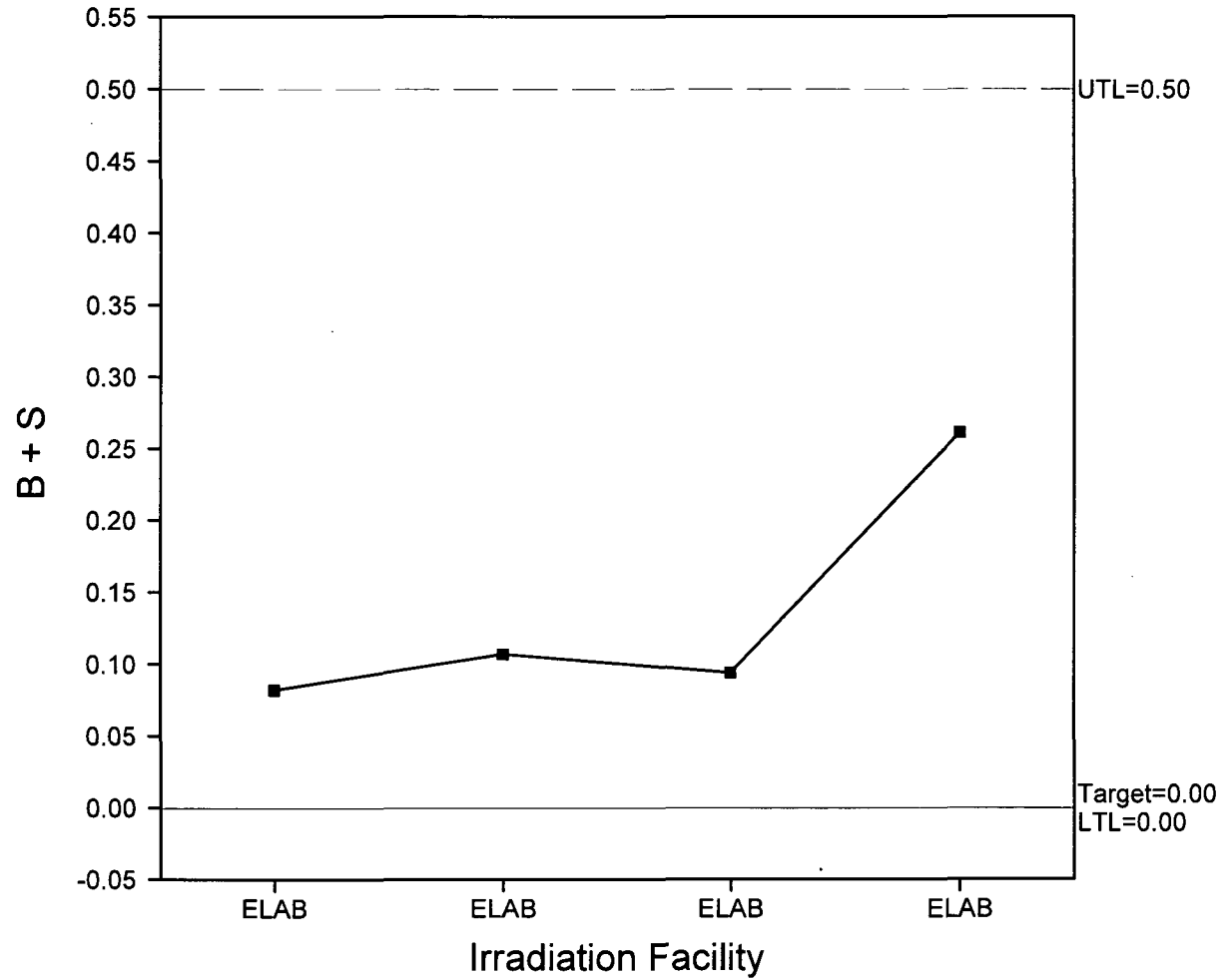


APPENDIX A
QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
January-June 2006

FIGURE 28

Extremity Cat IV Mean Bias + Std Dev. ($|B|+S$) @ the Shallow Depth Dose

Total:	4
Rows:	All
Mean:	0.136
Median:	0.100
Std Dev:	0.084
Act % out of TL:	0.00

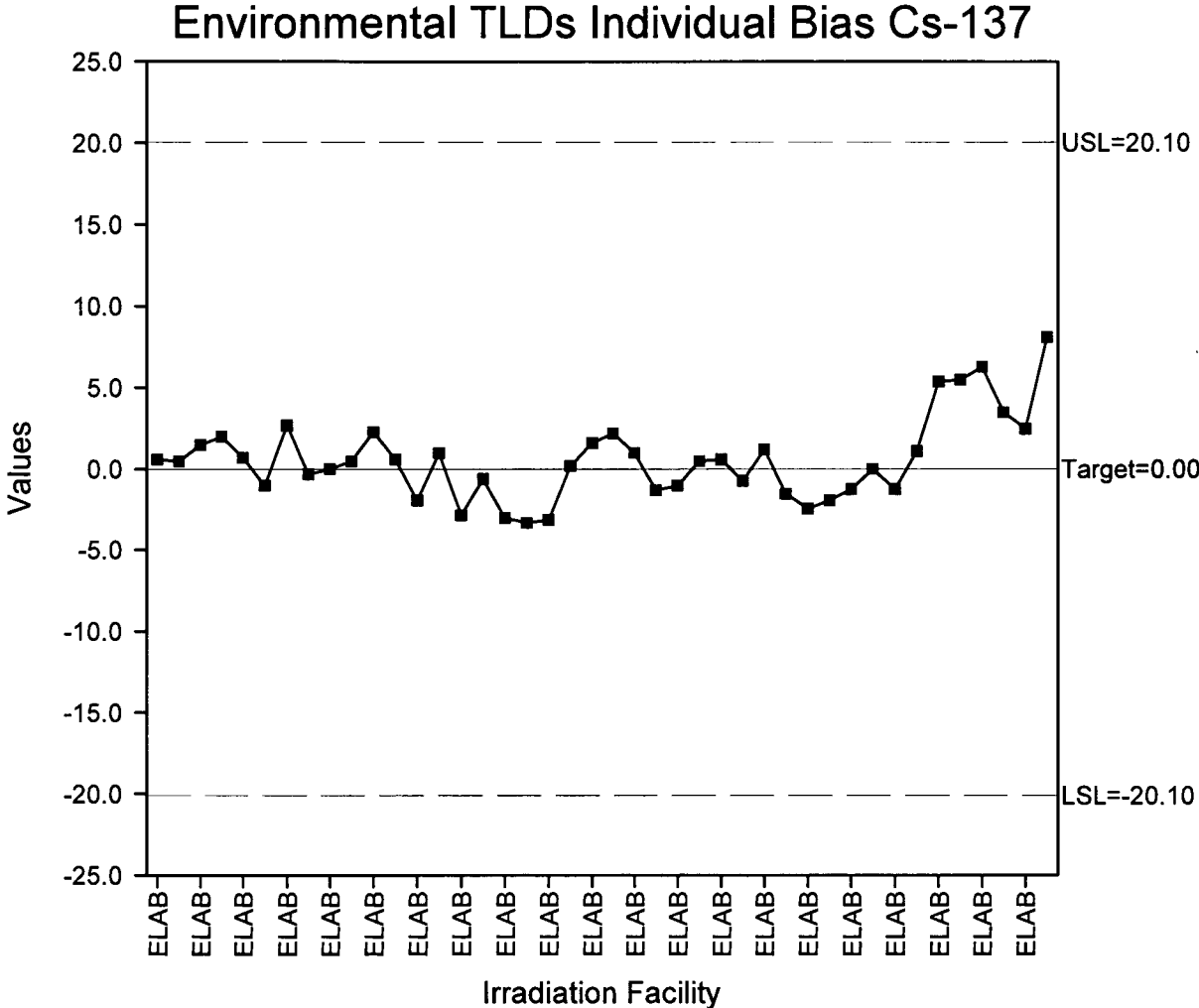


APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 January-June 2006

FIGURE 29

Process Statistics

Total:	42
Rows:	All
Mean:	0.593
Median:	0.500
Std Dev:	2.527
Act % out of SL:	0.00



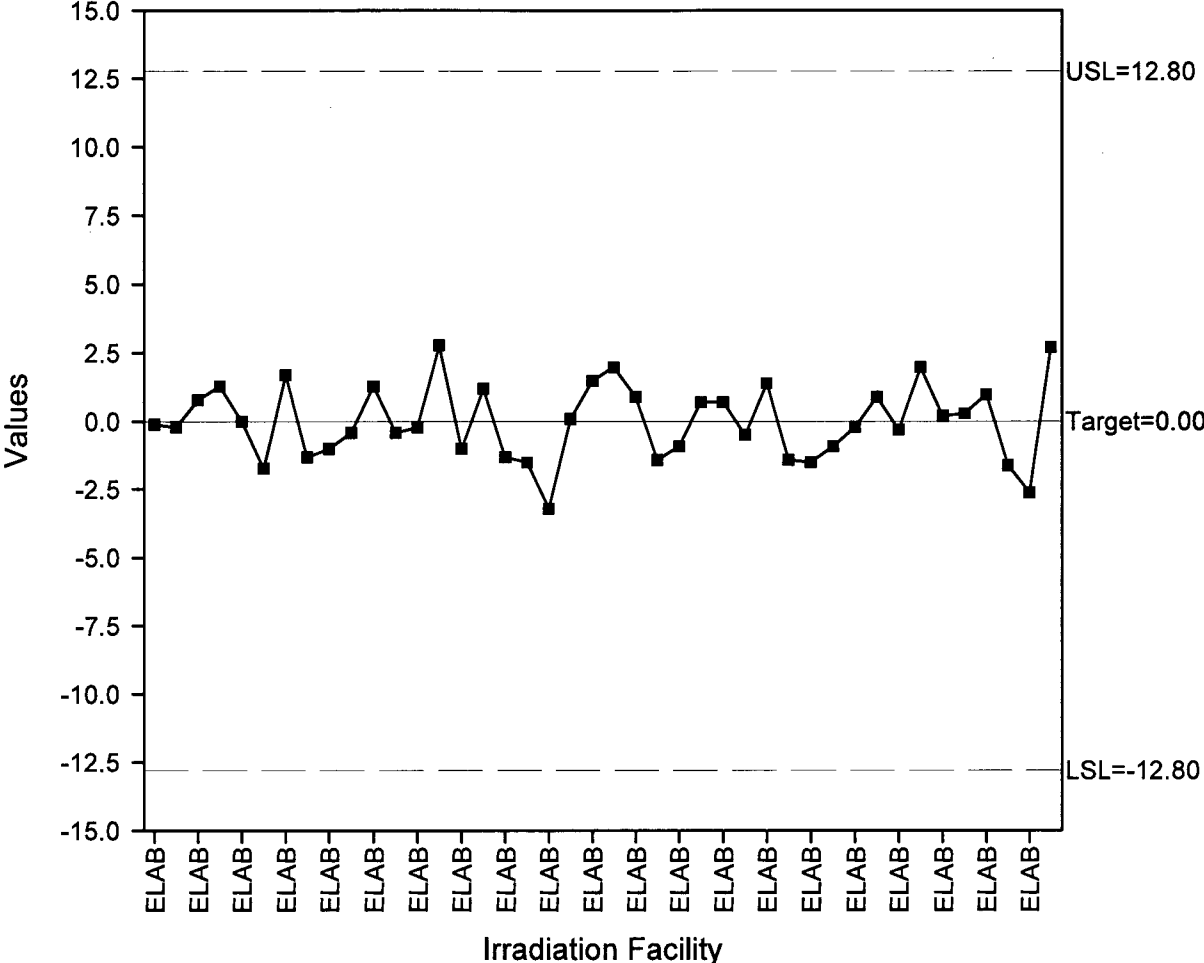
APPENDIX A
 QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
 January-June 2006

FIGURE 30

Environmental TLDs Precision Cs-137

Process Statistics

Total:	42
Rows:	All
Mean:	-0.002
Median:	-0.150
Std Dev:	1.380
Act % out of SL:	0.00

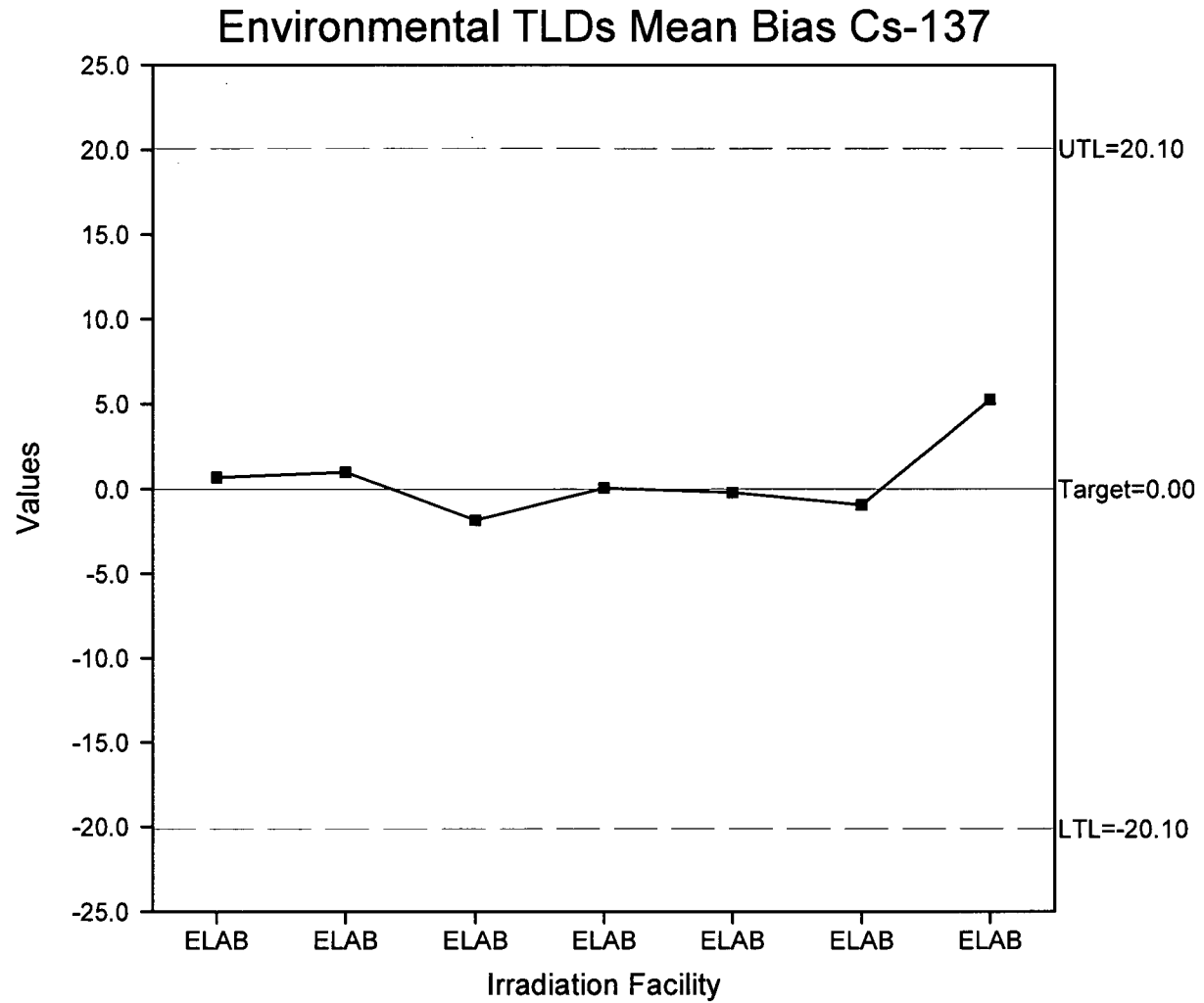


APPENDIX A
QC TESTING DATA FOR THE SEMI-ANNUAL PERIOD
January-June 2006

FIGURE 31

Process Statistics

Total:	7
Rows:	All
Mean:	0.600
Median:	0.100
Std Dev:	2.279
Act % out of TL:	0.00





APPENDIX B

NVLAP CERTIFICATE OF ACCREDITATION AND SCOPE OF ACCREDITATION

APPENDIX C

Summary of 2006 REMP Data

Worksheet

Sample Title:
Sample Date/Time:

gamma spectroscopy
analysis Report

Input data from the Liquid Scintillation

cpm	7.85
bkgd	8.08
Volume	3
Efficiency	0.4013
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

H-3 in the water sample

Activity is <MDA

MDA = 1.35E-06 uCi/ml
2.00E-06 uCi/ml

ISFSI Pad
for storm water
run off
May 2004

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)
Percent Humidity in Sample Area (as a Fraction)
Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time format MM/DD HH:MM format
Initial Sample flow rate cc/min
Sample stop date & time format MM/DD HH:MM format
Final Sample flow rate cc/min

Sample collection time 0 min
Total sample volume 0 cc

H-3 Concentration in Air (uCi/cc)

N/A

MDA = < N/A

Required MDA = 1E-6 uCi/cc

Performed by mshephard
Chemistry Technician

5-24-06
Date

Reviewed by [Signature]
Chemistry Supervisor

5-25-06
Date

24-MAY-2006 08:28:46.31

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - ISFSI NORTH
SAMPLE ID : 060523014A * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 23-MAY-2006 09:45 * GEO EFFICIENCY DATE: 12-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.09600E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 24-MAY-2006 00:50 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.01070E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 24-MAY-2006 07:31 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:56:47 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3407.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3407.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060523014A_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : OPS
REVIEWED BY :
COMMENTS :

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	185.73*	36	24	1.33	371.37	366	10	32.7		RA-226

Co 60 FAILED AGAIN

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 24-MAY-2006 08:28
REQUESTOR : CAS

PAGE 1 OF _____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060523014A
Sample Title : - ISFSI NORTH
Sample Time : 23-MAY-2006 09:45
Count Time : 24-MAY-2006 07:31
Sample Quantity : 3.09600E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 7.853E-09	Passed
CO-58	1.500E-08	< 5.970E-09	Passed
CO-60	1.500E-08	< 1.521E-08	FAILED
ZN-65	3.000E-08	< 9.978E-09	Passed
CS-134	1.500E-08	< 7.320E-09	Passed
CS-137	1.800E-08	< 1.523E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 24-MAY-2006 08:28
REQUESTOR : CAS

PAGE 1 OF

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - ISFSI NORTH

SAMPLE No. : 060523014A OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 24-MAY-2006 07:31:42 SAMPLE QUANTITY : 3.09600E+03
SAMPLE TIME : 23-MAY-2006 09:45:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
RA-226	186.21	-0.48	2.092E-07	* Peak FWHM = 1.3
AVG ENERGY DIFF =		-0.48	2.092E-07	= TOTAL GAMMA ACTIVITY
			2.092E-07	= Total NP Activity

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	POTENTIAL	
			/ML	ID	ACTIVITY

No Unidentified/Rejected Peaks

Performed by: *[Signature]*

Reviewed by: *[Signature]*

**** End Of Report (1 Page) ****

24-MAY-2006 16:47:28.93

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - ISFSI NORTH
SAMPLE ID : 060523014B * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 23-MAY-2006 09:45 * GEO EFFICIENCY DATE: 13-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.09600E+03 ML

DETECTOR : DET 1 * LIBRARY : CHEM RELEASE
LAST ENERGY CAL : 24-MAY-2006 00:45 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00028E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 24-MAY-2006 13:27 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 03:20:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 12001. Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 12000. Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 1 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060523014B_ADC1_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : OPS
REVIEWED BY : KL
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

*Co 60
failed
ms
5-24-06*

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 24-MAY-2006 16:47
REQUESTOR : CAS

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CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060523014B
Sample Title : - ISFSI NORTH
Sample Time : 23-MAY-2006 09:45
Count Time : 24-MAY-2006 13:27
Sample Quantity : 3.09600E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 1
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.740E-09	Passed
CO-58	1.500E-08	< 3.762E-09	Passed
CO-60	1.500E-08	< 1.519E-08	FAILED
ZN-65	3.000E-08	< 1.256E-08	Passed
CS-134	1.500E-08	< 4.161E-09	Passed
CS-137	1.800E-08	< 5.814E-09	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 24-MAY-2006 16:47
REQUESTOR : CAS

PAGE 1 OF _____

CYAPCO
HADDAM NECK STATION
POST NID QA ANALYSIS

TITLE : - ISFSI NORTH

SAMPLE No. : 060523014B OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 24-MAY-2006 13:27:13 SAMPLE QUANTITY : 3.09600E+03
SAMPLE TIME : 23-MAY-2006 09:45:00 DETECTOR : DET 1
LIBRARY : CHEM_RELEASE

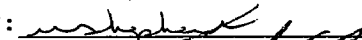
ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: 

Reviewed by: 

**** End Of Report (1 Page) ****

25-MAY-2006 15:38:17.59

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - ISFSI NORTH
SAMPLE ID : 060525019 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 23-MAY-2006 09:45 * GEO EFFICIENCY DATE: 11-FEB-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.09600E+03 ML

DETECTOR : DET5 * LIBRARY : CHEM RELEASE
LAST ENERGY CAL : 25-MAY-2006 08:23 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00057E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 25-MAY-2006 14:48 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:50:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3000.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3000.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 2 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060525019_ADC5_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : OPS
REVIEWED BY : KC
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 25-MAY-2006 15:38
REQUESTOR : CAS

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CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060525019
Sample Title : - ISFSI NORTH
Sample Time : 23-MAY-2006 09:45
Count Time : 25-MAY-2006 14:48
Sample Qauntity : 3.09600E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 5
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 7.195E-09	Passed
CO-58	1.500E-08	< 7.462E-09	Passed
CO-60	1.500E-08	< 1.117E-08	Passed
ZN-65	3.000E-08	< 1.268E-08	Passed
CS-134	1.500E-08	< 6.116E-09	Passed
CS-137	1.800E-08	< 9.342E-09	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 25-MAY-2006 15:38
REQUESTOR : CAS

PAGE 1 OF _____

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - ISFSI NORTH

SAMPLE No. : 060525019 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 25-MAY-2006 14:48:00 SAMPLE QUANTITY : 3.09600E+03
SAMPLE TIME : 23-MAY-2006 09:45:00 DETECTOR : DET5
LIBRARY : CHEM_RELEASE


ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: 

Reviewed by: 

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: ISFSI NORTH
Sample Date/Time: 8/9/2006 9:05

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	6.54
bkgd	5.87
Volume	3
Efficiency	0.3979 (enter EFF(%) as decimal)
Bkgd Count Time (min)	15
Sample Count Time (min)	15

Liquid Sample Activity is <MDA

MDA = < 1.17E-06 uCi/ml
Required MDA = 2.00E-06 uCi/ml

COPY

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample (leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc) N/A

Gas Bubbler Sample (leave blank if not used)

Sample start date & time format MM/DD HH:MM format
Initial Sample flow rate cc/min
Sample stop date & time format MM/DD HH:MM format
Final Sample flow rate cc/min

Sample collection time 0 min
Total sample volume 0 cc

H-3 Concentration in Air (uCi/cc) N/A

MDA = < N/A

Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
Chemistry Technician

8-14-06
Date

Reviewed by *[Signature]*
Chemistry Supervisor

8/23/06
Date

10-AUG-2006 17:11:47.10

CONNECTICUT YANKEE
HADDAM NECK STATION

COPY

SAMPLE TITLE : - ISFSI NORTH

SAMPLE ID : 060810037

SAMPLE TIME : 9-AUG-2006 09:05:

SAMPLE TYPE : LIQUID

* SAMPLE GEOMETRY : 4LMARS

* GEO EFFICIENCY DATE: 12-JAN-2006

* SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2

LAST ENERGY CAL : 10-AUG-2006 06:39

KEV/CHANNEL : 5.00914E-01

START CHANNEL : 100

ACQ DATE & TIME : 10-AUG-2006 16:21

PRESET LIVE TIME : 0 00:50:00

ELAPSED REAL TIME : 3000.2 Secs

ELAPSED LIVE TIME : 3000.0 Secs

DECAYED TO 1 DAYS HOURS

FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060810037_ADC2_LIQUID.CNF;1

* LIBRARY : CHEM_RELEASE

* ENERGY TOLERANCE: 2.00000

* HALF LIFE RATIO : 9.00000

* END CHANNEL : 4096

* DEADTIME (%) : 0.0%

* SENSITIVITY : 7.50000

* GAUSSIAN SEN : 10.00000

* CORRECTION FACTOR: 1.00000E+00

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : OPS

REVIEWED BY : 

COMMENTS :

Post-NID Peak Search Report

***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 10-AUG-2006 17:11
REQUESTOR : CAS_TECH

PAGE 1 OF _____

CYAPCO
HADDAM NECK STATION

COPY

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060810037
Sample Title : - ISFSI NORTH
Sample Time : 9-AUG-2006 09:05
Count Time : 10-AUG-2006 16:21
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 6.492E-09	Passed
CO-58	1.500E-08	< 5.705E-09	Passed
CO-60	1.500E-08	< 7.790E-09	Passed
ZN-65	3.000E-08	< 1.343E-08	Passed
CS-134	1.500E-08	< 4.736E-09	Passed
CS-137	1.800E-08	< 1.365E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 10-AUG-2006 17:11
REQUESTOR : CAS_TECH

PAGE 1 OF ___

CYAPCO
HADDAM NECK STATION
POST NID QA ANALYSIS

COPY

TITLE : - ISFSI NORTH

SAMPLE No. : 060810037 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 10-AUG-2006 16:21:31 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 9-AUG-2006 09:05:00. DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: *[Signature]*

Reviewed by: *[Signature]*

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: **ISFSI NORTH**
Sample Date/Time: **10/11/2006 13:15:00 PM**

COPY

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	5.81
bkgd	4.52
Volume	3
Efficiency	0.3864
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is **<MDA**

MDA = **< 1.06E-06** uCi/ml
Required MDA = 2.00E-06 uCi/ml

(enter EFF(%) as decimal)

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample (leave blank if not used)

Ambient Temperature in Sample Area (degrees Farenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc) **N/A**

Gas Bubbler Sample (leave blank if not used)

Sample start date & time format MM/DD HH:MM format

Initial Sample flow rate cc/min

Sample stop date & time format MM/DD HH:MM format

Final Sample flow rate cc/min

Sample collection time 0 min

Total sample volume 0 cc

H-3 Concentration in Air (uCi/cc) **N/A**

MDA = < N/A

Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
Chemistry Technician

10-12-06
Date

Reviewed by *[Signature]*
Chemistry Supervisor

11/9/06
Date

11-OCT-2006 14:50:53.36

CONNECTICUT YANKEE
HADDAM NECK STATION

COPY

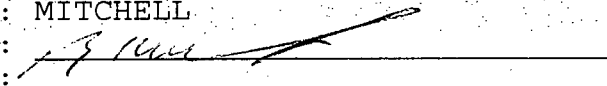
SAMPLE TITLE : - ISFSI NORTH
SAMPLE ID : 061011004
SAMPLE TIME : 11-OCT-2006 13:15
SAMPLE TYPE : LIQUID

* SAMPLE GEOMETRY : 4LMARS
* GEO EFFICIENCY DATE: 12-JAN-2006
* SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2
LAST ENERGY CAL : 11-OCT-2006 07:14
KEV/CHANNEL : 5.01027E-01
START CHANNEL : 100
ACQ DATE & TIME : 11-OCT-2006 14:00
PRESET LIVE TIME : 0 00:50:00
ELAPSED REAL TIME : 3000.2 Secs
ELAPSED LIVE TIME : 3000.0 Secs
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]061011004_ADC2_LIQUID.CNF;1

* LIBRARY : CHEM_RELEASE
* ENERGY TOLERANCE: 2.00000
* HALF LIFE RATIO : 9.00000
* END CHANNEL : 4096
* DEADTIME (%) : 0.0%
* SENSITIVITY : 7.50000
* GAUSSIAN SEN : 10.00000
* CORRECTION FACTOR: 1.00000E+00

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : MITCHELL
REVIEWED BY : 
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 11-OCT-2006 14:50
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

COPY

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 061011004
Sample Title : - ISFSI NORTH
Sample Time : 11-OCT-2006 13:15
Count Time : 11-OCT-2006 14:00
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 6.460E-09	Passed
CO-58	1.500E-08	< 5.499E-09	Passed
CO-60	1.500E-08	< 1.020E-08	Passed
ZN-65	3.000E-08	< 9.246E-09	Passed
CS-134	1.500E-08	< 4.100E-09	Passed
CS-137	1.800E-08	< 1.466E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 11-OCT-2006 14:50
REQUESTOR : CAS_TECH

PAGE 1 OF ___

CYAPCO
HADDAM NECK STATION

COPY

POST NID QA ANALYSIS

TITLE : - ISFSI NORTH

SAMPLE No. : 061011004 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 11-OCT-2006 14:00:37 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 11-OCT-2006 13:15:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
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UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: [Signature]

Reviewed by: [Signature]

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: ISFSI SOUTH
Sample Date/Time: 5/23/2006 9:30

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	7.96
bkgd	8.08
Volume	3
Efficiency	0.3980
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

(enter EFF(%) as decimal)

Liquid Sample Activity is **<MDA**

MDA = < **1.36E-06** uCi/ml

Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time

format MM/DD HH:MM format

Initial Sample flow rate

cc/min

Sample stop date & time

format MM/DD HH:MM format

Final Sample flow rate

cc/min

Sample collection time

0 min

Total sample volume

0 cc

H-3 Concentration in Air (uCi/cc)

N/A

MDA= < **N/A**

Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
Chemistry Technician

5-24-06
Date

Reviewed by *[Signature]*
Chemistry Supervisor

5-25-06
Date

23-MAY-2006 17:44:56.46

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - ISFSI SOUTH
SAMPLE ID : 060523015
SAMPLE TIME : 23-MAY-2006
SAMPLE TYPE : LIQUID

* SAMPLE GEOMETRY : 4LMARS
EFFICIENCY DATE: 12-JAN-2006
QUANTITY : 2.60000E+03 ML

Gamma Spectroscopy Analysis Report
ISFSI PAD
North and South
May 2006

DETECTOR : DET 2
LAST ENERGY CAL : 23-MAY-
KEV/CHANNEL : 5.01058
START CHANNEL : 100
ACQ DATE & TIME : 23-MAY-
PRESET LIVE TIME : 0 01:09.50
ELAPSED REAL TIME : 4190.3 Secs
ELAPSED LIVE TIME : 4190.0 Secs
DECAYED TO 0 DAYS HOURS

Y : CHEM RELEASE
TOLERANCE: 2.00000
IFE RATIO : 9.00000
ANNEL : 4096
ME (%) : 0.0%
* SENSITIVITY : 7.50000
* GAUSSIAN SEN : 10.00000
* CORRECTION FACTOR: 1.00000E+00

FILE IDENT : CAS\$DISK: [NEU.SAMPLE.CHEM.NEW] 060523015_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : OPS

REVIEWED BY : KL
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 23-MAY-2006 17:44
REQUESTOR : CAS

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060523015
Sample Title : - ISFSI SOUTH
Sample Time : 23-MAY-2006 09:30
Count Time : 23-MAY-2006 16:34
Sample Quantity : 2.60000E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 7.080E-09	Passed
CO-58	1.500E-08	< 6.730E-09	Passed
CO-60	1.500E-08	< 1.334E-08	Passed
ZN-65	3.000E-08	< 7.877E-09	Passed
CS-134	1.500E-08	< 3.888E-09	Passed
CS-137	1.800E-08	< 1.719E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 23-MAY-2006 17:44
REQUESTOR : CAS

PAGE 1 OF

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - ISFSI SOUTH

SAMPLE No. : 060523015 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 23-MAY-2006 16:34:48 SAMPLE QUANTITY : 2.60000E+03
SAMPLE TIME : 23-MAY-2006 09:30:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: *[Signature]*

Reviewed by: *[Signature]*

**** End Of Report (1 Page) ****

23-MAY-2006 19:53:18.56

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - ISFSI NORTH
SAMPLE ID : 060523014 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 23-MAY-2006 09:45 * GEO EFFICIENCY DATE: 13-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.09600E+03 ML

DETECTOR : DET 1 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 23-MAY-2006 00:36 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00026E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 23-MAY-2006 16:33 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 03:20:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 12000. Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 12000. Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060523014_ADC1_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WMEAN V1.8

Collected by : OPS
REVIEWED BY : KC
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

Co 60 FAILED

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 23-MAY-2006 19:53
REQUESTOR : CAS

PAGE 1 OF _____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060523014
Sample Title : - ISFSI NORTH
Sample Time : 23-MAY-2006 09:45
Count Time : 23-MAY-2006 16:33
Sample Quantity : 3.09600E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 1
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 6.335E-09	Passed
CO-58	1.500E-08	< 4.597E-09	Passed
CO-60	1.500E-08	< 1.517E-08	FAILED
ZN-65	3.000E-08	< 1.010E-08	Passed
CS-134	1.500E-08	< 3.716E-09	Passed
CS-137	1.800E-08	< 6.308E-09	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 23-MAY-2006 19:53
REQUESTOR : CAS

PAGE 1 OF _____

CYAPCO
HADDAM NECK STATION
POST NID QA ANALYSIS

TITLE : - ISFSI NORTH

SAMPLE No. : 060523014 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 23-MAY-2006 16:33:03 SAMPLE QUANTITY : 3.09600E+03
SAMPLE TIME : 23-MAY-2006 09:45:00 DETECTOR : DET 1
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: mshepherd
Reviewed by: [Signature]

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: ISFSI SOUTH
Sample Date/Time: 8/9/2006 8:55

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	5.06
bkgd	5.87
Volume	3
Efficiency	0.3967 (enter EFF(%) as decimal)
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is **<MDA**

MDA = < **1.17E-06** uCi/ml
Required MDA = 2.00E-06 uCi/ml

COPY

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time

Initial Sample flow rate

Sample stop date & time

Final Sample flow rate

format MM/DD HH:MM format

cc/min

format MM/DD HH:MM format

cc/min

Sample collection time

0 min

Total sample volume

0 cc

H-3 Concentration in Air (uCi/cc)

N/A

MDA = < **N/A**

Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
Chemistry Technician

8-14-06
Date

Reviewed by *[Signature]*
Chemistry Supervisor

8/23/06
Date

10-AUG-2006 19:40:20.83

CONNECTICUT YANKEE
HADDAM NECK STATION

COPY

SAMPLE TITLE : - ISFSI SOUTH
SAMPLE ID : 060810036 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 9-AUG-2006 08:55: * GEO EFFICIENCY DATE: 13-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 1 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 10-AUG-2006 06:35 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00217E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 10-AUG-2006 16:20 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 03:20:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 12000. Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 12000. Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 1 DAYS HOURS
FILE IDENT : CAS\$DISK: [NEU.SAMPLE.CHEM.NEW] 060810036_ADC1_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : OPS
REVIEWED BY : *[Signature]*
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 10-AUG-2006 19:40
REQUESTOR : CAS_TECH

PAGE 1 OF ___

CYAPCO
HADDAM NECK STATION

COPY

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060810036
Sample Title : - ISFSI SOUTH
Sample Time : 9-AUG-2006 08:55
Count Time : 10-AUG-2006 16:20
Sample Qauntity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 1
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.286E-09	Passed
CO-58	1.500E-08	< 3.797E-09	Passed
CO-60	1.500E-08	< 1.366E-08	Passed
ZN-65	3.000E-08	< 7.884E-09	Passed
CS-134	1.500E-08	< 3.171E-09	Passed
CS-137	1.800E-08	< 5.324E-09	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 10-AUG-2006 19:40
REQUESTOR : CAS_TECH

PAGE 1 OF ___

COPY

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - ISFSI SOUTH

SAMPLE No. : 060810036 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 10-AUG-2006 16:20:06 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 9-AUG-2006 08:55:00. DETECTOR : DET 1
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: *[Signature]*

Reviewed by: *[Signature]*

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: **ISFSI SOUTH**
Sample Date/Time: **10/11/2006 13:00:00 PM**

COPY

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	6.19
bkgd	4.52
Volume	3
Efficiency	0.3857
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is **<MDA**

MDA = **< 1.06E-06** uCi/ml

Required MDA = 2.00E-06 uCi/ml

(enter EFF(%) as decimal)

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Farenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time

Initial Sample flow rate

Sample stop date & time

Final Sample flow rate

format MM/DD HH:MM format

cc/min

format MM/DD HH:MM format

cc/min

Sample collection time

0 min

Total sample volume

0 cc

H-3 Concentration in Air (uCi/cc)

N/A

MDA = **< N/A**

Required MDA = 1E-6 uCi/cc

Performed by [Signature]
Chemistry Technician

10-12-06
Date

Reviewed by [Signature]
Chemistry Supervisor

10/9/06
Date

11-OCT-2006 17:11:47.79

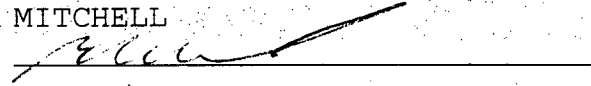
COPY

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - ISFSI SOUTH
SAMPLE ID : 061011003 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 11-OCT-2006 13:00 * GEO EFFICIENCY DATE: 13-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 1 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 11-OCT-2006 07:07 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00452E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 11-OCT-2006 13:59 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 03:12:20 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 11540. Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 11540. Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]061011003_ADC1_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : MITCHELL
REVIEWED BY : 
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 11-OCT-2006 17:11
REQUESTOR : CAS_TECH

COPY

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 061011003
Sample Title : - ISFSI SOUTH
Sample Time : 11-OCT-2006 13:00
Count Time : 11-OCT-2006 13:59
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 1
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.209E-09	Passed
CO-58	1.500E-08	< 4.071E-09	Passed
CO-60	1.500E-08	< 1.333E-08	Passed
ZN-65	3.000E-08	< 9.282E-09	Passed
CS-134	1.500E-08	< 3.310E-09	Passed
CS-137	1.800E-08	< 4.794E-09	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 11-OCT-2006 17:11
REQUESTOR : CAS_TECH

PAGE 1 OF ___

CYAPCO
HADDAM NECK STATION

COPY

POST NID QA ANALYSIS

TITLE : - ISFSI SOUTH

SAMPLE No. : 061011003 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 11-OCT-2006 13:59:13 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 11-OCT-2006 13:00:00 DETECTOR : DET 1
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: *[Signature]*

Reviewed by: *[Signature]*

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: **ISFSI POND REMP**
Sample Date/Time: **6/28/2006 15:15 PM**

COPY

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	6.01
bkgd	5.20
Volume	3
Efficiency	0.3943 (enter EFF(%) as decimal)
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is **<MDA**

MDA = < **1.11E-06** uCi/ml
Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample (leave blank if not used)

Ambient Temperature in Sample Area (degrees Farenheit)
Percent Humidity in Sample Area (as a Fraction)
Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc) **N/A**

Gas Bubbler Sample (leave blank if not used)

Sample start date & time

--

 format MM/DD HH:MM format
Initial Sample flow rate

--

 cc/min
Sample stop date & time

--

 format MM/DD HH:MM format
Final Sample flow rate

--

 cc/min

Sample collection time 0 min
Total sample volume 0 cc

H-3 Concentration in Air (uCi/cc) **N/A**

MDA = < **N/A**
Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
Chemistry Technician

6-29-06
Date

Reviewed by *[Signature]*
Chemistry Supervisor

12/14/06
Date

29-JUN-2006 18:52:38.58

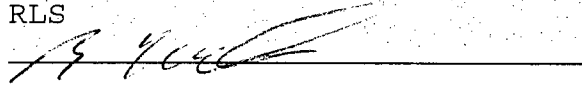
CONNECTICUT YANKEE
HADDAM NECK STATION

COPY

SAMPLE TITLE : - ISFSI POND REMP QTLY SAMPLE
SAMPLE ID : 060629009 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 28-JUN-2006 15:15 * GEO EFFICIENCY DATE: 13-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 1 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 29-JUN-2006 11:21 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 4.99923E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 29-JUN-2006 16:09 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 02:42:43 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 9763.4 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 9763.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 1 DAYS HOURS
FILE IDENT : CAS\$DISK: [NEU.SAMPLE.CHEM.NEW]060629009_ADC1_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
REVIEWED BY : 
COMMENTS :

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	1173.15*	28	4	1.63	2351.52	2344	16	41.4		CO-60

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 29-JUN-2006 18:52
REQUESTOR : CAS_TECH

CYAPCO
HADDAM NECK STATION

COPY

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060629009
Sample Title : - ISFSI POND REMP QTLY SAMPLE
Sample Time : 28-JUN-2006 15:15
Count Time : 29-JUN-2006 16:09
Sample Qauntity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 1
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 3.476E-09	Passed
CO-58	1.500E-08	< 5.064E-09	Passed
CO-60	1.500E-08	< 9.268E-09	Okay
ZN-65	3.000E-08	< 8.030E-09	Passed
CS-134	1.500E-08	< 3.401E-09	Passed
CS-137	1.800E-08	< 5.399E-09	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 29-JUN-2006 18:52
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

COPY

POST NID QA ANALYSIS

TITLE : - ISFSI POND REMP QTLY SAMPLE

SAMPLE No. : 060629009 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 29-JUN-2006 16:09:39 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 28-JUN-2006 15:15:00 DETECTOR : DET 1
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
CO-60	1332.49	0.00	9.268E-09	* Key Line Not Found
AVG ENERGY DIFF =		0.00	9.268E-09	= TOTAL GAMMA ACTIVITY
			9.268E-09	= Total AP Activity

*Will RECOUNT
APR 2007
Dose 40L Well.*

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
No Unidentified/Rejected Peaks							

Performed by: [Signature]

Reviewed by: [Signature]

**** End Of Report (1 Page) ****

5-JUL-2006 11:19:26.21

CONNECTICUT YANKEE
HADDAM NECK STATION

COPY

RECOUNT AFTER WIPING DOWN
DETECTOR WELL. on 7.1.06

SAMPLE TITLE : - ISFSI POND REMP QTLY SAMPLE
SAMPLE ID : 060629009A * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 28-JUN-2006 15:15 * GEO EFFICIENCY DATE: 13-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 1 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 5-JUL-2006 07:54: * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 4.99906E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 5-JUL-2006 08:46: * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 02:32:56 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 9176.4 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 9176.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 6 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060629009A_ADC1_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
REVIEWED BY : *[Signature]*
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 5-JUL-2006 11:19
REQUESTOR : CAS_TECH

COPY

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060629009A
Sample Title : - ISFSI POND REMP QTLY SAMPLE
Sample Time : 28-JUN-2006 15:15
Count Time : 5-JUL-2006 08:46
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 1
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.479E-09	Passed
CO-58	1.500E-08	< 2.744E-09	Passed
CO-60	1.500E-08	< 1.368E-08	Passed
ZN-65	3.000E-08	< 8.120E-09	Passed
CS-134	1.500E-08	< 4.326E-09	Passed
CS-137	1.800E-08	< 4.489E-09	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 5-JUL-2006 11:19
REQUESTOR : CAS_TECH

PAGE 1 OF ___

COPY

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - ISFSI POND REMP QTLY SAMPLE

SAMPLE No. : 060629009A OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 5-JUL-2006 08:46:14. SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 28-JUN-2006 15:15:00 DETECTOR : DET 1
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

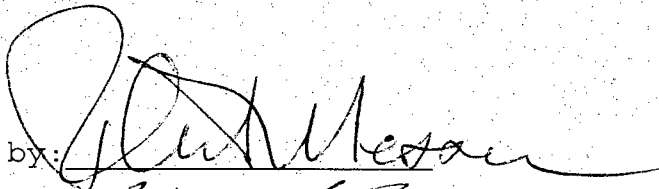
UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by:



Reviewed by:



**** End Of Report (1 Page) ****



Environmental Laboratory Analysis Report

29 Research Drive
Westboro, MA 01581
508-573-6650

Customer Connecticut Yankee
Attention Richard N. McGrath

Report Date 12/19/06
Receipt Date 11/21/06

Connecticut Yankee
362 Injun Hollow Road

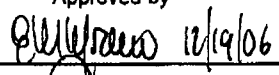
Haddam Neck, CT 06424-3022

Lab. Sample No. L11698-06 **Client ID** 30-AC BOTTOM FEEDER **Product** GAMMA SPECTROMETRY
Reference Date 11/15/06 **Analysis Date** 12/12/06 **Matrix** Fish

Nuclide	Activity Concentration +/- 1 - Sigma (pCi/kg)	TPU 1 Sigma (pCi/kg)	Measured MDC (pCi/kg)	Required MDC (pCi/kg)	Flags
AcTh-228	3E+01 +/- 2.3E+01	2.4E+01	7.9E+01		
Ag-108m	6E+00 +/- 4.3E+00	4.3E+00	1.4E+01		
Ag-110m	-5.8E+00 +/- 8.9E+00	8.9E+00	3.4E+01		
Ba-140	-5E+00 +/- 2.8E+01	2.8E+01	1.1E+02		
Be-7	-4.3E+01 +/- 5.8E+01	5.8E+01	2.2E+02		
Ce-141	1.1E+01 +/- 1.4E+01	1.4E+01	4.8E+01		
Ce-144	-4.5E+01 +/- 2.5E+01	2.5E+01	9.3E+01		
Co-57	-2E-01 +/- 3.6E+00	3.6E+00	1.2E+01		
Co-58	1.2E+00 +/- 6.3E+00	6.3E+00	2.3E+01		
Co-60	1.21E+01 +/- 6.6E+00	6.7E+00	2.1E+01	1.3E+02	
Cr-51	1.1E+02 +/- 7.9E+01	7.9E+01	2.6E+02		
Cs-134	6E+00 +/- 5.8E+00	5.8E+00	2.0E+01	1.3E+02	
Cs-137	1.15E+01 +/- 6.1E+00	6.1E+00	2.0E+01	1.5E+02	
Fe-59	1.3E+01 +/- 1.6E+01	1.6E+01	5.6E+01		
I-131	5E+00 +/- 4.7E+01	4.7E+01	1.7E+02		
K-40	2.62E+03 +/- 1.9E+02	2.3E+02	2.7E+02		bc
La-140	-6E+00 +/- 3.2E+01	3.2E+01	1.2E+02		
Mn-54	-6.6E+00 +/- 4.9E+00	4.9E+00	2.0E+01	1.3E+02	
Nb-95	-2.6E+00 +/- 8.1E+00	8.1E+00	3.0E+01		
Ru-103	-1.79E+01 +/- 7.7E+00	7.7E+00	3.1E+01		
Ru-106	7.8E+01 +/- 5.4E+01	5.4E+01	1.8E+02		
Sb-124	-3.5E+01 +/- 1.8E+01	1.8E+01	8.0E+01		
Sb-125	4E+00 +/- 1.5E+01	1.5E+01	5.2E+01		
Se-75	7.6E+00 +/- 6.4E+00	6.5E+00	2.2E+01		
Zn-65	-2E+01 +/- 1.5E+01	1.5E+01	5.9E+01	2.6E+02	
Zr-95	3E+00 +/- 1.3E+01	1.3E+01	4.7E+01		

- Flags:**
- a The measured MDC is greater than the required MDC
 - b The activity concentration is greater than three times its one sigma counting uncertainty.
 - c Peak was found

Reporting Level Ratio:

Approved by

E.M. Moreno
Sample Control & Measurements Supervisor

c:



Environmental Laboratory Analysis Report
 29 Research Drive
 Westboro, MA 01581
 508-573-6650

Customer Connecticut Yankee
 Attention Richard N. McGrath

Report Date 12/19/06
 Receipt Date 11/21/06

Connecticut Yankee
 362 Injun Hollow Road
 Haddam Neck, CT 06424-3022

Lab. Sample No. L11698-05 Client ID 30-AC PREDATOR FISH Product GAMMA SPECTROMETRY
 Reference Date 11/15/06 Analysis Date 12/12/06 Matrix Fish

Nuclide	Activity Concentration +/- 1 - Sigma (pCi/kg)	TPU 1 Sigma (pCi/kg)	Measured MDC (pCi/kg)	Required MDC (pCi/kg)	Flags
AcTh-228	3E+00 +/- 2.1E+01	2.1E+01	7.6E+01		
Ag-108m	6E+00 +/- 4.2E+00	4.2E+00	1.4E+01		
Ag-110m	-1.15E+01 +/- 7.4E+00	7.4E+00	3.0E+01		
Ba-140	-5.4E+01 +/- 2.4E+01	2.4E+01	1.1E+02		
Be-7	-5.2E+01 +/- 5.5E+01	5.5E+01	2.1E+02		
Ce-141	-1.24E+01 +/- 9.2E+00	9.2E+00	3.3E+01		
Ce-144	2E+00 +/- 2.0E+01	2.0E+01	7.1E+01		
Co-57	2.7E+00 +/- 2.5E+00	2.5E+00	8.3E+00		
Co-58	4.3E+00 +/- 6.4E+00	6.4E+00	2.3E+01		
Co-60	5.1E+00 +/- 5.7E+00	5.7E+00	2.0E+01	1.3E+02	
Cr-51	-6.3E+01 +/- 6.3E+01	6.3E+01	2.3E+02		
Cs-134	1.32E+01 +/- 6.4E+00	6.4E+00	2.0E+01	1.3E+02	
Cs-137	1.52E+01 +/- 6.1E+00	6.1E+00	1.9E+01	1.5E+02	
Fe-59	0E+00 +/- 1.7E+01	1.7E+01	6.1E+01		
I-131	-2.4E+01 +/- 4.0E+01	4.0E+01	1.5E+02		
K-40	3.27E+03 +/- 2.0E+02	2.6E+02	2.7E+02		bc
La-140	-6.2E+01 +/- 2.7E+01	2.7E+01	1.2E+02		
Mn-54	-7.8E+00 +/- 4.9E+00	4.9E+00	2.0E+01	1.3E+02	
Nb-95	8.4E+00 +/- 9.4E+00	9.4E+00	3.2E+01		
Ru-103	6.3E+00 +/- 6.9E+00	6.9E+00	2.4E+01		
Ru-106	5.7E+01 +/- 4.1E+01	4.1E+01	1.4E+02		
Sb-124	7E+00 +/- 1.5E+01	1.5E+01	5.5E+01		
Sb-125	-1.4E+01 +/- 1.2E+01	1.2E+01	4.6E+01		
Se-75	5E-01 +/- 5.7E+00	5.7E+00	2.0E+01		
Zn-65	-1.7E+01 +/- 1.3E+01	1.3E+01	5.2E+01	2.6E+02	
Zr-95	-9E+00 +/- 1.3E+01	1.3E+01	4.7E+01		

- Flags: a The measured MDC is greater than the required MDC
 b The activity concentration is greater than three times its one sigma counting uncertainty.
 c Peak was found

Reporting Level Ratio:

Approved by

 E.M. Moreno
 Sample Control & Measurements Supervisor

c:



Environmental Laboratory Analysis Report

29 Research Drive
Westboro, MA 01581
508-573-6650

Customer Connecticut Yankee
Attention Richard N. McGrath

Report Date 12/19/06
Receipt Date 11/21/06

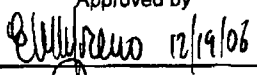
Connecticut Yankee
362 Injun Hollow Road
Haddam Neck, CT 06424-3022

Lab. Sample No. L11698-02 Client ID 26-I BOTTOM FEEDER Product GAMMA SPECTROMETRY
Reference Date 11/16/06 Analysis Date 12/12/06 Matrix Fish

Nuclide	Activity Concentration		TPU 1 Sigma (pCi/kg)	Measured MDC (pCi/kg)	Required MDC (pCi/kg)	Flags
	+/-	1 - Sigma (pCi/kg)				
AcTh-228	-1.2E+01	+/- 2.7E+01	2.7E+01	1.1E+02		
Ag-108m	8E-01	+/- 5.5E+00	5.5E+00	2.0E+01		
Ag-110m	2.6E+00	+/- 8.9E+00	8.9E+00	3.4E+01		
Ba-140	-2.7E+01	+/- 2.7E+01	2.7E+01	1.3E+02		
Be-7	-3.3E+01	+/- 7.2E+01	7.2E+01	2.8E+02		
Ce-141	1E+01	+/- 1.3E+01	1.3E+01	4.3E+01		
Ce-144	-4.1E+01	+/- 2.9E+01	2.9E+01	1.1E+02		
Co-57	-3E+00	+/- 3.7E+00	3.7E+00	1.4E+01		
Co-58	-1.03E+01	+/- 8.4E+00	8.5E+00	3.6E+01		
Co-60	-1E+00	+/- 1.1E+01	1.1E+01	4.1E+01	1.3E+02	
Cr-51	1.3E+01	+/- 8.6E+01	8.6E+01	3.1E+02		
Cs-134	-1E+00	+/- 8.3E+00	8.3E+00	3.2E+01	1.3E+02	
Cs-137	1.03E+01	+/- 7.7E+00	7.8E+00	2.6E+01	1.5E+02	
Fe-59	-5E+00	+/- 2.0E+01	2.0E+01	8.0E+01		
I-131	-5.2E+01	+/- 4.8E+01	4.8E+01	1.9E+02		
K-40	3E+03	+/- 2.7E+02	3.1E+02	3.9E+02		bc
La-140	-3.1E+01	+/- 3.1E+01	3.1E+01	1.5E+02		
Mn-54	9.1E+00	+/- 8.1E+00	8.1E+00	2.8E+01	1.3E+02	
Nb-95	2E+00	+/- 1.1E+01	1.1E+01	4.2E+01		
Ru-103	3E+00	+/- 1.0E+01	1.0E+01	3.7E+01		
Ru-106	-8.9E+01	+/- 6.7E+01	6.7E+01	2.7E+02		
Sb-124	2.8E+01	+/- 2.2E+01	2.2E+01	7.6E+01		
Sb-125	-1.3E+01	+/- 1.8E+01	1.8E+01	7.0E+01		
Se-75	2E+00	+/- 8.0E+00	8.0E+00	2.8E+01		
Zn-65	-2.2E+01	+/- 2.2E+01	2.2E+01	8.8E+01	2.6E+02	
Zr-95	4.3E+01	+/- 2.2E+01	2.2E+01	6.8E+01		

- Flags: a The measured MDC is greater than the required MDC
 b The activity concentration is greater than three times its one sigma counting uncertainty.
 c Peak was found

Reporting Level Ratio:

Approved by

 E.M. Moreno
 Sample Control & Measurements Supervisor

c:



Environmental Laboratory Analysis Report

29 Research Drive
Westboro, MA 01581
508-573-6650

Customer Connecticut Yankee
Attention Richard N. McGrath

Report Date 12/19/06
Receipt Date 11/21/06

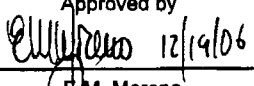
Connecticut Yankee
362 Injun Hollow Road
Haddam Neck, CT 06424-3022

Lab. Sample No. L11698-03 **Client ID** 29-I PREDATOR FISH **Product** GAMMA SPECTROMETRY
Reference Date 11/15/06 **Analysis Date** 12/12/06 **Matrix** Fish

Nuclide	Activity Concentration +/- 1 - Sigma (pCi/kg)	TPU 1 Sigma (pCi/kg)	Measured MDC (pCi/kg)	Required MDC (pCi/kg)	Flags
AcTh-228	2.8E+01 +/- 3.5E+01	3.5E+01	1.2E+02		
Ag-108m	-4.6E+00 +/- 7.1E+00	7.1E+00	2.7E+01		
Ag-110m	2E+00 +/- 1.3E+01	1.3E+01	4.9E+01		
Ba-140	-4.1E+01 +/- 3.6E+01	3.6E+01	1.6E+02		
Be-7	0E+00 +/- 8.3E+01	8.3E+01	3.1E+02		
Ce-141	-1.8E+01 +/- 1.6E+01	1.6E+01	5.9E+01		
Ce-144	-5E+00 +/- 4.0E+01	4.0E+01	1.4E+02		
Co-57	8.9E+00 +/- 5.3E+00	5.3E+00	1.7E+01		
Co-58	-1.5E+01 +/- 8.0E+00	8.0E+00	3.7E+01		
Co-60	-1.17E+01 +/- 9.7E+00	9.7E+00	4.2E+01	1.3E+02	
Cr-51	-1E+01 +/- 1.1E+02	1.1E+02	4.1E+02		
Cs-134	1.16E+01 +/- 9.5E+00	9.5E+00	3.2E+01	1.3E+02	
Cs-137	2.3E+01 +/- 1.3E+01	1.3E+01	4.2E+01	1.5E+02	c
Fe-59	5E+00 +/- 2.5E+01	2.5E+01	9.5E+01		
I-131	-5.4E+01 +/- 6.4E+01	6.4E+01	2.5E+02		
K-40	2.73E+03 +/- 2.7E+02	3.0E+02	4.2E+02		bc
La-140	-4.7E+01 +/- 4.1E+01	4.1E+01	1.9E+02		
Mn-54	-9.1E+00 +/- 7.3E+00	7.3E+00	3.1E+01	1.3E+02	
Nb-95	3E+01 +/- 1.4E+01	1.4E+01	4.4E+01		
Ru-103	3E+00 +/- 1.1E+01	1.1E+01	3.9E+01		
Ru-106	1E+01 +/- 8.5E+01	8.5E+01	3.1E+02		
Sb-124	2.3E+01 +/- 2.0E+01	2.0E+01	7.1E+01		
Sb-125	2E+01 +/- 2.1E+01	2.1E+01	7.1E+01		
Se-75	-3.9E+00 +/- 9.7E+00	9.7E+00	3.5E+01		
Zn-65	-4E+00 +/- 1.8E+01	1.8E+01	7.3E+01	2.6E+02	
Zr-95	5E+00 +/- 2.0E+01	2.0E+01	7.2E+01		

- Flags:**
- a The measured MDC is greater than the required MDC
 - b The activity concentration is greater than three times its one sigma counting uncertainty.
 - c Peak was found

Reporting Level Ratio:

Approved by
 12/19/06
E.M. Moreno
Sample Control & Measurements Supervisor

c:



Environmental Laboratory Analysis Report

29 Research Drive
Westboro, MA 01581
508-573-6650

Customer Connecticut Yankee
Attention Richard N. McGrath

Report Date 12/19/06
Receipt Date 11/21/06

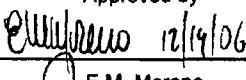
Connecticut Yankee
362 Injun Hollow Road
Haddam Neck, CT 06424-3022

Lab. Sample No. L11698-01 Client ID 26-I PREDATOR FISH Product GAMMA SPECTROMETRY
Reference Date 11/16/06 Analysis Date 12/12/06 Matrix Fish

Nuclide	Activity Concentration +/- 1 - Sigma (pCi/kg)	TPU 1 Sigma (pCi/kg)	Measured MDC (pCi/kg)	Required MDC (pCi/kg)	Flags
AcTh-228	4.9E+01 +/- 5.0E+01	5.0E+01	1.7E+02		
Ag-108m	8.9E+00 +/- 8.5E+00	8.5E+00	3.0E+01		
Ag-110m	0E+00 +/- 2.1E+01	2.1E+01	8.2E+01		
Ba-140	1.7E+01 +/- 3.8E+01	3.8E+01	1.6E+02		
Be-7	7E+01 +/- 1.2E+02	1.2E+02	4.4E+02		
Ce-141	8E+00 +/- 2.1E+01	2.1E+01	7.4E+01		
Ce-144	2.9E+01 +/- 5.7E+01	5.7E+01	2.0E+02		
Co-57	-2.8E+00 +/- 7.2E+00	7.2E+00	2.7E+01		
Co-58	-1E+01 +/- 1.1E+01	1.1E+01	5.0E+01		
Co-60	-3.2E+01 +/- 1.5E+01	1.5E+01	7.3E+01	1.3E+02	
Cr-51	0E+00 +/- 1.6E+02	1.6E+02	5.9E+02		
Cs-134	-5E+00 +/- 1.6E+01	1.6E+01	6.4E+01	1.3E+02	
Cs-137	9E+00 +/- 1.4E+01	1.4E+01	5.1E+01	1.5E+02	
Fe-59	-4.5E+01 +/- 3.7E+01	3.7E+01	1.6E+02		
I-131	-4.9E+01 +/- 8.5E+01	8.5E+01	3.4E+02		
K-40	2.47E+03 +/- 3.5E+02	3.7E+02	6.0E+02		bc
La-140	2E+01 +/- 4.4E+01	4.4E+01	1.8E+02		
Mn-54	-3E+00 +/- 1.3E+01	1.3E+01	5.2E+01	1.3E+02	
Nb-95	7E+00 +/- 1.6E+01	1.6E+01	6.2E+01		
Ru-103	6E+00 +/- 1.4E+01	1.4E+01	5.3E+01		
Ru-106	-1.52E+02 +/- 9.8E+01	9.9E+01	4.4E+02		
Sb-124	-9.2E+01 +/- 3.9E+01	4.0E+01	2.1E+02		
Sb-125	4.9E+01 +/- 2.5E+01	2.5E+01	7.7E+01		
Se-75	-2.8E+01 +/- 1.6E+01	1.6E+01	6.3E+01		
Zn-65	-2.2E+01 +/- 2.8E+01	2.8E+01	1.2E+02	2.6E+02	
Zr-95	-4E+00 +/- 2.5E+01	2.5E+01	1.0E+02		

- Flags: a The measured MDC is greater than the required MDC
 b The activity concentration is greater than three times its one sigma counting uncertainty.
 c Peak was found

Reporting Level Ratio:

Approved by

 E.M. Moreno
 Sample Control & Measurements Supervisor

c:



Environmental Laboratory Analysis Report

29 Research Drive
Westboro, MA 01581
508-573-6650

Customer Connecticut Yankee
Attention Richard N. McGrath

Report Date 12/19/06
Receipt Date 11/21/06

Connecticut Yankee
362 Injun Hollow Road
Haddam Neck, CT 06424-3022

Lab. Sample No. L11698-04 Client ID 29-I BOTTOM FEEDER Product GAMMA SPECTROMETRY
Reference Date 11/15/06 Analysis Date 12/12/06 Matrix Fish

Nuclide	Activity Concentration +/- 1 - Sigma (pCi/kg)	TPU 1 Sigma (pCi/kg)	Measured MDC (pCi/kg)	Required MDC (pCi/kg)	Flags
AcTh-228	1.6E+01 +/- 2.4E+01	2.4E+01	8.4E+01		
Ag-108m	-6.9E+00 +/- 5.6E+00	5.6E+00	2.1E+01		
Ag-110m	-1.02E+01 +/- 9.0E+00	9.1E+00	3.5E+01		
Ba-140	6E+00 +/- 2.3E+01	2.3E+01	8.9E+01		
Be-7	1.08E+02 +/- 6.1E+01	6.1E+01	2.0E+02		
Ce-141	-1.2E+01 +/- 1.3E+01	1.3E+01	4.6E+01		
Ce-144	-1E+01 +/- 3.3E+01	3.3E+01	1.2E+02		
Co-57	5.6E+00 +/- 4.3E+00	4.3E+00	1.4E+01		
Co-58	-1.16E+01 +/- 7.8E+00	7.9E+00	3.1E+01		
Co-60	3.5E+00 +/- 8.1E+00	8.1E+00	2.9E+01	1.3E+02	
Cr-51	-8E+00 +/- 8.4E+01	8.4E+01	3.0E+02		
Cs-134	5.4E+00 +/- 6.4E+00	6.4E+00	2.2E+01	1.3E+02	
Cs-137	3.57E+01 +/- 9.3E+00	9.5E+00	2.7E+01	1.5E+02	bc
Fe-59	1.5E+01 +/- 2.0E+01	2.0E+01	6.9E+01		
I-131	-5E+00 +/- 6.2E+01	6.2E+01	2.2E+02		
K-40	2.18E+03 +/- 1.8E+02	2.1E+02	3.2E+02		bc
La-140	7E+00 +/- 2.7E+01	2.7E+01	1.0E+02		
Mn-54	0E+00 +/- 6.1E+00	6.1E+00	2.2E+01	1.3E+02	
Nb-95	8E+00 +/- 1.1E+01	1.1E+01	3.8E+01		
Ru-103	-1E+00 +/- 8.2E+00	8.2E+00	3.0E+01		
Ru-106	-7E+00 +/- 6.4E+01	6.4E+01	2.3E+02		
Sb-124	1.7E+01 +/- 1.7E+01	1.7E+01	5.8E+01		
Sb-125	7E+00 +/- 1.7E+01	1.7E+01	5.9E+01		
Se-75	-1.4E+01 +/- 8.2E+00	8.2E+00	3.1E+01		
Zn-65	0E+00 +/- 1.6E+01	1.6E+01	6.0E+01	2.6E+02	
Zr-95	-6E+00 +/- 1.2E+01	1.2E+01	4.5E+01		

- Flags: a The measured MDC is greater than the required MDC
b The activity concentration is greater than three times its one sigma counting uncertainty.
c Peak was found

Reporting Level Ratio: 00.0

Approved by

E.M. Moreno
Sample Control & Measurements Supervisor

c:



Environmental Laboratory Analysis Report

29 Research Drive
Westboro, MA 01581
508-573-6650

Customer Connecticut Yankee
Attention Richard N. McGrath

Report Date 12/21/06
Receipt Date 11/21/06

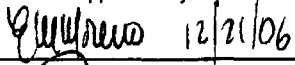
Connecticut Yankee
362 Injun Hollow Road
Haddam Neck, CT 06424-3022

Lab. Sample No. L11699-03 Client ID 30-C MIDDLETOWN Product GAMMA SPECTROMETRY
Reference Date 11/15/06 Analysis Date 12/20/06 Matrix Bottom Sediment

Nuclide	Activity Concentration +/- 1 - Sigma (pCi/kg)	TPU 1 Sigma (pCi/kg)	Measured MDC (pCi/kg)	Required MDC (pCi/kg)	Flags
AcTh-228	1.451E+03 +/- 9.2E+01	1.2E+02	2.9E+02		bc
Ag-108m	-1.3E+01 +/- 1.6E+01	1.6E+01	5.9E+01		
Ag-110m	3.2E+01 +/- 2.6E+01	2.6E+01	8.7E+01		
Ba-140	-1.8E+02 +/- 1.2E+02	1.2E+02	5.1E+02		
Be-7	4.3E+02 +/- 2.3E+02	2.3E+02	7.5E+02		
Ce-141	-7.3E+01 +/- 5.3E+01	5.3E+01	1.9E+02		
Ce-144	-4E+01 +/- 1.2E+02	1.2E+02	4.2E+02		
Co-57	6E+00 +/- 1.5E+01	1.5E+01	4.9E+01		
Co-58	-8.5E+01 +/- 2.5E+01	2.5E+01	1.0E+02		
Co-60	-3.2E+01 +/- 2.3E+01	2.3E+01	9.1E+01	1.5E+02	
Cr-51	-1.8E+02 +/- 3.6E+02	3.6E+02	1.3E+03		
Cs-134	-1E+01 +/- 2.0E+01	2.0E+01	7.2E+01	1.5E+02	
Cs-137	1.54E+02 +/- 3.3E+01	3.4E+01	9.6E+01	1.8E+02	bc
Fe-59	-5.3E+01 +/- 6.7E+01	6.7E+01	2.5E+02		
I-131	-4.7E+02 +/- 3.8E+02	3.8E+02	1.4E+03		
K-40	1.992E+04 +/- 7.8E+02	1.3E+03	6.5E+02		bc
La-140	-2.1E+02 +/- 1.4E+02	1.4E+02	5.8E+02		
Mn-54	4.1E+01 +/- 2.0E+01	2.0E+01	6.4E+01		
Nb-95	7E+00 +/- 3.8E+01	3.8E+01	1.3E+02		
Ru-103	0E+00 +/- 3.2E+01	3.2E+01	1.1E+02		
Ru-106	1.8E+02 +/- 1.9E+02	1.9E+02	6.6E+02		
Sb-124	0E+00 +/- 4.8E+01	4.8E+01	1.9E+02		
Sb-125	8.3E+01 +/- 5.3E+01	5.3E+01	1.8E+02		
Se-75	7E+00 +/- 2.6E+01	2.6E+01	9.0E+01		
Zn-65	2E+01 +/- 1.1E+02	1.1E+02	3.7E+02		
Zr-95	4E+01 +/- 4.7E+01	4.7E+01	1.6E+02		

- Flags: a The measured MDC is greater than the required MDC
 b The activity concentration is greater than three times its one sigma counting uncertainty.
 c Peak was found

Reporting Level Ratio:

Approved by

 E.M. Moreno
 Sample Control & Measurements Supervisor

c:



Environmental Laboratory Analysis Report
 29 Research Drive
 Westboro, MA 01581
 508-573-6650

Customer Connecticut Yankee
 Attention Richard N. McGrath

Report Date 12/21/06
 Receipt Date 11/21/06

Connecticut Yankee
 362 Injun Hollow Road

Haddam Neck, CT 06424-3022

Lab. Sample No. L11699-02 Client ID 29-I VICIN OF DISCHARGE Product GAMMA SPECTROMETRY
 Reference Date 11/15/06 Analysis Date 12/20/06 Matrix Bottom Sediment

Nuclide	Activity Concentration +/- 1 - Sigma (pCi/kg)	TPU 1 Sigma (pCi/kg)	Measured MDC (pCi/kg)	Required MDC (pCi/kg)	Flags
AcTh-228	1.457E+03 +/- 7.7E+01	1.1E+02	2.5E+02		bc
Ag-108m	-6E+00 +/- 1.5E+01	1.5E+01	5.4E+01		
Ag-110m	9E+00 +/- 2.5E+01	2.5E+01	8.9E+01		
Ba-140	1.06E+03 +/- 3.6E+02	3.6E+02	1.1E+03		
Be-7	5E+02 +/- 2.2E+02	2.2E+02	6.9E+02		
Ce-141	1E+01 +/- 4.8E+01	4.8E+01	1.6E+02		
Ce-144	3.8E+01 +/- 9.1E+01	9.1E+01	3.1E+02		
Co-57	1.1E+01 +/- 1.2E+01	1.2E+01	4.0E+01		
Co-58	-3.6E+01 +/- 2.3E+01	2.3E+01	8.9E+01		
Co-60	1.75E+02 +/- 2.2E+01	2.4E+01	7.5E+01	1.5E+02	bc
Cr-51	-6E+01 +/- 2.5E+02	2.5E+02	8.9E+02		
Cs-134	1.3E+01 +/- 1.7E+01	1.7E+01	5.7E+01	1.5E+02	
Cs-137	2.67E+02 +/- 3.3E+01	3.5E+01	8.7E+01	1.8E+02	bc
Fe-59	3.3E+01 +/- 6.4E+01	6.4E+01	2.2E+02		
I-131	-3E+02 +/- 2.5E+02	2.5E+02	9.1E+02		
K-40	1.949E+04 +/- 7.4E+02	1.2E+03	7.2E+02		bc
La-140	1.6E+02 +/- 2.0E+02	2.0E+02	6.9E+02		
Mn-54	2.7E+01 +/- 2.0E+01	2.0E+01	6.8E+01		
Nb-95	0E+00 +/- 6.1E+01	6.1E+01	2.1E+02		
Ru-103	7E+00 +/- 2.7E+01	2.7E+01	9.4E+01		
Ru-106	3E+02 +/- 1.4E+02	1.4E+02	4.6E+02		
Sb-124	-3.8E+01 +/- 4.9E+01	4.9E+01	2.0E+02		
Sb-125	2.8E+01 +/- 4.7E+01	4.7E+01	1.6E+02		
Se-75	-2.3E+01 +/- 2.3E+01	2.3E+01	8.2E+01		
Zn-65	4.2E+01 +/- 8.8E+01	8.8E+01	3.0E+02		
Zr-95	7.7E+01 +/- 4.3E+01	4.3E+01	1.4E+02		

- Flags: a The measured MDC is greater than the required MDC
 b The activity concentration is greater than three times its one sigma counting uncertainty.
 c Peak was found

Reporting Level Ratio:

Approved by

 E.M. Moreno
 Sample Control & Measurements Supervisor

c:



Environmental Laboratory Analysis Report
 29 Research Drive
 Westboro, MA 01581
 508-573-6650

Customer Connecticut Yankee
 Attention Richard N. McGrath

Report Date 12/21/06
 Receipt Date 11/21/06

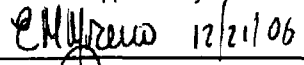
Connecticut Yankee
 362 Injun Hollow Road
 Haddam Neck, CT 06424-3022

Lab. Sample No. L11699-01 Client ID 28-I EAST HADDAM BRIDGE Product GAMMA SPECTROMETRY
 Reference Date 11/15/06 Analysis Date 12/20/06 Matrix Bottom Sediment

Nuclide	Activity Concentration +/- 1 - Sigma (pCi/kg)	TPU 1 Sigma (pCi/kg)	Measured MDC (pCi/kg)	Required MDC (pCi/kg)	Flags
AcTh-228	8.7E+02 +/- 5.6E+01	7.1E+01	1.8E+02		bc
Ag-108m	1.3E+01 +/- 1.1E+01	1.1E+01	3.6E+01		
Ag-110m	-1.8E+01 +/- 1.7E+01	1.7E+01	6.5E+01		
Ba-140	-8.9E+01 +/- 7.1E+01	7.1E+01	2.8E+02		
Be-7	1.09E+03 +/- 2.2E+02	2.2E+02	6.4E+02		bc
Ce-141	1.7E+01 +/- 3.8E+01	3.8E+01	1.3E+02		
Ce-144	-1.1E+02 +/- 1.6E+02	1.6E+02	5.4E+02		
Co-57	-1E+01 +/- 1.0E+01	1.0E+01	3.6E+01		
Co-58	1.4E+01 +/- 1.5E+01	1.5E+01	4.9E+01		
Co-60	7E+00 +/- 1.4E+01	1.4E+01	4.9E+01	1.5E+02	
Cr-51	1.1E+02 +/- 2.4E+02	2.4E+02	8.2E+02		
Cs-134	-1.1E+01 +/- 1.2E+01	1.2E+01	4.4E+01	1.5E+02	
Cs-137	1.01E+02 +/- 2.0E+01	2.0E+01	5.7E+01	1.8E+02	bc
Fe-59	-1.3E+01 +/- 4.0E+01	4.0E+01	1.5E+02		
I-131	-1.4E+02 +/- 2.3E+02	2.3E+02	8.1E+02		
K-40	1.278E+04 +/- 4.7E+02	8.0E+02	4.6E+02		bc
La-140	-1.03E+02 +/- 8.1E+01	8.1E+01	3.3E+02		
Mn-54	-6E+00 +/- 1.4E+01	1.4E+01	5.0E+01		
Nb-95	-4.9E+01 +/- 2.4E+01	2.4E+01	9.2E+01		
Ru-103	-4.9E+01 +/- 1.9E+01	1.9E+01	7.4E+01		
Ru-106	-1E+01 +/- 1.2E+02	1.2E+02	4.2E+02		
Sb-124	2.4E+01 +/- 2.8E+01	2.8E+01	9.8E+01		
Sb-125	7E+00 +/- 3.3E+01	3.3E+01	1.1E+02		
Se-75	-4.7E+01 +/- 2.0E+01	2.0E+01	7.3E+01		
Zn-65	-6.9E+01 +/- 6.4E+01	6.4E+01	2.2E+02		
Zr-95	-2.2E+01 +/- 3.0E+01	3.0E+01	1.1E+02		

- Flags: a The measured MDC is greater than the required MDC
 b The activity concentration is greater than three times its one sigma counting uncertainty.
 c Peak was found

Reporting Level Ratio:

Approved by

 B.M. Moreno
 Sample Control & Measurements Supervisor

c:



Environmental Laboratory Analysis Report
 29 Research Drive
 Westboro, MA 01581
 508-573-6650

Customer Connecticut Yankee
Attention Richard N. McGrath

Report Date 01/05/07
Receipt Date 12/14/06

Connecticut Yankee
 362 Injun Hollow Road
 Haddam Neck, CT 06424-3022

Lab. Sample No. L11820-01 **Client ID** 27-C SHELLFISH **Product** GAMMA SPECTROMETRY
Reference Date 12/12/06 **Analysis Date** 01/04/07 **Matrix** Fish

Nuclide	Activity Concentration +/- 1 - Sigma (pCi/kg)	TPU 1 Sigma (pCi/kg)	Measured MDC (pCi/kg)	Required MDC (pCi/kg)	Flags
AcTh-228	1.42E+02 +/- 2.2E+01	2.3E+01	8.9E+01		bc
Ag-108m	-3.8E+00 +/- 4.2E+00	4.2E+00	1.5E+01		
Ag-110m	1.56E+01 +/- 6.7E+00	6.7E+00	2.1E+01		
Ba-140	5E+00 +/- 1.7E+01	1.7E+01	6.0E+01		
Be-7	4.8E+01 +/- 5.1E+01	5.1E+01	1.7E+02		
Ce-141	1.2E+01 +/- 1.1E+01	1.1E+01	3.7E+01		
Ce-144	3E+01 +/- 3.0E+01	3.0E+01	1.0E+02		
Co-57	2.4E+00 +/- 3.8E+00	3.8E+00	1.3E+01		
Co-58	-4.6E+00 +/- 6.0E+00	6.0E+00	2.2E+01		
Co-60	-3.3E+00 +/- 5.2E+00	5.2E+00	2.0E+01	1.3E+02	
Cr-51	3.4E+01 +/- 7.0E+01	7.0E+01	2.4E+02		
Cs-134	-1.3E+00 +/- 5.9E+00	5.9E+00	2.1E+01	1.3E+02	
Cs-137	-1.1E+00 +/- 5.1E+00	5.1E+00	1.8E+01	1.5E+02	
Fe-59	4E+00 +/- 1.2E+01	1.2E+01	4.2E+01		
I-131	-1.4E+01 +/- 3.5E+01	3.5E+01	1.2E+02		
K-40	1.87E+02 +/- 8.3E+01	8.3E+01	2.6E+02		c
La-140	5E+00 +/- 1.9E+01	1.9E+01	6.9E+01		
Mn-54	0E+00 +/- 5.4E+00	5.4E+00	1.9E+01	1.3E+02	
Nb-95	7.3E+00 +/- 8.7E+00	8.7E+00	3.0E+01		
Ru-103	-4E-01 +/- 7.2E+00	7.2E+00	2.5E+01		
Ru-106	-1.35E+02 +/- 4.8E+01	4.9E+01	1.9E+02		
Sb-124	-2E+00 +/- 1.3E+01	1.3E+01	4.8E+01		
Sb-125	1E+01 +/- 1.4E+01	1.4E+01	4.8E+01		
Se-75	8.9E+00 +/- 7.0E+00	7.0E+00	2.3E+01		
Zn-65	1.3E+01 +/- 2.2E+01	2.2E+01	7.3E+01	2.6E+02	
Zr-95	1.2E+01 +/- 1.1E+01	1.1E+01	3.6E+01		

- Flags:** a The measured MDC is greater than the required MDC
 b The activity concentration is greater than three times its one sigma counting uncertainty.
 c Peak was found

Reporting Level Ratio:

Approved by

 E.M. Moreno
 Sample Control & Measurements Supervisor

c:



Environmental Laboratory Analysis Report
 29 Research Drive
 Westboro, MA 01581
 508-573-6650

Customer Connecticut Yankee
Attention Richard N. McGrath

Report Date 01/05/07
Receipt Date 12/14/06

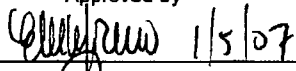
Connecticut Yankee
 362 Injun Hollow Road
 Haddam Neck, CT 06424-3022

Lab. Sample No. L11820-02 **Client ID** 31-I SHELLFISH **Product** GAMMA SPECTROMETRY
Reference Date 12/12/06 **Analysis Date** 01/04/07 **Matrix** Fish

Nuclide	Activity Concentration +/- 1 - Sigma (pCi/kg)	TPU 1 Sigma (pCi/kg)	Measured MDC (pCi/kg)	Required MDC (pCi/kg)	Flags
AcTh-228	2.11E+02 +/- 2.3E+01	2.5E+01	8.5E+01		bc
Ag-108m	-1.8E+00 +/- 4.5E+00	4.5E+00	1.6E+01		
Ag-110m	-8.1E+00 +/- 7.0E+00	7.0E+00	2.6E+01		
Ba-140	-1.2E+02 +/- 5.1E+01	5.2E+01	2.0E+02		
Be-7	-6E+00 +/- 5.2E+01	5.2E+01	1.8E+02		
Ce-141	2E+00 +/- 1.1E+01	1.1E+01	3.8E+01		
Ce-144	-2.8E+01 +/- 3.1E+01	3.1E+01	1.1E+02		
Co-57	-2E-01 +/- 3.8E+00	3.8E+00	1.3E+01		
Co-58	-2.7E+00 +/- 5.9E+00	5.9E+00	2.1E+01		
Co-60	1.3E+00 +/- 4.4E+00	4.4E+00	1.6E+01	1.3E+02	
Cr-51	-1E+02 +/- 7.5E+01	7.5E+01	2.7E+02		
Cs-134	-3.4E+00 +/- 4.5E+00	4.5E+00	1.8E+01	1.3E+02	
Cs-137	-3.8E+00 +/- 5.5E+00	5.5E+00	2.0E+01	1.5E+02	
Fe-59	1.4E+01 +/- 1.1E+01	1.2E+01	3.9E+01		
I-131	1E+01 +/- 3.4E+01	3.4E+01	1.2E+02		
K-40	2.08E+02 +/- 7.7E+01	7.8E+01	2.4E+02		c
La-140	-1.5E+01 +/- 3.3E+01	3.3E+01	1.2E+02		
Mn-54	-1.9E+00 +/- 4.6E+00	4.6E+00	1.7E+01	1.3E+02	
Nb-95	-7.9E+00 +/- 8.0E+00	8.0E+00	2.9E+01		
Ru-103	-4E+00 +/- 6.8E+00	6.8E+00	2.4E+01		
Ru-106	-7.2E+01 +/- 5.3E+01	5.4E+01	1.9E+02		
Sb-124	-3E+00 +/- 1.2E+01	1.2E+01	4.5E+01		
Sb-125	-2E+01 +/- 1.4E+01	1.4E+01	5.1E+01		
Se-75	-4.4E+00 +/- 6.7E+00	6.7E+00	2.3E+01		
Zn-65	1.8E+01 +/- 2.1E+01	2.1E+01	7.1E+01	2.6E+02	
Zr-95	2E+00 +/- 8.5E+00	8.5E+00	3.6E+01		

- Flags:**
- a The measured MDC is greater than the required MDC
 - b The activity concentration is greater than three times its one sigma counting uncertainty.
 - c Peak was found

Reporting Level Ratio:

Approved by

 E.M. Moreno
 Sample Control & Measurements Supervisor

c:

Attachment 1
Packard 2500 TR Log Sheet

Sample Date/Time	Analysis Date/Time	Sample ID	Sample Location/Description	CPM Region A	CPM Region C	Eff.	(SIE)	Activity (µCi/units)	Notes	Perf Init.
12-15-5 1930	12-15-5 1932	051215003	GWTT - NOV'S	57.34	28.26	3977	490	1.94 E-5		S
12-19-5 0900	12-19-5 1134	-	QC	3575.90	-	2955	485	12100 dpm		ms
12-19-5 0900	12-19-5 1150	-	BKG	7.32	25.75	3964	488	-		ms
12-19-5 1010	12-19-5 1206	051219004	RIVE MAKE-UP	7.58	27.69	3967	489	21.3 E-6		ms
12-19-5 1720	12-19-5 1838	051219010	RY	7.09	29.45	4013	496	49.78 E-9		S
12-19-5 0900	12-21-5 1443	-	QC	3531.05	-	2936	481	12028 dpm		ms
12-19-5 0900	12-21-5 1439	-	BKG	6.69	30.05	3956	487	-		ms
12-21-5 1405	12-21-5 1415	051221004	SFR CUT	12376.8	218.10	4023	497	4.62 E-3		ms
1-3-6 0800	1-3-6 2019	-	QC	3565.5	-	2943	484	12117 dpm		ms
1-3-6 0800	1-3-6 2035	-	BKG	6.88	28.78	3983	492	-		ms
1-3-6 1715	1-3-6 2051	060103002	R-1	6.65	26.55	4001	494	49.53 E-9		ms
1-3-6 0800	1-5-6 1623	-	QC	3488.9	-	2931	481	11905 dpm		ms
1-3-6 0800	1-5-6 1641	-	BKG	6.06	28.47	3967	488	-		ms
1-5-6 1400	1-5-6 1657	060105002	ISFSI (Rem old)	5.50	29.23	3945	485	<MDA		ms
1-5-6 1000	1-5-6 1713	060105003	Goodspeed	6.20	29.33	3927	482	<MDA		ms
1-6-6 1400	1-6-6 1653	060106000	Harbor Park	8.07	27.86	3979	491	<MDA		ms
LE 1-3-6 0800	1-6-6 1621	-	QC	3529.5	-	2932	482	12038 dpm		ms
LE 1-3-6 0800	1-6-6 1631	-	BKG	7.37	27.30	3965	488	-		ms
1-6-6 1830	1-6-6 1709	060106005	GWTT w/ 12-10-5	14.57	29.63	4007	495	2.70 E-6		ms
1-9-6 0800	1-10-6 1847	-	BKG	3537.3	-	2933	482	12057 dpm		ms

Reviewed by: JS/14

Date: 12/14/06

COPY

1-MAR-2007 09:42:43.06

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - GOODSPEED RIVER SAMPLE
SAMPLE ID : 060106007A * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 5-JAN-2006 10:00: * GEO EFFICIENCY DATE: 17-SEP-2002
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 6-JAN-2006 04:06: * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00656E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 6-JAN-2006 14:16: * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 01:01:05 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3665.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3665.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 1 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.OLD]060106007A_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
REVIEWED BY : _____
COMMENTS :

COPY

Post-NID Peak Search Report
***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 1-MAR-2007 09:42
REQUESTOR : CAS_TECH

PAGE 1 OF _____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060106007A
Sample Title : - GOODSPEED RIVER SAMPLE
Sample Time : 5-JAN-2006 10:00
Count Time : 6-JAN-2006 14:16
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 5.173E-09	Passed
CO-58	1.500E-08	< 3.897E-09	Passed
CO-60	1.500E-08	< 1.329E-08	Passed
ZN-65	3.000E-08	< 5.597E-09	Passed
CS-134	1.500E-08	< 5.261E-09	Passed
CS-137	1.800E-08	< 1.193E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 1-MAR-2007 09:42
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - GOODSPEED RIVER SAMPLE

SAMPLE No. : 060106007A OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 6-JAN-2006 14:16:55. SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 5-JAN-2006 10:00:00. DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
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UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
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No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: RSK/Hand

Reviewed by: RSK/Hand

COPY

**** End Of Report (1 Page) ****

1-MAR-2007 09:43:40.71

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - GOODSPEED RIVER SAMPLE
SAMPLE ID : 060106007 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 5-JAN-2006 10:00: * GEO EFFICIENCY DATE: 18-SEP-2002
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 1 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 6-JAN-2006 02:53: * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00601E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 6-JAN-2006 09:19: * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 02:34:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 9240.4 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 9240.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.OLD]060106007_ADC1_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
REVIEWED BY : _____
COMMENTS : _____

COPY

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	1173.50*	46	3	2.28	2346.56	2340	12	24.2		CO-60
0	1332.94*	37	17	2.36	2665.73	2659	11	34.2		CO-60

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 1-MAR-2007 09:43
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060106007
Sample Title : - GOODSPEED RIVER SAMPLE
Sample Time : 5-JAN-2006 10:00
Count Time : 6-JAN-2006 09:19
Sample Qauntity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 1
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.194E-09	Passed
CO-58	1.500E-08	< 3.638E-09	Passed
CO-60	1.500E-08	1.628E-08	Okay
ZN-65	3.000E-08	< 1.190E-08	Passed
CS-134	1.500E-08	< 3.854E-09	Passed
CS-137	1.800E-08	< 5.409E-09	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 1-MAR-2007 09:43
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - GOODSPEED RIVER SAMPLE

SAMPLE No. : 060106007 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 6-JAN-2006 09:19:36. SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 5-JAN-2006 10:00:00. DETECTOR : DET 1
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
CO-60	1332.49	0.45	1.628E-08	* Peak FWHM = 2.4
AVG ENERGY DIFF = 0.45			1.628E-08	= TOTAL GAMMA ACTIVITY
			1.628E-08	= Total AP Activity

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
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No Unidentified/Rejected Peaks

Performed by: *[Signature]*

Reviewed by: *[Signature]*

COPY

*** End Of Report (1 Page) ***

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: Goodspeed- river
Sample Date/Time: 1/17/2006 12:45

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	8.27
bkgd	6.41
Volume	3
Efficiency	0.4011
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

(enter EFF(%) as decimal)

Liquid Sample Activity is <MDA

MDA = < **1.21E-06** uCi/ml
Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time format MM/DD HH:MM format

Initial Sample flow rate cc/min

Sample stop date & time format MM/DD HH:MM format

Final Sample flow rate cc/min

Sample collection time 0 min

Total sample volume 0 cc

COPY

H-3 Concentration in Air (uCi/cc)

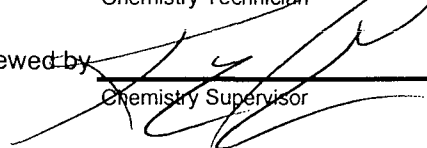
N/A

MDA= < **N/A**

Required MDA = 1E-6 uCi/cc

Performed by 
Chemistry Technician

1-18-06
Date

Reviewed by 
Chemistry Supervisor

1-26-06
Date

17-JAN-2006 20:03:11.43

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - GOODSPEED RIVER
SAMPLE ID : 060117011
SAMPLE TIME : 17-JAN-2006 12:45
SAMPLE TYPE : LIQUID

* SAMPLE GEOMETRY : 4LMARS
* GEO EFFICIENCY DATE: 18-SEP-2002
* SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 1
LAST ENERGY CAL : 17-JAN-2006 14:21
KEV/CHANNEL : 5.00500E-01
START CHANNEL : 100
ACQ DATE & TIME : 17-JAN-2006 16:42
PRESET LIVE TIME : 0 03:20:00
ELAPSED REAL TIME : 12000. Secs
ELAPSED LIVE TIME : 12000. Secs
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060117011_ADC1_LIQUID.CNF;1

* LIBRARY : CHEM_RELEASE
* ENERGY TOLERANCE: 2.00000
* HALF LIFE RATIO : 9.00000
* END CHANNEL : 4096
* DEADTIME (%) : 0.0%
* SENSITIVITY : 7.50000
* GAUSSIAN SEN : 10.00000
* CORRECTION FACTOR: 1.00000E+00

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : A
REVIEWED BY : _____
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

COPY

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 17-JAN-2006 20:03
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060117011
Sample Title : - GOODSPEED RIVER
Sample Time : 17-JAN-2006 12:45
Count Time : 17-JAN-2006 16:42
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 1
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 3.728E-09	Passed
CO-58	1.500E-08	< 3.574E-09	Passed
CO-60	1.500E-08	< 1.333E-08	Passed
ZN-65	3.000E-08	< 9.545E-09	Passed
CS-134	1.500E-08	< 3.269E-09	Passed
CS-137	1.800E-08	< 4.380E-09	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 17-JAN-2006 20:03
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - GOODSPEED RIVER

SAMPLE No. : 060117011 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 17-JAN-2006 16:42:56 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 17-JAN-2006 12:45:00 DETECTOR : DET 1
LIBRARY : CHEM_RELEASE

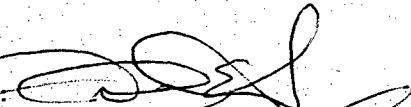
ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------


UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
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No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: 

Reviewed by: 

**** End of Report (1 Page) ****

Tritium Calculation Worksheet

Sample Title: **Goodspeed- river sample**
Sample Date/Time: **1/31/2006 13:00**

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	7.88
bkgd	7.77
Volume	3
Efficiency	0.4023
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

(enter EFF(%) as decimal)

Liquid Sample Activity is **<MDA**

MDA = < 1.32E-06 uCi/ml

Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time

--

format MM/DD HH:MM format

Initial Sample flow rate

--

cc/min

Sample stop date & time

--

format MM/DD HH:MM format

Final Sample flow rate

--

cc/min

Sample collection time

0 min

Total sample volume

0 cc


COPY

H-3 Concentration in Air (uCi/cc)

N/A

MDA= < N/A

Required MDA = 1E-6 uCi/cc

Performed by 
 Chemistry Technician

2-1-6
 Date

Reviewed by 
 Chemistry Supervisor

2-7-06
 Date

1-FEB-2006 09:56:34.59

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - GOODSPEED RIVER SAMPLE
SAMPLE ID : 060201005 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 31-JAN-2006 13:00 * GEO EFFICIENCY DATE: 17-SEP-2002
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 1-FEB-2006 01:24: * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00975E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 1-FEB-2006 09:06: * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:50:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3000.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3000.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060201005_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : A
REVIEWED BY : KL
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

COPY

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 1-FEB-2006 09:56
REQUESTOR : CAS_TECH

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060201005
Sample Title : - GOODSPEED RIVER SAMPLE
Sample Time : 31-JAN-2006 13:00
Count Time : 1-FEB-2006 09:06
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 2.981E-09	Passed
CO-58	1.500E-08	< 6.366E-09	Passed
CO-60	1.500E-08	< 1.244E-08	Passed
ZN-65	3.000E-08	< 3.541E-09	Passed
CS-134	1.500E-08	< 3.089E-09	Passed
CS-137	1.800E-08	< 1.197E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 1-FEB-2006 09:56
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - GOODSPEED RIVER SAMPLE

SAMPLE No. : 060201005 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 1-FEB-2006 09:06:18. SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 31-JAN-2006 13:00:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
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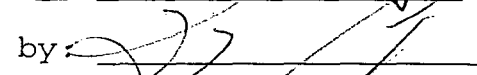
UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: 

Reviewed by: 

**** End Of Report (1 Page) ****

Tritium Calculation Worksheet

Sample Title: **GOODSPEED RIVER**
Sample Date/Time: **2/15/2006 16:20 PM**

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	7.90
bkgd	6.53
Volume	3
Efficiency	0.3993 (enter EFF(%) as decimal)
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is **<MDA**

MDA = < 1.22E-06 uCi/ml
Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time format MM/DD HH:MM format

Initial Sample flow rate cc/min

Sample stop date & time format MM/DD HH:MM format

Final Sample flow rate cc/min

Sample collection time 0 min

Total sample volume 0 cc

COPY

H-3 Concentration in Air (uCi/cc)

N/A

MDA = < N/A

Required MDA = 1E-6 uCi/cc

Performed by *ushepherd*
 Chemistry Technician

2-16-06
 Date

Reviewed by *[Signature]*
 Chemistry Supervisor

2-28-06
 Date

16-FEB-2006 11:50:42.13

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - GOODSPEED RIVER WATER
SAMPLE ID : 060216002 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 15-FEB-2006 16:20 * GEO EFFICIENCY DATE: 12-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM RELEASE
LAST ENERGY CAL : 16-FEB-2006 05:29 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00959E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 16-FEB-2006 11:00 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:50:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3000.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3000.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060216002_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : KC
REVIEWED BY : KL
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

COPY

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 16-FEB-2006 11:50
REQUESTOR : CAS

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060216002
Sample Title : - GOODSPEED RIVER WATER
Sample Time : 15-FEB-2006 16:20
Count Time : 16-FEB-2006 11:00
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.365E-09	Passed
CO-58	1.500E-08	< 5.329E-09	Passed
CO-60	1.500E-08	< 1.211E-08	Passed
ZN-65	3.000E-08	< 1.355E-08	Passed
CS-134	1.500E-08	< 3.880E-09	Passed
CS-137	1.800E-08	< 1.153E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 16-FEB-2006 11:50
REQUESTOR : CAS

PAGE 1 OF _____

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - GOODSPEED RIVER WATER

SAMPLE No. : 060216002 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 16-FEB-2006 11:00:30 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 15-FEB-2006 16:20:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
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UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: 

Reviewed by: 

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: **GOODSPEED RIVER**
Sample Date/Time: **2/27/2006 14:00 PM**

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	6.52
bkgd	5.89
Volume	3
Efficiency	0.3949
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

(enter EFF(%) as decimal)

Liquid Sample Activity is **<MDA**

MDA = < 1.18E-06 uCi/ml
Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time

Initial Sample flow rate

Sample stop date & time

Final Sample flow rate

format MM/DD HH:MM format
cc/min
format MM/DD HH:MM format
cc/min

Sample collection time

0 min

Total sample volume

0 cc

COPY

H-3 Concentration in Air (uCi/cc)

N/A

MDA = < N/A

Required MDA = 1E-6 uCi/cc

Performed by *mshephard*
Chemistry Technician

2-28-06
Date

Reviewed by *[Signature]*
Chemistry Supervisor

2-28-06
Date

28-FEB-2006 17:22:51.84

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - GOODSPEED RIVER
SAMPLE ID : 060228008 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 27-FEB-2006 14:00 * GEO EFFICIENCY DATE: 12-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 28-FEB-2006 08:28 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00984E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 28-FEB-2006 16:32 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:50:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3000.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3000.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 1 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060228008_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
REVIEWED BY : KL
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 28-FEB-2006 17:22
REQUESTOR : CAS

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060228008
Sample Title : - GOODSPEED RIVER
Sample Time : 27-FEB-2006 14:00
Count Time : 28-FEB-2006 16:32
Sample Qauntity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.829E-09	Passed
CO-58	1.500E-08	< 6.436E-09	Passed
CO-60	1.500E-08	< 1.294E-08	Passed
ZN-65	3.000E-08	< 1.483E-08	Passed
CS-134	1.500E-08	< 3.076E-09	Passed
CS-137	1.800E-08	< 1.349E-08	Passed

*** End Of Report (1 Page) ***

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 28-FEB-2006 17:22
REQUESTOR : CAS

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - GOODSPEED RIVER

SAMPLE No. : 060228008 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 28-FEB-2006 16:32:35 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 27-FEB-2006 14:00:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
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UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
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No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: [Signature]

Reviewed by: [Signature]

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: **GOODSPEED RIVER**
Sample Date/Time: **3/14/2006 13:00 PM**

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	6.46
bkgd	8.40
Volume	3
Efficiency	0.3972 (enter EFF(%) as decimal)
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is **<MDA**
MDA = **< 1.38E-06** uCi/ml
Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample (leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)
 Percent Humidity in Sample Area (as a Fraction)
 Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc) **N/A**

Gas Bubbler Sample (leave blank if not used)

Sample start date & time format MM/DD HH:MM format
 Initial Sample flow rate cc/min
 Sample stop date & time format MM/DD HH:MM format
 Final Sample flow rate cc/min
 Sample collection time 0 min
 Total sample volume 0 cc

COPY

H-3 Concentration in Air (uCi/cc) **N/A**

MDA = **< N/A**
 Required MDA = 1E-6 uCi/cc

Performed by *mskyphene*
 Chemistry Technician

3-14-06
 Date

Reviewed by *[Signature]*
 Chemistry Supervisor

3-15-06
 Date

14-MAR-2006 15:29:52.41

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - GOODSPEED RIVER
SAMPLE ID : 060314006 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 14-MAR-2006 13:00 * GEO EFFICIENCY DATE: 12-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM RELEASE
LAST ENERGY CAL : 14-MAR-2006 08:31 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.01144E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 14-MAR-2006 14:35 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:54:33 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3273.3 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3273.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060314006_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
REVIEWED BY : KL
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

COPY

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 14-MAR-2006 15:29
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060314006
Sample Title : - GOODSPEED RIVER
Sample Time : 14-MAR-2006 13:00
Count Time : 14-MAR-2006 14:35
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 6.744E-09	Passed
CO-58	1.500E-08	< 5.819E-09	Passed
CO-60	1.500E-08	< 1.494E-08	Passed
ZN-65	3.000E-08	< 1.182E-08	Passed
CS-134	1.500E-08	< 6.403E-09	Passed
CS-137	1.800E-08	< 1.269E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 14-MAR-2006 15:29
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - GOODSPEED RIVER

SAMPLE No. : 060314006 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 14-MAR-2006 14:35:04 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 14-MAR-2006 13:00:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: *mshepherd*

Reviewed by: *JAG*

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: **GOODSPEED**
Sample Date/Time: **3/27/2006 14:00**

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	12.17
bkgd	10.26
Volume	3
Efficiency	0.3919
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

(enter EFF(%) as decimal)

Liquid Sample Activity is **<MDA**

MDA = < 1.54E-06 uCi/ml

Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time

--

format MM/DD HH:MM format

Initial Sample flow rate

--

cc/min

Sample stop date & time

--

format MM/DD HH:MM format

Final Sample flow rate

--

cc/min

Sample collection time

0 min

Total sample volume

0 cc

COPY

H-3 Concentration in Air (uCi/cc)

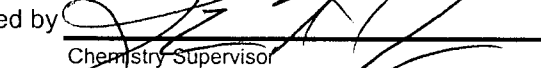
N/A

MDA= < N/A

Required MDA = 1E-6 uCi/cc

Performed by 
Chemistry Technician

3-27-06
Date

Reviewed by 
Chemistry Supervisor

3-30-06
Date

27-MAR-2006 21:48:23.09

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - GOODSPEED
SAMPLE ID : 060327009 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 27-MAR-2006 14:00 * GEO EFFICIENCY DATE: 12-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM RELEASE
LAST ENERGY CAL : 27-MAR-2006 19:15 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.01227E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 27-MAR-2006 20:56 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:51:11 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3071.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3071.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060327009_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : CHEM TECH
REVIEWED BY :
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

COPY

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 27-MAR-2006 21:48
REQUESTOR : CAS

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060327009
Sample Title : - GOODSPEED
Sample Time : 27-MAR-2006 14:00
Count Time : 27-MAR-2006 20:56
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 7.115E-09	Passed
CO-58	1.500E-08	< 7.054E-09	Passed
CO-60	1.500E-08	< 1.422E-08	Passed
ZN-65	3.000E-08	< 1.351E-08	Passed
CS-134	1.500E-08	< 6.496E-09	Passed
CS-137	1.800E-08	< 1.231E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 27-MAR-2006 21:48
REQUESTOR : CAS

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - GOODSPEED

SAMPLE No. : 060327009 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 27-MAR-2006 20:56:57 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 27-MAR-2006 14:00:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
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UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
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No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: [Signature]
Reviewed by: [Signature]

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: **goodspeed river**
Sample Date/Time: **4/10/2006 13:30**

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	12.28
bkgd	10.39
Volume	3
Efficiency	0.3978
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

(enter EFF(%) as decimal)

Liquid Sample Activity is **<MDA**

MDA = < 1.53E-06 uCi/ml

Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time

--

format MM/DD HH:MM format

Initial Sample flow rate

--

cc/min

Sample stop date & time

--

format MM/DD HH:MM format

Final Sample flow rate

--

cc/min

Sample collection time

0 min

Total sample volume

0 cc

COPY

H-3 Concentration in Air (uCi/cc)

N/A

MDA = < N/A

Required MDA = 1E-6 uCi/cc

Performed by [Signature]
Chemistry Technician

4-10-06
Date

Reviewed by [Signature]
Chemistry Supervisor

4-11-06
Date

10-APR-2006 19:59:30.83

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - GOODSPEED RIVER
SAMPLE ID : 060410013
SAMPLE TIME : 10-APR-2006 13:30
SAMPLE TYPE : LIQUID

* SAMPLE GEOMETRY : 4LMARS
* GEO EFFICIENCY DATE: 12-JAN-2006
* SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2
LAST ENERGY CAL : 10-APR-2006 10:44
KEV/CHANNEL : 5.01148E-01
START CHANNEL : 100
ACQ DATE & TIME : 10-APR-2006 19:09
PRESET LIVE TIME : 0 00:50:15
ELAPSED REAL TIME : 3015.2 Secs
ELAPSED LIVE TIME : 3015.0 Secs
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060410013_ADC2_LIQUID.CNF;1

* LIBRARY : CHEM RELEASE
* ENERGY TOLERANCE: 2.00000
* HALF LIFE RATIO : 9.00000
* END CHANNEL : 4096
* DEADTIME (%) : 0.0%
* SENSITIVITY : 7.50000
* GAUSSIAN SEN : 10.00000
* CORRECTION FACTOR: 1.00000E+00

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RS
REVIEWED BY : KL
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

COPY

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 10-APR-2006 19:59
REQUESTOR : CAS

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060410013
Sample Title : - GOODSPEED RIVER
Sample Time : 10-APR-2006 13:30
Count Time : 10-APR-2006 19:09
Sample Qauntity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 7.331E-09	Passed
CO-58	1.500E-08	< 6.318E-09	Passed
CO-60	1.500E-08	< 1.292E-08	Passed
ZN-65	3.000E-08	< 1.701E-08	Passed
CS-134	1.500E-08	< 5.011E-09	Passed
CS-137	1.800E-08	< 1.314E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 10-APR-2006 19:59
REQUESTOR : CAS

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - GOODSPEED RIVER

SAMPLE No. : 060410013 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 10-APR-2006 19:09:00 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 10-APR-2006 13:30:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

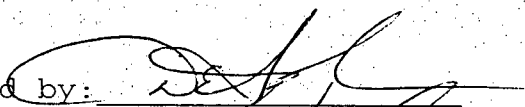
ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: 

Reviewed by: 

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: goodspeed
Sample Date/Time: 4/24/2006 12:40

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	8.52
bkgd	8.56
Volume	3
Efficiency	0.3997 (enter EFF(%) as decimal)
Bkgd Count Time (min)	15
Sample Count Time (min)	15

Liquid Sample Activity is <MDA

MDA = < 1.39E-06 uCi/ml
Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time format MM/DD HH:MM
Initial Sample flow rate cc/min
Sample stop date & time format MM/DD HH:MM
Final Sample flow rate cc/min

Sample collection time 0 min
Total sample volume 0 cc

H-3 Concentration in Air (uCi/cc)

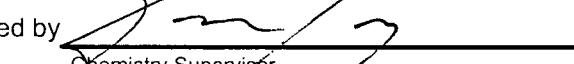
N/A

MDA= < N/A

Required MDA = 1E-6 uCi/cc

Performed by 
Chemistry Technician

4-25-06
Date

Reviewed by 
Chemistry Supervisor

5-10-06
Date

COPY

25-APR-2006 08:54:23.27

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - GOODSPEED RIVER
SAMPLE ID : 060425005 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 24-APR-2006 12:40 * GEO EFFICIENCY DATE: 12-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 25-APR-2006 07:20 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.01193E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 25-APR-2006 07:58 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:55:52 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3352.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3352.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060425005_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : ASH /C
REVIEWED BY : _____
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

COPY

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 25-APR-2006 08:54
REQUESTOR : CAS_TECH

PAGE 1 OF _____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060425005
Sample Title : - GOODSPEED RIVER
Sample Time : 24-APR-2006 12:40
Count Time : 25-APR-2006 07:58
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 5.532E-09	Passed
CO-58	1.500E-08	< 6.496E-09	Passed
CO-60	1.500E-08	< 1.317E-08	Passed
ZN-65	3.000E-08	< 1.314E-08	Passed
CS-134	1.500E-08	< 4.159E-09	Passed
CS-137	1.800E-08	< 1.288E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 25-APR-2006 08:54
REQUESTOR : CAS_TECH

PAGE 1 OF _____

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - GOODSPEED RIVER

SAMPLE No. : 060425005 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 25-APR-2006 07:58:15 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 24-APR-2006 12:40:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

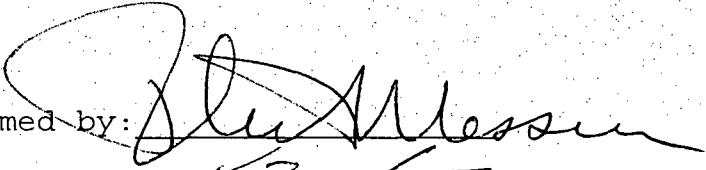
ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
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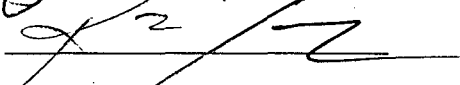
UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
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No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: 

Reviewed by: 

**** End Of Report (1 Page) ****

Tritium Calculation Worksheet

Sample Title: **GOODSPEED RIVER**
Sample Date/Time: **5/9/2006 14:00 PM**

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	8.94
bkgd	6.62
Volume	3
Efficiency	0.3982 (enter EFF(%) as decimal)
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is **<MDA**
MDA = **< 1.23E-06** uCi/ml
Required MDA = **2.00E-06** uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)
 Percent Humidity in Sample Area (as a Fraction)
 Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc) **N/A**

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time format MM/DD HH:MM format
 Initial Sample flow rate cc/min
 Sample stop date & time format MM/DD HH:MM format
 Final Sample flow rate cc/min
 Sample collection time 0 min
 Total sample volume 0 cc

H-3 Concentration in Air (uCi/cc) **N/A**

MDA= < N/A
 Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
 Chemistry Technician

5-10-06
 Date

Reviewed by *[Signature]*
 Chemistry Supervisor

5-15-06
 Date

9-MAY-2006 18:35:33.60

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - GOODSPEED RIVER
SAMPLE ID : 060509014 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 9-MAY-2006 14:00: * GEO EFFICIENCY DATE: 13-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 1 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 9-MAY-2006 00:45: * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00030E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 9-MAY-2006 16:10: * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 02:24:58 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 8698.3 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 8698.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060509014_ADC1_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
REVIEWED BY : KL
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

COPY

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 9-MAY-2006 18:35
REQUESTOR : CAS

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060509014
Sample Title : - GOODSPEED RIVER
Sample Time : 9-MAY-2006 14:00
Count Time : 9-MAY-2006 16:10
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 1
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 3.760E-09	Passed
CO-58	1.500E-08	< 4.555E-09	Passed
CO-60	1.500E-08	< 1.279E-08	Passed
ZN-65	3.000E-08	< 8.245E-09	Passed
CS-134	1.500E-08	< 3.864E-09	Passed
CS-137	1.800E-08	< 6.372E-09	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 9-MAY-2006 18:35
REQUESTOR : CAS

PAGE 1 OF _____

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - GOODSPEED RIVER

SAMPLE No. : 060509014 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 9-MAY-2006 16:10:21. SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 9-MAY-2006 14:00:00. DETECTOR : DET 1
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
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UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
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No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: Sharon Ventres

Reviewed by: [Signature]

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
 Rev. CY-001

Sample Title: **GOODSPEED RIVER**
Sample Date/Time: **5/22/2006 14:00 PM**

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	7.65
bkgd	7.24
Volume	3
Efficiency	0.4021 (enter EFF(%) as decimal)
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is **<MDA**

MDA = < 1.27E-06 uCi/ml
 Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time

--

format MM/DD HH:MM format

Initial Sample flow rate

--

cc/min

Sample stop date & time

--

format MM/DD HH:MM format

Final Sample flow rate

--

cc/min

Sample collection time

0 min

Total sample volume

0 cc

H-3 Concentration in Air (uCi/cc)

N/A

MDA = < N/A

Required MDA = 1E-6 uCi/cc

Performed by *urshyphere*
 Chemistry Technician

5-22-06
 Date

Reviewed by *[Signature]*
 Chemistry Supervisor

5-25-06
 Date

24-MAY-2006 14:24:06.86

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - GOODSPEED RIVER
SAMPLE ID : 060524002 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 22-MAY-2006 14:00 * GEO EFFICIENCY DATE: 11-FEB-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET5 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 24-MAY-2006 02:01 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00300E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 24-MAY-2006 13:33 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:50:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3000.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3000.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 1 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060524002_ADC5_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
REVIEWED BY : LC
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

*ATTEMPTED TO COUNT FOR 16 HRS
BUT Y-SPEC AUTO SET TIME TO 3000 SEC.
5-24-06*

COPY

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 24-MAY-2006 14:24
REQUESTOR : CAS

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060524002
Sample Title : - GOODSPEED RIVER
Sample Time : 22-MAY-2006 14:00
Count Time : 24-MAY-2006 13:33
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 5
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.817E-09	Passed
CO-58	1.500E-08	< 4.815E-09	Passed
CO-60	1.500E-08	< 1.116E-08	Passed
ZN-65	3.000E-08	< 1.300E-08	Passed
CS-134	1.500E-08	< 4.282E-09	Passed
CS-137	1.800E-08	< 9.667E-09	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 24-MAY-2006 14:24
REQUESTOR : CAS

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - GOODSPEED RIVER

SAMPLE No. : 060524002 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 24-MAY-2006 13:33:50 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 22-MAY-2006 14:00:00 DETECTOR : DET5
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
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UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: mshepherd

Reviewed by: [Signature]

**** End of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: **GOODSPEED RIVER**
Sample Date/Time: **6/6/2006 13:13 PM**

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	8.74
bkgd	7.51
Volume	3
Efficiency	0.3981
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

(enter EFF(%) as decimal)

Liquid Sample Activity is **<MDA**

MDA = < 1.31E-06 uCi/ml

Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time

--

format MM/DD HH:MM format

Initial Sample flow rate

--

cc/min

Sample stop date & time

--

format MM/DD HH:MM format

Final Sample flow rate

--

cc/min

Sample collection time

0 min

Total sample volume

0 cc

H-3 Concentration in Air (uCi/cc)

N/A

MDA= < N/A

Required MDA = 1E-6 uCi/cc

Performed by *mshepherd*
Chemistry Technician

6-6-6
Date

Reviewed by *[Signature]*
Chemistry Supervisor

6-8-06
Date

7-JUN-2006 09:06:51.05

CONNECTICUT YANKEE
HADDAM NECK STATION

RECOUNT DUE TO FAILED CO² ON PREVIOUS USE
on 6-7-6

SAMPLE TITLE : - GOODSPEED RIVER
SAMPLE ID : 060606018A
SAMPLE TIME : 6-JUN-2006 13:13:
SAMPLE TYPE : LIQUID

* SAMPLE GEOMETRY : 4LMARS
* GEO EFFICIENCY DATE: 12-JAN-2006
* SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2
LAST ENERGY CAL : 7-JUN-2006 01:18:
KEV/CHANNEL : 5.00962E-01
START CHANNEL : 100
ACQ DATE & TIME : 7-JUN-2006 08:16:
PRESET LIVE TIME : 0 00:50:00
ELAPSED REAL TIME : 3000.2 Secs
ELAPSED LIVE TIME : 3000.0 Secs
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060606018A_ADC2_LIQUID.CNF;1

* LIBRARY : CHEM_RELEASE
* ENERGY TOLERANCE: 2.00000
* HALF LIFE RATIO : 9.00000
* END CHANNEL : 4096
* DEADTIME (%) : 0.0%
* SENSITIVITY : 7.50000
* GAUSSIAN SEN : 10.00000
* CORRECTION FACTOR: 1.00000E+00

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
REVIEWED BY : KC
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

COPY

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 7-JUN-2006 09:06
REQUESTOR : CAS

PAGE 1 OF _____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060606018A
Sample Title : - GOODSPEED RIVER
Sample Time : 6-JUN-2006 13:13
Count Time : 7-JUN-2006 08:16
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 6.144E-09	Passed
CO-58	1.500E-08	< 6.746E-09	Passed
CO-60	1.500E-08	< 1.020E-08	Passed
ZN-65	3.000E-08	< 1.325E-08	Passed
CS-134	1.500E-08	< 5.557E-09	Passed
CS-137	1.800E-08	< 1.283E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 7-JUN-2006 09:06
REQUESTOR : CAS

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - GOODSPEED RIVER

SAMPLE No. : 060606018A OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 7-JUN-2006 08:16:39. SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 6-JUN-2006 13:13:00. DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
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UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: *[Signature]*

Reviewed by: *[Signature]*

**** End Of Report (1 Page) ****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 6-JUN-2006 16:30
REQUESTOR : CAS

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060606018
Sample Title : - GOODSPEED RIVER
Sample Time : 6-JUN-2006 13:13
Count Time : 6-JUN-2006 14:55
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 1
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 7.691E-09	Passed
CO-58	1.500E-08	< 5.755E-09	Passed
CO-60	1.500E-08	< 1.645E-08	FAILED
ZN-65	3.000E-08	< 1.184E-08	Passed
CS-134	1.500E-08	< 3.945E-09	Passed
CS-137	1.800E-08	< 7.404E-09	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA CHECK (V9.1)
REPORT DATE : 6-JUN-2006 16:30
REQUESTOR : CAS

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - GOODSPEED RIVER

SAMPLE No. : 060606018 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 6-JUN-2006 14:55:50. SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 6-JUN-2006 13:13:00. DETECTOR : DET 1
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: *[Signature]*

Reviewed by: *[Signature]*

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: **GOODSPEED RIVER**
Sample Date/Time: **6/19/2006 14:00 PM**

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	6.19
bkgd	7.31
Volume	3
Efficiency	0.3922 (enter EFF(%) as decimal)
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is **<MDA**

MDA = < 1.31E-06 uCi/ml
Required MDA = 2.00E-06 uCi/ml

COPY

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)
Percent Humidity in Sample Area (as a Fraction)
Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time format MM/DD HH:MM format
Initial Sample flow rate cc/min
Sample stop date & time format MM/DD HH:MM format
Final Sample flow rate cc/min

Sample collection time 0 min
Total sample volume 0 cc

H-3 Concentration in Air (uCi/cc)

N/A

MDA = < N/A

Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
Chemistry Technician

6-20-06
Date

Reviewed by *[Signature]*
Chemistry Supervisor

6-20-06
Date

19-JUN-2006 17:07:12.12

CONNECTICUT YANKEE
HADDAM NECK STATION

COPY

SAMPLE TITLE : - GOODSPEED ENVIRONMENTAL
SAMPLE ID : 060619016 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 19-JUN-2006 14:00 * GEO EFFICIENCY DATE: 12-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 19-JUN-2006 08:13 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.01163E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 19-JUN-2006 16:16 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:50:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3000.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3000.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK: [NEU.SAMPLE.CHEM.NEW]060619016_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : SHEPHERD
REVIEWED BY : KL
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 19-JUN-2006 17:07
REQUESTOR : CAS_TECH

PAGE 1 OF ___

CYAPCO
HADDAM NECK STATION

COPY

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060619016
Sample Title : - GOODSPEED ENVIRONMENTAL
Sample Time : 19-JUN-2006 14:00
Count Time : 19-JUN-2006 16:16
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.818E-09	Passed
CO-58	1.500E-08	< 4.498E-09	Passed
CO-60	1.500E-08	< 7.271E-09	Passed
ZN-65	3.000E-08	< 1.249E-08	Passed
CS-134	1.500E-08	< 4.520E-09	Passed
CS-137	1.800E-08	< 1.247E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 19-JUN-2006 17:07
REQUESTOR : CAS_TECH

CYAPCO
HADDAM NECK STATION
POST NID QA ANALYSIS

COPY

TITLE : - GOODSPEED ENVIRONMENTAL

SAMPLE No. : 060619016 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 19-JUN-2006 16:16:55 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 19-JUN-2006 14:00:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
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UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
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No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: mslypbae
Reviewed by: [Signature]

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: **GOODSPEED REMP**
Sample Date/Time: **6/28/2006 13:00 PM**

COPY

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	5.78
bkgd	5.20
Volume	3
Efficiency	0.3958 (enter EFF(%) as decimal)
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is **<MDA**

MDA = < **1.11E-06** uCi/ml

Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time		format MM/DD HH:MM format
Initial Sample flow rate		cc/min
Sample stop date & time		format MM/DD HH:MM format
Final Sample flow rate		cc/min

Sample collection time 0 min

Total sample volume 0 cc

H-3 Concentration in Air (uCi/cc)

N/A

MDA = < **N/A**

Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
Chemistry Technician

6-29-06
Date

Reviewed by *[Signature]*
Chemistry Supervisor

12/4/06
Date

5-JUL-2006 10:02:41.55

CONNECTICUT YANKEE
HADDAM NECK STATION

COPY

SAMPLE TITLE : - GOODSPEED WATER SAMPLE
SAMPLE ID : 060705004 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 28-JUN-2006 13:00 * GEO EFFICIENCY DATE: 12-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 5-JUL-2006 08:05: * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.01274E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 5-JUL-2006 09:12: * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:50:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3000.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3000.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 6 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060705004_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : SHEPHERD
REVIEWED BY : 
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 5-JUL-2006 10:02
REQUESTOR : CAS_TECH

PAGE 1 OF ___

COPY

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060705004
Sample Title : - GOODSPEED WATER SAMPLE
Sample Time : 28-JUN-2006 13:00
Count Time : 5-JUL-2006 09:12
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 6.407E-09	Passed
CO-58	1.500E-08	< 2.822E-09	Passed
CO-60	1.500E-08	< 1.050E-08	Passed
ZN-65	3.000E-08	< 1.189E-08	Passed
CS-134	1.500E-08	< 7.583E-09	Passed
CS-137	1.800E-08	< 1.188E-08	Passed

*** End Of Report (1 Page) ***

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 5-JUL-2006 10:02
REQUESTOR : CAS_TECH

PAGE 1 OF ____

COPY

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - GOODSPEED WATER SAMPLE

SAMPLE No. : 060705004 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 5-JUL-2006 09:12:25. SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 28-JUN-2006 13:00:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
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UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
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No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: 

Reviewed by: 

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: **GOODSPEED RIVER**
Sample Date/Time: **7/6/2006 13:45 PM**

COPY

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	5.58
bkgd	6.38
Volume	3
Efficiency	0.3905 (enter EFF(%) as decimal)
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is **<MDA**

MDA = < 1.24E-06 uCi/ml

Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample (leave blank if not used)

Ambient Temperature in Sample Area (degrees Farenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc) **N/A**

Gas Bubbler Sample (leave blank if not used)

Sample start date & time format MM/DD HH:MM format

Initial Sample flow rate cc/min

Sample stop date & time format MM/DD HH:MM format

Final Sample flow rate cc/min

Sample collection time 0 min

Total sample volume 0 cc

H-3 Concentration in Air (uCi/cc) **N/A**

MDA = < N/A

Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
Chemistry Technician

7-7-06
Date

Reviewed by *[Signature]*
Chemistry Supervisor

Date

6-JUL-2006 17:57:47.04

CONNECTICUT YANKEE
HADDAM NECK STATION

COPY

SAMPLE TITLE : - GOODSPEED RIVER
SAMPLE ID : 060706017
SAMPLE TIME : 6-JUL-2006 13:45:
SAMPLE TYPE : LIQUID

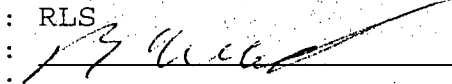
* SAMPLE GEOMETRY : 4LMARS
* GEO EFFICIENCY DATE: 12-JAN-2006
* SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2
LAST ENERGY CAL : 6-JUL-2006 07:45:
KEV/CHANNEL : 5.01151E-01
START CHANNEL : 100
ACQ DATE & TIME : 6-JUL-2006 17:07:
PRESET LIVE TIME : 0 00:50:00
ELAPSED REAL TIME : 3000.1 Secs
ELAPSED LIVE TIME : 3000.0 Secs
DECAYED TO 0 DAYS HOURS

* LIBRARY : CHEM_RELEASE
* ENERGY TOLERANCE: 2.00000
* HALF LIFE RATIO : 9.00000
* END CHANNEL : 4096
* DEADTIME (%) : 0.0%
* SENSITIVITY : 7.50000
* GAUSSIAN SEN : 10.00000
* CORRECTION FACTOR: 1.00000E+00

FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060706017_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
REVIEWED BY : 
COMMENTS :

Post-NID Peak Search Report

***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 6-JUL-2006 17:57
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

COPY

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060706017
Sample Title : - GOODSPEED RIVER
Sample Time : 6-JUL-2006 13:45
Count Time : 6-JUL-2006 17:07
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 6.998E-09	Passed
CO-58	1.500E-08	< 5.718E-09	Passed
CO-60	1.500E-08	< 8.995E-09	Passed
ZN-65	3.000E-08	< 1.122E-08	Passed
CS-134	1.500E-08	< 3.097E-09	Passed
CS-137	1.800E-08	< 1.354E-08	Passed

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

COPY

Sample Title: **GOODSPEED RIVER**
Sample Date/Time: **7/18/2006 10:30**

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	5.60
bkgd	5.84
Volume	3
Efficiency	0.3779 (enter EFF(%) as decimal)
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is **<MDA**

MDA = < **1.23E-06** uCi/ml
Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time format MM/DD HH:MM format

Initial Sample flow rate cc/min

Sample stop date & time format MM/DD HH:MM format

Final Sample flow rate cc/min

Sample collection time 0 min

Total sample volume 0 cc

H-3 Concentration in Air (uCi/cc)

N/A

MDA = < **N/A**

Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
Chemistry Technician

7-26-06
Date

Reviewed by *[Signature]*
Chemistry Supervisor

12/4/06
Date

19-JUL-2006 12:21:20.12

COPY

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - GOODSPEED RIVER
SAMPLE ID : 060719005
SAMPLE TIME : 18-JUL-2006 10:30
SAMPLE TYPE : LIQUID

* SAMPLE GEOMETRY : 4LMARS
* GEO EFFICIENCY DATE: 12-JAN-2006
* SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2
LAST ENERGY CAL : 19-JUL-2006 08:32
KEV/CHANNEL : 5.00961E-01
START CHANNEL : 100
ACQ DATE & TIME : 19-JUL-2006 11:31
PRESET LIVE TIME : 0 00:50:00
ELAPSED REAL TIME : 3000.2 Secs
ELAPSED LIVE TIME : 3000.0 Secs
DECAYED TO 1 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060719005_ADC2_LIQUID.CNF;1

* LIBRARY : CHEM_RELEASE
* ENERGY TOLERANCE: 2.00000
* HALF LIFE RATIO : 9.00000
* END CHANNEL : 4096
* DEADTIME (%) : 0.0%
* SENSITIVITY : 7.50000
* GAUSSIAN SEN : 10.00000
* CORRECTION FACTOR: 1.00000E+00

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
REVIEWED BY : *[Signature]*
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 19-JUL-2006 12:21
REQUESTOR : CAS

PAGE 1 OF 1

COPY

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060719005
Sample Title : - GOODSPEED RIVER
Sample Time : 18-JUL-2006 10:30
Count Time : 19-JUL-2006 11:31
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 5.186E-09	Passed
CO-58	1.500E-08	< 6.476E-09	Passed
CO-60	1.500E-08	< 7.789E-09	Passed
ZN-65	3.000E-08	< 3.414E-09	Passed
CS-134	1.500E-08	< 5.293E-09	Passed
CS-137	1.800E-08	< 1.452E-08	Passed

*** End Of Report (1 Page) ***

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

COPY

Sample Title: GOODSPEED RIVER
Sample Date/Time: 8/3/2006 8:00

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	4.23
bkgd	5.23
Volume	3
Efficiency	0.3917 (enter EFF(%) as decimal)
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is **<MDA**

MDA = < **1.12E-06** uCi/ml
Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample (leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)
Percent Humidity in Sample Area (as a Fraction)
Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc) **N/A**

Gas Bubbler Sample (leave blank if not used)

Sample start date & time format MM/DD HH:MM format
Initial Sample flow rate cc/min
Sample stop date & time format MM/DD HH:MM format
Final Sample flow rate cc/min

Sample collection time 0 min
Total sample volume 0 cc

H-3 Concentration in Air (uCi/cc) **N/A**

MDA = < **N/A**

Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
Chemistry Technician

8-10-06
Date

Reviewed by *[Signature]*
Chemistry Supervisor

12/15/06
Date

8-AUG-2006 16:58:51.04

COPY

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - GOODSPEED RIVER SAMPLE
SAMPLE ID : 060808075 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 3-AUG-2006 08:00: * GEO EFFICIENCY DATE: 12-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 8-AUG-2006 08:05: * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.01085E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 8-AUG-2006 16:08: * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:50:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3000.3 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3000.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 5 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060808075_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
REVIEWED BY : *[Signature]*
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 8-AUG-2006 16:58
REQUESTOR : CAS_TECH

PAGE 1 OF ___

COPY

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060808075
Sample Title : - GOODSPEED RIVER SAMPLE
Sample Time : 3-AUG-2006 08:00
Count Time : 8-AUG-2006 16:08
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 6.840E-09	Passed
CO-58	1.500E-08	< 1.458E-09	Passed
CO-60	1.500E-08	< 1.016E-08	Passed
ZN-65	3.000E-08	< 1.184E-08	Passed
CS-134	1.500E-08	< 6.734E-09	Passed
CS-137	1.800E-08	< 1.477E-08	Passed

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: GOODSPEED RIVER
Sample Date/Time: 8/16/6 10:00AM

COPY

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	5.74
bkgd	6.46
Volume	3
Efficiency	0.3862
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

(enter EFF(%) as decimal)

Liquid Sample Activity is **<MDA**

MDA = < **1.26E-06** uCi/ml

Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)
Percent Humidity in Sample Area (as a Fraction)
Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time format MM/DD HH:MM format
Initial Sample flow rate cc/min
Sample stop date & time format MM/DD HH:MM format
Final Sample flow rate cc/min

Sample collection time 0 min
Total sample volume 0 cc

H-3 Concentration in Air (uCi/cc)

N/A

MDA = < **N/A**

Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
Chemistry Technician

8-17-6
Date

Reviewed by *[Signature]*
Chemistry Supervisor

12/15/06
Date

17-AUG-2006 10:12:02.15

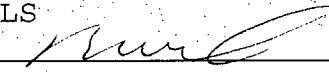
COPY

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - GOODSPEED RIVER SAMPLE
SAMPLE ID : 060817001 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 16-AUG-2006 10:00 * GEO EFFICIENCY DATE: 12-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 17-AUG-2006 08:39 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00975E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 17-AUG-2006 09:21 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:50:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3000.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3000.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060817001_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
REVIEWED BY : 
COMMENTS :

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	351.80*	28	11	1.27	703.21	698	11	31.9		PB-214

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 17-AUG-2006 10:12
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

COPY

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060817001
Sample Title : - GOODSPEED RIVER SAMPLE
Sample Time : 16-AUG-2006 10:00
Count Time : 17-AUG-2006 09:21
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 5.073E-09	Passed
CO-58	1.500E-08	< 4.758E-09	Passed
CO-60	1.500E-08	< 9.043E-09	Passed
ZN-65	3.000E-08	< 3.413E-09	Passed
CS-134	1.500E-08	< 4.156E-09	Passed
CS-137	1.800E-08	< 1.302E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 17-AUG-2006 10:12
REQUESTOR : CAS_TECH

COPY

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - GOODSPEED RIVER SAMPLE

SAMPLE No. : 060817001 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 17-AUG-2006 09:21:46 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 16-AUG-2006 10:00:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
PB-214	351.92	-0.12	1.970E-08	* Peak FWHM = 1.3
AVG ENERGY DIFF =		-0.12	1.970E-08	= TOTAL GAMMA ACTIVITY
			1.970E-08	= Total NP Activity

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
No Unidentified/Rejected Peaks								

Performed by: [Signature]

Reviewed by: [Signature]

**** End Of Report (1 Page) ****

Tritium Calculation Worksheet

Sample Title: **GOODSPEED RIVER**
 Sample Date/Time: **8/29/2006 11:00**

COPY

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	5.37
bkgd	7.12
Volume	3
Efficiency	0.3840 (enter EFF(%) as decimal)
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is **<MDA**

MDA = **< 1.32E-06** uCi/ml

Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time

format MM/DD HH:MM format

Initial Sample flow rate

cc/min

Sample stop date & time

format MM/DD HH:MM format

Final Sample flow rate

cc/min

Sample collection time

0 min

Total sample volume

0 cc

H-3 Concentration in Air (uCi/cc)

N/A

MDA = **< N/A**

Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
 Chemistry Technician

8-30-06
 Date

Reviewed by *[Signature]*
 Chemistry Supervisor

12/15/06
 Date

30-AUG-2006 08:41:34.96

CONNECTICUT YANKEE
HADDAM NECK STATION

COPY

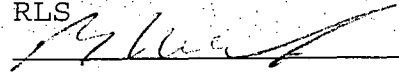
SAMPLE TITLE : - GOODSPEED RIVER
SAMPLE ID : 060830001
SAMPLE TIME : 29-AUG-2006 11:00
SAMPLE TYPE : LIQUID

* SAMPLE GEOMETRY : 4LMARS
* GEO EFFICIENCY DATE: 12-JAN-2006
* SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2
LAST ENERGY CAL : 30-AUG-2006 07:02
KEV/CHANNEL : 5.01028E-01
START CHANNEL : 100
ACQ DATE & TIME : 30-AUG-2006 07:51
PRESET LIVE TIME : 0 00:50:00
ELAPSED REAL TIME : 3000.2 Secs
ELAPSED LIVE TIME : 3000.0 Secs
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060830001_ADC2_LIQUID.CNF;1

* LIBRARY : CHEM_RELEASE
* ENERGY TOLERANCE: 2.00000
* HALF LIFE RATIO : 9.00000
* END CHANNEL : 4096
* DEADTIME (%) : 0.0%
* SENSITIVITY : 7.50000
* GAUSSIAN SEN : 10.00000
* CORRECTION FACTOR: 1.00000E+00

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
REVIEWED BY : 
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 30-AUG-2006 08:41
REQUESTOR : CAS_TECH

PAGE 1 OF ____

COPY

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060830001
Sample Title : - GOODSPEED RIVER
Sample Time : 29-AUG-2006 11:00
Count Time : 30-AUG-2006 07:51
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 5.594E-09	Passed
CO-58	1.500E-08	< 5.216E-09	Passed
CO-60	1.500E-08	< 7.354E-09	Passed
ZN-65	3.000E-08	< 3.412E-09	Passed
CS-134	1.500E-08	< 6.283E-09	Passed
CS-137	1.800E-08	< 1.161E-08	Passed

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: **GOODSPEED RIVER**
Sample Date/Time: **9/12/2006 14:00 PM**

COPY

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	7.00
bkgd	5.43
Volume	3
Efficiency	0.3867 (enter EFF(%) as decimal)
Bkgd Count Time (min)	15
Sample Count Time (min)	15

Liquid Sample Activity is **<MDA**

MDA = **< 1.16E-06** uCi/ml

Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample (leave blank if not used)

Ambient Temperature in Sample Area (degrees Farenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc) **N/A**

Gas Bubbler Sample (leave blank if not used)

Sample start date & time

--

 format MM/DD HH:MM format

Initial Sample flow rate

--

 cc/min

Sample stop date & time

--

 format MM/DD HH:MM format

Final Sample flow rate

--

 cc/min

Sample collection time 0 min

Total sample volume 0 cc

H-3 Concentration in Air (uCi/cc) **N/A**

MDA = **< N/A**

Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
Chemistry Technician

9-13-06
Date

Reviewed by *[Signature]*
Chemistry Supervisor

12/15/06
Date

12-SEP-2006 19:45:10.61

CONNECTICUT YANKEE
HADDAM NECK STATION

COPY

SAMPLE TITLE : - GOODSPEED RIVER SAMPLE
 SAMPLE ID : 060912016 * SAMPLE GEOMETRY : 4LMARS
 SAMPLE TIME : 12-SEP-2006 14:00 * GEO EFFICIENCY DATE: 13-JAN-2006
 SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 1 * LIBRARY : CHEM_RELEASE
 LAST ENERGY CAL : 12-SEP-2006 07:13 * ENERGY TOLERANCE: 2.00000
 KEV/CHANNEL : 5.00219E-01 * HALF LIFE RATIO : 9.00000
 START CHANNEL : 100 * END CHANNEL : 4096
 ACQ DATE & TIME : 12-SEP-2006 16:24 * DEADTIME (%) : 0.0%
 PRESET LIVE TIME : 0 03:20:00 * SENSITIVITY : 7.50000
 ELAPSED REAL TIME : 12000. Secs * GAUSSIAN SEN : 10.00000
 ELAPSED LIVE TIME : 12000. Secs * CORRECTION FACTOR: 1.00000E+00
 DECAYED TO 0 DAYS HOURS
 FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060912016_ADC1_LIQUID.CNF;1

 ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
 REVIEWED BY : _____
 COMMENTS : _____

Post-NID Peak Search Report
 ***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 12-SEP-2006 19:45
REQUESTOR : CAS_TECH

PAGE 1 OF ___

COPY

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060912016
Sample Title : - GOODSPEED RIVER SAMPLE
Sample Time : 12-SEP-2006 14:00
Count Time : 12-SEP-2006 16:24
Sample Qauntity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 1
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 3.826E-09	Passed
CO-58	1.500E-08	< 3.153E-09	Passed
CO-60	1.500E-08	< 1.436E-08	Passed
ZN-65	3.000E-08	< 6.885E-09	Passed
CS-134	1.500E-08	< 3.448E-09	Passed
CS-137	1.800E-08	< 5.169E-09	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 12-SEP-2006 19:45
REQUESTOR : CAS_TECH

PAGE 1 OF ___

CYAPCO
HADDAM NECK STATION

COPY

POST NID QA ANALYSIS

TITLE : - GOODSPEED RIVER SAMPLE

SAMPLE No. : 060912016 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 12-SEP-2006 16:24:55 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 12-SEP-2006 14:00:00 DETECTOR : DET 1
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: _____

Reviewed by: _____

**** End Of Report (1 Page) ****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 3-OCT-2006 17:32
REQUESTOR : CAS_TECH

CYAPCO
HADDAM NECK STATION

COPY

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 061003015
Sample Title : - GOODSPEED RIVER WATER
Sample Time : 28-SEP-2006 15:20
Count Time : 3-OCT-2006 16:42
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 5.647E-09	Passed
CO-58	1.500E-08	< 6.459E-09	Passed
CO-60	1.500E-08	< 1.135E-08	Passed
ZN-65	3.000E-08	< 8.338E-09	Passed
CS-134	1.500E-08	< 4.972E-09	Passed
CS-137	1.800E-08	< 1.309E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 3-OCT-2006 17:32
REQUESTOR : CAS_TECH

COPY

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - GOODSPEED RIVER WATER

SAMPLE No. : 061003015 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 3-OCT-2006 16:42:35. SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 28-SEP-2006 15:20:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: [Signature]

Reviewed by: [Signature]

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

COPY

Sample Title: GOODSPEED RIVER
Sample Date/Time: 10/18/2006 14:00 PM

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	6.59
bkgd	5.57
Volume	3
Efficiency	0.3829
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is **<MDA**

MDA = < **1.18E-06** uCi/ml

Required MDA = 2.00E-06 uCi/ml

(enter EFF(%) as decimal)

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time

Initial Sample flow rate

Sample stop date & time

Final Sample flow rate

format MM/DD HH:MM format

cc/min

format MM/DD HH:MM format

cc/min

Sample collection time

0 min

Total sample volume

0 cc

H-3 Concentration in Air (uCi/cc)

N/A

MDA = < **N/A**

Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
Chemistry Technician

10-20-06
Date

Reviewed by *[Signature]*
Chemistry Supervisor

2/29/07
Date

18-OCT-2006 18:40:16.64

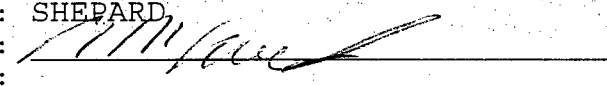
COPY

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - GOODSPEED RIVER
SAMPLE ID : 061018011 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 18-OCT-2006 14:00 * GEO EFFICIENCY DATE: 13-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 1 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 18-OCT-2006 07:02 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00474E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 18-OCT-2006 16:32 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 02:07:58 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 7678.3 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 7678.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]061018011_ADC1_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : SHEPARD
REVIEWED BY : 
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 18-OCT-2006 18:40
REQUESTOR : CAS_TECH

PAGE 1 OF ___

COPY

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 061018011
Sample Title : - GOODSPEED RIVER
Sample Time : 18-OCT-2006 14:00
Count Time : 18-OCT-2006 16:32
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 1
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.591E-09	Passed
CO-58	1.500E-08	< 3.045E-09	Passed
CO-60	1.500E-08	< 1.481E-08	Passed
ZN-65	3.000E-08	< 1.088E-08	Passed
CS-134	1.500E-08	< 4.568E-09	Passed
CS-137	1.800E-08	< 6.295E-09	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 18-OCT-2006 18:40
REQUESTOR : CAS_TECH

PAGE 1 OF ___

COPY

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - GOODSPEED RIVER

SAMPLE No. : 061018011 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 18-OCT-2006 16:32:03 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 18-OCT-2006 14:00:00 DETECTOR : DET 1
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

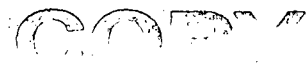
Performed by: *[Signature]*

Reviewed by: *[Signature]*

**** End Of Report (1 Page) ****

Tritium Calculation Worksheet

Sample Title: **GOODSPEED RIVER**
Sample Date/Time: **10/31/2006 14:30 PM**



Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	7.55
bkgd	6.14
Volume	3
Efficiency	0.3842 (enter EFF(%) as decimal)
Bkgd Count Time (min)	15
Sample Count Time (min)	15

Liquid Sample Activity is **<MDA**

MDA = < 1.23E-06 uCi/ml
Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)
 Percent Humidity in Sample Area (as a Fraction)
 Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time format MM/DD HH:MM format
 Initial Sample flow rate cc/min
 Sample stop date & time format MM/DD HH:MM format
 Final Sample flow rate cc/min

Sample collection time 0 min
 Total sample volume 0 cc

H-3 Concentration in Air (uCi/cc)

N/A

MDA= < N/A

Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
 Chemistry Technician

11-1-6
 Date

Reviewed by *[Signature]*
 Chemistry Supervisor

2/27/07
 Date

1-NOV-2006 15:31:06.46

COPY

CONNECTICUT YANKEE
HADDAM NECK STATION

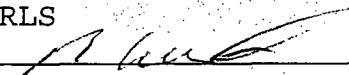
SAMPLE TITLE : - GOODSPEED RIVER WATER
SAMPLE ID : 061101007
SAMPLE TIME : 31-OCT-2006 14:30
SAMPLE TYPE : LIQUID

* SAMPLE GEOMETRY : 4LMARS
* GEO EFFICIENCY DATE: 12-JAN-2006
* SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2
LAST ENERGY CAL : 1-NOV-2006 07:07:
KEV/CHANNEL : 5.01141E-01
START CHANNEL : 100
ACQ DATE & TIME : 1-NOV-2006 14:40:
PRESET LIVE TIME : 0 00:50:00
ELAPSED REAL TIME : 3000.2 Secs
ELAPSED LIVE TIME : 3000.0 Secs
DECAYED TO 1 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]061101007_ADC2_LIQUID.CNF;1

* LIBRARY : CHEM_RELEASE
* ENERGY TOLERANCE: 2.00000
* HALF LIFE RATIO : 9.00000
* END CHANNEL : 4096
* DEADTIME (%) : 0.0%
* SENSITIVITY : 7.50000
* GAUSSIAN SEN : 10.00000
* CORRECTION FACTOR: 1.00000E+00

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
REVIEWED BY : 
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 1-NOV-2006 15:31
REQUESTOR : CAS_TECH

PAGE 1 OF

COPY

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 061101007
Sample Title : - GOODSPEED RIVER WATER
Sample Time : 31-OCT-2006 14:30
Count Time : 1-NOV-2006 14:40
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.525E-09	Passed
CO-58	1.500E-08	< 4.631E-09	Passed
CO-60	1.500E-08	< 1.087E-08	Passed
ZN-65	3.000E-08	< 1.118E-08	Passed
CS-134	1.500E-08	< 4.987E-09	Passed
CS-137	1.800E-08	< 1.402E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 1-NOV-2006 15:31
REQUESTOR : CAS_TECH

PAGE 1 OF ___

COPY

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - GOODSPEED RIVER WATER

SAMPLE No. : 061101007 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 1-NOV-2006 14:40:50. SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 31-OCT-2006 14:30:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: [Signature]

Reviewed by: [Signature]

**** End Of Report (1 Page) ****

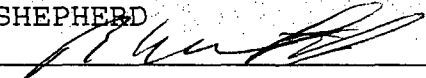
17-NOV-2006 12:44:58.23

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - GOODSPEED RIVER SAMPLE
SAMPLE ID : 061117008 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 15-NOV-2006 13:48 * GEO EFFICIENCY DATE: 13-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 1 * LIBRARY : CHEM RELEASE
LAST ENERGY CAL : 17-NOV-2006 07:15 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00244E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 17-NOV-2006 09:38 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 03:05:47 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 11147. Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 11147. Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 1 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]061117008_ADC1_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : SHEPHERD
REVIEWED BY : 
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 17-NOV-2006 12:44
REQUESTOR : CAS_TECH

PAGE 1 OF ___

COPY

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 061117008
Sample Title : - GOODSPEED RIVER SAMPLE
Sample Time : 15-NOV-2006 13:48
Count Time : 17-NOV-2006 09:38
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 1
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 3.840E-09	Passed
CO-58	1.500E-08	< 3.856E-09	Passed
CO-60	1.500E-08	< 1.291E-08	Passed
ZN-65	3.000E-08	< 8.898E-09	Passed
CS-134	1.500E-08	< 3.821E-09	Passed
CS-137	1.800E-08	< 5.628E-09	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 17-NOV-2006 12:44
REQUESTOR : CAS_TECH

COPY

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - GOODSPEED RIVER SAMPLE

SAMPLE No. : 061117008 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 17-NOV-2006 09:38:56 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 15-NOV-2006 13:48:00 DETECTOR : DET 1
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: *[Signature]*

Reviewed by: *[Signature]*

**** End Of Report (1 Page) ****

5-DEC-2006 10:32:50.65

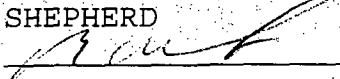
COPY

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - GOODSPEED RIVER SAMPLE
SAMPLE ID : 061204020A * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 29-NOV-2006 15:00 * GEO EFFICIENCY DATE: 12-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 5-DEC-2006 07:09: * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00959E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 5-DEC-2006 09:31: * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 01:01:23 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3683.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3683.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 5 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]061204020A_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : SHEPHERD
REVIEWED BY : 
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 5-DEC-2006 10:32
REQUESTOR : CAS_TECH

PAGE 1 OF ___

COPY

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 061204020A
Sample Title : - GOODSPEED RIVER SAMPLE
Sample Time : 29-NOV-2006 15:00
Count Time : 5-DEC-2006 09:31
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 5.245E-09	Passed
CO-58	1.500E-08	< 5.648E-09	Passed
CO-60	1.500E-08	< 1.311E-08	Passed
ZN-65	3.000E-08	< 9.317E-09	Passed
CS-134	1.500E-08	< 3.619E-09	Passed
CS-137	1.800E-08	< 1.126E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 5-DEC-2006 10:32
REQUESTOR : CAS_TECH

PAGE 1 OF ___

CYAPCO
HADDAM NECK STATION

COPY

POST NID QA ANALYSIS

TITLE : - GOODSPEED RIVER SAMPLE

SAMPLE No. : 061204020A OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 5-DEC-2006 09:31:14. SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 29-NOV-2006 15:00:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: *msch...*

Reviewed by: *Amu...*

**** End Of Report (1 Page) ****

4-DEC-2006 18:02:13.48

CONNECTICUT YANKEE
HADDAM NECK STATION

COPY

SAMPLE TITLE : - GOODSPEED RIVER SAMPLE

SAMPLE ID : 061204020

SAMPLE TIME : 29-NOV-2006 15:00

SAMPLE TYPE : LIQUID

* SAMPLE GEOMETRY : 4LMARS

* GEO EFFICIENCY DATE: 12-JAN-2006

* SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2

LAST ENERGY CAL : 4-DEC-2006 07:17:

KEV/CHANNEL : 5.00930E-01

START CHANNEL : 100

ACQ DATE & TIME : 4-DEC-2006 16:49:

PRESET LIVE TIME : 0 01:12:06

ELAPSED REAL TIME : 4326.3 Secs

ELAPSED LIVE TIME : 4326.0 Secs

DECAYED TO 5 DAYS HOURS

FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]061204020_ADC2_LIQUID.CNF;1

* LIBRARY : CHEM_RELEASE

* ENERGY TOLERANCE: 2.00000

* HALF LIFE RATIO : 9.00000

* END CHANNEL : 4096

* DEADTIME (%) : 0.0%

* SENSITIVITY : 7.50000

* GAUSSIAN SEN : 10.00000

* CORRECTION FACTOR: 1.00000E+00

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : SHEPHERD

REVIEWED BY : [Signature]

COMMENTS :

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw %Err	Fit	Nuclides
0	1332.51*	18	14	0.87	2666.83	2658	13103.0		CO-60

↑
RECORDED

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 4-DEC-2006 18:02
REQUESTOR : CAS_TECH

COPY

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 061204020
Sample Title : - GOODSPEED RIVER SAMPLE
Sample Time : 29-NOV-2006 15:00
Count Time : 4-DEC-2006 16:49
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 3.582E-09	Passed
CO-58	1.500E-08	< 2.740E-09	Passed
CO-60	1.500E-08	8.967E-09	Okay
ZN-65	3.000E-08	< 1.046E-08	Passed
CS-134	1.500E-08	< 3.321E-09	Passed
CS-137	1.800E-08	< 1.124E-08	Passed

*** End Of Report (1 Page) ***

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 4-DEC-2006 18:02
REQUESTOR : CAS_TECH

PAGE 1 OF ___

CYAPCO
HADDAM NECK STATION

COPY

POST NID QA ANALYSIS

TITLE : - GOODSPEED RIVER SAMPLE

SAMPLE No. : 061204020 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 4-DEC-2006 16:49:53. SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 29-NOV-2006 15:00:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
CO-60	1332.49	0.03	8.967E-09	* Peak FWHM = 0.87 * Count Rate Error = 51.52
AVG ENERGY DIFF =		0.03	8.967E-09	= TOTAL GAMMA ACTIVITY
			8.967E-09	= Total AP Activity

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
No Unidentified/Rejected Peaks								

Performed by: R. S. Hopkins / per lwy

Reviewed by: [Signature]

**** End Of Report (1 Page) ****

Sample Title: HARBOR PARK
Sample Date/Time: 1/6/2006 14:00:00 PM

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	8.07
bkgd	6.06
Volume	3
Efficiency	0.3979 (enter EFF(%) as decimal)
Bkgd Count Time (min)	15
Sample Count Time (min)	15

Liquid Sample Activity is <MDA

MDA = < 1.18E-06 uCi/ml

Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample (leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc) N/A

Gas Bubbler Sample (leave blank if not used)

Sample start date & time format MM/DD HH:MM

Initial Sample flow rate cc/min

Sample stop date & time format MM/DD HH:MM

Final Sample flow rate cc/min

Sample collection time 0 min


Total sample volume 0 cc

COPY

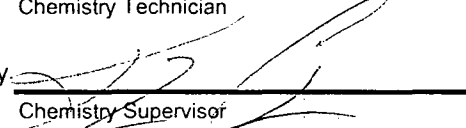
H-3 Concentration in Air (uCi/cc) N/A

MDA = < N/A

Required MDA = 1E-6 uCi/cc

Performed by 
 Chemistry Technician

1-9-06
 Date

Reviewed by 
 Chemistry Supervisor

1-13-06
 Date

1-MAR-2007 09:48:49.55

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - HARBOR PARK
SAMPLE ID : 060106025 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 6-JAN-2006 14:00: * GEO EFFICIENCY DATE: 18-SEP-2002
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 1 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 6-JAN-2006 02:53: * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00601E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 6-JAN-2006 17:04: * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 03:20:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 12000. Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 12000. Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.OLD]060106025_ADC1_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : A
REVIEWED BY : _____
COMMENTS : _____

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	1173.42*	72	8	1.72	2346.40	2338	17	20.1		CO-60
0	1332.55*	48	15	1.55	2664.95	2658	15	29.4		CO-60

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 1-MAR-2007 09:48
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060106025
Sample Title : - HARBOR PARK
Sample Time : 6-JAN-2006 14:00
Count Time : 6-JAN-2006 17:04
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 1
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.332E-09	Passed
CO-58	1.500E-08	< 3.790E-09	Passed
CO-60	1.500E-08	1.802E-08	Okay
ZN-65	3.000E-08	< 6.801E-09	Passed
CS-134	1.500E-08	< 3.167E-09	Passed
CS-137	1.800E-08	< 4.828E-09	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 1-MAR-2007 09:48
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION
POST NID QA ANALYSIS

TITLE : - HARBOR PARK

SAMPLE No. : 060106025 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 6-JAN-2006 17:04:21. SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 6-JAN-2006 14:00:00. DETECTOR : DET 1
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
CO-60	1332.49	0.06	1.802E-08	* Peak FWHM = 1.6
AVG ENERGY DIFF =		0.06	1.802E-08 =	TOTAL GAMMA ACTIVITY
			1.802E-08 =	Total AP Activity

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
No Unidentified/Rejected Peaks								

Performed by: _____

Reviewed by: _____

**** End Of Report (1 Page) ****

1-MAR-2007 09:48:01.92

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - HARBOR PARK
SAMPLE ID : 060106025B * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 6-JAN-2006 14:00: * GEO EFFICIENCY DATE: 17-SEP-2002
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 9-JAN-2006 08:16: * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00790E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 9-JAN-2006 15:01: * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:59:11 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3551.3 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3551.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 3 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.OLD]060106025B_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3-2 MINACT V2.8 WTMEAN V1.8

Collected by : A
REVIEWED BY : _____
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 1-MAR-2007 09:48
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060106025B
Sample Title : - HARBOR PARK
Sample Time : 6-JAN-2006 14:00
Count Time : 9-JAN-2006 15:01
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.605E-09	Passed
CO-58	1.500E-08	< 2.782E-09	Passed
CO-60	1.500E-08	< 1.466E-08	Passed
ZN-65	3.000E-08	< 8.175E-09	Passed
CS-134	1.500E-08	< 4.402E-09	Passed
CS-137	1.800E-08	< 1.236E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 1-MAR-2007 09:48
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION
POST NID QA ANALYSIS

TITLE : - HARBOR PARK

SAMPLE No. : 060106025B OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 9-JAN-2006 15:01:44. SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 6-JAN-2006 14:00:00. DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
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UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: ASH

Reviewed by: QA

*** End Of Report (1 Page) ***

1-MAR-2007 09:47:10.88

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - HARBOR PARK
SAMPLE ID : 060106025A * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 6-JAN-2006 14:00: * GEO EFFICIENCY DATE: 18-SEP-2002
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 1 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 9-JAN-2006 07:37: * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00487E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 9-JAN-2006 08:27: * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 03:20:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 12000. Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 12000. Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 2 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.OLD]060106025A_ADC1_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : A
REVIEWED BY : _____
COMMENTS : _____

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	1173.78*	28	25	1.32	2347.67	2342	10	51.8		CO-60
0	1332.76*	62	11	1.71	2665.99	2659	14	22.4		CO-60

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 1-MAR-2007 09:47
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060106025A
Sample Title : - HARBOR PARK
Sample Time : 6-JAN-2006 14:00
Count Time : 9-JAN-2006 08:27
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 1
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 3.108E-09	Passed
CO-58	1.500E-08	< 3.093E-09	Passed
CO-60	1.500E-08	1.324E-08	Okay
ZN-65	3.000E-08	< 6.779E-09	Passed
CS-134	1.500E-08	< 3.423E-09	Passed
CS-137	1.800E-08	< 4.532E-09	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 1-MAR-2007 09:47
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - HARBOR PARK

SAMPLE No. : 060106025A OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 9-JAN-2006 08:27:53. SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 6-JAN-2006 14:00:00. DETECTOR : DET 1
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
CO-60	1332.49	0.27	1.324E-08	* Peak FWHM = 1.7
AVG ENERGY DIFF =		0.27	1.324E-08	= TOTAL GAMMA ACTIVITY
			1.324E-08	= Total AP Activity

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
No Unidentified/Rejected Peaks								

Performed by: ASH
Reviewed by: ASH

*** End Of Report (1 Page) ***

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: Harbor Park- river
Sample Date/Time: 1/17/2006 9:47

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	7.07
bkgd	6.41
Volume	3
Efficiency	0.4047 (enter EFF(%) as decimal)
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is <MDA

MDA = < 1.20E-06 uCi/ml

Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Farenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time

--

format MM/DD HH:MM format

Initial Sample flow rate

--

cc/min

Sample stop date & time

--

format MM/DD HH:MM format

Final Sample flow rate

--

cc/min

Sample collection time

0 min

Total sample volume

0 cc

H-3 Concentration in Air (uCi/cc)

N/A

MDA= < N/A

Required MDA = 1E-6 uCi/cc

Performed by [Signature]
Chemistry Technician

1-18-06
Date

Reviewed by [Signature]
Chemistry Supervisor

1-26-06
Date

COPY

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 17-JAN-2006 17:36
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060117012
Sample Title : - HARBOR PARK RIVER
Sample Time : 16-JAN-2006 17:30
Count Time : 17-JAN-2006 16:46
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 5.336E-09	Passed
CO-58	1.500E-08	< 3.004E-09	Passed
CO-60	1.500E-08	< 6.934E-09	Passed
ZN-65	3.000E-08	< 1.155E-08	Passed
CS-134	1.500E-08	< 3.221E-09	Passed
CS-137	1.800E-08	< 1.230E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 17-JAN-2006 17:36
REQUESTOR : CAS_TECH

PAGE 1 OF _____

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - HARBOR PARK RIVER

SAMPLE No. : 060117012 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 17-JAN-2006 16:46:12 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 16-JAN-2006 17:30:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
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UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
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No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: 

Reviewed by: 

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: Harbor Park- river sample
Sample Date/Time: 1/31/2006 13:30

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	7.49
bkgd	7.77
Volume	3
Efficiency	0.3950 (enter EFF(%) as decimal)
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is <MDA

MDA = < 1.34E-06 uCi/ml
Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)
Percent Humidity in Sample Area (as a Fraction)
Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time
Initial Sample flow rate
Sample stop date & time
Final Sample flow rate
Sample collection time
Total sample volume

format MM/DD HH:MM format
cc/min
format MM/DD HH:MM format
cc/min

0 min
0 cc

COPY

H-3 Concentration in Air (uCi/cc)

N/A

MDA = < N/A

Required MDA = 1E-6 uCi/cc

Performed by [Signature]
Chemistry Technician

2-1-6
Date

Reviewed by [Signature]
Chemistry Supervisor

2-7-06
Date

1-FEB-2006 12:15:05.04

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - HARBOR PARK- RIVER SAMPLE
SAMPLE ID : 060201006 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 31-JAN-2006 13:30 * GEO EFFICIENCY DATE: 17-SEP-2002
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 1-FEB-2006 01:24: * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00975E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 1-FEB-2006 11:24: * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:50:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3000.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3000.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060201006_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : A
REVIEWED BY : KL
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

COPY

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 1-FEB-2006 12:15
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060201006
Sample Title : - HARBOR PARK- RIVER SAMPLE
Sample Time : 31-JAN-2006 13:30
Count Time : 1-FEB-2006 11:24
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.024E-09	Passed
CO-58	1.500E-08	< 3.904E-09	Passed
CO-60	1.500E-08	< 1.086E-08	Passed
ZN-65	3.000E-08	< 3.542E-09	Passed
CS-134	1.500E-08	< 6.017E-09	Passed
CS-137	1.800E-08	< 1.307E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 1-FEB-2006 12:15
REQUESTOR : CAS_TECH

PAGE 1 OF _____

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - HARBOR PARK- RIVER SAMPLE

SAMPLE No. : 060201006 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 1-FEB-2006 11:24:48. SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 31-JAN-2006 13:30:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

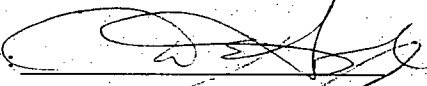
ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
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UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
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No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: 

Reviewed by: 

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: harbor park
Sample Date/Time: 2/15/2006 16:30

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	6.75
bkgd	6.07
Volume	3
Efficiency	0.3894 (enter EFF(%) as decimal)
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is <MDA

MDA = < 1.21E-06 uCi/ml
Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time

Initial Sample flow rate

Sample stop date & time

Final Sample flow rate

format MM/DD HH:MM format

cc/min

format MM/DD HH:MM format

cc/min

Sample collection time

0 min

Total sample volume

0 cc

COPY

H-3 Concentration in Air (uCi/cc)

N/A

MDA = < N/A

Required MDA = 1E-6 uCi/cc

Performed by [Signature]
Chemistry Technician

2-15-06
Date

Reviewed by [Signature]
Chemistry Supervisor

2-20-06
Date

15-FEB-2006 19:44:50.58

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - HARBOR PARK RIVER
SAMPLE ID : 060215003 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 15-FEB-2006 16:30 * GEO EFFICIENCY DATE: 12-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 15-FEB-2006 04:51 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00847E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 15-FEB-2006 18:46 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:57:54 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3474.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3474.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060215003_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : A
REVIEWED BY : KC
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

COPY

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 15-FEB-2006 19:44
REQUESTOR : CAS

PAGE 1 OF _____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060215003
Sample Title : - HARBOR PARK RIVER
Sample Time : 15-FEB-2006 16:30
Count Time : 15-FEB-2006 18:46
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.823E-09	Passed
CO-58	1.500E-08	< 5.287E-09	Passed
CO-60	1.500E-08	< 1.430E-08	Passed
ZN-65	3.000E-08	< 7.986E-09	Passed
CS-134	1.500E-08	< 4.505E-09	Passed
CS-137	1.800E-08	< 1.135E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 15-FEB-2006 19:44
REQUESTOR : CAS

PAGE 1 OF _____

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - HARBOR PARK RIVER

SAMPLE No. : 060215003 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 15-FEB-2006 18:46:42 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 15-FEB-2006 16:30:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE


ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
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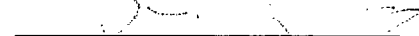
UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: 

Reviewed by: 

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: HARBOR PARK RIVER
Sample Date/Time: 2/27/2006 14:35 PM

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	7.01
bkgd	5.89
Volume	3
Efficiency	0.3924 (enter EFF(%) as decimal)
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is <MDA

MDA = < **1.18E-06** uCi/ml
Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time

Initial Sample flow rate

Sample stop date & time

Final Sample flow rate

format MM/DD HH:MM format

cc/min

format MM/DD HH:MM format

cc/min

Sample collection time

0 min

Total sample volume

0 cc

COPY

H-3 Concentration in Air (uCi/cc)

N/A

MDA = < **N/A**

Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
Chemistry Technician

2-28-06
Date

Reviewed by *[Signature]*
Chemistry Supervisor

3-7-06
Date

28-FEB-2006 21:33:12.32

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - HARBOR PARK RIVER
SAMPLE ID : 060228015 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 27-FEB-2006 14:35 * GEO EFFICIENCY DATE: 12-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 28-FEB-2006 08:28 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00984E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 28-FEB-2006 20:42 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:50:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3000.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3000.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 1 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060228015_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RS
REVIEWED BY :
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

COPY

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 28-FEB-2006 21:33
REQUESTOR : CAS

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060228015
Sample Title : - HARBOR PARK RIVER
Sample Time : 27-FEB-2006 14:35
Count Time : 28-FEB-2006 20:42
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.309E-09	Passed
CO-58	1.500E-08	< 4.249E-09	Passed
CO-60	1.500E-08	< 1.264E-08	Passed
ZN-65	3.000E-08	< 3.416E-09	Passed
CS-134	1.500E-08	< 6.345E-09	Passed
CS-137	1.800E-08	< 1.345E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 28-FEB-2006 21:33
REQUESTOR : CAS

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - HARBOR PARK RIVER

SAMPLE No. : 060228015 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 28-FEB-2006 20:42:56 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 27-FEB-2006 14:35:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

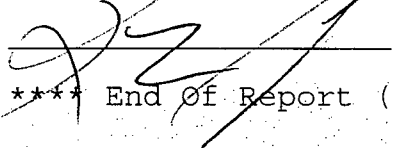
UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
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No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: 

Reviewed by: 

**** End of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: **HARBOR PARK**
Sample Date/Time: **3/15/2006 15:15 PM**

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	6.74
bkgd	6.38
Volume	3
Efficiency	0.3976 (enter EFF(%) as decimal)
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is **<MDA**

MDA = < 1.21E-06 uCi/ml
Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)
Percent Humidity in Sample Area (as a Fraction)
Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time format MM/DD HH:MM format
Initial Sample flow rate cc/min
Sample stop date & time format MM/DD HH:MM format
Final Sample flow rate cc/min

Sample collection time 0 min
Total sample volume 0 cc

H-3 Concentration in Air (uCi/cc)

N/A

MDA = < N/A

Required MDA = 1E-6 uCi/cc

COPY

Performed by Stephane
Chemistry Technician

3-16-06
Date

Reviewed by [Signature]
Chemistry Supervisor

3-21-06
Date

15-MAR-2006 19:13:27.29

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - HARBOR PARK
SAMPLE ID : 060315018 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 15-MAR-2006 15:15 * GEO EFFICIENCY DATE: 12-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM RELEASE
LAST ENERGY CAL : 15-MAR-2006 03:14 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00947E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 15-MAR-2006 18:23 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:50:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3000.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3000.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060315018_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RS
REVIEWED BY : VC
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

COPY

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 15-MAR-2006 19:13
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060315018
Sample Title : - HARBOR PARK
Sample Time : 15-MAR-2006 15:15
Count Time : 15-MAR-2006 18:23
Sample Qauntity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 3.819E-09	Passed
CO-58	1.500E-08	< 4.135E-09	Passed
CO-60	1.500E-08	< 1.474E-08	Passed
ZN-65	3.000E-08	< 1.350E-08	Passed
CS-134	1.500E-08	< 5.839E-09	Passed
CS-137	1.800E-08	< 1.360E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 15-MAR-2006 19:13
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - HARBOR PARK

SAMPLE No. : 060315018 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 15-MAR-2006 18:23:15 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 15-MAR-2006 15:15:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

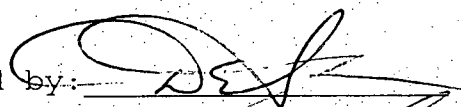
ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: 

Reviewed by: 

**** End Of Report (1 Page) ****

11-APR-2006 13:22:21.84


CONNECTICUT YANKEE
HADDAM NECK STATION

COPY

SAMPLE TITLE : - HARBOR PARK 6000 SECOND COUNT
SAMPLE ID : 060410011 * SAMPLE GEOMETRY : 4lmars
SAMPLE TIME : 15-MAR-2006 15:15 * GEO EFFICIENCY DATE: 12-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : MASTER
LAST ENERGY CAL : 10-APR-2006 10:44 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.01148E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 10-APR-2006 15:21 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 01:40:00 * SENSITIVITY : 5.00000
ELAPSED REAL TIME : 6001.1 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 6000.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 26 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060410011_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : ASH
REVIEWED BY : 
COMMENTS :

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	199.18	59	95	1.44	398.13	391	14	37.2		

Summary of Nuclide Activity

Sample ID : 060410011

Acquisition date : 10-APR-2006 15:21:49

Total number of lines in spectrum 1

Number of unidentified lines 0

Number of lines tentatively identified by NID 1

100.00%

COPY

**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found

"M" = Manually accepted

"E" = Manually edited

"A" = Nuclide specific abn. limit

Minimum Detectable Activity Report

Sample ID : 060410011

for Jack McCarthy.

Acquisition date : 10-APR-2006 15:21:49

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/ML)
CR-51	13.	320.08	4.7100E-08
MN-54	9.	834.83	4.6686E-09
CO-57	34.	122.06	3.1817E-09
CO-58	11.	810.76	5.9808E-09
FE-59	5.	1099.22	1.0965E-08
CO-60	20.	1332.49	8.6749E-09
ZN-65	5.	1115.52	8.7046E-09
KR-85	11.	513.99	7.4378E-07
NB-95	5.	765.79	5.1750E-09
ZR-95	5.	756.72	7.8291E-09
RU-106	12.	621.84	4.2489E-08
AG-110M	10.	657.75	4.3063E-09
SN-113	15.	391.71	5.3869E-09
SB-125	13.	427.89	1.0614E-08
I-131	16.	364.48	3.4212E-08
BA-133	10.	356.01	3.8547E-09
CS-134	14.	604.70	4.2969E-09
CS-137	52.	661.65	8.8209E-09
CE-139	30.	165.85	3.4017E-09
LA-140	0.	1596.49	Half-Life too short
CE-141	40.	145.44	9.6559E-09
CE-144	29.	133.54	2.2919E-08
EU-152	1.	1407.95	1.3997E-08
EU-154	33.	123.07	6.2312E-09
EU-155	34.	105.31	1.3267E-08
HG-203	18.	279.19	4.7335E-09
TL-208	20.	583.14	5.4947E-09
PB-210	37.	46.50	3.4065E-07
BI-212	11.	727.17	3.6066E-08
PB-212	48.	238.63	7.8811E-09
BI-214	13.	609.31	8.5790E-09
PB-214	27.	351.92	9.6632E-09
<u>RA-226</u>	50.	186.21	9.5993E-08
AC-228	5.	911.07	1.3433E-08
TH-234	36.	63.29	1.4614E-07
U-235	53.	185.72	5.9893E-09
NP-239	0.	106.13	Half-Life too short
AM-241	33.	59.54	1.7152E-08

COPY

< 96pCi/l

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 11-APR-2006 13:22
REQUESTOR : CAS

PAGE 1 OF _____

COPY

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - HARBOR PARK 6000 SECOND COUNT

SAMPLE No. : 060410011 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4lmars
COUNT TIME : 10-APR-2006 15:21:49 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 15-MAR-2006 15:15:00 DETECTOR : DET 2
LIBRARY : MASTER

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
199.18	59.	1.44	7.579E-01	2.002E-04	37.2	R	SE-75	4.339E-07
						R	AC-228	1.630E-06

Total Unidentified/Rejected Peaks = 1
% Unidentified/Rejected Peaks = 100.00

Flags: U - Unknown Line
R - Rejected During Analysis
P - Positively Identified (line not in analysis library)

No nuclides found - QA Analysis Terminated

Performed by: _____

Reviewed by: _____

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: HARBOR PARK
Sample Date/Time: 3/27/2006 14:40

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	11.04
bkgd	10.26
Volume	3
Efficiency	0.3922 (enter EFF(%) as decimal)
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is <MDA

MDA = < **1.54E-06** uCi/ml

Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time

Initial Sample flow rate

Sample stop date & time

Final Sample flow rate

format MM/DD HH:MM format

cc/min

format MM/DD HH:MM format

cc/min

Sample collection time

0 min

Total sample volume

0 cc

H-3 Concentration in Air (uCi/cc)

N/A

MDA = < **N/A**

Required MDA = 1E-6 uCi/cc

Performed by [Signature]
Chemistry Technician

3-27-06
Date

Reviewed by [Signature]
Chemistry Supervisor

3-3-06
Date

COPY

28-MAR-2006 00:16:13.10

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - HARBOR PARK
SAMPLE ID : 060327011 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 27-MAR-2006 14:40 * GEO EFFICIENCY DATE: 12-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 27-MAR-2006 19:15 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.01227E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 27-MAR-2006 23:25 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:50:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3000.6 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3000.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060327011_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RS
REVIEWED BY : _____
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

COPY

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 28-MAR-2006 00:16
REQUESTOR : CAS

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060327011
Sample Title : - HARBOR PARK
Sample Time : 27-MAR-2006 14:40
Count Time : 27-MAR-2006 23:25
Sample Qauntity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.821E-09	Passed
CO-58	1.500E-08	< 4.235E-09	Passed
CO-60	1.500E-08	< 1.300E-08	Passed
ZN-65	3.000E-08	< 1.467E-08	Passed
CS-134	1.500E-08	< 3.878E-09	Passed
CS-137	1.800E-08	< 1.239E-08	Passed

*** End Of Report (1 Page) ***

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 28-MAR-2006 00:16
REQUESTOR : CAS

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - HARBOR PARK

SAMPLE No. : 060327011 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 27-MAR-2006 23:25:55 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 27-MAR-2006 14:40:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

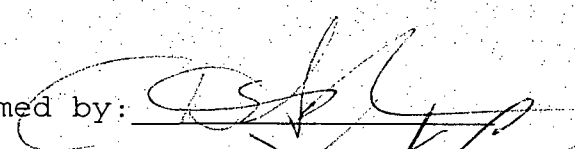
ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
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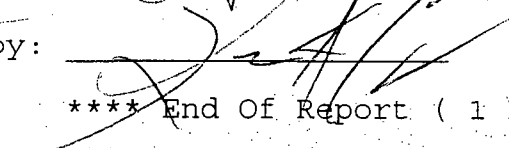
UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: 

Reviewed by: 

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: harbor park river
Sample Date/Time: 4/10/2006 14:00

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	10.62
bkgd	10.39
Volume	3
Efficiency	0.3955 (enter EFF(%) as decimal)
Bkgd Count Time (min)	15
Sample Count Time (min)	15

Liquid Sample Activity is <MDA

MDA = < 1.54E-06 uCi/ml
Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time

Initial Sample flow rate

Sample stop date & time

Final Sample flow rate

format MM/DD HH:MM format
cc/min
format MM/DD HH:MM format
cc/min

Sample collection time

0 min

Total sample volume

0 cc

COPY

H-3 Concentration in Air (uCi/cc)

N/A

MDA = < N/A

Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
Chemistry Technician

4-10-6
Date

Reviewed by *[Signature]*
Chemistry Supervisor

4-11-06
Date

10-APR-2006 19:59:58.89

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - HARBOR PARK RIVER
SAMPLE ID : 060410014 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 10-APR-2006 14:00 * GEO EFFICIENCY DATE: 11-FEB-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET5 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 10-APR-2006 10:21 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00162E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 10-APR-2006 19:09 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:50:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3000.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3000.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060410014_ADC5_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RS
REVIEWED BY :
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

COPY

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 10-APR-2006 19:59
REQUESTOR : CAS

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060410014
Sample Title : - HARBOR PARK RIVER
Sample Time : 10-APR-2006 14:00
Count Time : 10-APR-2006 19:09
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 5
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 5.276E-09	Passed
CO-58	1.500E-08	< 5.270E-09	Passed
CO-60	1.500E-08	< 1.378E-08	Passed
ZN-65	3.000E-08	< 9.599E-09	Passed
CS-134	1.500E-08	< 4.968E-09	Passed
CS-137	1.800E-08	< 9.826E-09	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 10-APR-2006 20:00
REQUESTOR : CAS

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - HARBOR PARK RIVER

SAMPLE No. : 060410014 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 10-APR-2006 19:09:42 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 10-APR-2006 14:00:00 DETECTOR : DET5
LIBRARY : CHEM_RELEASE

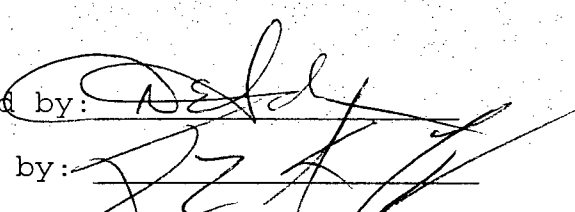
ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

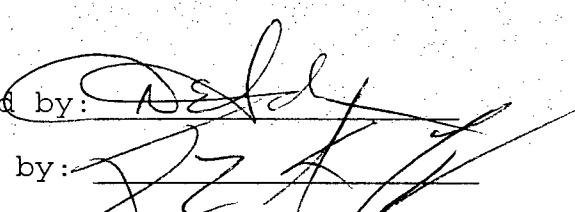
UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: 

Reviewed by: 

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: harbor park
Sample Date/Time: 4/24/2006 13:20

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	9.30
bkgd	8.56
Volume	3
Efficiency	0.3959 (enter EFF(%) as decimal)
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is <MDA

MDA = < 1.40E-06 uCi/ml

Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time

--

format MM/DD HH:MM format

Initial Sample flow rate

--

cc/min

Sample stop date & time

--

format MM/DD HH:MM format

Final Sample flow rate

--

cc/min

Sample collection time

0 min

Total sample volume

0 cc

COPY

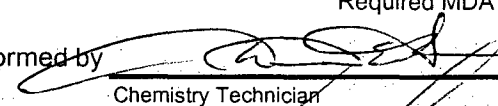
H-3 Concentration in Air (uCi/cc)

N/A

MDA = < N/A

Required MDA = 1E-6 uCi/cc

Performed by

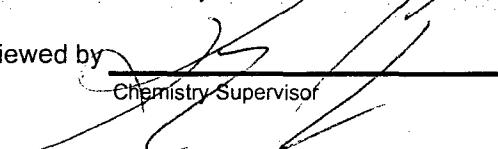


Chemistry Technician

4-25-06

Date

Reviewed by



Chemistry Supervisor

5-10-06

Date

25-APR-2006 09:04:47.29

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - HARBOR PARK
SAMPLE ID : 060425006 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 24-APR-2006 13:20 * GEO EFFICIENCY DATE: 11-FEB-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET5 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 25-APR-2006 07:28 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00205E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 25-APR-2006 08:00 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 01:04:23 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3863.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3863.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060425006_ADC5_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : ASH
REVIEWED BY : KL
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

COPY

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 25-APR-2006 09:04
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060425006
Sample Title : - HARBOR PARK
Sample Time : 24-APR-2006 13:20
Count Time : 25-APR-2006 08:00
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 5
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.707E-09	Passed
CO-58	1.500E-08	< 3.447E-09	Passed
CO-60	1.500E-08	< 1.357E-08	Passed
ZN-65	3.000E-08	< 1.360E-08	Passed
CS-134	1.500E-08	< 3.564E-09	Passed
CS-137	1.800E-08	< 8.869E-09	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 25-APR-2006 09:04
REQUESTOR : CAS_TECH

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - HARBOR PARK

SAMPLE No. : 060425006 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 25-APR-2006 08:00:08 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 24-APR-2006 13:20:00 DETECTOR : DET5
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: *[Signature]*

Reviewed by: *[Signature]*

**** End Of Report (1 Page) ****

Tritium Calculation Worksheet

Sample Title: **HARBOR PARK RIVER**
Sample Date/Time: **5/9/2006 14:30 PM**

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	7.18
bkgd	6.62
Volume	3
Efficiency	0.3950 (enter EFF(%) as decimal)
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is **<MDA**

MDA = < **1.24E-06** uCi/ml
Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)
 Percent Humidity in Sample Area (as a Fraction)
 Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time format MM/DD HH:MM format
 Initial Sample flow rate cc/min
 Sample stop date & time format MM/DD HH:MM format
 Final Sample flow rate cc/min
 Sample collection time 0 min
 Total sample volume 0 cc

COPY

H-3 Concentration in Air (uCi/cc)

N/A

MDA = < **N/A**

Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
 Chemistry Technician

5-10-06
 Date

Reviewed by *[Signature]*
 Chemistry Supervisor

5-15-06
 Date

9-MAY-2006 17:02:32.10

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - HARBOR PARK RIVER
SAMPLE ID : 060509015 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 9-MAY-2006 14:30: * GEO EFFICIENCY DATE: 12-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 9-MAY-2006 01:06: * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.01137E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 9-MAY-2006 16:12: * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:50:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3000.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3000.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060509015_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
REVIEWED BY : RLS
COMMENTS :

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	511.68*	12	4	2.28	1022.56	1015	18	85.6		

COPY

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 9-MAY-2006 17:02
REQUESTOR : CAS

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060509015
Sample Title : - HARBOR PARK RIVER
Sample Time : 9-MAY-2006 14:30
Count Time : 9-MAY-2006 16:12
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.818E-09	Passed
CO-58	1.500E-08	< 6.800E-09	Passed
CO-60	1.500E-08	< 1.024E-08	Passed
ZN-65	3.000E-08	< 1.286E-08	Passed
CS-134	1.500E-08	< 4.537E-09	Passed
CS-137	1.800E-08	< 1.448E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 9-MAY-2006 17:02
REQUESTOR : CAS

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - HARBOR PARK RIVER

SAMPLE No. : 060509015 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 9-MAY-2006 16:12:15. SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 9-MAY-2006 14:30:00. DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
511.68	12.	2.28	5.877E-01	1.553E-04	85.6	U	ANN-RD	0.000E+00

Total Unidentified/Rejected Peaks = 1
% Unidentified/Rejected Peaks = 100.00

Flags: U - Unknown Line
R - Rejected During Analysis
P - Positively Identified (line not in analysis library)

No nuclides found - QA Analysis Terminated

Performed by: Sharon Ventres

Reviewed by: [Signature]

**** End Of Report (1 Page) ****

Tritium Calculation Worksheet

Sample Title: HARBOR PARK

Sample Date/Time: 5/22/2006 14:30 PM

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	7.56
bkgd	7.24
Volume	3
Efficiency	0.4010
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is <MDA

MDA = < 1.28E-06 uCi/ml

Required MDA = 2.00E-06 uCi/ml

(enter EFF(%) as decimal)

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time

Initial Sample flow rate

Sample stop date & time

Final Sample flow rate

format MM/DD HH:MM format

cc/min

format MM/DD HH:MM format

cc/min

Sample collection time

0 min

Total sample volume

0 cc

COPY

H-3 Concentration in Air (uCi/cc)

N/A

MDA = < N/A

Required MDA = 1E-6 uCi/cc

Performed by mshepherd
Chemistry Technician

5-22-06
Date

Reviewed by [Signature]
Chemistry Supervisor

5-25-06
Date

22-MAY-2006 16:59:13.27

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - HARBOR PARK
SAMPLE ID : 060522006 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 22-MAY-2006 14:30 * GEO EFFICIENCY DATE: 11-FEB-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET5 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 22-MAY-2006 08:10 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00100E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 22-MAY-2006 16:08 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:50:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3000.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3000.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060522006_ADC5_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
REVIEWED BY : _____
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

COPY

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 22-MAY-2006 16:59
REQUESTOR : CAS

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060522006
Sample Title : - HARBOR PARK
Sample Time : 22-MAY-2006 14:30
Count Time : 22-MAY-2006 16:08
Sample Qauntity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 5
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 6.477E-09	Passed
CO-58	1.500E-08	< 4.948E-09	Passed
CO-60	1.500E-08	< 1.024E-08	Passed
ZN-65	3.000E-08	< 8.168E-09	Passed
CS-134	1.500E-08	< 5.049E-09	Passed
CS-137	1.800E-08	< 6.126E-09	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 22-MAY-2006 16:59
REQUESTOR : CAS

PAGE 1 OF _____

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - HARBOR PARK

SAMPLE No. : 060522006 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 22-MAY-2006 16:08:57 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 22-MAY-2006 14:30:00 DETECTOR : DET5
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: Cindy Aye

Reviewed by: [Signature]

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: **HARBOR PARK RIVER**
Sample Date/Time: **6/6/2006 13:45 PM**

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	8.85
bkgd	7.51
Volume	3
Efficiency	0.3918 (enter EFF(%) as decimal)
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is **<MDA**

MDA = < 1.33E-06 uCi/ml
Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time

Initial Sample flow rate

Sample stop date & time

Final Sample flow rate

format MM/DD HH:MM format

cc/min

format MM/DD HH:MM format

cc/min

Sample collection time

0 min

Total sample volume

0 cc

COPY

H-3 Concentration in Air (uCi/cc)

N/A

MDA = < N/A

Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
Chemistry Technician

6-6-06
Date

Reviewed by *[Signature]*
Chemistry Supervisor

6-6-06
Date

7-JUN-2006 08:09:39.20

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - HARBOR PARK
SAMPLE ID : 060606019A * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 6-JUN-2006 13:45: * GEO EFFICIENCY DATE: 12-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 7-JUN-2006 01:18: * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00962E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 7-JUN-2006 07:19: * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:50:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3000.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3000.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK: [NEU.SAMPLE.CHEM.NEW] 060606019A_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
REVIEWED BY : KL
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

*Recounted after wiping down detector
suspected detector contamination.
also a high ds error.*

ms 6-7-6

COPY

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 7-JUN-2006 08:09
REQUESTOR : CAS

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060606019A
Sample Title : - HARBOR PARK
Sample Time : 6-JUN-2006 13:45
Count Time : 7-JUN-2006 07:19
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 3.824E-09	Passed
CO-58	1.500E-08	< 4.776E-09	Passed
CO-60	1.500E-08	< 8.700E-09	Passed
ZN-65	3.000E-08	< 3.411E-09	Passed
CS-134	1.500E-08	< 5.742E-09	Passed
CS-137	1.800E-08	< 1.290E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 7-JUN-2006 08:09
REQUESTOR : CAS

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - HARBOR PARK

SAMPLE No. : 060606019A OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 7-JUN-2006 07:19:22. SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 6-JUN-2006 13:45:00. DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: *[Signature]*

Reviewed by: *[Signature]*

**** End Of Report (1 Page) ****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 6-JUN-2006 15:47
REQUESTOR : CAS

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060606019
Sample Title : - HARBOR PARK
Sample Time : 6-JUN-2006 13:45
Count Time : 6-JUN-2006 14:56
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 6.985E-09	Passed
CO-58	1.500E-08	< 6.362E-09	Passed
CO-60	1.500E-08	< 9.766E-09	Passed
ZN-65	3.000E-08	< 9.402E-09	Passed
CS-134	1.500E-08	< 6.552E-09	Passed
CS-137	1.800E-08	5.777E-09	Okay

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 6-JUN-2006 15:47
REQUESTOR : CAS

PAGE 1 OF _____

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - HARBOR PARK

SAMPLE No. : 060606019 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 6-JUN-2006 14:56:50. SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 6-JUN-2006 13:45:00. DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
CS-137	661.65	0.05	5.777E-09	* Peak FWHM = 1.7 * Count Rate Error = 68.22
AVG ENERGY DIFF =		0.05	5.777E-09	= TOTAL GAMMA ACTIVITY
			5.777E-09	= Total FP Activity

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
No Unidentified/Rejected Peaks								

Performed by: mskyline

Reviewed by: [Signature]

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: **HARBOR PARK RIVER**
Sample Date/Time: **6/19/2006 14:45 PM**

COPY

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	6.54
bkgd	7.31
Volume	3
Efficiency	0.3906 (enter EFF(%) as decimal)
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is **<MDA**

MDA = **< 1.32E-06** uCi/ml

Required MDA = **2.00E-06** uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample (leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc) **N/A**

Gas Bubbler Sample (leave blank if not used)

Sample start date & time		format MM/DD HH:MM format
Initial Sample flow rate		cc/min
Sample stop date & time		format MM/DD HH:MM format
Final Sample flow rate		cc/min

Sample collection time 0 min

Total sample volume 0 cc

H-3 Concentration in Air (uCi/cc) **N/A**

MDA = **< N/A**

Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
Chemistry Technician

6-20-06
Date

Reviewed by *[Signature]*
Chemistry Supervisor

6-20-06
Date

20-JUN-2006 12:45:25.00

COPY

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - HARBOR PARK RIVER SAMPLE
SAMPLE ID : 060619017B * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 19-JUN-2006 14:45 * GEO EFFICIENCY DATE: 12-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 20-JUN-2006 08:11 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.01266E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 20-JUN-2006 11:55 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:50:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3000.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3000.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060619017B_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : SHEPHERD
REVIEWED BY : KC
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

Jack said this
is fine. Hope's
Trailer move will
solve Bkg problem

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 20-JUN-2006 12:45
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

COPY

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060619017B
Sample Title : - HARBOR PARK RIVER SAMPLE
Sample Time : 19-JUN-2006 14:45
Count Time : 20-JUN-2006 11:55
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.968E-09	Passed
CO-58	1.500E-08	< 5.776E-09	Passed
CO-60	1.500E-08	< 1.020E-08	Passed
ZN-65	3.000E-08	< 1.169E-08	Passed
CS-134	1.500E-08	< 3.590E-09	Passed
CS-137	1.800E-08	< 1.124E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 20-JUN-2006 12:45
REQUESTOR : CAS_TECH

COPY

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - HARBOR PARK RIVER SAMPLE

SAMPLE No. : 060619017B OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 20-JUN-2006 11:55:13 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 19-JUN-2006 14:45:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
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UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: *mslyshene*
Reviewed by: *[Signature]*

**** End Of Report (1 Page) ****

20-JUN-2006 10:54:23.87

COPY

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - HARBOR PARK RIVER SAMPLE
SAMPLE ID : 060619017A * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 19-JUN-2006 14:45 * GEO EFFICIENCY DATE: 13-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 1 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 20-JUN-2006 08:07 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 4.99909E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 20-JUN-2006 08:36 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 02:18:04 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 8284.3 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 8284.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK: [NEU.SAMPLE.CHEM.NEW]060619017A_ADC1_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : SHEPHERD
REVIEWED BY : KC
COMMENTS :

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	1172.98*	22	4	1.92	2350.90	2343	16	48.6		CO-60

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 20-JUN-2006 10:54
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

COPY

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060619017A
Sample Title : - HARBOR PARK RIVER SAMPLE
Sample Time : 19-JUN-2006 14:45
Count Time : 20-JUN-2006 08:36
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 1
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.437E-09	Passed
CO-58	1.500E-08	< 5.084E-09	Passed
CO-60	1.500E-08	8.512E-09	Okay
ZN-65	3.000E-08	< 7.115E-09	Passed
CS-134	1.500E-08	< 3.429E-09	Passed
CS-137	1.800E-08	< 6.042E-09	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 20-JUN-2006 10:54
REQUESTOR : CAS_TECH

PAGE 1 OF 1

COPY

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - HARBOR PARK RIVER SAMPLE

SAMPLE No. : 060619017A OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 20-JUN-2006 08:36:07 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 19-JUN-2006 14:45:00 DETECTOR : DET 1
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
CO-60	1332.49	0.00	8.512E-09	* Key Line Not Found
AVG ENERGY DIFF =		0.00	8.512E-09	= TOTAL GAMMA ACTIVITY
			8.512E-09	= Total AP Activity

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
No Unidentified/Rejected Peaks								

Performed by: *[Signature]*

Reviewed by: *[Signature]*

**** End Of Report (1 Page) ****

19-JUN-2006 18:34:14.32

COPY

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - HARBOR PARK RIVER SAMPLE

SAMPLE ID : 060619017

* SAMPLE GEOMETRY : 4LMARS

SAMPLE TIME : 19-JUN-2006 14:45

* GEO EFFICIENCY DATE: 13-JAN-2006

SAMPLE TYPE : LIQUID

* SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 1

* LIBRARY : CHEM_RELEASE

LAST ENERGY CAL : 19-JUN-2006 08:09

* ENERGY TOLERANCE: 2.00000

KEV/CHANNEL : 4.99986E-01

* HALF LIFE RATIO : 9.00000

START CHANNEL : 100

* END CHANNEL : 4096

ACQ DATE & TIME : 19-JUN-2006 16:24

* DEADTIME (%) : 0.0%

PRESET LIVE TIME : 0 02:09:44

* SENSITIVITY : 7.50000

ELAPSED REAL TIME : 7784.3 Secs

* GAUSSIAN SEN : 10.00000

ELAPSED LIVE TIME : 7784.0 Secs

* CORRECTION FACTOR: 1.00000E+00

DECAYED TO 0 DAYS HOURS

FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060619017_ADC1_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : SHEPHERD

REVIEWED BY : KC

COMMENTS :

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	92.61*	41	89	1.12	185.42	182	8	46.9		
0	1173.29*	16	6	2.26	2351.39	2345	11	63.6		CO-60

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 19-JUN-2006 18:34
REQUESTOR : CAS_TECH

CYAPCO
HADDAM NECK STATION

COPY

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060619017
Sample Title : - HARBOR PARK RIVER SAMPLE
Sample Time : 19-JUN-2006 14:45
Count Time : 19-JUN-2006 16:24
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 1
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.927E-09	Passed
CO-58	1.500E-08	< 4.060E-09	Passed
CO-60	1.500E-08	6.618E-09	Okay
ZN-65	3.000E-08	< 9.600E-09	Passed
CS-134	1.500E-08	< 4.291E-09	Passed
CS-137	1.800E-08	< 6.148E-09	Passed

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: **HARBOR PARK REMP**
Sample Date/Time: **6/28/2006 10:00**

COPY

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	7.18
bkgd	5.20
Volume	3
Efficiency	0.3943
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

(enter EFF(%) as decimal)

Liquid Sample Activity is **<MDA**

MDA = **< 1.11E-06** uCi/ml

Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time

--

 format MM/DD HH:MM format

Initial Sample flow rate

--

 cc/min

Sample stop date & time

--

 format MM/DD HH:MM format

Final Sample flow rate

--

 cc/min

Sample collection time 0 min

Total sample volume 0 cc

H-3 Concentration in Air (uCi/cc)

N/A

MDA = **< N/A**

Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
Chemistry Technician

6-29-06
Date

Reviewed by *[Signature]*
Chemistry Supervisor

12/9/06
Date

29-JUN-2006 18:50:49.07

COPY

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - HARBOR PARK QTLY REMP

SAMPLE ID : 060629014

SAMPLE TIME : 28-JUN-2006 10:00

SAMPLE TYPE : LIQUID

* SAMPLE GEOMETRY : 4LMARS

* GEO EFFICIENCY DATE: 12-JAN-2006

* SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2

LAST ENERGY CAL : 29-JUN-2006 11:16

KEV/CHANNEL : 5.01171E-01

START CHANNEL : 100

ACQ DATE & TIME : 29-JUN-2006 18:00

PRESET LIVE TIME : 0 00:50:00

ELAPSED REAL TIME : 3000.2 Secs

ELAPSED LIVE TIME : 3000.0 Secs

DECAYED TO 1 DAYS HOURS

FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060629014_ADC2_LIQUID.CNF;1

* LIBRARY : CHEM RELEASE

* ENERGY TOLERANCE: 2.00000

* HALF LIFE RATIO : 9.00000

* END CHANNEL : 4096

* DEADTIME (%) : 0.0%

* SENSITIVITY : 7.50000

* GAUSSIAN SEN : 10.00000

* CORRECTION FACTOR: 1.00000E+00

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS

REVIEWED BY : 

COMMENTS :

Post-NID Peak Search Report

***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 29-JUN-2006 18:50
REQUESTOR : CAS_TECH

COPY

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060629014
Sample Title : - HARBOR PARK QTLY REMP
Sample Time : 28-JUN-2006 10:00
Count Time : 29-JUN-2006 18:00
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 5.600E-09	Passed
CO-58	1.500E-08	< 6.275E-09	Passed
CO-60	1.500E-08	< 1.072E-08	Passed
ZN-65	3.000E-08	< 1.524E-08	Passed
CS-134	1.500E-08	< 5.084E-09	Passed
CS-137	1.800E-08	< 1.455E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 29-JUN-2006 18:50
REQUESTOR : CAS_TECH

PAGE 1 OF

COPY

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - HARBOR PARK QTLY REMP

SAMPLE No. : 060629014 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 29-JUN-2006 18:00:33 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 28-JUN-2006 10:00:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: [Signature]

Reviewed by: [Signature]

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: HARBOR PARK RIVER
Sample Date/Time: 7/6/2006 14:30 PM

COPY

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	5.64
bkgd	6.38
Volume	3
Efficiency	0.3895 (enter EFF(%) as decimal)
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is <MDA

MDA = < **1.24E-06** uCi/ml
Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample (leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)
Percent Humidity in Sample Area (as a Fraction)
Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc) N/A

Gas Bubbler Sample (leave blank if not used)

Sample start date & time format MM/DD HH:MM format
Initial Sample flow rate cc/min
Sample stop date & time format MM/DD HH:MM format
Final Sample flow rate cc/min

Sample collection time 0 min
Total sample volume 0 cc

H-3 Concentration in Air (uCi/cc) N/A

MDA = < **N/A**
Required MDA = 1E-6 uCi/cc

Performed by *mslyp*
Chemistry Technician

7-7-06
Date

Reviewed by *B. W. S.*
Chemistry Supervisor

12/4/06
Date

6-JUL-2006 19:16:31.09

CONNECTICUT YANKEE
HADDAM NECK STATION

COPY

SAMPLE TITLE : - HARBOR PARK RIVER

SAMPLE ID : 060706016

SAMPLE TIME : 6-JUL-2006 14:30:

SAMPLE TYPE : LIQUID

* SAMPLE GEOMETRY : 4LMARS

* GEO EFFICIENCY DATE: 13-JAN-2006

* SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 1

LAST ENERGY CAL : 6-JUL-2006 07:40:

KEV/CHANNEL : 4.99922E-01

START CHANNEL : 100

ACQ DATE & TIME : 6-JUL-2006 17:06:

PRESET LIVE TIME : 0 02:09:27

ELAPSED REAL TIME : 7767.4 Secs

ELAPSED LIVE TIME : 7767.0 Secs

DECAYED TO 0 DAYS HOURS

FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060706016_ADC1_LIQUID.CNF;1

* LIBRARY : CHEM_RELEASE

* ENERGY TOLERANCE: 2.00000

* HALF LIFE RATIO : 9.00000

* END CHANNEL : 4096

* DEADTIME (%) : 0.0%

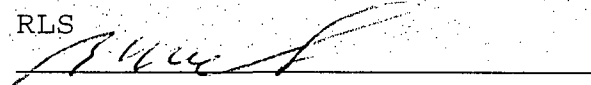
* SENSITIVITY : 7.50000

* GAUSSIAN SEN : 10.00000

* CORRECTION FACTOR: 1.00000E+00

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS

REVIEWED BY : 

COMMENTS :

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	365.14	43	29	1.23	731.06	726	9	27.2		I-131

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 6-JUL-2006 19:16
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

COPY

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060706016
Sample Title : - HARBOR PARK RIVER
Sample Time : 6-JUL-2006 14:30
Count Time : 6-JUL-2006 17:06
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 1
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 3.960E-09	Passed
CO-58	1.500E-08	< 4.761E-09	Passed
CO-60	1.500E-08	< 1.303E-08	Passed
ZN-65	3.000E-08	< 1.335E-08	Passed
CS-134	1.500E-08	< 5.130E-09	Passed
CS-137	1.800E-08	< 6.880E-09	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 6-JUL-2006 19:16
REQUESTOR : CAS_TECH

PAGE 1 OF ___

CYAPCO
HADDAM NECK STATION
POST NID QA ANALYSIS

COPY

TITLE : - HARBOR PARK RIVER

SAMPLE No. : 060706016 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 6-JUL-2006 17:06:49. SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 6-JUL-2006 14:30:00. DETECTOR : DET 1
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
I-131	364.48	0.66	8.633E-09	* Peak FWHM = 1.2
AVG ENERGY DIFF =		0.66	8.633E-09	= TOTAL GAMMA ACTIVITY
			8.633E-09	= Total FP Activity

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

Performed by: [Signature]

Reviewed by: [Signature]

**** End Of Report (1 Page) ****

11-JUL-2006 10:21:25.42

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - HARBOR PARK RIVER
SAMPLE ID : 060706016A
SAMPLE TIME : 6-JUL-2006 14:30:
SAMPLE TYPE : LIQUID

* SAMPLE GEOMETRY : 4LMARS
* GEO EFFICIENCY DATE: 13-JAN-2006
* SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 1
LAST ENERGY CAL : 11-JUL-2006 07:51
KEV/CHANNEL : 4.99942E-01
START CHANNEL : 100
ACQ DATE & TIME : 11-JUL-2006 08:18
PRESET LIVE TIME : 0 02:02:35
ELAPSED REAL TIME : 7355.3 Secs
ELAPSED LIVE TIME : 7355.0 Secs
DECAYED TO 4 DAYS HOURS

* LIBRARY : CHEM_RELEASE
* ENERGY TOLERANCE: 2.00000
* HALF LIFE RATIO : 9.00000
* END CHANNEL : 4096
* DEADTIME (%) : 0.0%
* SENSITIVITY : 7.50000
* GAUSSIAN SEN : 10.00000
* CORRECTION FACTOR: 1.00000E+00

FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060706016A_ADC1_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
REVIEWED BY : _____
COMMENTS :

COPY

Post-NID Peak Search Report
***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 11-JUL-2006 10:21
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060706016A
Sample Title : - HARBOR PARK RIVER
Sample Time : 6-JUL-2006 14:30
Count Time : 11-JUL-2006 08:18
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 1
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.741E-09	Passed
CO-58	1.500E-08	< 4.832E-09	Passed
CO-60	1.500E-08	< 1.389E-08	Passed
ZN-65	3.000E-08	< 1.016E-08	Passed
CS-134	1.500E-08	< 4.193E-09	Passed
CS-137	1.800E-08	< 5.651E-09	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 11-JUL-2006 10:21
REQUESTOR : CAS_TECH

PAGE 1 OF ____

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - HARBOR PARK RIVER

SAMPLE No. : 060706016A OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 11-JUL-2006 08:18:33 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 6-JUL-2006 14:30:00. DETECTOR : DET 1
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: *[Signature]*

Reviewed by: *[Signature]*

COPY

*** End Of Report (1 Page) ***

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: HARBOR PARK RIVER
Sample Date/Time: 7/18/2006 11:00

COPY

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	6.61
bkgd	5.84
Volume	3
Efficiency	0.3796
Bkgd. Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is <MDA

MDA = < **1.22E-06** uCi/ml

Required MDA = 2.00E-06 uCi/ml

(enter EFF(%) as decimal)

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time

Initial Sample flow rate

Sample stop date & time

Final Sample flow rate

format MM/DD HH:MM format

cc/min

format MM/DD HH:MM format

cc/min

Sample collection time

0 min

Total sample volume

0 cc

H-3 Concentration in Air (uCi/cc)

N/A

MDA = < **N/A**

Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
Chemistry Technician

7-26-06
Date

Reviewed by *[Signature]*
Chemistry Supervisor

12/4/06
Date

19-JUL-2006 14:08:40.16

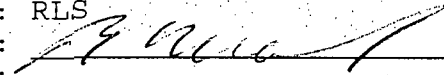
COPY

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - HARBOR PARK
SAMPLE ID : 060719007 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 18-JUL-2006 11:00 * GEO EFFICIENCY DATE: 12-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 19-JUL-2006 08:32 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00961E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 19-JUL-2006 13:18 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:50:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3000.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3000.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 1 DAYS HOURS
FILE IDENT : CAS\$DISK: [NEU.SAMPLE.CHEM.NEW]060719007_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
REVIEWED BY : 
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 19-JUL-2006 14:08
REQUESTOR : CAS

PAGE 1 OF

COPY

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060719007
Sample Title : - HARBOR PARK
Sample Time : 18-JUL-2006 11:00
Count Time : 19-JUL-2006 13:18
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.311E-09	Passed
CO-58	1.500E-08	< 4.793E-09	Passed
CO-60	1.500E-08	< 1.023E-08	Passed
ZN-65	3.000E-08	< 1.623E-08	Passed
CS-134	1.500E-08	< 3.920E-09	Passed
CS-137	1.800E-08	< 1.501E-08	Passed

*** End Of Report (1 Page) ***

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 19-JUL-2006 14:08
REQUESTOR : CAS

PAGE 1 OF 1

COPY

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - HARBOR PARK

SAMPLE No. : 060719007 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 19-JUL-2006 13:18:24 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 18-JUL-2006 11:00:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: *[Signature]*

Reviewed by: *[Signature]*

**** End Of Report (1 Page) ****

Tritium Calculation Worksheet

Sample Title: **HARBOR PARK**

Sample Date/Time: **8/3/2006 8:30**

COPY

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	5.43
bkgd	5.23
Volume	3
Efficiency	0.3906
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is **<MDA**

MDA = **< 1.13E-06** uCi/ml

Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time		format MM/DD HH:MM format
Initial Sample flow rate		cc/min
Sample stop date & time		format MM/DD HH:MM format
Final Sample flow rate		cc/min

Sample collection time 0 min

Total sample volume 0 cc

H-3 Concentration in Air (uCi/cc)

N/A

MDA = **< N/A**

Required MDA = 1E-6 uCi/cc

Performed by [Signature]
Chemistry Technician

8-12-06
Date

Reviewed by [Signature]
Chemistry Supervisor

12/15/06
Date

9-AUG-2006 08:29:29.40

COPY

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - HARBOR PARK RIVER WATER
SAMPLE ID : 060809001 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 3-AUG-2006 08:30: * GEO EFFICIENCY DATE: 12-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 9-AUG-2006 06:57: * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00886E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 9-AUG-2006 07:39: * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:50:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3000.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3000.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 5 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060809001_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
REVIEWED BY : *[Signature]*
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

*This was re-counted due to only one peak was
found on previous count and #1 DET failed the
morning after this was done on 8-9-6*

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 9-AUG-2006 08:29
REQUESTOR : CAS_TECH

COPY

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060809001
Sample Title : - HARBOR PARK RIVER WATER
Sample Time : 3-AUG-2006 08:30
Count Time : 9-AUG-2006 07:39
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 5.971E-09	Passed
CO-58	1.500E-08	< 5.027E-09	Passed
CO-60	1.500E-08	< 9.690E-09	Passed
ZN-65	3.000E-08	< 1.381E-08	Passed
CS-134	1.500E-08	< 5.909E-09	Passed
CS-137	1.800E-08	< 1.319E-08	Passed

*** End Of Report (1 Page) ***

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 9-AUG-2006 08:29
REQUESTOR : CAS_TECH

PAGE 1 OF ___

COPY

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - HARBOR PARK RIVER WATER

SAMPLE No. : 060809001 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 9-AUG-2006 07:39:12. SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 3-AUG-2006 08:30:00. DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: *[Signature]*

Reviewed by: *[Signature]*

**** End Of Report (1 Page) ****

8-AUG-2006 17:39:46.56

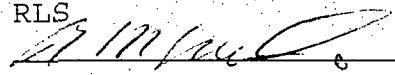
COPY

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - HARBOR PARK RIVER SAMPLE
SAMPLE ID : 060808076 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 3-AUG-2006 08:30: * GEO EFFICIENCY DATE: 13-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 1 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 8-AUG-2006 07:52: * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00200E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 8-AUG-2006 16:49: * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:50:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3000.1 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3000.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 5 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060808076_ADC1_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
REVIEWED BY : 
COMMENTS :

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	1171.62	35	0	1.38	2347.20	2341	11	16.9		CO-60
0	1330.45	31	0	1.81	2666.06	2658	14	18.0		

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 8-AUG-2006 17:39
REQUESTOR : CAS_TECH

PAGE 1 OF ___

COPY

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060808076
Sample Title : - HARBOR PARK RIVER SAMPLE
Sample Time : 3-AUG-2006 08:30
Count Time : 8-AUG-2006 16:49
Sample Qauntity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 1
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 7.933E-09	Passed
CO-58	1.500E-08	< 4.551E-09	Passed
CO-60	1.500E-08	3.832E-08	Okay
ZN-65	3.000E-08	< 1.669E-08	Passed
CS-134	1.500E-08	< 5.981E-09	Passed
CS-137	1.800E-08	< 1.048E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 8-AUG-2006 17:39
REQUESTOR : CAS_TECH

PAGE 1 OF

COPY

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - HARBOR PARK RIVER SAMPLE

SAMPLE No. : 060808076 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 8-AUG-2006 16:49:30. SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 3-AUG-2006 08:30:00. DETECTOR : DET 1
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
CO-60	1332.49	0.00	3.832E-08	* Key Line Not Found
AVG ENERGY DIFF = 0.00				
				3.832E-08 = TOTAL GAMMA ACTIVITY
				3.832E-08 = Total AP Activity

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
1330.45	31.	1.81	5.217E+00	1.378E-03	18.0	U		

Total Unidentified/Rejected Peaks = 1
% Unidentified/Rejected Peaks = 50.00

Flags: U - Unknown Line
R - Rejected During Analysis
P - Positively Identified (line not in analysis library)

Performed by:

Reviewed by:

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: **HARBOR PARK**
Sample Date/Time: **8/16/2006 10:45**

COPY

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	6.57
bkgd	6.46
Volume	3
Efficiency	0.3837 (enter EFF(%) as decimal)
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is **<MDA**

MDA = **< 1.27E-06** uCi/ml

Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample (leave blank if not used)

Ambient Temperature in Sample Area (degrees Farenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc) **N/A**

Gas Bubbler Sample (leave blank if not used)

Sample start date & time

--

 format MM/DD HH:MM format

Initial Sample flow rate

--

 cc/min

Sample stop date & time

--

 format MM/DD HH:MM format

Final Sample flow rate

--

 cc/min

Sample collection time 0 min

Total sample volume 0 cc

H-3 Concentration in Air (uCi/cc) **N/A**

MDA = **< N/A**

Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
Chemistry Technician

8-17-06
Date

Reviewed by *[Signature]*
Chemistry Supervisor

12/5/06
Date

17-AUG-2006 13:50:59.42

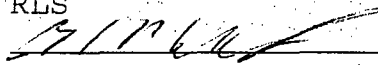
COPY

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - HARBOR PARK RIVER WATER
SAMPLE ID : 060817013 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 16-AUG-2006 10:45 * GEO EFFICIENCY DATE: 12-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 17-AUG-2006 08:39 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00975E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 17-AUG-2006 13:00 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:50:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3000.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3000.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 1 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060817013_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
REVIEWED BY : 
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 17-AUG-2006 13:51
REQUESTOR : CAS_TECH

COPY

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060817013
Sample Title : - HARBOR PARK RIVER WATER
Sample Time : 16-AUG-2006 10:45
Count Time : 17-AUG-2006 13:00
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 5.716E-09	Passed
CO-58	1.500E-08	< 5.167E-09	Passed
CO-60	1.500E-08	< 8.691E-09	Passed
ZN-65	3.000E-08	< 9.274E-09	Passed
CS-134	1.500E-08	< 5.599E-09	Passed
CS-137	1.800E-08	< 1.188E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 17-AUG-2006 13:51
REQUESTOR : CAS_TECH

PAGE 1 OF _____

CYAPCO
HADDAM NECK STATION

COPY

POST NID QA ANALYSIS

TITLE : - HARBOR PARK RIVER WATER

SAMPLE No. : 060817013 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 17-AUG-2006 13:00:42 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 16-AUG-2006 10:45:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: [Signature]

Reviewed by: [Signature]

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: **HARBOR PARK RIVER**
Sample Date/Time: **8/29/2006 11:30**

COPY

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	7.21
bkgd	7.12
Volume	3
Efficiency	0.3860 (enter EFF(%) as decimal)
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is **<MDA**

MDA = **< 1.32E-06 uCi/ml**
Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample (leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)
Percent Humidity in Sample Area (as a Fraction)
Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc) **N/A**

Gas Bubbler Sample (leave blank if not used)

Sample start date & time format MM/DD HH:MM format
Initial Sample flow rate cc/min
Sample stop date & time format MM/DD HH:MM format
Final Sample flow rate cc/min

Sample collection time 0 min
Total sample volume 0 cc

H-3 Concentration in Air (uCi/cc) **N/A**

MDA = **< N/A**
Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
Chemistry Technician

8-30-06
Date

Reviewed by *[Signature]*
Chemistry Supervisor

12/5/06
Date

30-AUG-2006 09:45:57.63

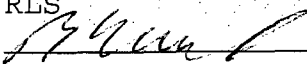
CONNECTICUT YANKEE
HADDAM NECK STATION

COPY

SAMPLE TITLE : - HARBOR PARK RIVER WATER
SAMPLE ID : 060830004 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 29-AUG-2006 11:30 * GEO EFFICIENCY DATE: 12-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 30-AUG-2006 07:02 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.01028E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 30-AUG-2006 08:55 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:50:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3000.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3000.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK: [NEU.SAMPLE.CHEM.NEW] 060830004_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
REVIEWED BY : 
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 30-AUG-2006 09:45
REQUESTOR : CAS_TECH

COPY

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060830004
Sample Title : - HARBOR PARK RIVER WATER
Sample Time : 29-AUG-2006 11:30
Count Time : 30-AUG-2006 08:55
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 6.242E-09	Passed
CO-58	1.500E-08	< 4.784E-09	Passed
CO-60	1.500E-08	< 7.339E-09	Passed
ZN-65	3.000E-08	< 1.356E-08	Passed
CS-134	1.500E-08	< 5.342E-09	Passed
CS-137	1.800E-08	< 9.384E-09	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 30-AUG-2006 09:45
REQUESTOR : CAS_TECH

PAGE 1 OF ___

COPY

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - HARBOR PARK RIVER WATER

SAMPLE No. : 060830004 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 30-AUG-2006 08:55:41 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 29-AUG-2006 11:30:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: Stephane

Reviewed by: [Signature]

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: **HARBOR PARK**
Sample Date/Time: **9/12/2006 14:40 PM**

COPY

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	6.83
bkgd	5.43
Volume	3
Efficiency	0.3838 (enter EFF(%) as decimal)
Bkgd Count Time (min)	15
Sample Count Time (min)	15

Liquid Sample Activity is **<MDA**

MDA = **< 1.17E-06** uCi/ml
Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample (leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)
Percent Humidity in Sample Area (as a Fraction)
Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc) **N/A**

Gas Bubbler Sample (leave blank if not used)

Sample start date & time format MM/DD HH:MM format
Initial Sample flow rate cc/min
Sample stop date & time format MM/DD HH:MM format
Final Sample flow rate cc/min
Sample collection time 0 min
Total sample volume 0 cc

H-3 Concentration in Air (uCi/cc) **N/A**

MDA = **< N/A**
Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
Chemistry Technician

9-13-06
Date

Reviewed by *[Signature]*
Chemistry Supervisor

12/15/06
Date

12-SEP-2006 17:16:25.33

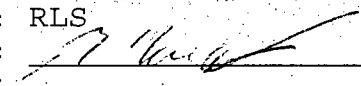
CONNECTICUT YANKEE
HADDAM NECK STATION

COPY

SAMPLE TITLE : - HARBOR PARK RIVER SAMPLE
 SAMPLE ID : 060912017 * SAMPLE GEOMETRY : 4LMARS
 SAMPLE TIME : 12-SEP-2006 14:40 * GEO EFFICIENCY DATE: 12-JAN-2006
 SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM_RELEASE
 LAST ENERGY CAL : 12-SEP-2006 07:18 * ENERGY TOLERANCE: 2.00000
 KEV/CHANNEL : 5.00784E-01 * HALF LIFE RATIO : 9.00000
 START CHANNEL : 100 * END CHANNEL : 4096
 ACQ DATE & TIME : 12-SEP-2006 16:26 * DEADTIME (%) : 0.0%
 PRESET LIVE TIME : 0 00:50:00 * SENSITIVITY : 7.50000
 ELAPSED REAL TIME : 3000.2 Secs * GAUSSIAN SEN : 10.00000
 ELAPSED LIVE TIME : 3000.0 Secs * CORRECTION FACTOR: 1.00000E+00
 DECAYED TO 0 DAYS HOURS
 FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]060912017_ADC2_LIQUID.CNF;1

 ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
 REVIEWED BY : 
 COMMENTS :

Post-NID Peak Search Report
 ***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 12-SEP-2006 17:16
REQUESTOR : CAS_TECH

PAGE 1 OF ___

COPY

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 060912017
Sample Title : - HARBOR PARK RIVER SAMPLE
Sample Time : 12-SEP-2006 14:40
Count Time : 12-SEP-2006 16:26
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 5.461E-09	Passed
CO-58	1.500E-08	< 4.746E-09	Passed
CO-60	1.500E-08	< 8.267E-09	Passed
ZN-65	3.000E-08	< 6.402E-09	Passed
CS-134	1.500E-08	< 4.644E-09	Passed
CS-137	1.800E-08	< 1.257E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 12-SEP-2006 17:16
REQUESTOR : CAS_TECH

PAGE 1 OF ___

COPY

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - HARBOR PARK RIVER SAMPLE

SAMPLE No. : 060912017 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 12-SEP-2006 16:26:09 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 12-SEP-2006 14:40:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: mslyshane

Reviewed by: [Signature]

**** End Of Report (1 Page) ****

3-OCT-2006 20:01:10.39

30-c


CONNECTICUT YANKEE
HADDAM NECK STATION

COPY

SAMPLE TITLE : - HARBOR PARK RIVER WATER
SAMPLE ID : 061003014 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 28-SEP-2006 13:15 * GEO EFFICIENCY DATE: 13-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 1 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 3-OCT-2006 06:53: * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00412E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 3-OCT-2006 16:40: * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 03:20:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 12000. Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 12000. Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 5 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]061003014_ADC1_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
REVIEWED BY : 
COMMENTS :

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	1332.26*	16	4	1.90	2668.20	2660	15156.1			CO-60

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 3-OCT-2006 20:01
REQUESTOR : CAS_TECH

PAGE 1 OF ___

COPY

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 061003014
Sample Title : - HARBOR PARK RIVER WATER
Sample Time : 28-SEP-2006 13:15
Count Time : 3-OCT-2006 16:40
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 1
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

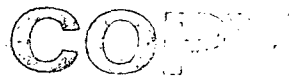
Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.295E-09	Passed
CO-58	1.500E-08	< 2.655E-09	Passed
CO-60	1.500E-08	4.945E-09	Okay
ZN-65	3.000E-08	< 9.172E-09	Passed
CS-134	1.500E-08	< 3.093E-09	Passed
CS-137	1.800E-08	< 4.707E-09	Passed

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: **HARBOR PARK RIVER**
Sample Date/Time: **10/18/2006 14:35 PM**



Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	5.44
bkgd	5.57
Volume	3
Efficiency	0.3829
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

Liquid Sample Activity is **<MDA**

MDA = **< 1.18E-06** uCi/ml

Required MDA = 2.00E-06 uCi/ml

(enter EFF(%) as decimal)

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Fahrenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time

Initial Sample flow rate

Sample stop date & time

Final Sample flow rate

format MM/DD HH:MM format

cc/min

format MM/DD HH:MM format

cc/min

Sample collection time

0 min

Total sample volume

0 cc

H-3 Concentration in Air (uCi/cc)

N/A

MDA = **< N/A**

Required MDA = 1E-6 uCi/cc

Performed by [Signature]
Chemistry Technician

10-20-06
Date

Reviewed by [Signature]
Chemistry Supervisor

2/27/07
Date

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 30-OCT-2006 14:56
REQUESTOR : CAS_TECH

PAGE 1 OF ___

COPY

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 061018012
Sample Title : - HARBOR PARK RIVER
Sample Time : 18-OCT-2006 14:35
Count Time : 18-OCT-2006 16:33
Sample Qauntity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 7.752E-09	Passed
CO-58	1.500E-08	< 2.003E-09	Passed
CO-60	1.500E-08	< 8.776E-09	Passed
ZN-65	3.000E-08	< 1.167E-08	Passed
CS-134	1.500E-08	< 4.392E-09	Passed
CS-137	1.800E-08	< 1.222E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 30-OCT-2006 14:56
REQUESTOR : CAS_TECH

PAGE 1 OF ___

COPY

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - HARBOR PARK RIVER

SAMPLE No. : 061018012 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 18-OCT-2006 16:33:15 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 18-OCT-2006 14:35:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: R. Skyles / per Verification Log

Reviewed by: [Signature]

**** End Of Report (1 Page) ****

Attachment 1
Tritium Calculation Worksheet

24265-000-GPP-GGGE-D2401-001
Rev. CY-001

Sample Title: **HARBOR PARK RIVER**
Sample Date/Time: **10/31/2006 15:06 PM**

COPY

Input data from the Liquid Scintillation Counter to determine activity of H-3 in the water sample

cpm	7.48
bkgd	6.14
Volume	3
Efficiency	0.3798
Bkgd Count	
Time (min)	15
Sample Count	
Time (min)	15

(enter EFF(%) as decimal)

Liquid Sample Activity is **<MDA**

MDA = < **1.25E-06** uCi/ml

Required MDA = 2.00E-06 uCi/ml

Enter data in the applicable shaded blocks below to determine the final activity of H-3 in the atmosphere

Dehumidifier Sample

(leave blank if not used)

Ambient Temperature in Sample Area (degrees Farenheit)

Percent Humidity in Sample Area (as a Fraction)

Tritium Results from LSC on Condensed Water Vapor (uCi/cc)

N/A

H-3 Concentration in Air (uCi/cc)

N/A

Gas Bubbler Sample

(leave blank if not used)

Sample start date & time

Initial Sample flow rate

Sample stop date & time

Final Sample flow rate

format MM/DD HH:MM format

cc/min

format MM/DD HH:MM format

cc/min

Sample collection time

0 min

Total sample volume

0 cc

H-3 Concentration in Air (uCi/cc)

N/A

MDA = < **N/A**

Required MDA = 1E-6 uCi/cc

Performed by *[Signature]*
Chemistry Technician

11-6-6
Date

Reviewed by *[Signature]*
Chemistry Supervisor

2/2/07
Date

1-NOV-2006 14:06:53.73


COPY

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - HARBOR PARK RIVER WATER
SAMPLE ID : 061101006 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 31-OCT-2006 15:06 * GEO EFFICIENCY DATE: 12-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 1-NOV-2006 07:07: * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.01141E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 1-NOV-2006 13:16: * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:50:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3000.1 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3000.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 0 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]061101006_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : RLS
REVIEWED BY : 
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 1-NOV-2006 14:06
REQUESTOR : CAS_TECH

PAGE 1 OF ___

COPY

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 061101006
Sample Title : - HARBOR PARK RIVER WATER
Sample Time : 31-OCT-2006 15:06
Count Time : 1-NOV-2006 13:16
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.523E-09	Passed
CO-58	1.500E-08	< 5.500E-09	Passed
CO-60	1.500E-08	< 1.206E-08	Passed
ZN-65	3.000E-08	< 1.314E-08	Passed
CS-134	1.500E-08	< 4.567E-09	Passed
CS-137	1.800E-08	< 1.287E-08	Passed

**** End Of Report (1 Page) ****

16-NOV-2006 18:23:12.48

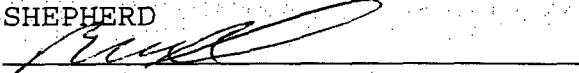
COPY

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - HARBOR PARK RIVER SAMPLE
SAMPLE ID : 061116024 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 15-NOV-2006 14:20 * GEO EFFICIENCY DATE: 13-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 1 * LIBRARY : CHEM RELEASE
LAST ENERGY CAL : 16-NOV-2006 08:07 * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00190E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 16-NOV-2006 16:26 * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 01:56:17 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 6977.3 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 6977.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 1 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]061116024_ADC1_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : SHEPHERD
REVIEWED BY : 
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 16-NOV-2006 18:23
REQUESTOR : CAS_TECH

PAGE 1 OF ___

CYAPCO
HADDAM NECK STATION

COPY

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 061116024
Sample Title : - HARBOR PARK RIVER SAMPLE
Sample Time : 15-NOV-2006 14:20
Count Time : 16-NOV-2006 16:26
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 1
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 4.700E-09	Passed
CO-58	1.500E-08	< 3.882E-09	Passed
CO-60	1.500E-08	< 1.565E-08	FAILED
ZN-65	3.000E-08	< 1.469E-08	Passed
CS-134	1.500E-08	< 5.557E-09	Passed
CS-137	1.800E-08	< 7.736E-09	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 16-NOV-2006 18:23
REQUESTOR : CAS_TECH

PAGE 1 OF ___

CYAPCO
HADDAM NECK STATION

COPY

POST NID QA ANALYSIS

TITLE : - HARBOR PARK RIVER SAMPLE

SAMPLE No. : 061116024 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 16-NOV-2006 16:26:41 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 15-NOV-2006 14:20:00 DETECTOR : DET 1
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: *[Signature]*

Reviewed by: *[Signature]*

**** End Of Report (1 Page) ****

17-NOV-2006 10:06:37.35

CONNECTICUT YANKEE
HADDAM NECK STATION

COPY

SAMPLE TITLE : - HARBOR PARK RIVER SAMPLE

SAMPLE ID : 061116024A

SAMPLE TIME : 15-NOV-2006 14:20

SAMPLE TYPE : LIQUID

* SAMPLE GEOMETRY : 4LMARS

* GEO EFFICIENCY DATE: 12-JAN-2006

* SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2

LAST ENERGY CAL : 17-NOV-2006 07:20

KEV/CHANNEL : 5.01116E-01

START CHANNEL : 100

ACQ DATE & TIME : 17-NOV-2006 09:16

PRESET LIVE TIME : 0 00:50:00

ELAPSED REAL TIME : 3000.3 Secs

ELAPSED LIVE TIME : 3000.0 Secs

DECAYED TO 1 DAYS HOURS

FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]061116024A_ADC2_LIQUID.CNF;1

* LIBRARY : CHEM_RELEASE

* ENERGY TOLERANCE: 2.00000

* HALF LIFE RATIO : 9.00000

* END CHANNEL : 4096

* DEADTIME (%) : 0.0%

* SENSITIVITY : 7.50000

* GAUSSIAN SEN : 10.00000

* CORRECTION FACTOR: 1.00000E+00

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : SHEPHERD

REVIEWED BY :

COMMENTS :

Post-NID Peak Search Report

***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 17-NOV-2006 10:06
REQUESTOR : CAS_TECH

PAGE 1 OF ___

COPY

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 061116024A
Sample Title : - HARBOR PARK RIVER SAMPLE
Sample Time : 15-NOV-2006 14:20
Count Time : 17-NOV-2006 09:16
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 5.606E-09	Passed
CO-58	1.500E-08	< 3.127E-09	Passed
CO-60	1.500E-08	< 7.815E-09	Passed
ZN-65	3.000E-08	< 1.172E-08	Passed
CS-134	1.500E-08	< 5.362E-09	Passed
CS-137	1.800E-08	< 1.310E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 17-NOV-2006 10:06
REQUESTOR : CAS_TECH

PAGE 1 OF ___

COPY

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - HARBOR PARK RIVER SAMPLE

SAMPLE No. : 061116024A OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 17-NOV-2006 09:16:21 SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 15-NOV-2006 14:20:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
---------	-------------	-------------------	-------------------	----------

UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
--------	----------	------	-----------	---------------	---------	------	--------------	----------

No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: *[Signature]*

Reviewed by: *[Signature]*

**** End Of Report (1 Page) ****

4-DEC-2006 11:39:30.84

COPY

CONNECTICUT YANKEE
HADDAM NECK STATION

SAMPLE TITLE : - HARBOR PARK RIVER SAMPLE
SAMPLE ID : 061204001 * SAMPLE GEOMETRY : 4LMARS
SAMPLE TIME : 29-NOV-2006 15:30 * GEO EFFICIENCY DATE: 12-JAN-2006
SAMPLE TYPE : LIQUID * SAMPLE QUANTITY : 3.78500E+03 ML

DETECTOR : DET 2 * LIBRARY : CHEM_RELEASE
LAST ENERGY CAL : 4-DEC-2006 07:17: * ENERGY TOLERANCE: 2.00000
KEV/CHANNEL : 5.00930E-01 * HALF LIFE RATIO : 9.00000
START CHANNEL : 100 * END CHANNEL : 4096
ACQ DATE & TIME : 4-DEC-2006 10:49: * DEADTIME (%) : 0.0%
PRESET LIVE TIME : 0 00:50:00 * SENSITIVITY : 7.50000
ELAPSED REAL TIME : 3000.2 Secs * GAUSSIAN SEN : 10.00000
ELAPSED LIVE TIME : 3000.0 Secs * CORRECTION FACTOR: 1.00000E+00
DECAYED TO 4 DAYS HOURS
FILE IDENT : CAS\$DISK:[NEU.SAMPLE.CHEM.NEW]061204001_ADC2_LIQUID.CNF;1

ANALYSES : PEAK V16.8 NID V3.2 MINACT V2.8 WTMEAN V1.8

Collected by : SHEPHERD
REVIEWED BY : 
COMMENTS :

Post-NID Peak Search Report
***** No peaks found *****

REPORT NAME : DET LIM (V1.1)
REPORT DATE : 4-DEC-2006 11:39
REQUESTOR : CAS_TECH

PAGE 1 OF ___

COPY

CYAPCO
HADDAM NECK STATION

DETECTION LIMIT CONFIRMATION REPORT

Sample ID : 061204001
Sample Title : - HARBOR PARK RIVER SAMPLE
Sample Time : 29-NOV-2006 15:30
Count Time : 4-DEC-2006 10:49
Sample Quantity : 3.78500E+03 ML
Nuclide Library : CHEM_RELEASE
Analyzed By : CAS
Sample Media : 4LMARS
Sample Shelf : 0
Detector : 2
Required LLD File : CAS_LLD:pge_free_odcm.DAT - ENV. ODCM LLD'S LIQUID

Nuclide	Required LLD (uCi/ML)	Measured VALUE (uCi/ML)	LLD MET
MN-54	1.500E-08	< 6.460E-09	Passed
CO-58	1.500E-08	< 5.231E-09	Passed
CO-60	1.500E-08	< 1.425E-08	Passed
ZN-65	3.000E-08	< 1.669E-08	Passed
CS-134	1.500E-08	< 5.656E-09	Passed
CS-137	1.800E-08	< 1.483E-08	Passed

**** End Of Report (1 Page) ****

REPORT NAME : QA_CHECK (V9.1)
REPORT DATE : 4-DEC-2006 11:39
REQUESTOR : CAS_TECH

PAGE 1 OF ___

COPY

CYAPCO
HADDAM NECK STATION

POST NID QA ANALYSIS

TITLE : - HARBOR PARK RIVER SAMPLE

SAMPLE No. : 061204001 OPERATOR NAME : CAS
SAMPLE TYPE : LIQUID SAMPLE GEOMETRY : 4LMARS
COUNT TIME : 4-DEC-2006 10:49:14. SAMPLE QUANTITY : 3.78500E+03
SAMPLE TIME : 29-NOV-2006 15:30:00 DETECTOR : DET 2
LIBRARY : CHEM_RELEASE

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR uCi/ML	COMMENTS
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UNIDENTIFIED/REJECTED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	GAMMA/SEC /ML	% ERROR	FLAG	POTENTIAL ID	ACTIVITY
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No Unidentified/Rejected Peaks

No nuclides found - QA Analysis Terminated

Performed by: unshihane

Reviewed by: [Signature]

**** End Of Report (1 Page) ****

FRAMATOME ANP - DOSIMETRY SERVICES SECTION
29 RESEARCH DRIVE WESTBORO, MA 01581
DATE: 04/26/06 TIME: 17.11.54

CLIENT: CONNECTICUT YANKEE

OCCUPATIONAL RADIATION EXPOSURE REPORT FILE: CY642001
DSS DOSE ALGORITHM NUMBER: B2
ISSUE PERIOD DUE DATE: 03/31/2006

REISSUE: NO
KNOWN DOSE DATE: NO
PERCENT CONTROL SUBTRACTION: 100
NEUTRON CORRECTION FACTOR: 1.000
MINIMUM REPORTED DOSES (mrem):
7mg/cm2 Dose = 0
300mg/cm2 Dose = 0
1000mg/cm2 Dose = 0
Neutron Dose = 0

SEQNO	ISS. NUM.	DOSI #1	DOSI #2	SHALLOW (7mg) (rem)	EYE (300mg) (rem)	DEEP (1000mg) (rem)	NEUTRON (1) (rem)
1	1	7002086	4051051	.020	.020	.020	.000
2	1	7002113	4051052	.020	.020	.020	.001
3	1	7002116	4051053	.018	.018	.018	.000
4	1	7002127	4051054	.019	.019	.019	.005
5	1	7002130	4051056	.023	.023	.023	.002
6	1	7002182	4051057	.025	.025	.025	.000
7	1	7002183	4051058	.030	.030	.030	.000
8	1	7002188	4051061	.021	.021	.021	.000
9	1	7002199	4051062	.259	.259	.259	.062
10	1	7002204	4051063	.023	.023	.023	.000
11	1	7002245	4051064	.022	.022	.022	.000
12	1	7002256	4051066	.025	.025	.025	.000
13	1	7002267	4051067	.023	.023	.023	.000
14	1	7002268	4051068	.025	.025	.025	.003
15	1	7002278	4051069	.023	.023	.023	.000
16	1	7002286	4051070	.015	.015	.015	.000
17	1	7002289	4051071	.016	.016	.016	.001

Total TLDS Reported: 17
Total 7mg Dose(rem): .607
Total 300mg Dose(rem): .607
Total 1000mg Dose(rem): .607
Total Neutron Dose(rem): .074

COPY

NOTE: (1) THE NEUTRON DOSE COMPONENT HAS NOT BEEN ADDED TO ANY DEPTH DOSES.

REV: 12/19/2005

PERFORMED BY: Jim D'Amico

FRAMATOME ANP - DOSIMETRY SERVICES SECTION

NEUTRON ANOMALY IDENTIFICATION REPORT

DATE: 04/26/06

TIME: 15.31.21

DUE DATE: 03/31/2006

NEUTRON CORRECTION FACTOR:

1.000

CLIENT: CY

SEQNO INUM	DOSI1 DOSI2	CDE	FILE1 FILE2	ELEMENT 1	ELEMENT 2 AVG. TLD1	ELEMENT 3 AVG. TLD2	ELEMENT 4 NEUTRON	FLAG
2	7002113	808	CY642001	32.8	34.1	21.0	32.0	
1	4051052	814	CY642001	35.1	31.7	19.8	32.5	
					33.0	33.1	.001	3
4	7002127	808	CY642001	28.6	31.7	20.3	29.9	
1	4051054	814	CY642001	29.6	22.2	19.0	34.7	
					30.1	28.8	.005	3
5	7002130	808	CY642001	31.2	32.1	24.7	36.9	
1	4051056	814	CY642001	48.7	39.3	24.0	38.6	
					33.4	42.2	.002	3
9	7002199	808	CY642001	242.8	260.2	309.4	255.2	
1	4051062	814	CY642001	318.3	309.9	298.7	317.5	
					252.7	315.2	.062	3
10	7002204	808	CY642001	39.9	47.2	23.9	62.8	
1	4051063	814	CY642001	23.1	31.6	23.2	30.5	
					50.0	28.4	.000	1
14	7002268	808	CY642001	32.2	27.8	26.6	28.8	
1	4051068	814	CY642001	25.8	33.0	22.6	31.5	
					29.6	30.1	.003	3
17	7002289	808	CY642001	22.2	26.2	17.0	25.3	
1	4051071	814	CY642001	21.2	25.5	13.1	26.2	
					24.6	24.3	.001	3

TOTAL ANOMALY TLDS: 7

FRAMATOME ANP - DOSIMETRY SERVICES SECTION
 ENVIRONMENTAL DOSIMETRY
 REMP - Issue Period Summary Report
 for
 CONNECTICUT YANKEE

Report Date: 04/14/06

Issuance Period: 1st.Qtr.2006

Station Location	Station Description	#E	---- μ R/Hour ---- Exposure	---- ±1 S.D.	mR/Std.Qtr.(91) Exposure	---- ±1 S.D.	Lost
CY-1-I	ONSITE DISCHARGE CAN	3	5.43	.33	11.85	.72	
CY-2-I	HADDAM PARK ROAD	3	5.61	.17	12.25	.38	
CY-3-I	HADDAM JAIL HILL RD	3	6.31	.20	13.78	.43	
CY-4-I	HADDAM RANGER ROAD	3	5.10	.18	11.15	.40	
CY-5-I	ONSITE INJUN HOL RD	3	6.54	.20	14.29	.43	
CY-6-I	ONSITE SUBSTATION	3	6.15	.21	13.44	.45	
CY-7-I	HADDAM	3	6.04	.27	13.18	.60	
CY-8-I	EAST HADDAM	3	6.09	.22	13.30	.47	
CY-9-I	HIGGANUM	3	6.10	.32	13.32	.69	
CY-10-I	HURD PARK ROAD	3	6.72	.27	14.68	.60	
CY-11-C	MIDDLETOWN	3	5.11	.26	11.17	.57	
CY-12-C	DEEP RIVER	3	6.02	.22	13.14	.48	
CY-13-C	NORTH MADISON	3	4.94	.40	10.78	.87	
CY-14-C	COLCHESTER	3	7.65	.30	16.70	.66	
CY-40-X	ONSITE INTAKE SCREEN	3	6.16	.18	13.45	.38	
CY-41-X	PICNIC AREA	3	5.30	.17	11.58	.37	
CY-42-X	ONSITE ENVIRON TRAIL	3	9.57	.38	20.91	.83	
CY-43-X	MOODUS-RTS 149&151	3	6.93	.29	15.14	.64	
CY-44-X	HORTON RD SHAILERVIL	3	5.76	.30	12.59	.66	
CY-45-X	SAME FENCE UP HILL	3	7.21	.24	15.74	.53	
CY-46-X	COVE RD N ON FENCE	2	9.11	.60	19.90	1.32	
CY-47-X	VISITORS CENTER	3	6.52	.24	14.24	.53	
CY-48-X	MET SHACK	3	5.16	.50	11.26	1.10	
CY-50-IF	ISFSI PAD SE END FEN	3	95.01	5.07	207.50	11.07	
CY-51-IF	ISFSI MONITOR ST FEN	3	6.18	.27	13.51	.58	
CY-52-IF	SCHMIDT CEMETERY OS	3	5.86	.19	12.79	.42	
CY-53-IF	ISFSI HAUL ROUTE OS	2	6.66	.21	14.55	.46	
CY-54-IF	RT 149 SALMON RIVER	3	6.23	.22	13.61	.49	
CY-55-IF	HV TOWER NW OF PAD	3	6.67	.32	14.56	.69	
CY-56-IF	BURROW PIT ON-SITE	3	6.28	.32	13.72	.70	

TOTAL STATIONS REPORTED: 30

FRAMATOME ANP - DOSIMETRY SERVICES SECTION
 ENVIRONMENTAL DOSIMETRY
 REMP - Individual Processing File Report
 for
 CONNECTICUT YANKEE

Processing File: CY06101D
 Processing Date: 04/03/2006

Report Date: 04/14/06
 Issuance Period: 1st.Qtr.2006

Station Location	Station Description	#E	----- μ R/Hour ----- Exposure	± 1 S.D.	CV
CY-1-I	ONSITE DISCHARGE CAN	3	5.43	.33	6.11
CY-2-I	HADDAM PARK ROAD	3	5.61	.17	3.09
CY-3-I	HADDAM JAIL HILL RD	3	6.31	.20	3.14
CY-4-I	HADDAM RANGER ROAD	3	5.10	.18	3.60
CY-5-I	ONSITE INJUN HOL RD	3	6.54	.20	2.99
CY-6-I	ONSITE SUBSTATION	3	6.15	.21	3.34
CY-7-I	HADDAM	3	6.04	.27	4.52
CY-8-I	EAST HADDAM	3	6.09	.22	3.54
CY-9-I	HIGGANUM	3	6.10	.32	5.20
CY-10-I	HURD PARK ROAD	3	6.72	.27	4.06
CY-11-C	MIDDLETOWN	3	5.11	.26	5.14
CY-12-C	DEEP RIVER	3	6.02	.22	3.63
CY-13-C	NORTH MADISON	3	4.94	.40	8.04
CY-14-C	COLCHESTER	3	7.65	.30	3.94
CY-40-X	ONSITE INTAKE SCREEN	3	6.16	.18	2.85
CY-41-X	PICNIC AREA	3	5.30	.17	3.22
CY-42-X	ONSITE ENVIRON TRAIL	3	9.57	.38	3.99
CY-43-X	MOODUS-RTS 149&151	3	6.93	.29	4.22
CY-44-X	HORTON RD SHAILERVIL	3	5.76	.30	5.25
CY-45-X	SAME FENCE UP HILL	3	7.21	.24	3.34
CY-46-X	COVE RD N ON FENCE	2	9.11	.60	6.61
CY-47-X	VISITORS CENTER	3	6.52	.24	3.70
CY-48-X	MET SHACK	3	5.16	.50	9.74
CY-50-IF	ISFSI PAD SE END FEN	3	95.01	5.07	5.34
CY-51-IF	ISFSI MONITOR ST FEN	3	6.18	.27	4.30
CY-52-IF	SCHMIDT CEMETERY OS	3	5.86	.19	3.26
CY-53-IF	ISFSI HAUL ROUTE OS	2	6.66	.21	3.17
CY-54-IF	RT 149 SALMON RIVER	3	6.23	.22	3.58
CY-55-IF	HV TOWER NW OF PAD	3	6.67	.32	4.74
CY-56-IF	BURROW PIT ON-SITE	3	6.28	.32	5.12
CYRQFB1	FADE BADGE 1	3	100.40	8.42	8.39

TOTAL STATIONS REPORTED: 31

REPORTED BY: J. D. Dand

FRAMATOME ANP - DOSIMETRY SERVICES SECTION
29 RESEARCH DRIVE WESTBORO, MA 01581
DATE: 08/23/06 TIME: 08.42.37

CLIENT: CONNECTICUT YANKEE

OCCUPATIONAL RADIATION EXPOSURE REPORT FILE: CY672101
DSS DOSE ALGORITHM NUMBER: B2
ISSUE PERIOD DUE DATE: 06/30/2006

REISSUE: NO
KNOWN DOSE DATE: NO
PERCENT CONTROL SUBTRACTION: 100
NEUTRON CORRECTION FACTOR: 1.000
MINIMUM REPORTED DOSES (mrem):
7mg/cm2 Dose = 0
300mg/cm2 Dose = 0
1000mg/cm2 Dose = 0
Neutron Dose = 0

SEQNO	ISS. NUM.	DOSI #1	DOSI #2	SHALLOW (7mg) (rem)	EYE (300mg) (rem)	DEEP (1000mg) (rem)	NEUTRON(1) (rem)
18	1	7006373	4041642	.018	.018	.018	.000
19	1	7006374	4041643	.016	.016	.016	.000
20	1	7006375	4041644	.015	.015	.015	.006
21	1	7006376	4041645	.015	.015	.015	.000
22	1	7006377	4041646	.019	.019	.019	.001
23	1	7006381	4041647	.025	.025	.025	.003
24	1	7006382	4041648	.017	.017	.017	.000
25	1	7006383	4041649	.015	.015	.015	.000
26	1	7006384	4041650	.297	.267	.267	.079
27	1	7006385	4041651	.017	.017	.017	.000
28	1	7006386	4041654	.017	.017	.017	.000
29	1	7006387	4041655	.016	.016	.016	.000
30	1	7006388	4041656	.018	.018	.018	.004
31	1	7006389	4041657	.019	.019	.019	.005
32	1	7006390	4041658	.017	.017	.017	.000
33	1	7006391	4041659	.013	.013	.013	.000
34	1	7006392	4041660	.013	.013	.013	.000

Total TLDS Reported: 17
Total 7mg Dose (rem): .567
Total 300mg Dose (rem): .537
Total 1000mg Dose (rem): .537
Total Neutron Dose (rem): .098

NOTE: (1) THE NEUTRON DOSE COMPONENT HAS NOT BEEN ADDED TO ANY DEPTH DOSES.

PERFORMED BY: Jim David

FRAMATOME ANP - DOSIMETRY SERVICES SECTION

NEUTRON ANOMALY IDENTIFICATION REPORT

DATE: 08/23/06

TIME: 08.42.17

DUE DATE: 06/30/2006

NEUTRON CORRECTION FACTOR:

1.000

CLIENT: CY

SEQNO INUM	DOSI1 DOSI2	CDE	FILE1 FILE2	ELEMENT 1	ELEMENT 2 AVG.TLD1	ELEMENT 3 AVG.TLD2	ELEMENT 4 NEUTRON	FLAG
20	7006375	808	CY672101	25.6	25.5	15.6	22.0	
1	4041644	814	CY672101	21.4	23.1 24.4	16.6 24.3	28.4 .006	3
22	7006377	808	CY672101	28.4	32.1	20.4	27.9	
1	4041646	814	CY672101	30.1	35.6 29.5	22.0 31.5	28.8 .001	3
23	7006381	808	CY672101	32.0	31.7	26.3	30.4	
1	4041647	814	CY672101	37.6	34.2 31.4	26.9 34.9	32.9 .003	3
26	7006384	808	CY672101	297.5	278.9	283.0	267.4	
1	4041650	814	CY672101	363.3	369.5 281.3	266.9 359.7	346.4 .079	3
30	7006388	808	CY672101	29.1	29.6	18.4	25.3	
1	4041656	814	CY672101	27.5	29.3 28.0	18.7 28.8	29.5 .004	3
31	7006389	808	CY672101	25.3	27.3	20.1	22.0	
1	4041657	814	CY672101	28.2	27.8 24.9	21.3 27.6	26.8 .005	3

TOTAL ANOMALY TLDS: 6

FRAMATOME ANP - DOSIMETRY SERVICES SECTION
 ENVIRONMENTAL DOSIMETRY
 REMP - Issue Period Summary Report
 for
 CONNECTICUT YANKEE

Report Date: 08/07/06

Issuance Period: 2nd.Qtr.2006

Station Location	Station Description	#E	---- μ R/Hour Exposure	----- ±1 S.D.	mR/Std.Qtr.(91) Exposure	----- ±1 S.D.	Lost
CY-1-I	ONSITE DISCHARGE CAN	3	7.00	.49	15.28	1.06	
CY-2-I	HADDAM PARK ROAD	3	6.02	.39	13.14	.86	
CY-3-I	HADDAM JAIL HILL RD	3	6.48	.24	14.16	.53	
CY-4-I	HADDAM RANGER ROAD	3	5.74	.33	12.54	.72	
CY-5-I	ONSITE INJUN HOL RD	3	6.78	.22	14.81	.48	
CY-6-I	ONSITE SUBSTATION	3	6.49	.28	14.18	.62	
CY-7-I	HADDAM	3	6.48	.27	14.16	.60	
CY-8-I	EAST HADDAM	2	6.67	.26	14.56	.57	
CY-9-I	HIGGANUM	3	6.41	.36	13.99	.79	
CY-10-I	HURD PARK ROAD	3	7.09	.28	15.49	.61	
CY-11-C	MIDDLETOWN	3	5.71	.38	12.48	.82	
CY-12-C	DEEP RIVER	3	6.60	.37	14.41	.80	
CY-13-C	NORTH MADISON	2	6.02	.24	13.14	.53	
CY-14-C	COLCHESTER	3	8.11	.42	17.72	.92	
CY-40-X	ONSITE INTAKE SCREEN	3	5.91	.24	12.92	.52	
CY-41-X	PICNIC AREA	2	5.80	.27	12.67	.58	
CY-42-X	ONSITE ENVIRON TRAIL	3	11.61	.56	25.35	1.22	
CY-43-X	MOODUS-RTS 149&151	3	7.30	.29	15.94	.63	
CY-44-X	HORTON RD SHAILERVIL	3	6.29	.44	13.73	.97	
CY-45-X	SAME FENCE UP HILL	3	9.39	.33	20.51	.71	
CY-46-X	COVE RD N ON FENCE	3	6.24	.38	13.62	.82	
CY-47-X	VISITORS CENTER	3	6.64	.25	14.50	.55	
CY-48-X	MET SHACK	3	5.70	.30	12.44	.65	
CY-50-IF	ISFSI PAD SE END FEN	3	111.60	3.37	243.74	7.35	
CY-51-IF	ISFSI MONITOR ST FEN	3	6.62	.28	14.45	.61	
CY-52-IF	SCHMIDT CEMETERY OS	3	6.59	.51	14.40	1.11	
CY-53-IF	ISFSI HAUL ROUTE OS	3	6.12	.30	13.36	.65	
CY-54-IF	RT 149 SALMON RIVER	3	6.84	.38	14.93	.84	
CY-55-IF	HV TOWER NW OF PAD	3	7.47	.38	16.32	.83	
CY-56-IF	BURROW PIT ON-SITE	3	6.79	.38	14.83	.83	

TOTAL STATIONS REPORTED: 30

FRAMATOME ANP - DOSIMETRY SERVICES SECTION
 ENVIRONMENTAL DOSIMETRY
 REMP - Individual Processing File Report
 for
 CONNECTICUT YANKEE

Processing File: CY06201D
 Processing Date: 07/18/2006

Report Date: 08/07/06
 Issuance Period: 2nd.Qtr.2006

Station Location	Station Description	#E	----- μ R/Hour ----- Exposure	±1 S.D.	CV
CY-1-I	ONSITE DISCHARGE CAN	3	7.00	.49	6.94
CY-2-I	HADDAM PARK ROAD	3	6.02	.39	6.54
CY-3-I	HADDAM JAIL HILL RD	3	6.48	.24	3.74
CY-4-I	HADDAM RANGER ROAD	3	5.74	.33	5.74
CY-5-I	ONSITE INJUN HOL RD	3	6.78	.22	3.27
CY-6-I	ONSITE SUBSTATION	3	6.49	.28	4.37
CY-7-I	HADDAM	3	6.48	.27	4.24
CY-8-I	EAST HADDAM	2	6.67	.26	3.91
CY-9-I	HIGGANUM	3	6.41	.36	5.65
CY-10-I	HURD PARK ROAD	3	7.09	.28	3.96
CY-11-C	MIDDLETOWN	3	5.71	.38	6.57
CY-12-C	DEEP RIVER	3	6.60	.37	5.55
CY-13-C	NORTH MADISON	2	6.02	.24	4.03
CY-14-C	COLCHESTER	3	8.11	.42	5.19
CY-40-X	ONSITE INTAKE SCREEN	3	5.91	.24	4.06
CY-41-X	PICNIC AREA	2	5.80	.27	4.61
CY-42-X	ONSITE ENVIRON TRAIL	3	11.61	.56	4.80
CY-43-X	MOODUS-RTS 149&151	3	7.30	.29	3.95
CY-44-X	HORTON RD SHAILERVIL	3	6.29	.44	7.06
CY-45-X	SAME FENCE UP HILL	3	9.39	.33	3.46
CY-46-X	COVE RD N ON FENCE	3	6.24	.38	6.02
CY-47-X	VISITORS CENTER	3	6.64	.25	3.82
CY-48-X	MET SHACK	3	5.70	.30	5.23
CY-50-IF	ISFSI PAD SE END FEN	3	111.60	3.37	3.02
CY-51-IF	ISFSI MONITOR ST FEN	3	6.62	.28	4.22
CY-52-IF	SCHMIDT CEMETERY OS	3	6.59	.51	7.71
CY-53-IF	ISFSI HAUL ROUTE OS	3	6.12	.30	4.87
CY-54-IF	RT 149 SALMON RIVER	3	6.84	.38	5.63
CY-55-IF	HV TOWER NW OF PAD	3	7.47	.38	5.09
CY-56-IF	BURROW PIT ON-SITE	3	6.79	.38	5.60
CYRQFB1	FADE BADGE 1	3	91.57	.77	.85

TOTAL STATIONS REPORTED: 31

REPORTED BY: Jim O'Neil

FRAMATOME ANP - DOSIMETRY SERVICES SECTION
 29 RESEARCH DRIVE WESTBORO, MA 01581
 DATE: 10/31/06 TIME: 11.38.32

CLIENT: CONNECTICUT YANKEE

OCCUPATIONAL RADIATION EXPOSURE REPORT FILE: CY6A1901
 DSS DOSE ALGORITHM NUMBER: B2
 ISSUE PERIOD DUE DATE: 09/30/2006

REISSUE: NO
 KNOWN DOSE DATE: NO
 PERCENT CONTROL SUBTRACTION: 100
 NEUTRON CORRECTION FACTOR: 1.000
 MINIMUM REPORTED DOSES (mrem):
 7mg/cm2 Dose = 0
 300mg/cm2 Dose = 0
 1000mg/cm2 Dose = 0
 Neutron Dose = 0

SEQNO	ISS. NUM.	DOSI #1	DOSI #2	SHALLOW (7mg) (rem)	EYE (300mg) (rem)	DEEP (1000mg) (rem)	NEUTRON (1) (rem)
35	1	7004337	4034818	.018	.018	.018	.008
36	1	7004338	4034819	.019	.019	.019	.005
37	1	7004339	4034820	.018	.018	.018	.001
38	1	7004340	4034821	.017	.017	.017	.000
39	1	7004341	4034822	.023	.023	.023	.000
40	1	7004342	4034823	.024	.024	.024	.000
41	1	7004344	4034824	.019	.019	.019	.005
42	1	7004345	4034825	.019	.019	.019	.000
43	1	7004347	4034826	.252	.252	.252	.058
44	1	7004348	4034827	.021	.021	.021	.002
45	1	7004357	4034828	.020	.020	.020	.000
46	1	7004358	4034829	.021	.021	.021	.002
47	1	7004367	4034830	.020	.020	.020	.004
48	1	7004368	4034831	.022	.022	.022	.000
49	1	7004373	4034832	.019	.019	.019	.000
50	1	7004374	4034833	.015	.015	.015	.000
51	1	7004375	4034834	.015	.015	.015	.000

Total TLDS Reported: 17
 Total 7mg Dose (rem): .562
 Total 300mg Dose (rem): .562
 Total 1000mg Dose (rem): .562
 Total Neutron Dose (rem): .085

NOTE: (1) THE NEUTRON DOSE COMPONENT HAS NOT BEEN ADDED TO ANY DEPTH DOSES.

REV: 12/19/2005 PERFORMED BY: Jim Smith

FRAMATOME ANP - DOSIMETRY SERVICES SECTION

NEUTRON ANOMALY IDENTIFICATION REPORT

DATE: 10/31/06

TIME: 10.39.59

DUE DATE: 09/30/2006

NEUTRON CORRECTION FACTOR:

1.000

CLIENT: CY

SEQNO INUM	DOSI1 DOSI2	CDE	FILE1 FILE2	ELEMENT 1	ELEMENT 2 AVG.TLD1	ELEMENT 3 AVG.TLD2	ELEMENT 4 NEUTRON	FLAG
35 1	7004337 4034818	808 814	CY6A1901 CY6A1901	24.0 27.2	32.5 28.3 25.4	19.1 18.7 27.7	19.8 27.6 .008	3
36 1	7004338 4034819	808 814	CY6A1901 CY6A1901	32.0 25.3	26.1 25.8 28.0	19.9 20.4 27.4	26.0 31.2 .005	3
37 1	7004339 4034820	808 814	CY6A1901 CY6A1901	23.4 26.1	24.7 27.2 23.6	19.2 19.2 25.6	22.6 23.5 .001	3
41 1	7004344 4034824	808 814	CY6A1901 CY6A1901	37.1 26.6	31.1 27.0 29.7	20.5 19.2 26.6	21.0 26.3 .005	3
43 1	7004347 4034826	808 814	CY6A1901 CY6A1901	243.8 352.3	242.7 309.6 246.3	283.0 278.8 324.1	252.4 310.5 .058	3
44 1	7004348 4034827	808 814	CY6A1901 CY6A1901	27.5 33.4	34.0 27.4 30.1	22.1 22.8 30.7	28.9 31.2 .002	3
46 1	7004358 4034829	808 814	CY6A1901 CY6A1901	33.3 26.9	42.5 34.7 35.1	22.0 23.5 30.9	29.4 31.1 .002	3
47 1	7004367 4034830	808 814	CY6A1901 CY6A1901	38.7 30.2	34.6 28.7 33.9	21.3 22.5 30.6	28.5 32.8 .004	3
49 1	7004373 4034832	808 814	CY6A1901 CY6A1901	27.1 22.5	27.6 26.9 28.0	19.9 21.5 26.3	29.3 29.5 .000	3
51 1	7004375 4034834	808 814	CY6A1901 CY6A1901	20.8 20.7	20.2 31.1 21.1	15.3 15.0 24.8	22.2 22.5 .000	3

TOTAL ANOMALY TLDS: 10

FRAMATOME ANP - DOSIMETRY SERVICES SECTION
 ENVIRONMENTAL DOSIMETRY
 REMP - Issue Period Summary Report
 for
 CONNECTICUT YANKEE

Report Date: 10/31/06

Issuance Period: 3rd.Qtr.2006

Station Location	Station Description	#E	----- μR/Hour Exposure	----- +1 S.D.	mR/Std.Qtr. (91) Exposure	+1 S.D.	Lost
CY-1-I	ONSITE DISCHARGE CAN	3	5.29	.34	11.56	.73	
CY-2-I	HADDAM PARK ROAD	3	5.36	.34	11.71	.75	
CY-3-I	HADDAM JAIL HILL RD	3	5.71	.31	12.47	.68	
CY-4-I	HADDAM RANGER ROAD	3	5.30	.62	11.58	1.36	
CY-5-I	ONSITE INJUN HOL RD	3	6.37	.31	13.92	.67	
CY-6-I	ONSITE SUBSTATION	3	5.64	.28	12.31	.62	
CY-7-I	HADDAM	3	6.60	.31	14.41	.67	
CY-8-I	EAST HADDAM	3	5.76	.30	12.57	.65	
CY-9-I	HIGGANUM	3	5.88	.35	12.85	.76	
CY-10-I	HURD PARK ROAD	3	6.01	.29	13.13	.63	
CY-11-C	MIDDLETOWN	3	4.85	.30	10.59	.66	
CY-12-C	DEEP RIVER	3	5.83	.29	12.74	.63	
CY-13-C	NORTH MADISON	3	5.07	.25	11.07	.54	
CY-14-C	COLCHESTER	3	7.66	.39	16.74	.85	
CY-40-X	ONSITE INTAKE SCREEN	3	5.32	.28	11.61	.61	
CY-41-X	PICNIC AREA	3	5.57	.39	12.16	.85	
CY-42-X	ONSITE ENVIRON TRAIL	3	9.66	.46	21.11	1.00	
CY-43-X	MOODUS-RTS 149&151	3	7.42	.55	16.20	1.21	
CY-44-X	HORTON RD SHAILERVIL	3	6.25	.29	13.66	.64	
CY-45-X	SAME FENCE UP HILL	3	8.59	.70	18.77	1.54	
CY-46-X	COVE RD N ON FENCE	3	5.99	.39	13.07	.85	
CY-47-X	VISITORS CENTER	3	6.73	.34	14.69	.74	
CY-48-X	MET SHACK	3	5.14	.26	11.23	.57	
CY-50-IF	ISFSI PAD SE END FEN	3	113.07	4.31	246.94	9.40	
CY-51-IF	ISFSI MONITOR ST FEN	3	6.37	.33	13.91	.72	
CY-52-IF	SCHMIDT CEMETERY OS	3	6.42	.62	14.02	1.35	
CY-53-IF	ISFSI HAUL ROUTE OS	3	7.45	.43	16.26	.94	
CY-54-IF	RT 149 SALMON RIVER	3	6.74	.38	14.73	.82	
CY-55-IF	HV TOWER NW OF PAD	3	6.82	.39	14.89	.86	
CY-56-IF	BURROW PIT ON-SITE	3	6.91	.33	15.09	.72	

TOTAL STATIONS REPORTED: 30

FRAMATOME ANP - DOSIMETRY SERVICES SECTION
 ENVIRONMENTAL DOSIMETRY
 REMP - Individual Processing File Report
 for
 CONNECTICUT YANKEE

Processing File: CY06301D
 Processing Date: 10/13/2006

Report Date: 10/31/06
 Issuance Period: 3rd.Qtr.2006

Station Location	Station Description	#E	----- μ R/Hour ----- Exposure \pm 1 S.D.		CV
CY-1-I	ONSITE DISCHARGE CAN	3	5.29	.34	6.35
CY-2-I	HADDAM PARK ROAD	3	5.36	.34	6.42
CY-3-I	HADDAM JAIL HILL RD	3	5.71	.31	5.47
CY-4-I	HADDAM RANGER ROAD	3	5.30	.62	11.70
CY-5-I	ONSITE INJUN HOL RD	3	6.37	.31	4.81
CY-6-I	ONSITE SUBSTATION	3	5.64	.28	5.01
CY-7-I	HADDAM	3	6.60	.31	4.67
CY-8-I	EAST HADDAM	3	5.76	.30	5.19
CY-9-I	HIGGANUM	3	5.88	.35	5.93
CY-10-I	HURD PARK ROAD	3	6.01	.29	4.80
CY-11-C	MIDDLETOWN	3	4.85	.30	6.26
CY-12-C	DEEP RIVER	3	5.83	.29	4.97
CY-13-C	NORTH MADISON	3	5.07	.25	4.92
CY-14-C	COLCHESTER	3	7.66	.39	5.08
CY-40-X	ONSITE INTAKE SCREEN	3	5.32	.28	5.28
CY-41-X	PICNIC AREA	3	5.57	.39	6.99
CY-42-X	ONSITE ENVIRON TRAIL	3	9.66	.46	4.73
CY-43-X	MOODUS-RTS 149&151	3	7.42	.55	7.45
CY-44-X	HORTON RD SHAILERVIL	3	6.25	.29	4.71
CY-45-X	SAME FENCE UP HILL	3	8.59	.70	8.19
CY-46-X	COVE RD N ON FENCE	3	5.99	.39	6.51
CY-47-X	VISITORS CENTER	3	6.73	.34	5.04
CY-48-X	MET SHACK	3	5.14	.26	5.05
CY-50-IF	ISFSI PAD SE END FEN	3	113.07	4.31	3.81
CY-51-IF	ISFSI MONITOR ST FEN	3	6.37	.33	5.20
CY-52-IF	SCHMIDT CEMETERY OS	3	6.42	.62	9.63
CY-53-IF	ISFSI HAUL ROUTE OS	3	7.45	.43	5.78
CY-54-IF	RT 149 SALMON RIVER	3	6.74	.38	5.57
CY-55-IF	HV TOWER NW OF PAD	3	6.82	.39	5.78
CY-56-IF	BURROW PIT ON-SITE	3	6.91	.33	4.80
CYRQFB1	FADE BADGE 1	3	89.61	1.47	1.64

TOTAL STATIONS REPORTED: 31

REPORTED BY: Jim O'Neil

AREVA NP - DOSIMETRY SERVICES
29 RESEARCH DRIVE WESTBORO, MA 01581
DATE: 02/01/07 TIME: 16.37.39

CLIENT: CONNECTICUT YANKEE

OCCUPATIONAL RADIATION EXPOSURE REPORT FILE: CY713001
DSS DOSE ALGORITHM NUMBER: B2
ISSUE PERIOD DUE DATE: 12/31/2006

REISSUE: NO
KNOWN DOSE DATE: NO
PERCENT CONTROL SUBTRACTION: 100
NEUTRON CORRECTION FACTOR: 1.000
MINIMUM REPORTED DOSES (mrem):
7mg/cm2 Dose = 0
300mg/cm2 Dose = 0
1000mg/cm2 Dose = 0
Neutron Dose = 0

SEQNO	ISS. NUM.	DOSI #1	DOSI #2	SHALLOW (7mg) (rem)	EYE (300mg) (rem)	DEEP (1000mg) (rem)	NEUTRON (1) (rem)
52	1	7002640	4045720	.019	.019	.019	.000
53	1	7002641	4045721	.019	.019	.019	.000
54	1	7002642	4045723	.018	.018	.018	.000
55	1	7002644	4045725	.018	.018	.018	.000
56	1	7002646	4045726	.024	.024	.024	.000
57	1	7002647	4045727	.025	.025	.025	.000
58	1	7002649	4045728	.019	.019	.019	.000
59	1	7002650	4045729	.158	.031	.031	.000
60	1	7002653	4045730	.291	.278	.278	.063
61	1	7002654	4045731	.020	.020	.020	.000
62	1	7002656	4045732	.020	.020	.020	.000
63	1	7002658	4045733	.022	.022	.022	.000
64	1	7002659	4045734	.019	.019	.019	.000
65	1	7002660	4045735	.024	.024	.024	.000
66	1	7002661	4045736	.021	.021	.021	.000
67	1	7002662	4045737	.013	.013	.013	.000
68	1	7002663	4045738	.014	.014	.014	.000

Total TLDS Reported: 17
Total 7mg Dose (rem): .744
Total 300mg Dose (rem): .604
Total 1000mg Dose (rem): .604
Total Neutron Dose (rem): .063

NOTE: (1) THE NEUTRON DOSE COMPONENT HAS NOT BEEN ADDED TO ANY DEPTH DOSES.

REV: 12/19/2005

PERFORMED BY:

Jim Smith

AREVA NP - DOSIMETRY SERVICES

NEUTRON ANOMALY IDENTIFICATION REPORT

DATE: 02/01/07

TIME: 16.36.27

DUE DATE: 12/31/2006

NEUTRON CORRECTION FACTOR: 1.000

1.000

CLIENT: CY

SEQNO INUM	DOSI1 DOSI2	CDE	FILE1 FILE2	ELEMENT 1	ELEMENT 2 AVG.TLD1	ELEMENT 3 AVG.TLD2	ELEMENT 4 NEUTRON	FLAG
60	7002653	808	CY713001	290.8	283.2	300.7	277.9	
1	4045730	814	CY713001	353.2	353.5 284.0	308.1 349.2	340.8 .063	3

TOTAL ANOMALY TLDS: 1

AREVA NP - DOSIMETRY SERVICES
 ENVIRONMENTAL DOSIMETRY
 REMP - Issue Period Summary Report
 for
 CONNECTICUT YANKEE

Report Date: 02/02/07

Issuance Period: 4th.Qtr.2006

Station Location	Station Description	#E	---- μ R/Hour Exposure	----- +1 S.D.	mR/Std.Qtr. (91) Exposure	+1 S.D.	Lost
CY-1-I	ONSITE DISCHARGE CAN	3	6.11	.25	13.35	.55	
CY-2-I	HADDAM PARK ROAD	3	5.99	.33	13.08	.71	
CY-3-I	HADDAM JAIL HILL RD	3	6.44	.25	14.07	.55	
CY-4-I	HADDAM RANGER ROAD	3	5.54	.30	12.11	.66	
CY-5-I	ONSITE INJUN HOL RD	3	6.46	.53	14.12	1.15	
CY-6-I	ONSITE SUBSTATION	3	6.54	.30	14.29	.64	
CY-7-I	HADDAM	3	6.39	.25	13.97	.55	
CY-8-I	EAST HADDAM	3	6.31	.25	13.77	.54	
CY-9-I	HIGGANUM	3	6.48	.28	14.16	.61	
CY-10-I	HURD PARK ROAD	3	6.56	.39	14.34	.85	
CY-11-C	MIDDLETOWN	3	5.53	.25	12.07	.55	
CY-12-C	DEEP RIVER	3	6.25	.29	13.66	.64	
CY-13-C	NORTH MADISON	3	5.78	.40	12.62	.87	
CY-14-C	COLCHESTER	3	7.64	.28	16.68	.61	
CY-40-X	ONSITE INTAKE SCREEN	3	5.56	.22	12.13	.47	
CY-41-X	PICNIC AREA	3	5.63	.24	12.29	.53	
CY-42-X	ONSITE ENVIRON TRAIL	3	8.51	.46	18.59	1.01	
CY-43-X	MOODUS-RTS 149&151	3	7.08	.33	15.46	.71	
CY-44-X	HORTON RD SHAILERVIL	3	6.12	.23	13.36	.51	
CY-45-X	SAME FENCE UP HILL	3	8.40	.56	18.34	1.21	
CY-46-X	COVE RD N ON FENCE	3	6.29	.33	13.74	.71	
CY-47-X	VISITORS CENTER	3	6.60	.28	14.41	.61	
CY-48-X	MET SHACK	3	4.77	.21	10.41	.45	
CY-50-IF	ISFSI PAD SE END FEN	3	104.69	3.54	228.64	7.73	
CY-51-IF	ISFSI MONITOR ST FEN	3	6.25	.26	13.65	.58	
CY-52-IF	SCHMIDT CEMETERY OS	3	6.31	.34	13.78	.75	
CY-53-IF	ISFSI HAUL ROUTE OS	3	6.92	.29	15.11	.64	
CY-54-IF	RT 149 SALMON RIVER	3	6.59	.27	14.39	.60	
CY-55-IF	HV TOWER NW OF PAD	3	7.02	.29	15.33	.63	
CY-56-IF	BURROW PIT ON-SITE	3	6.90	.28	15.07	.62	

TOTAL STATIONS REPORTED: 30

AREVA NP - DOSIMETRY SERVICES
 ENVIRONMENTAL DOSIMETRY
 REMP - Individual Processing File Report
 for
 CONNECTICUT YANKEE

Processing File: CY06401D
 Processing Date: 01/23/2007

Report Date: 02/02/07
 Issuance Period: 4th.Qtr.2006

Station Location	Station Description	#E	----- μR/Hour Exposure	----- ±1 S.D.	----- CV
CY-1-I	ONSITE DISCHARGE CAN	3	6.11	.25	4.12
CY-2-I	HADDAM PARK ROAD	3	5.99	.33	5.46
CY-3-I	HADDAM JAIL HILL RD	3	6.44	.25	3.89
CY-4-I	HADDAM RANGER ROAD	3	5.54	.30	5.44
CY-5-I	ONSITE INJUN HOL RD	3	6.46	.53	8.17
CY-6-I	ONSITE SUBSTATION	3	6.54	.30	4.51
CY-7-I	HADDAM	3	6.39	.25	3.92
CY-8-I	EAST HADDAM	3	6.31	.25	3.91
CY-9-I	HIGGANUM	3	6.48	.28	4.33
CY-10-I	HURD PARK ROAD	3	6.56	.39	5.89
CY-11-C	MIDDLETOWN	3	5.53	.25	4.54
CY-12-C	DEEP RIVER	3	6.25	.29	4.69
CY-13-C	NORTH MADISON	3	5.78	.40	6.92
CY-14-C	COLCHESTER	3	7.64	.28	3.67
CY-40-X	ONSITE INTAKE SCREEN	3	5.56	.22	3.91
CY-41-X	PICNIC AREA	3	5.63	.24	4.35
CY-42-X	ONSITE ENVIRON TRAIL	3	8.51	.46	5.46
CY-43-X	MOODUS-RTS 149&151	3	7.08	.33	4.62
CY-44-X	HORTON RD SHAILERVIL	3	6.12	.23	3.82
CY-45-X	SAME FENCE UP HILL	3	8.40	.56	6.61
CY-46-X	COVE RD N ON FENCE	3	6.29	.33	5.18
CY-47-X	VISITORS CENTER	3	6.60	.28	4.23
CY-48-X	MET SHACK	3	4.77	.21	4.37
CY-50-IF	ISFSI PAD SE END FEN	3	104.69	3.54	3.38
CY-51-IF	ISFSI MONITOR ST FEN	3	6.25	.26	4.24
CY-52-IF	SCHMIDT CEMETERY OS	3	6.31	.34	5.45
CY-53-IF	ISFSI HAUL ROUTE OS	3	6.92	.29	4.20
CY-54-IF	RT 149 SALMON RIVER	3	6.59	.27	4.17
CY-55-IF	HV TOWER NW OF PAD	3	7.02	.29	4.08
CY-56-IF	BURROW PIT ON-SITE	3	6.90	.28	4.09
CYRQFB1	FADE BADGE 1	3	86.80	2.27	2.62

TOTAL STATIONS REPORTED: 31

REPORTED BY: Jin Duan

APPENDIX D

Summary of Unreported 2005 REMP Data

SAMPLE			END		CONC	STD.DEV.	MDC
TYPE	STATION	LSN	DATE	NUCLIDE	(pCi/m3)	(pCi/m3)	(pCi/m3)

No Unreported Data for 2005

APPENDIX E

**Summary of 2006 Condition Reports
Related to REMP Program**

REMP Program Condition Reports

Condition Report #	Issue Description	Date of Discovery	Initial Corrective Actions	Final Corrective Actions
06-0050	REMP Sample CY-30-a-C, Split with CTDEP Showed Positive Results for Cs-137	2/21/2006	CTDEP sent the sample to a second lab to confirm the result. Following the CTDEP's second lab confirming the Cs-137 result, the CTDEP scheduled a split of the CY discharge canal mouth. Both split samples were <MDA for gamma and tritium.	Chemistry Department issued two standing orders for using chain of custody forms for the transfer of samples to the DEP and to maintain split samples on site until results are confirmed.
06-0079	Gamma Analysis Not Performed REMP River Control Sample CY-40-a-C	3/22/2006	Notified Management. This is a background control, not a monitoring sample; however, this issue will need to be documented in the 2005 Annual REMP report.	Chemistry department instruction was provided to maintain samples until analyses are reviewed.
06-0099	CTDEP Detected Radium in Split Sample	4/8/2006	CTDEP detected 203 pCi/L Radium in the March 15, 2006 split sample, performed with CY at REMP sample location 30C. REMP sample location 30C is the CT River control sample located at the Harbor Park Restaurant tin Middletown, CT. Requested CTDEP give CY a copy of the gamma spectroscopy results. CTDEP indicated they would do that. Will ask Chemistry personnel to recount sample for 6000 seconds on Monday.	The Ct State lab reanalyzed the sample and the results were <MDA, which is consistent with the gamma spectroscopy results from CY.
06-0115	REMP Gamma Isotopic Analysis Results Missing	4/19/2006	Documented missing analysis results in the 2005 Annual REMP Report. Determined at MRT to be not reportable.	Vendor has instituted an electronic received receipt request to verify CYAPCO has received results.
06-0148	CTDEP Detected Gamma Activity in River Composite Sample Near REMP Station 28-I	5/24/2006	CY is counting their split sample for 16 hours	The recount of the sample was <MDA.