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Adapting The CANBERRA Q^2 To Assay High-Density Solid Waste From 321-M

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ABSTRACT

The Analytical Development Section of Savannah River Technology Center (SRTC) was requested by the Facilities Disposition Division (FDD) to determine the holdup of enriched uranium in the 321-M facility as part of an overall deactivation project of the facility. The 321-M facility was used to fabricate highly enriched uranium (HEU) fuel assemblies, lithium-aluminum target tubes, neptunium assemblies, and miscellaneous components for the production reactors. The facility also includes the 324-M storage building and the passageway connecting it to 321-M. The results of the holdup assays are essential for determining compliance with the Waste Acceptance Criteria, Material Control & Accountability, and to meet criticality safety controls. As part of the preparation for the start of the dismantling and removal of the HEU, loose and small items were placed in 55 gal drums for shipment to Solid Waste. A large number of drums contained low to medium density materials, and 72 drums contained high-density items. The materials in the 72 drums with high-density waste included scrap metal, metal hand-tools, power tools, motors, pumps, tool boxes, computer parts, gages, etc. All the drums containing low to medium density materials were assayed using the 315-M Canberra Q^2 Waste Assay System. This system is optimized for the assay of small, evenly distributed quantities of gamma emitting radionuclides. The Q^2 gives the most accurate results when measuring lightly packaged, hydrocarbon-type materials such as paper, plastics, and cardboard. We developed a novel adaptation of the M-Area Q^2 using its three detectors and a U-235 transmission source to make multiple measurements of uranium-235 in each drum. The conventional Q^2 combines the three detector outputs and makes a single density correction measurement based solely on sample mass. This makes the instrument suitable to assay only uniformly distributed low-density waste. We were able to adapt the instrument for assaying non-uniform high-density waste. Each detector's output was collected as a unique measurement. Using three different uranium-235 transmission source locations, we were able to identically measure U-235 gamma transmission through three drum segments. This multiple correction approach is used in segmented gamma scanners. This greatly reduces the impact that variations in the high-density materials would have on the results. This report covers measurements of uranium-235 content in high-density waste within a 55 gal container. We were able to report defensible U-235 contents in 65 of the 72 drums. Our results indicated that the 65 drums contain a total amount of 24.88 g of enriched uranium with values ranging from 2 mg to 3.66 g. This report will discuss the methodology, measurements, assumptions, and results of the U-235 content calculations for each of the 72 drums.

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1. INTRODUCTION

The 321-M facility was used to fabricate enriched uranium fuel assemblies, lithium-aluminum target tubes, neptunium assemblies, and miscellaneous components for the production reactors. The facility also includes the 324-M storage building and the passageway connecting it to 321-M. The facility operated for 25 years; during this time, thousands of uranium-aluminum-alloy (U-Al) fuel tubes were produced. After the facility ceased operations in 1995, all of the easily accessible U-Al was removed from the building and only residual amounts remained. The bulk of this residue is located in the equipment that generated and handled small U-Al particles and the exhaust systems for this equipment (e.g., Chip compactor, casting furnaces, log saw, lathes A & B, cyclone separator, Freonä cart, riser crusher, …etc). [1]

Prior to the start of the dismantling and removal of the HEU, lose and small items were placed in 55 gal drums for shipment to Solid Waste.[2] A large number of drums contained low to medium density materials, and 72 drums contained high-density items. The materials in the 72 drums with high-density waste included scrap metal, metal hand-tools, power tools, motors, pumps, tool boxes, computer parts, gages, etc.

Each low level waste package presented for disposal in the E-Area Vaults must meet the radionuclide limits specified in WSRC 1S WAC, 3.17.[3] WSRC 1S, WAC 2.02[4] specifies acceptable methods for quantifying waste package activity. Among the acceptable methods are Dose-to-Curie (DTC), direct sampling, and direct assay. Examples of acceptable assay equipment include use of the Canberra Q^2 system as specifically cited in WAC 2.02. Using the assay results, together with a known radiological distribution, the generator can quantify waste package isotopic activity and compare against WSRC 1S, WAC 3.17 limits to certify compliance with the radiological criteria.[3]

All the drums containing low to medium density materials were assayed using the 315-M Canberra Q^2 Waste Assay System. This system is optimized for the assay of small, evenly distributed quantities of gamma-emitting radionuclides. The Q^2 gives the most accurate results when measuring lightly packaged, hydrocarbon-type materials such as paper, plastics, and cardboard.[5]

The 72 drums containing high-density waste containing enriched uranium were scheduled for assay using the passive neutron shuffler system existing in F-Area. However, due to the work priority and backlog existing at the time of assay, the F-Area shuffler was not available for use to quantify these drums.

Using neutron-counting techniques is by far the preferred method of assaying very high-density items. To assay for HEU requires a neutron activation technique. Either of the FB-Line or M-Area Cf-shufflers would be a good choice for these assays, but neither was available. An active-well neutron coincidence counter does not have adequate sensitivity to measure U-235 in the range of milligrams or grams per drum.[6] A passive neutron drum counter is not useful for measurement of U-235 content. We were constrained to use some kind of a γ-ray acquisition system to perform these requested assays. A far-field γ-ray assay was unsuitable for the same reasons that the Q^2 instrument procedure was unsuitable. The extreme densities and extreme non-uniformity of the waste made the use of a single transmission correction completely unreliable. To perform the assays we adapted the 313-M Q^2 instrument to operate approximately like a segmented gamma scanner.

This report discusses how the Canberra Q^2 was adapted for measuring U-235 content in high-density waste. It also includes the methodology, non-destructive assay (NDA) measurements, assumptions, and results of the assay of 72 drums containing high-density waste.

Figure 1. A photograph of the Q^2 showing its detector arrangement.

2. EXPERIMENTAL

Limitations of the method:

- This system is optimized for the assay of small, evenly distributed quantities of gamma emitting radionuclides.
- The Q2 gives the most accurate results when measuring lightly packaged, hydrocarbon-type materials such as paper, plastics, and cardboard.
- The 185 KeV will not be detected through ¾ in of steel, thus any object, such as pumps that have >3/4" thick walls and contains internal contamination, will not be detected.
- An additional uncertainty is introduced because the detectors are not collimated. This allows cross talk between the three vertical segments, making the system effectively a hybrid between a close-field and segmented system. Therefor we have two distinct correction factors for calculating the content.
- Often the top half of the drum is empty which could lead to an error in the transmission.
- Since the waste in the drum is not homogeneous, and the drum is rotating, a metal object may be in the field of view of the detector only part of the time. The k*ln*(1/T) form of the transmission correction factor partly compensates for this uncertainty.

To accomplish the measurements requested we adapted the 313-M Canberra Q^2 instrument to acquire data in a mode approximately equivalent to a three segment segmented gamma scanner. The 313-M Canberra Q^2 Waste Assay System is a quantitative and qualitative gamma-ray pulse height analysis system capable of measuring very low amounts of U-235. It uses three 20% efficient intrinsic high purity germanium detectors with 7.5 liter cryostats. The sample is placed on a turntable mounted on the door of the shielding and then rotated at a nominal 10 RPM. An electronic load cell on the turntable weighs the sample and displays the result. A four-inch thick low-background steel shield surrounds the sample and detectors in all directions. The data acquisition system contains a PC-based Canberra AccuSpec Multichannel Analyzer system, appropriate high voltage power supply, and amplifiers. The three AccuSpec boards are controlled by Canberra's Genie-PC Gamma Waste Assay System.[7]

A photograph of the Canberra Q^2 is shown in Figure 1. Note that the instrument has three vertically stacked detectors to acquire close field γ-ray data from three portions of a 55-gallon drum. When operated by its normal procedure to assay for U-235, the system sums the three spectra acquired and fits the peak area in the summed spectrum to determine the detection rate for the 185-keV γ-ray from U-235 decay. The system then applies a pre-determined detection efficiency and a density correction factor to relate detected events to measured content.[8] An important feature is that the three detectors are not collimated. The transmission correction factor used by the Q^2 is determined from a simple measure of the mass of the drum being assayed, and so the instrument assumes a completely uniform distribution of mass in the drum and that each detector is looking at the same transmission characteristics. For these 72 drums of solid waste those two assumptions are especially

poor. In addition, since the drums have very high densities up to 1.3 g/cc, they are out of the reliable range for the Q^2. Local densities ranged up to 8 g/cc, and so the transmission of the 185-keV γ-ray out of individual components of the waste will be as low as fractions of a percent. Therefore the only reliable measure of U-235 content using γ-ray acquisitions would be with a segmented scanner.

Figure 2. A photograph showing inside the Q^2 and transmission source positions.

Our technique of data acquisition to assay for U-235 content in each of the 72 drums is illustrated in the photograph shown in Figure 2. For each drum a 4.85-g source of U-235 was placed inside the Q^2 cavity opposite the top detector, and a γ-ray spectrum was acquired with the drum in place for 60 – 600 seconds. The area under the 185-keV γ-ray peak and the detector livetime were obtained manually for the top detector. Then successive acquisitions were obtained with the source opposite the middle and bottom detectors, and the data for each of the middle and bottom detectors were obtained manually. Finally the drum was counted for 600 – 3600 seconds without the source present. In this way we obtained data sufficient to measure the transmission of the photons from the 4.85-g source directly through each of the three barrel segments to the detector opposite the source.

This was a very expensive technique to use to assay the 72 drums. Each drum required four counts. None of the acquisitions was automated, and all of the data were obtained manually. For each acquisition the Q^2 stores the summed spectrum from all three detectors, but no single spectrum from an individual detector was ever available except on the instrument display immediately after the acquisition or when we aggressively stored it on a disk. Data were hand recorded in a laboratory notebook for subsequent analysis. We recorded data on thirteen separate days of acquisitions over a period of three months. For each distinct day of acquisition we recorded T_0 spectra with the transmission source

successively opposite each of the three detectors and with no sample drum present. These daily spectra served both as the unattenuated transmission spectra for determination of sample attenuation and as a QC check on the instrument. FDD management accepted the very large expense and the known and very large uncertainties of using this γ-ray technique in order to obtain a gram value for each of these high priority drums.

3. Data and Analysis

The data acquired for each drum are recorded and manipulated in the Excel™ spreadsheet of Table 1. The first eight columns in Table 1 serve to identify the drum and to record count times and peak areas obtained and to calculate cps and uncertainties for each detector segment for the transmission data and sample only data. Columns nine through thirteen contain calculated values that we describe below in an example calculation. The spreadsheet was formatted to round all results to two places past the decimal. The data for each drum are recorded in four blocks of three where the last block of three represents the manual counts obtained in each of the three detectors from the drum-only spectra. For each drum the first three blocks of three represent the data obtained with the source present. For each day of acquisition we have recorded three blocks of three T_0 data.

Looking at the first three blocks of T_0 data acquired on 25 July we begin a description of the calculations. The spectrum labeled T01725 is the unattenuated spectrum going into the top detector, the spectrum labeled T02det2 is the unattenuated spectrum going to the middle detector, and the spectrum labeled T03det3 is the unattenuated spectrum going to the bottom detector. These three spectra had count rates of 16.99, 16.48, and 16.52 cps respectively, as seen in column seven of Table 1. Taking the average, we record 16.66 cps as the unattenuated count rate for each detector.

Table 1. Sample Calculations for Drum FD000420.

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	C_f SQRT of 1/T	Segment Corrected cps	C_f of ln1/T	Segment Corrected cps
T_{01}	T01725	281.52	4784	1.49	71.28	16.99	0.25					
T_{01}	T01det2	281.52	4621	1.52	70.24	16.41	0.25					
T_{01}	T01det3	281.52	3438	1.76	71.28	12.21	0.25					
T_{02}	T02det1	300	4396	1.56	68.58	14.65	0.23					
T_{02}	T02det2	300	4944	1.47	72.68	16.48	0.24					
T_{02}	T02det3	300	4385	1.55	67.97	14.62	0.23					
T_{03}	T03det1	300	3750	1.72	64.50	12.50	0.22					
T_{03}	T03det2	300	4670	1.52	70.98	15.57	0.24					
T_{03}	T03det3	300	4955	1.47	72.84	16.52	0.24					
$T_{empty\ drum}$	Dmtdet1	300	3151	1.85	58.29	10.50	0.19	1.59	1.26		1.19	
$T_{empty\ drum}$	Dmtdet2	300	3631	1.73	62.82	12.10	0.21	1.38	1.17		1.13	
$T_{empty\ drum}$	Dmtdet3	300	3230	1.83	59.11	10.77	0.20	1.55	1.24		1.18	
FD000420	T1420D1	271	2793	1.98	55.30	10.31	0.20	1.71	1.31		1.23	
FD000420	T1420D2	271	493	5.03	24.80	1.82	0.09					
FD000420	T1420D3	271	258	4.26	10.99	0.95	0.04					
FD000420	T2420D1	600	632	4.45	28.12	1.05	0.05					
FD000420	T2420D2	600	2140	2.36	50.50	3.57	0.08	6.41	2.53		1.90	
FD000420	T2420D3	600	1268	3.05	38.67	2.11	0.06					
FD000420	T3420D1	600	1644	2.66	43.73	2.74	0.07					
FD000420	T3420D2	600	1381	2.97	41.02	2.30	0.07					
FD000420	T3420D3	600	3325	1.28	42.56	5.54	0.07	3.37	1.83		1.55	
FD000420	420D1	1292.3	719	4.19	30.13	0.56	0.02			0.73		0.68
FD000420	420D2	1292.3	1252	3.14	39.31	0.97	0.03			2.45		1.84
FD000420	420D3	1292.3	766	4.04	30.95	0.59	0.02			1.09		0.92
								Sum (cps)		**4.27**		**3.44**

Activity per drum (dps) = Sum cps/0.000885(0.53) = Sum cps/0.000469 **= 9101.50 7340.10**
Activity per drum (nCi) = dps*60/2220 = 9101.5*0.027 **= 245.70 198.18**

To obtain the transmission for detector 1 for drum FD000420, we use the transmission spectrum T1420D1 and the sample only spectrum 420D1. The transmission spectrum detection rate is 10.31±0.20 cps, and the drum only detection rate is 0.56±0.02 cps. The transmission value of column nine is calculated by

$$T = (10.31-0.56)/16.66 = 0.585, \quad (1)$$

and the transmission factor of column nine is

$$1/T = 1.71.$$

We perform similar calculations to obtain transmission factors of 6.41 and 3.37 for the middle and bottom detectors. We then perform two distinct calculations of U-235 content based on two distinct transmission correction form factors. The first calculation assumes that the correction factor is equal to the square root of the transmission factor. This is based on the reasoning that the transmission source photons had to pass through the entire sample, but on average the sample photons have to transit only half of the sample. In column ten of Table 1 we determine and tabulate the correction factors for each segment to be equal to the square root of 1/T for that segment. Therefore for sample FD420 we obtain the correction factors 1.307 for the top detector, 2.533 for the middle, and 1.835 for the bottom detector. These correction factors are then applied to the measured detection rates tabulated in column seven to obtain the corrected count rates tabulated in column eleven.

$$\text{Corrected rate(det1,FD420)} = 1.307(0.56) = 0.727\text{cps}. \quad (2)$$

The corrected rate for detector 2 is 2.454 cps, and the corrected rate for detector 3 is 1.088 cps. The three corrected rates are summed as shown in Table 1. The total activity per drum is then determined by dividing by the overall Q^2 detection efficiency for the 185 keV γ-ray and by dividing by the branching ratio of 0.53 to obtain the total U-235 activity per drum. The total is listed at the bottom of Table 1 in units of decays per second. The summed efficiency for the 185-keV γ-ray is 0.000885.

$$[\text{U-235}]_{\text{FD420}} = 4.269/(0.000885)(0.53) = 4.269/0.000469$$

$$= 9102 \text{ dps}. \quad (3)$$

Finally, we convert from decays/sec-drum to nCuries/drum by multiplying by 60/2220. The square root correction factor is applicable to a far field measurement where the rotated drum (sample) is much farther from the detector than the radius of the drum and where the correction factors are not far from unity. The far field correction factor considers that at large distances the photons passing all the way through from the back of the drum to the detector travel almost the same distance as those that pass from near the front of the drum to the detector.

The next set of calculations of U-235 content is based on the transmission correction factor for a close field measurement. This correction factor recognizes that in a close field measurement by far most of the photons that reach the detector came from portions of the sample that are near the detector when they leave the sample. This correction factor considers that when the sample self-absorption is large, those photons that originate from the back side of the sample have very little chance to reach the detector. Therefore by far most of the photons that reach the detector had the short path to the detector and had to transit only a fraction of the sample. Thus the effective correction factor is much smaller than the square root of 1/T.

From reference 9, the correction factor is calculated by

$$Cf_{(close\ field)} = -k\ln(1/T)/[1-(1/T)^{k}], \quad (4)$$

where $k = \pi/4 = 0.785$. As above, we perform a separate calculation of the correction factor from the measured transmission for each segment for each drum. In column twelve of Table 1, we calculate the close-field transmission correction factors. Using drum FD420 again, we perform an example calculation. For the top segment of drum FD420 we measured a transmission factor of 1.709. The calculated correction factor for this segment then becomes

$$Cf_{(close\ field)} = -0.785\ln(1/1.709)/[1-(1/1.709)^{0.785}] = -0.785(-0.535)/[1-0.656] = 1.225. \quad (5)$$

The correction factors for segments two and three are then 1.901 and 1.551 as shown in the appropriate elements of column twelve of Table 1. The corrected count rates are shown in column thirteen, where the corrected rate for the top segment of drum FD420, is

$$1.225*0.56 = 0.682 \text{ cps.}$$

The corrected segment rates are summed in column thirteen of Table 1, and for FD420 that sum is 3.443 cps. Dividing by the Q^2 efficiency we obtain

$$[U\text{-}235]_{FD420} = 3.443/0.000469 = 7340 \text{ dps}, \quad (6)$$

or 198 nCurie for drum FD420. The term 0.000469 is defined in equation 3 above.

Each of the 72 drums was assayed in this manner. The measured data and calculated parameters are all tabulated in the Appendix, which is a reproduction of an Excel spreadsheet that performs the two transmission-corrected calculations for each drum. The measured transmission values for each segment of each drum are listed in column eight of the Appendix. The reader can note that generally the transmission values for the top segment of each drum were in the range of 1.3 – 2.0, while those values for the middle and bottom portion varied widely in the range of 1.5 – 700. (Some even went negative, which we discuss below.) These widely varying transmission values are a manifestation that the drums clearly were not filled with a uniform distribution of solid waste.

For most drums the top portion was approximately empty of material, and the measured transmission correction was approximately equal to that of the drum only, as shown by the empty drum correction factors listed near the middle of Table 1. The middle and bottom portions of the drums all contained material of widely varying density. From these data it is clear that individual transmission correction factors for each segment are very important for a γ-PHA assay. All of the 72 drums are out of the boundary limit of the Q^2 assumption of uniform density.

4. Results and Discussion

We obtain two unique measures of U-235 content for each drum. One is based on a far field transmission correction factor, and one is based on a close field segmented gamma scanner correction factor, where the latter measure is without fail lower than the former. The adapted technique we have used with the Q^2 is clearly not representative of a far-field measurement. It is also not exactly representative of a close field segmented scanner because the detectors are not collimated. Thus neither calculation of the correction factor is quite correct. In all cases for our reported value we have used the average with a one sigma standard deviation precision. The two measured values along with the reported value and Q^2 value for each drum are listed in Table 2.

The reported values listed in the sixth column of Table 2 are equal to the average of the two calculations with an uncertainty equal to the standard deviation. In almost all cases the uncertainty of either single calculation is dominated by the uncertainty of the measured transmission factor. This is especially true when the transmission factor is large. That is, when a given transmission factor is large, its uncertainty is also large. The overall uncertainty in either single method of calculation of U-235 content can be determined by propagating the uncertainty of the transmission factors through the calculation. However we have observed that even when performing that rigorous propagation of uncertainty, the final uncertainty for each reported value is always dominated by the disagreement in the two methods of calculation. Thus there is no benefit to report the propagation of uncertainty.

The Q^2 value tabulated in column five of Table 2 is simply the instrumental value that the Q^2 made from the drum-only acquisition using its own efficiency curve and correction factor based on each individual drum mass. For most of the 72 cases all three of the measured values are in fairly good agreement, indicating that while our adapted technique has significantly improved the defensibility of the measurement, it has not significantly improved the accuracy. However for several cases our measured values differ significantly from the Q^2 values, and we believe ours are far superior. In seven cases we obtained physically unreal (i.e. negative) values of the transmission factor. From the form of equation (1) it is clear that this happens only when the drum-only detection rates are greater than the drum plus transmission source detection rates - or equivalently, when the transmission factors are so low that photons from the transmission source have no chance to reach the detector.

In drums where any one of the segments yielded a physically unreal transmission value, we have tabulated our measured value as "N/A". These seven drums represent cases where a γ-ray assay is not applicable. Even though in five of these seven cases the Q^2 instrument delivered a finite measured value using its own transmission corrected value based on mass, these measured values have to be considered completely unreliable and would under-report the actual contents. For those seven cases our transmission measurements have demonstrated that the sample must be considered infinitely thick with respect to the 185-keV γ-ray from U-235, and so any measured value based on γ-PHA is out of the boundary limits of the system. These seven drums will have to be assayed by a neutron counting system or repackaged for Q^2 assay or analyzed with special attention similar to the holdup assays performed for the riser crusher and casting furnaces.[10]

Table 2. A list of all the drums and measured contents.

Drum ID	Description	C_f (SqRt)	C_f (ln/T)	Q^2	nCi per Drum	s nCi per Drum	g/Drum
Empty Drum	Empty Drum	4	3		4	1	0.00
FD000402	Computer Equipment	227	169	152±5	198	41	0.09
FD000403	Scrap Metal; Tools; Aluminum Cans	421	332	255±7	376	63	0.17
FD000405	Computer Equipment	12	9		10	2	0.00
FD000406	Widen Pumps (2)	151	102	114±6	126	35	0.06
FD000407	Air Sample; Drop Light	131	110	158±6	120	15	0.06
FD000410	Tools; Grinding Brushes; Dolly Face Cover; Computer Screen	768	306	216±4	537	327	0.25
FD000412	Computer Equipment	7	6	7±2	6	1	0.00
FD000413	Scrap Metal; Tools; Plastic	132	99	181±4	116	23	0.05
FD000414	Computer Equipment	4683	2543	2390±35	3613	1513	1.67
FD000416	Plastic; Monitor Meter	220	153	165±4	186	47	0.09
FD000417	Computer Parts	17	14	>10	16	2	0.01
FD000418	Scrap Metal; Tools	327	253	352±11	290	52	0.13
FD000420	Scrap Metal; Tools; Calibration Item; Electric Motor; Scale; Electric Cords	246	198	228±6	222	34	0.10
FD000421	Scrap Metal; Power Supply; Meter Gages	1095	790	998+21	942	216	0.44
FD000554	Tool Box; Scale	128	109	128±5	118	13	0.05
FD000555	Scale; Computer Monitors; Power Conditioner; Scrap Metal	11	7	8±2	9	3	0.00
FD000556	Scrap Metal; Tools	154	135	145	144	13	0.07
FD000557	Tools; Scrap Metal	283	246	273±9	264	26	0.12
FD000559	Scrap Metal; Motor	75	41	28±3	58	24	0.03
FD000560	Computer Parts; Scrap Metal	2	2	<4	2	0	0.00
FD000561	Duct Hoses; Plastic Trash Cans; Fuse Boxes	991	524	524±24	758	330	0.35
FD000562	Graphite Molds; Silver Aprons & Jackets; Press Plate	2059	1139	1130±23	1599	651	0.74
FD000563	Scrap Metal; Tools	N/A					0.00
FD000564	Scale; Air Gun; Power Tools; Scrap Metal	373	270	237±7	322	73	0.15
FD000565	Plastic Rack; Scrap Metal	2133	1351		1742	553	0.81
FD000566	Wooden Box; Caution Cones	684	590	620+13	637	66	0.29
FD000567	Apron Jackets; Computer Parts; Air Pump; Motor; Calculator	77	42	40±5	60	25	0.03
FD000569	Plastic Hose; Scrap Metal	774	645	769+16	710	91	0.33
FD000570	Calibrated Standards; Scrap Metal	850	673	790	762	125	0.35
FD000571	Scale; Scrap Metal	8005	3748	2900±57	5876	3010	2.72
FD000573	Scrap Metal	150	126	114±6	138	17	0.06
FD000578	Computer Parts; Scrap Metal	4	3	<10	4	1	0.00
FD000579	Tool Box; Scrap Metal	72	60	52+4	66	8	0.03

Drum ID	Description	C_f (SqRt)	C_f (ln/T)	Q^2	nCi per Drum	s nCi per Drum	g/Drum
FD000580	Floppy Disk, Scrap Metal, Computer Equipment	23	18	15±1	20	4	0.01
FD000581	Scale; Computer Equipment; Scrap Metal	48	33	31±2	40	11	0.02
FD000582	Scrap Aluminum; Scrap Metal	5035	3021	2380+59	4028	1424	1.86
FD000583	Scrap Aluminum ; Scrap Metal	70	41	34±4	56	21	0.03
FD000594	Scrap Aluminum; Fiberglass; Electrical Cords; Scrap Metal	60	37	29±1	48	16	0.02
FD00000595	Container returned unused	6	5	<10	6	1	0.00
FD000596	Electrical Cords; Fiberglass; Scrap Metal	271	214	194±3	242	40	0.11
FD000597	Scrap Metal	143	121	140+4	132	16	0.06
FD000378	No Description available	8375	5702	9740±110	7038	1890	3.26
FD000394	No Description available	8066	5011	4600±87	6538	2160	3.03
FD000382	No Description available	1058	165	107±2	612	631	0.28
FD000385	No Description available	N/A		265±5			0.00
FD000379	No Description available	N/A					0.00
FD000396	No Description available	208	111		160	69	0.07
FD000399	No Description available	398	283		340	81	0.16
FD000408	No Description available	103	80	77±3	92	16	0.04
FD000397	No Description available	228	128	125±3	178	71	0.08
FD000404	No Description available	161	126	109±6	144	25	0.07
FD000384	No Description available	N/A		595±15			0.00
FD000400	No Description available	243	165	143±6	204	55	0.09
FD000398	No Description available	904	417	351±12	660	344	0.31
FD000415	No Description available	174	116	111±3	145	41	0.07
FD000377	No Description available	105	83	78±5	94	16	0.04
FD000411	No Description available	66	53	55±3	60	9	0.03
FD000389	No Description available	5212	1445	1580±54	3328	2664	1.54
FD000386	No Description available	2637	602	558±17	1620	1439	0.75
FD000391	No Description available	606	313	312±11	460	208	0.21
FD000392	No Description available	2271	1597	1530±26	1934	477	0.90
FD000381	No Description available	220	96	82±3	158	88	0.07
FD000380	No Description available	N/A		112±4			0.00
FD000401	No Description available	87	58	51±4	72	21	0.03
FD000390	No Description available	1678	761	1200±22	1220	648	0.56
FD000388	No Description available	N/A		1880±42			0.00
FD000395	No Description available	1464	844	768±19	1154	438	0.53
FD000383	No Description available	3978	1866	2350±48	2922	1493	1.35
FD000387	No Description available	N/A		8950±110			0.00

5. CONCLUSION

We have used a special acquisition procedure that adapts the Canberra Q^2 instrument to a transmission corrected three-segment segmented gamma scanner to assay 72 drums of high density non-uniform solid waste from the 321-M deactivation project. We have reported defensible U-235 contents in 65 of the 72 drums. The measured values range from 4 nCi/drum (2 mg) to 7040 nCi/drum (3.66 g) with one sigma uncertainties generally of about 20%. Seven drums contained solid waste of such extreme density that we could obtain no finite transmission correction. That is, these seven drums contained waste that in at least one of the acquisition segments was infinitely thick to the 185 keV γ-ray. As discussed in the **Introduction**, these seven drums must be assayed by a neutron-based counting instrument such as a californium shuffler.

Our special acquisition procedure used a 4.85 g source of U-235 as a movable and removable transmission source so that we could obtain a transmission measurement for each of three segments in each of the 72 drums of solid waste. The measured transmission factors varied over the range of 1.3 up to almost 800, clearly demonstrating extreme non-uniformity in the waste assayed. The widely varying transmission factors also clearly demonstrate that the measured values obtained from the normal operation of the Q^2 would be completely indefensible for these drums.

In our determinations of U-235 content we have used two distinct calculations of the transmission correction factor. Because the acquisition configuration is an adapted one, neither method of calculation quite fits the physical situation. Therefore our reported values are based on the resulting average of the two calculations, and the reported uncertainty for each value is equal to the standard deviation of the average. This standard deviation dominates the uncertainty (imprecision) of each individual measurement so that it was not necessary to propagate the individual measurement uncertainties through for each calculation.

6. ACKNOWLEDGEMENTS

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8. APPENDIX

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
T_{01}	T01725	281.52	4784	1.49	71.28	16.99	0.25										
T_{01}	T01det2	281.52	4621	1.52	70.24	16.41	0.25										
T_{01}	T01det3	281.52	3438	1.76	71.28	12.21	0.25										
T_{02}	T02det1	300	4396	1.56	68.58	14.65	0.23										
T_{02}	T02det2	300	4944	1.47	72.68	16.48	0.24										
T_{02}	T02det3	300	4385	1.55	67.97	14.62	0.23										
T_{03}	T03det1	300	3750	1.72	64.50	12.50	0.22										
T_{03}	T03det2	300	4670	1.52	70.98	15.57	0.24										
T_{03}	T03det3	300	4955	1.47	72.84	16.52	0.24										
								16.66									
$T_{empty\ drum}$	DMTdet1	300	3151	1.85	58.29	10.50	0.19	1.59	1.26					1.19			
$T_{empty\ drum}$	DMTdet2	300	3631	1.73	62.82	12.10	0.21	1.38	1.17					1.13			
$T_{empty\ drum}$	DMTdet3	300	3230	1.83	59.11	10.77	0.20	1.55	1.24					1.18			
FD000420	T1420D1	271	2793	1.98	55.30	10.31	0.20	1.71	1.307					1.2251			
FD000420	T1420D2	271	493	5.03	24.80	1.82	0.09										
FD000420	T1420D3	271	258	4.26	10.99	0.95	0.04										
FD000420	T2420D1	600	632	4.45	28.12	1.05	0.05										
FD000420	T2420D2	600	2140	2.36	50.50	3.57	0.08	6.41	2.533					1.9009			
FD000420	T2420D3	600	1268	3.05	38.67	2.11	0.06										

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
FD000420	T3420D1	600	1644	2.66	43.73	2.74	0.07										
FD000420	T3420D2	600	1381	2.97	41.02	2.30	0.07										
FD000420	T3420D3	600	3325	1.28	42.56	5.54	0.07	3.37	1.835					1.5511			
FD000420	420D1	1292.3	719	4.19	30.13	0.56	0.02			0.73				0.6816			
FD000420	420D2	1292.3	1252	3.14	39.31	0.97	0.03			2.45	4.269	9101.5	245.74	1.8416	3.443	7340.1	198.18
FD000420	420D3	1292.3	766	4.04	30.95	0.59	0.02			1.09				0.9194			
				0.785													
FD000413	T1413D1	347.45	4429	1.56	69.09	12.75	0.20	1.36	1.168					1.1268			
FD000413	T1413D2	347.45	659	4.27	28.14	1.90	0.08										
FD000413	T1413D3	347.45	135	10.92	14.74	0.39	0.04										
FD000413	T2413D1	600	1611	2.66	42.85	2.69	0.07										
FD000413	T2413D2	600	929	3.97	36.88	1.55	0.06	13.88	3.726					2.365			
FD000413	T2413D3	600	709	4.23	29.99	1.18	0.05										
FD000413	T3413D1	600	478	5.16	24.66	0.80	0.04										
FD000413	T3413D2	600	882	3.82	33.69	1.47	0.06										
FD000413	T3413D3	600	1374	2.96	40.67	2.29	0.07	7.71	2.776					2.0069			
FD000413	413D1	4166	2213	2.37	52.45	0.53	0.01			0.62				0.5986			
FD000413	413D2	4166	1450	3.14	45.53	0.35	0.01			1.30	2.271	4842.3	130.74	0.8231	1.677	3576.7	96.572
FD000413	413D3	4166	531	5.65	30.00	0.13	0.01			0.35				0.2558			
FD000410	T1410D1	254.67	3047	1.9	57.89	11.96	0.23	1.43	1.195					1.1461			
FD000410	T1410D2	254.67	2047	2.38	48.72	8.04	0.19										
FD000410	T1410D3	254.67	515	4.46	22.97	2.02	0.09										

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
FD000410	T2410D1	600	4955	1.49	73.83	8.26	0.12										
FD000410	T2410D2	600	2533	2.2	55.73	4.22	0.09	4.94	2.222					1.7542			
FD000410	T2410D3	600	1310	3.01	39.43	2.18	0.07										
FD000410	T3410D1	600	1299	2.99	38.84	2.17	0.06										
FD000410	T3410D2	600	1554	2.84	44.13	2.59	0.07										
FD000410	T3410D3	600	578	4.72	27.28	0.96	0.05	163.46	12.78					4.0754			
FD000410	410D1	3600	1035	3.78	39.12	0.29	0.01			0.34				0.3295			
FD000410	410D2	3600	3045	2.1	63.95	0.85	0.02			1.88	13.24	28221	761.96	1.4838	5.324	11351	306.49
FD000410	410D3	3600	3101	1.98	61.40	0.86	0.02			11.01				3.5105			
FD000594	T1594D1	229.1	2919	1.93	56.34	12.74	0.25	1.31	1.147					1.1112			
FD000594	T1594D2	229.1	1612	2.66	42.88	7.04	0.19										
FD000594	T1594D3	229.1	171	8.93	15.27	0.75	0.07										
FD000594	T2594D1	600	5460	1.55	84.63	9.10	0.14										
FD000594	T2594D2	600	819	4.12	33.74	1.37	0.06	13.59	3.687					2.3517			
FD000594	T2594D3	600	367	6.14	22.53	0.61	0.04										
FD000594	T3594D1	600	711	4.21	29.93	1.19	0.05										
FD000594	T3594D2	600	501	5.95	29.81	0.84	0.05										
FD000594	T3594D3	600	458	5.31	24.32	0.76	0.04	24.80	4.98					2.7408			
FD000594	594D1	6000	397	7.47	29.66	0.07	0.00			0.08				0.0735			
FD000594	594D2	6000	835	4.98	41.58	0.14	0.01			0.51	1.044	2225.5	60.089	0.3273	0.651	1388.4	37.486
FD000594	594D3	6000	548	5.89	32.28	0.09	0.01			0.45				0.2503			

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
T01	T01det1	100	1577	2.57	41	15.77	0.41										
	T01det2	100	1576	2.56	40	15.76	0.4										
	T01det3	100	1203	2.96	36	12.03	0.36										
T02	T02det1	100	1360	2.76	38	13.6	0.38										
	T02det2	100	1634	2.52	41	16.34	0.41										
	T02det3	100	1610	2.55	41	16.1	0.41										
T03	T03det1	100	1055	3.18	34	10.55	0.34										
	T03det2	100	1489	2.68	40	14.89	0.4										
	T03det3	100	1714	2.49	43	17.14	0.43										
								16.42									
FD406	T1406D1	281.11	3557	1.74	61.89	12.65	0.22	1.33	1.153					1.1162			
	T1406D2	281.11	2107	2.31	48.67	7.495	0.17										
	T1406D3	281.11	672	4.1	27.55	2.391	0.1										
	T2406D1	300	2298	2.19	50.33	7.66	0.17										
	T2406D2	300	2296	2.21	50.74	7.653	0.17	2.30	1.517					1.3624			
	T2406D3	300	132	10.56	13.94	0.44	0.05										
	T3406D1	416.52	1528	2.73	41.71	3.668	0.1										
	T3406D2	416.52	711	4.04	28.72	1.707	0.07										
	T3406D3	416.52	278	6.72	18.68	0.667	0.04	38.26	6.185					3.0345			
	406D1	600	188	8.13	15.28	0.313	0.03			0.36				0.3497			
	406D2	600	310	6.5	20.15	0.517	0.03			0.78	2.619	5584.6	150.78	0.7039	1.777	3788.6	102.29
	406D3	600	143	10.08	14.41	0.238	0.02			1.47				0.7232			

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
FD562	T1562D1	300	3767	1.7	64.04	12.56	0.21	1.55	1.244					1.1809			
	T1562D2	300	1973	2.41	47.55	6.577	0.16										
	T1562D3	300	1143	3.17	36.23	3.81	0.12										
	T2562D1	300	1113	3.28	36.51	3.71	0.12										
	T2562D2	300	1556	2.75	42.79	5.187	0.14	11.03	3.321					2.222			
	T2562D3	300	1375	2.92	40.15	4.583	0.13										
	T3562D1	300	759	4.01	30.44	2.53	0.1										
	T3562D2	300	1639	2.7	44.25	5.463	0.15										
	T3562D3	300	930	3.62	33.67	3.1	0.11	56.29	7.502					3.3035			
	562D1	600	1165	3.26	37.98	1.942	0.06			2.41				2.2929			
	562D2	600	2219	2.31	51.26	3.698	0.09			12.28	35.77	76262	2059.1	8.2178	19.79	42192	1139.2
	562D3	600	1685	2.64	44.48	2.808	0.07			21.07				9.2773			
FD554	T1554D1	300	1048	3.44	36.05	3.493	0.12	5.06	2.25					1.7684			
	T1554D2	300	339	7.7	26.1	1.13	0.09										
	T1554D3	300	1521	2.97	45.17	5.07	0.15										
	T2554D1	300	125	15	18.75	0.417	0.06										
	T2554D2	300	2576	2.15	55.38	8.587	0.18	2.03	1.426					1.3045			
	T2554D3	300	1405	3.13	43.98	4.683	0.15										
	T3554D1	300	1134	3.33	37.76	3.78	0.13										
	T3554D2	300	271	9.11	24.69	0.903	0.08										
	T3554D3	300	1417	2.98	42.23	4.723	0.14	3.86	1.965					1.6222			

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	DF554D1	3600	907	5.81	52.7	0.252	0.01			0.57				0.4455			
	554D2	3600	1862	3.91	72.8	0.517	0.02			0.74	2.231	4756.9	128.44	0.6747	1.885	4019.1	108.52
	554D3	3600	1697	4.41	74.84	0.471	0.02			0.93				0.7647			
FD559	T1559D1	335.22	4083	1.63	66.55	12.18	0.2	1.36	1.166					1.1255			
	T1559D2	335.22	816	3.85	31.42	2.434	0.09										
	T1559D3	335.22	682	4.11	28.03	2.034	0.08										
	T2559D1	346.05	908	3.58	32.51	2.624	0.09										
	T2559D2	346.05	1327	2.97	39.41	3.835	0.11	4.46	2.112					1.6993			
	T2559D3	346.05	952	3.53	33.61	2.751	0.1										
	T3559D1	600	661	4.33	28.62	1.102	0.05										
	T3559D2	600	1481	2.79	41.32	2.468	0.07										
	T3559D3	600	176	9.39	16.53	0.293	0.03	81.95	9.052					3.5711			
	559D1	1000	108	12.03	12.99	0.108	0.01			0.13				0.1216			
	559D2	1000	155	9.92	15.38	0.155	0.02			0.33	1.295	2761.6	74.564	0.2634	0.717	1528.9	41.28
	559D3	1000	93	14.13	13.14	0.093	0.01			0.84				0.3321			
FD563	T1563D1	271.01	2817	1.96	55.21	10.39	0.2	3.11	1.763								
	T1563D2	271.01	647	4.31	27.89	2.387	0.1										
	T1563D3	271.01	169	8.81	14.89	0.624	0.05										
	T2563D1	463.04	1110	3.29	36.52	2.397	0.08										
	T2563D2	463.04	458	5.21	23.86	0.989	0.05	-6.47	N/A								
	T2563D3	463.04	866	3.72	32.22	1.87	0.07										

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	T3563D1	300	277	6.75	18.7	0.923	0.06										
	T3563D2	300	349	6.19	21.6	1.163	0.07										
	T3563D3	300	796	3.72	29.61	2.653	0.1	13.05	3.612								
	563D1	3600	18400	0.82	150.9	5.111	0.04			9.01							
	563D2	3600	12692	1.05	133.3	3.526	0.04			N/A	N/A	N/A	N/A				
	563D3	3600	5022	1.82	91.4	1.395	0.03			5.04							
EMTY DRM	T1EDD1	300	3115	1.86	57.94	10.38	0.19	1.58	1.258					1.1907			
	T1EDD2	300	3356	1.79	60.07	11.19	0.2										
	T1EDD3	300	2431	2.11	51.29	8.103	0.17										
	T2EDD1	300	2804	1.97	55.24	9.347	0.18										
	T2EDD2	300	3420	1.78	60.88	11.4	0.2	1.44	1.201					1.151			
	T2EDD3	300	3189	1.85	59	10.63	0.2										
	T3EDD1	300	2069	2.31	47.79	6.897	0.16										
	T3EDD2	300	3046	1.89	57.57	10.15	0.19										
	T3EDD3	300	2061	2.28	46.99	6.87	0.16	2.40	1.548					1.3818			
	EPDD1	300	1	500	5	0.003	0.02			0.00				0.004			
	EPDD2	300	8	61	4.88	0.027	0.02			0.03	0.062	132.25	3.5708	0.0307	0.058	123.01	3.3212
	EPDD3	300	5	89	4.45	0.017	0.01			0.03				0.023			
					0												
FD565	T1565D1	300	1090	3.65	39.79	3.633	0.13	24.28	4.927					2.7267			
	T1565D2	300	2425	2.31	56.02	8.083	0.19										
	T1565D3	300	1040	3.68	38.27	3.467	0.13										

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	T2565D1	300	1312	3.27	42.9	4.373	0.14										
	T2565D2	300	2224	2.46	54.71	7.413	0.18	6.83	2.614					1.9372			
	T2565D3	300	1883	2.6	48.96	6.277	0.16										
	T3565D1	300	3392	1.88	63.77	11.31	0.21										
	T3565D2	300	2323	2.36	54.82	7.743	0.18										
	T3565D3	300	984	3.8	37.39	3.28	0.12	16.68	4.085					2.4818			
	565D1	661.13	1955	2.69	52.59	2.957	0.08			14.57				8.063			
	565D2	661.13	3313	2.69	89.12	5.011	0.13			13.10	37.05	78994	2132.8	9.7075	23.47	50040	1351.1
	565D3	661.13	1518	3.13	47.51	2.296	0.07			9.38				5.6984			
0.000469	0.027																
T01	T1DET1	101.87	1665	2.51	41.79	16.34	0.41										
	T1det2	101.87	1617	2.55	41.23	15.87	0.4										
	T1det3	101.87	1115	3.1	34.57	10.95	0.34										
T02	T2det1	100	1432	2.7	38.66	14.32	0.39										
	T2det2	100	1715	2.47	42.36	17.15	0.42										
	T2det3	100	1623	2.55	41.39	16.23	0.41										
T03	T3det1	100	1112	3.06	34.03	11.12	0.34										
	T3det2	100	1576	2.59	40.82	15.76	0.41										
	T3det3	100	1714	2.49	42.68	17.14	0.43										
								16.88									
FD570	T1570D1	271.45	2482	2.13	52.87	9.143	0.19	2.48	1.574					1.3981			
	T1570D2	271.45	1932	2.44	47.14	7.117	0.17										
	T1570D3	271.45	906	3.55	32.16	3.338	0.12										

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	T2570D1	300	1473	2.79	41.1	4.91	0.14										
	T2570D2	300	1836	2.5	45.9	6.12	0.15	5.36	2.316					1.7999			
	T2570D3	300	1460	2.86	41.76	4.867	0.14										
	T3570D2	300	1113	3.21	35.73	3.71	0.12										
	T3570D2	300	1864	2.5	46.6	6.213	0.16										
	T3570D3	300	1105	3.22	35.58	3.683	0.12	7.42	2.724					1.9851			
	570D1	1549.2	3614	1.82	65.77	2.333	0.04			3.67				3.2615			
	570D2	1549.2	4738	1.6	75.81	3.058	0.05			7.08	14.76	31479	849.93	5.5047	11.69	24920	672.85
	570D3	1549.2	2280	2.33	53.12	1.472	0.03			4.01				2.9214			
FD564	T1564D1	166.17	1388	2.84	39.42	8.353	0.24	2.15	1.467					1.3307			
	T1564D2	166.17	410	5.56	22.8	2.467	0.14										
	T1564D3	166.17	311	6.21	19.31	1.872	0.12										
	T2564D1	300	456	5.28	24.08	1.52	0.08										
	T2564D2	300	748	4.01	29.99	2.493	0.1	11.29	3.36					2.2362			
	T2564D3	300	785	3.96	31.09	2.617	0.1										
	T3564D1	300	338	6.24	21.09	1.127	0.07										
	T3564D2	300	725	4.09	29.65	2.417	0.1										
	T3564D3	300	1077	3.31	35.65	3.59	0.12	6.12	2.473					1.874			
	564D1	900	457	5.34	24.4	0.508	0.03			0.74				0.6757			
	564D2	900	935	3.67	34.31	1.039	0.04			3.49	6.478	13812	372.92	2.3231	4.698	10017	270.45
	564D3	900	816	3.97	32.4	0.907	0.04			2.24				1.6991			

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
FD555	T1555D1	300	3432	1.78	61.09	11.44	0.2	1.48	1.216					1.1611			
	T1555D2	300	251	7.64	19.18	0.837	0.06										
	T1555D3	300	466	5.08	23.67	1.553	0.08										
	T2555D1	300	217	6.73	14.6	0.723	0.05										
	T2555D2	300	1371	2.9	39.76	4.57	0.13	3.62	1.901					1.5878			
	T2555D3	300	489	5.05	24.69	1.63	0.08										
	T3555D1	300	281	6.66	18.71	0.937	0.06										
	T3555D2	300	957	3.46	33.11	3.19	0.11										
	T3555d2	300	169	9.4	15.89	0.563	0.05	30.21	5.497					2.8734			
	555d1	3600	70	28	19.6	0.019	0.01			0.02				0.0226			
	555d2	3600	104	23	23.92	0.029	0.01			0.05	0.189	401.92	10.852	0.0459	0.126	268.48	7.2489
	555d3	3600	72	29	20.88	0.02	0.01			0.11				0.0575			
FD419	T1419D1	136.32	1846	2.41	44.49	13.54	0.33	1.30	1.138					1.1052			
	T1419D2	136.32	779	3.92	30.54	5.714	0.22										
	T1419D3	136.32	590	4.56	26.9	4.328	0.2										
	T2419D1	300	1642	2.61	42.86	5.473	0.14										
	T2419D2	300	1809	2.55	46.13	6.03	0.15	3.72	1.929					1.6028			
	T2419D3	300	1373	2.96	40.64	4.577	0.14										
	T3419D1	300	812	3.91	31.75	2.707	0.11										
	T3419D2	300	932	3.64	33.92	3.107	0.11										
	T3419D3	300	912	3.72	33.93	3.04	0.11	19.70	4.439					2.5893			

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	419D1	605.41	313	6.44	20.16	0.517	0.03			0.59				0.5714			
	419D2	605.41	979	3.56	34.85	1.617	0.06			3.12	13.5	28791	777.35	2.5918	8.877	18928	511.06
	419D3	605.41	1336	3.01	40.21	2.207	0.07			9.80				5.7141			
FD572	T1572d1	300	1908	2.4	45.79	6.36	0.15	2.92	1.71					1.4796			
	T1572D2	300	2069	2.35	48.62	6.897	0.16										
	T1572D3	300	2269	2.24	50.83	7.563	0.17										
	T2572D1	250.4	1360	2.88	39.17	5.431	0.16										
	T2572D2	250.4	2147	2.27	48.74	8.574	0.19	2.28	1.511					1.3587			
	T2572D3	250.4	1254	3.01	37.75	5.008	0.15										
	T3572D1	300	1488	2.76	41.07	4.96	0.14										
	T3572D2	300	947	3.56	33.71	3.157	0.11										
	T3672D3	300	1064	3.34	35.54	3.547	0.12	52.24	7.228					3.2511			
	572d1	370.31	218	7.84	17.09	0.589	0.05			1.01				0.8711			
	572D2	370.31	512	4.94	25.29	1.383	0.07			2.09	26.46	56417	1523.2	1.8786	13.26	28270	763.28
	572D3	370.31	1197	3.08	36.87	3.232	0.1			23.36				10.509			
			#####														
T0	T01D1	100	1640	2.53	41.49	16.4	0.41										
	T01D2	100	1503	2.68	40.28	15.03	0.4										
	T01D3	100	1284	2.86	36.72	12.84	0.37										
	T02D1	100	1385	2.76	38.23	13.85	0.38										
	T02D2	100	1653	2.54	41.99	16.53	0.42										
	T02D3	100	1557	2.63	40.95	15.57	0.41										

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	T03D1	100	1024	3.22	32.97	10.24	0.33										
	T03dD2	100	1449	2.71	39.27	14.49	0.39										
	T03D3	100	1591	2.59	41.21	15.91	0.41										
								16.28									
FD412	T1412D1	300	2937	1.92	56.39	9.79	0.19	1.67	1.29					1.2135			
	T1412D2	300	424	5.69	24.13	1.413	0.08										
	T1412D3	300	622	4.36	27.12	2.073	0.09										
	T2412D1	300	435	5.21	22.66	1.45	0.08										
	T2412D2	300	916	3.69	33.8	3.053	0.11	5.41	2.326					1.8051			
	T2412D3	300	784	3.91	30.65	2.613	0.1										
	T3412D1	300	525	4.82	25.31	1.75	0.08										
	T3412D2	300	763	3.56	27.16	2.543	0.09										
	T3412D3	300	1069	3.28	35.06	3.563	0.12	4.57	2.137					1.7121			
	412D1	6000	85	119	101.2	0.014	0.02			0.02				0.0172			
	412D2	6000	273	50	136.5	0.046	0.02			0.11	0.124	264.68	7.1465	0.0821	0.099	211.78	5.7181
	412D3	6000	0	0	0	0	0			0.00				0			
FD567	T1567D1	300	3137	1.86	58.35	10.46	0.19	1.58	1.255					1.1891			
	T1567D2	300	633	4.39	27.79	2.11	0.09										
	T1567D3	300	60	20.56	12.34	0.2	0.04										
	T2567D1	300	542	4.7	25.47	1.807	0.08										
	T2567D2	300	153	9.86	15.09	0.51	0.05	46.96	6.853					3.1765			
	T2567D3	300	545	4.82	26.27	1.817	0.09										

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	T3567D1	300	31	32	9.92	0.103	0.03										
	T3567D2	300	521	4.99	26	1.737	0.09										
	T3567D3	300	572	4.58	26.2	1.907	0.09	0.90	0.951					0.961			
	567D1	600	75	15.6	11.7	0.125	0.02			0.16				0.1486			
	567D2	600	98	13.6	13.33	0.163	0.02			1.12	1.338	2852.9	77.029	0.5188	0.73	1556.3	42.021
	567D3	600	39	27.21	10.61	0.065	0.02			0.06				0.0625			
FD416	T1416D1	300	3346	1.79	59.89	11.15	0.2	1.52	1.234					1.174			
	T1416D2	300	351	6.32	22.18	1.17	0.07										
	T1416D3	300	1001	3.43	34.33	3.337	0.11										
	T2416D1	166.01	203	8.16	16.56	1.223	0.1										
	T2416D2	166.01	1137	3.15	35.82	6.849	0.22	2.60	1.612					1.4213			
	T2416D3	166.01	127	5.33	6.769	0.765	0.04										
	T3416D1	300	752	3.94	29.63	2.507	0.1										
	T3416D2	300	1185	3.09	36.62	3.95	0.12										
	T3416D3	300	351	6.28	22.04	1.17	0.07	23.48	4.845					2.7045			
	416D1	2000	919	3.7	34	0.46	0.02			0.57				0.5395			
	416D2	2000	1169	3.38	39.51	0.585	0.02			0.94	3.818	8140.5	219.79	0.8307	2.659	5669.2	153.07
	416D3	2000	953	3.78	36.02	0.477	0.02			2.31				1.2887			
FD580	T1580	300	3659	1.72	62.93	12.2	0.21	1.34	1.157					1.1188			
	T1580	300	2397	2.14	51.3	7.99	0.17										
	T1580	300	790	3.87	30.57	2.633	0.1										

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	T2580	300	2309	2.17	50.11	7.697	0.17										
	T2580	300	1572	4.85	76.24	5.24	0.25	3.16	1.776					1.518			
	T2580	300	558	4.7	26.23	1.86	0.09										
	T3580	300	771	3.89	29.99	2.57	0.1										
	T3580	300	514	4.85	24.93	1.713	0.08										
	T3580	300	543	4.7	25.52	1.81	0.09	9.35	3.058					2.1217			
	580D1	3527.8	117	16.21	18.97	0.033	0.01			0.04				0.0371			
	580D2	3527.8	287	8.52	24.45	0.081	0.01			0.14	0.394	839.06	22.655	0.1235	0.307	654.05	17.659
	580D3	3527.8	243	9.58	23.28	0.069	0.01			0.21				0.1461			
FD560	T1560D1	221.65	1078	3.24	34.93	4.864	0.16	3.35	1.83					1.5485			
	T1560D2	221.65	384	5.56	21.35	1.732	0.1										
	T1560D3	221.65	297	6.69	19.87	1.34	0.09										
	T2560D1	300	338	6.05	20.45	1.127	0.07										
	T2560D2	300	1124	3.19	35.86	3.747	0.12	4.35	2.085					1.6851			
	T2560D3	300	1049	3.38	35.46	3.497	0.12										
	T3560D1	300	317	6.26	19.84	1.057	0.07										
	T3560D2	300	959	3.49	33.47	3.197	0.11										
	T3560D3	300	523	4.82	25.21	1.743	0.08	9.39	3.065					2.1244			
	560D1	3000	11	155	17.05	0.004	0.01			0.01				0.0057			
	560D2	3000	0	8.52	0	0	0			0.00	0.037	79.654	2.1507	0	0.027	57.403	1.5499
	560D3	3000	30	61	18.3	0.01	0.01			0.03				0.0212			

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
FD558	T1558D1	300	2564	2.07	53.07	8.547	0.18	1.91	1.382					1.2755			
	T1558D2	300	2403	2.17	52.15	8.01	0.17										
	T1558D3	300	515	3.94	20.29	1.717	0.07										
	T2558D1	300	2078	2.3	47.79	6.927	0.16										
	T2558D2	300	1425	2.85	40.61	4.75	0.14	3.47	1.863					1.5666			
	T2558D3	300	608	4.43	26.93	2.027	0.09										
	T3558D1	300	749	3.96	29.66	2.497	0.1										
	T3558D2	300	434	5.56	24.13	1.447	0.08										
	T3558D3	300	689	4.13	28.46	2.297	0.09	7.25	2.693					1.9714			
	558D1	2211.7	55	30.68	16.87	0.025	0.01										
	558D2	2211.7	130	16.48	21.42	0.059	0.01										
	558D3	2211.7	113	17.82	20.14	0.051	0.01										

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
T_{01}	T01det1	100	1673	2.51	41.99	16.73	0.42										
T_{01}	T01det2	100	1642	2.55	41.87	16.42	0.42										
T_{01}	T01det3	100	1199	2.97	41.99	11.99	0.42										
T_{02}	T02det1	69.06	990	3.29	32.57	14.34	0.47										
T_{02}	T02det2	69.06	1194	2.94	35.10	17.29	0.51										
T_{02}	T02det3	69.06	1046	3.21	32.57	15.15	0.47										
T_{03}	T03det1	72.82	807	3.66	29.54	11.08	0.41										
T_{03}	T03det2	72.82	1163	3	34.89	15.97	0.48										
T_{03}	T03det3	72.82	1098	3.13	29.54	15.08	0.41										
0.000469	0.027							16.37									
FD000418	T1418D1	300	3585	1.75	62.74	11.95	0.21	1.40	1.185					1.14			
	T1418D2	300	1981	2.39	47.35	6.60	0.16										
	T1418D3	300	866	3.77	32.65	2.89	0.11										
	T2418D1	600	3510	1.8	63.18	5.85	0.11										
	T2418D2	600	1376	3	41.28	2.29	0.07	12.65	3.557					2.31			
	T2418D3	600	1704	2.7	46.01	2.84	0.08										
	T3418D1	208.06	1644	2.66	43.73	7.90	0.21										
	T3418D2	208.06	1381	2.97	41.02	6.64	0.20										
	T3418D3	208.06	3325	1.28	42.56	15.98	0.20	1.14	1.069					1.05			

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	418D1	600	178	9.53	16.96	0.30	0.03			0.352				0.34			
	418D2	600	600	4.67	28.02	1.00	0.05			3.557	5.68	12110	326.97	2.31	4.39	9360	253
	418D3	600	994	3.58	35.59	1.66	0.06			1.771				1.74			
				0.785													
FD000407	T1407D1	150.81	1757	2.51	44.10	11.65	0.29	1.45	1.205					1.15			
	T1407D2	150.81	290	6.49	18.82	1.92	0.12										
	T1407D3	150.81	248	6.88	17.06	1.64	0.11										
	T2407D1	300	3510	1.8	63.18	11.70	0.21										
	T2407D2	300	1376	3	41.28	4.59	0.14	4.13	2.032					1.66			
	T2407D3	300	1704	2.7	46.01	5.68	0.15										
	T3407D1	115.77	850	3.7	31.45	7.34	0.27										
	T3407D2	115.77	750	3.96	29.70	6.48	0.26										
	T3407D3	115.77	406	5.67	23.02	3.51	0.20	5.02	2.24					1.76			
	407D1	1000	386	6.04	23.31	0.39	0.02			0.465				0.45			
	407D2	1000	622	4.65	28.92	0.62	0.03			1.264	2.275	4851.7	131	1.03	1.91	4065	110
	407D3	1000	244	7.9	19.28	0.24	0.02			0.546				0.43			
FD417	T1417D1	600	1880	2.54	47.75	3.13	0.08	5.32	2.307					1.80			
	T1417D2	600	728	4.38	31.89	1.21	0.05										
	T1417D3	600	824	3.93	32.38	1.37	0.05										
	T2417D1	259.61	251	7.5	18.83	0.97	0.07										
	T2417D2	259.61	577	4.63	26.72	2.22	0.10	7.51	2.74					1.99			
	T2417D3	259.61	597	4.55	27.16	2.30	0.10										

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	T3417D1	445.64	490	5.21	25.53	1.10	0.06										
	T3417D2	445.64	1324	3.02	39.98	2.97	0.09										
	T3417D3	445.64	3547	1.77	62.78	7.96	0.14	2.07	1.437					1.31			
	417D1	1000	59	22.39	13.21	0.06	0.01			0.136				0.11			
	417D2	1000	42	30.51	12.81	0.04	0.01			0.115	0.301	642.83	17.356	0.08	0.24	502	14
	417D3	1000	35	34.37	12.03	0.04	0.01			0.05				0.05			
9/27 Acquisitions																	
T_{01}	T01det1	100	1610	2.57	41.38	16.10	0.41										
T_{01}	T01det2	100	1701	2.5	42.53	17.01	0.43										
T_{01}	T01det3	100	1214	2.98	41.38	12.14	0.41										
T_{02}	T02det1	100	1314	2.89	37.97	13.14	0.38										
T_{02}	T02det2	100	1684	2.52	42.44	16.84	0.42										
T_{02}	T02det3	100	1578	2.6	37.97	15.78	0.38										
T_{03}	T03det1	72.82	807	3.66	29.54	11.08	0.41										
T_{03}	T03det2	72.82	1163	3	34.89	15.97	0.48										
T_{03}	T03det3	55	850	3.73	29.54	15.45	0.54										
								16.13									
FD385	T1385D1	84.35	977	3.41	33.32	11.58	0.39	1.43	1.195					1.15			
	T1385D2	84.35	921	3.45	31.77	10.92	0.38										
	T1385D3	84.35	179	7.94	14.21	2.12	0.17										
	T2385D1	300	2686	2.04	54.79	8.95	0.18										
	T2385D2	300	1592	2.73	43.46	5.31	0.14	3.60	1.898					1.59			
	T2385D3	300	235	7.37	17.32	0.78	0.06										

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	T3385D1	120.99	371	5.67	21.04	3.07	0.17										
	T3385D2	120.99	99	12.17	12.05	0.82	0.10										
	T3385D3	120.99	62	16.01	9.93	0.51	0.08	-249.86	N/A					N/A			
	385D1	5000	1458	3.17	46.22	0.29	0.01			0.349				0.33			
	385D2	5000	4155	1.76	73.13	0.83	0.01			1.578	N/A	N/A	N/A	1.32	N/A	N/A	N/A
	385D3	5000	2885	2.19	63.18	0.58	0.01			N/A				N/A			
FD378	T1378D1	289.35	7990	1.19	95.08	27.61	0.33	1.35	1.16					1.12			
	T1378D2	289.35	13087	0.93	121.71	45.23	0.42										
	T1378D3	289.35	6215	1.37	85.15	21.48	0.29										
	T2378D1	600	15568	0.86	133.88	25.95	0.22										
	T2378D2	600	27362	0.64	175.12	45.60	0.29	1.32	1.148					1.11			
	T2378D3	600	8897	1.17	104.09	14.83	0.17										
	T3378D1	300	6683	1.32	88.22	22.28	0.29										
	T3378D2	300	11629	0.99	115.13	38.76	0.38										
	T3378D3	300	4585	1.62	74.28	15.28	0.25	36.02	6.002					2.99			
	378D1	1130	17658	0.82	144.80	15.63	0.13			18.13				17.52			
	378D2	1130	37703	0.55	207.37	33.37	0.18			38.31	145.5	310189	8375.1	37.11	99.04	211168	5702
	378D3	1130	16764	0.84	140.82	14.84	0.12			89.04				44.40			
FD394	T1394D1	300	4785	1.56	74.65	15.95	0.25	1.47	1.214					1.16			
	T1394D2	300	6276	1.38	86.61	20.92	0.29										
	T1394D3	300	5112	1.56	79.75	17.04	0.27										

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	T2394D1	87.04	845	3.74	31.60	9.71	0.36										
	T2394D2	87.04	1546	2.8	43.29	17.76	0.50	11.35	3.369					2.24			
	T2394D3	87.04	1647	2.75	45.29	18.92	0.52										
	T3394D1	300	1588	2.86	45.42	5.29	0.15										
	T3394D2	300	5618	1.46	82.02	18.73	0.27										
	T3394D3	300	5231	1.55	81.08	17.44	0.27	22.32	4.725					2.67			
	394D1	158.19	791	4.04	31.96	5.00	0.20			6.069				5.80			
	394D2	158.19	2585	2.17	56.09	16.34	0.35			55.06	140.1	298727	8065.6	36.60	87.05	185603	5011
	394D3	158.19	2644	2.14	56.58	16.71	0.36			78.97				44.65			
FD382	T1382D1	142.88	1686	2.56	43.16	11.80	0.30	1.39	1.179					1.14			
	T1382D2	142.88	1484	2.76	40.96	10.39	0.29										
	T1382D3	142.88	255	6.83	17.42	1.78	0.12										
	T2382D1	600	5461	1.43	78.09	9.10	0.13										
	T2382D2	600	4531	1.6	72.50	7.55	0.12	2.25	1.501					1.35			
	T2382D3	600	3321	6.7	222.51	5.54	0.37										
	T3382D1	600	2390	2.2	52.58	3.98	0.09										
	T3382D2	600	488	5.24	25.57	0.81	0.04										
	T3382D3	600	206	9.11	18.77	0.34	0.03	2707.39	52.03					6.22			
	382D1	8000	1637	3.14	51.40	0.20	0.01			0.241				0.23			
	382D2	8000	3135	2.19	68.66	0.39	0.01			0.588	18.38	39198	1058.4	0.53	2.86	6098	165
	382D3	8000	2699	2.33	62.89	0.34	0.01			17.55				2.10			
10/02 Acquisitions																	

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
T_{01}	T01det1	57.13	889	3.48	30.94	15.56	0.54										
T_{01}	T01det2	100	1701	2.5	42.53	17.01	0.43										
T_{01}	T01det3	100	1214	2.98	30.94	12.14	0.31										
T_{02}	T02det1	100	1314	2.89	37.97	13.14	0.38										
T_{02}	T02det2	58.79	995	3.24	32.24	16.92	0.55										
T_{02}	T02det3	100	1578	2.6	37.97	15.78	0.38										
T_{03}	T03det1	72.82	807	3.66	29.54	11.08	0.41										
T_{03}	T03det2	72.82	1163	3	34.89	15.97	0.48										
T_{03}	T03det3	58.29	1032	3.24	29.54	17.70	0.51										
								16.73									
FD379	T1379D1	305.55	3897	1.69	65.86	12.75	0.22	1.45	1.204					1.15			
	T1379D2	305.55	4526	1.61	72.87	14.81	0.24										
	T1379D3	305.55	3880	2.05	79.54	12.70	0.26										
	T2379D1	165.56	1736	2.56	44.44	10.49	0.27										
	T2379D2	165.56	1163	3.28	38.15	7.02	0.23	5.64	2.374					1.83			
	T2379D3	165.56	1432	2.96	42.39	8.65	0.26										
	T3379D1	425.69	1259	3.19	40.16	2.96	0.09										
	T3379D2	425.69	2507	2.26	56.66	5.89	0.13										
	T3379D3	425.69	3600	1.85	66.60	8.46	0.16	-147.87	N/A					N/A			
	379D1	300	366	6.28	22.98	1.22	0.08			1.469				1.41			
	379D2	300	1217	3.37	41.01	4.06	0.14			9.631	N/A	N/A	N/A	7.41	N/A	N/A	N/A
	379D3	300	2571	2.17	55.79	8.57	0.19			N/A				N/A			

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
FD396	T1396D1	487.74	5178	1.45	75.08	10.62	0.15	1.60	1.263					1.19			
	T1396D2	487.74	2637	2.11	55.64	5.41	0.11										
	T1396D3	487.74	536	5.07	27.18	1.10	0.06										
	T2396D1	337.98	1788	2.5	44.70	5.29	0.13										
	T2396D2	337.98	637	4.52	28.79	1.88	0.09	10.57	3.25					2.20			
	T2396D3	337.98	311	6.6	20.53	0.92	0.06										
	T3396D1	300	396	5.6	22.18	1.32	0.07										
	T3396D2	300	265	7.58	20.09	0.88	0.07										
	T3396D3	300	213	8.01	17.06	0.71	0.06	47.37	6.883					3.18			
	396D1	521.26	70	17	11.90	0.13	0.02			0.17				0.16			
	396D2	521.26	157	10.06	15.79	0.30	0.03			0.979	3.605	7685.7	207.51	0.66	1.96	4174	113
	396D3	521.26	186	8.85	16.46	0.36	0.03			2.456				1.14			
FD399	T1399D1	101.15	1241	2.94	36.49	12.27	0.36	1.41	1.187					1.14			
	T1399D2	101.15	1127	3.1	34.94	11.14	0.35										
	T1399D3	101.15	147	10.62	15.61	1.45	0.15										
	T2399D1	239.59	2341	2.17	50.80	9.77	0.21										
	T2399D2	239.59	1197	3.09	36.99	5.00	0.15	4.00	2.001					1.64			
	T2399D3	239.59	338	6.33	21.40	1.41	0.09										
	T3399D1	300	517	4.97	25.69	1.72	0.09										
	T3399D2	300	293	6.87	20.13	0.98	0.07										
	T3399D3	300	807	3.92	31.63	2.69	0.11	12.56	3.543					2.30			

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	399D1	509.73	197	8.37	16.49	0.39	0.03			0.459				0.44			
	399D2	509.73	417	5.71	23.81	0.82	0.05			1.637	6.906	14725	397.58	1.34	4.91	10467	283
	399D3	509.73	692	4.3	29.76	1.36	0.06			4.811				3.13			
FD408	T1408D1	244.34	2449	2.12	51.92	10.02	0.21	1.70	1.304					1.22			
	T1408D2	244.34	1274	3.02	38.47	5.21	0.16										
	T1408D3	244.34	408	5.41	22.07	1.67	0.09										
	T2408D1	303.51	1511	2.72	41.10	4.98	0.14										
	T2408D2	303.51	1032	3.41	35.19	3.40	0.12	5.54	2.354					1.82			
	T2408D3	303.51	1519	2.76	41.92	5.00	0.14										
	T3408D1	158.6	278	6.66	18.51	1.75	0.12										
	T3408D2	158.6	622	4.29	26.68	3.92	0.17										
	T3408D3	158.6	408	5.34	21.79	2.57	0.14	7.17	2.677					1.96			
	408D1	1835.1	350	6.96	24.36	0.19	0.01			0.249				0.23			
	408D2	1835.1	697	4.44	30.95	0.38	0.02			0.894	1.782	3799	102.57	0.69	1.39	2970	80
	408D3	1835.1	438	6.07	26.59	0.24	0.01			0.639				0.47			
10/03 Acquisitions																	
T_{01}	T01det1	60	922	3.41	31.44	15.37	0.52										
T_{01}	T01det2	100	1701	2.5	42.53	17.01	0.43										
T_{01}	T01det3	100	1214	2.98	31.44	12.14	0.31										
T_{02}	T02det1	100	1314	2.89	37.97	13.14	0.38										
T_{02}	T02det2	60	1012	3.22	32.59	16.87	0.54										

T_{02}	T02det3	100	1578	2.6	37.97	15.78	0.38										
Sample	**File Name**	**Count Time**	**Area**	**%** s	s	**cps**	s **cps**	**1/T**	**Cf= SQRT(1/T)**	**Corr. cps**	**Corr. Sum (cps)**	**Drum Activity (dps)**	**Drum Activity (nCi)**	**C_f of ln1/T**	**Corr. Sum (cps)**	**Drum Activity (dps)**	**Drum Activity (nCi)**
T_{03}	T03det1	72.82	807	3.66	29.54	11.08	0.41										
T_{03}	T03det2	72.82	1163	3	34.89	15.97	0.48										
T_{03}	T03det3	60	995	3.27	29.54	16.58	0.49										
								16.27									
FD403	T1403D1	233.24	2155	2.28	49.13	9.24	0.21	1.84	1.355					1.26			
	T1403D2	233.24	2188	2.27	49.67	9.38	0.21										
	T1403D3	233.24	1491	2.77	41.30	6.39	0.18										
	T2403D1	206.13	1384	2.84	39.31	6.71	0.19										
	T2403D2	206.13	1665	2.63	43.79	8.08	0.21	2.30	1.518					1.36			
	T2403D3	206.13	1705	2.6	44.33	8.27	0.22										
	T3403D1	122.3	549	4.58	25.14	4.49	0.21										
	T3403D2	122.3	895	3.56	31.86	7.32	0.26										
	T3403D3	122.3	538	4.82	25.93	4.40	0.21	6.82	2.612					1.94			
	403D1	600	229	7.74	17.72	0.38	0.03			0.517				0.48			
	403D2	600	608	4.35	26.45	1.01	0.04			1.538	7.313	15594	421.03	1.38	5.76	12280	332
	403D3	600	1208	3.11	37.57	2.01	0.06			5.258				3.90			
FD556	T1556D1	136.94	1625	2.63	42.74	11.87	0.31	1.42	1.191					1.14			
	T1556D2	136.94	491	4.83	23.72	3.59	0.17										
	T1556D3	136.94	414	5.44	22.52	3.02	0.16										
	T2556D1	375.64	699	4.39	30.69	1.86	0.08										
	T2556D2	375.64	2880	1.99	57.31	7.67	0.15	2.35	1.533					1.37			
	T2556D3	375.64	1693	2.65	44.86	4.51	0.12										

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	T3556D1	210.06	396	4.39	17.38	1.89	0.08										
	T3556D2	210.06	716	4.21	30.14	3.41	0.14										
	T3556D3	210.06	918	3.56	32.68	4.37	0.16	4.23	2.055					1.67			
	556D1	597.56	238	8.73	20.78	0.40	0.03			0.474				0.46			
	556D2	597.56	443	6.08	26.93	0.74	0.05			1.136	2.677	5708.2	154.12	1.02	2.34	4988	135
	556D3	597.56	310	6.9	21.39	0.52	0.04			1.066				0.87			
FD557	T1557D1	304.74	1778	2.58	45.87	5.83	0.15	3.13	1.768					1.51			
	T1557D2	304.74	1579	2.74	43.26	5.18	0.14										
	T1557D3	304.74	997	3.48	34.70	3.27	0.11										
	T2557D1	349.22	1208	3.16	38.17	3.46	0.11										
	T2557D2	349.22	1848	2.51	46.38	5.29	0.13	3.90	1.975					1.63			
	T2557D3	349.22	3047	1.92	58.50	8.73	0.17										
	T3557D1	300	713	4.24	30.23	2.38	0.10										
	T3557D2	300	1886	2.51	47.34	6.29	0.16										
	T3557D3	300	3239	1.85	59.92	10.80	0.20	1.70	1.304					1.22			
	557D1	600	378	6.03	22.79	0.63	0.04			1.114				0.95			
	557D2	600	672	4.52	30.37	1.12	0.05			2.212	4.921	10492	283.29	1.82	4.27	9109	246
	557D3	600	734	4.13	30.31	1.22	0.05			1.595				1.50			
FD573	**T1573D1**	**140.99**	**1827**	**2.43**	**44.40**	**12.96**	**0.31**	**1.27**	**1.127**					1.10			
	T1573D2	**140.99**	**1366**	**2.86**	**39.07**	**9.69**	**0.28**										
	T1573D3	**140.99**	**368**	**5.95**	**21.90**	**2.61**	**0.16**										

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	T2573D1	**157**	**1304**	**2.93**	**38.21**	**8.31**	**0.24**										
	T2573D2	**157**	**545**	**4.87**	**26.54**	**3.47**	**0.17**	**5.48**	**2.341**					1.81			
	T2573D3	**157**	**492**	**4.93**	**24.26**	**3.13**	**0.15**										
	T3573D1	**156.15**	**327**	**6.19**	**20.24**	**2.09**	**0.13**										
	T3573D2	**156.15**	**560**	**4.75**	**26.60**	**3.59**	**0.17**										
	T3573D3	**156.15**	**1158**	**3.14**	**36.36**	**7.42**	**0.23**	**2.46**	**1.568**					1.39			
	573D1	**670.24**	**106**	**14.23**	**15.08**	**0.16**	**0.02**			0.178				0.17			
	573D2	**670.24**	**336**	**7.16**	**24.06**	**0.50**	**0.04**			1.173	2.603	5551	149.88	0.91	2.19	4680	126
	573D3	**670.24**	**535**	**5.23**	**27.98**	**0.80**	**0.04**			1.252				1.11			
FD405	T1405D1	178.29	1516	2.72	41.24	8.50	0.23	1.91	1.383					1.28			
	T1405D2	178.29	219	8.42	18.44	1.23	0.10										
	T1405D3	178.29	113	11.52	13.02	0.63	0.07										
	T2405D1	192.34	284	6.75	19.17	1.48	0.10										
	T2405D2	192.34	317	8.42	26.69	1.65	0.14	10.01	3.164					2.16			
	T2405D3	192.34	517	4.89	25.28	2.69	0.13										
	T3405D1	300	239	7.47	17.85	0.80	0.06										
	T3405D2	300	709	4.34	30.77	2.36	0.10										
	T3405D3	300	564	4.68	26.40	1.88	0.09	8.89	2.981					2.09			
	405D1	1800	1	21155	211.55	0.00	0.12			8E-04				0.00			
	405D2	1800	40	49.78	19.91	0.02	0.01			0.07	0.217	462.28	12.482	0.05	0.15	322	9
	405D3	1800	88	21.26	18.71	0.05	0.01			0.146				0.10			

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
FD561	T1561D1	310.62	558	4.91	27.40	1.80	0.09	39.81	6.309					3.06			
	T1561D2	310.62	528	5.04	26.61	1.70	0.09										
	T1561D3	310.62	408	5.6	22.85	1.31	0.07										
	T2561D1	600	1194	3.19	38.09	1.99	0.06										
	T2561D2	600	1526	2.96	45.17	2.54	0.08	11.03	3.32					2.22			
	T2561D3	600	1648	2.72	44.83	2.75	0.07										
	T3561D1	449.84	794	4.06	32.24	1.77	0.07										
	T3561D2	449.84	1443	2.93	42.28	3.21	0.09										
	T3561D3	449.84	586	4.85	28.42	1.30	0.06	34.73	5.893					2.97			
	561D1	252.95	351	6.03	21.17	1.39	0.08			8.755				4.25			
	561D2	252.95	270	7.28	19.66	1.07	0.08			3.544	17.21	36706	991.06	2.37	9.10	19394	524
	571D3	252.95	211	7.75	16.35	0.83	0.06			4.916				2.48			

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
T01	T01det1	60	995	3.22	32.04	16.58	0.53										
T01	T01det2	60	984	3.27	32.18	16.40	0.54										
T01	T01det3	100	1199	2.97	35.61	11.99	0.36										
T02	T02det1	69.06	990	3.29	32.57	14.34	0.47										
T02	T02det2	60	984	3.27	32.18	16.40	0.54										
T02	T02det3	69.06	1046	3.21	33.58	15.15	0.49										
T03	T03det1	72.82	807	3.66	29.54	11.08	0.41										
T03	T03det2	72.82	1163	3	34.89	15.97	0.48										
T03	T03det3	60	948	3.34	31.66	15.80	0.53										
	0.00047	0.027						16.26									
FD000566	T1566D1	397.2	1956	2.46	48.12	4.92	0.12	4.58	2.14					1.71			
	T1566D2	397.2	3035	1.96	59.49	7.64	0.15										
	T1566D3	397.2	3109	1.91	59.38	7.83	0.15										
	T2566D1	174.74	820	3.78	31.00	4.69	0.18										
	T2566D2	174.74	1752	2.53	44.33	10.03	0.25	2.30	1.52					1.36			
	T2566D3	174.74	1512	2.77	41.88	8.65	0.24										
	T3566D1	103.87	475	4.97	23.61	4.57	0.23										
	T3566D2	103.87	859	3.66	31.44	8.27	0.30										
	T3566D3	103.87	872	3.68	32.09	8.40	0.31	2.83	1.68					1.46			
	566D1	620.63	855	3.79	32.40	1.38	0.05			2.95				2.36			
	566D2	620.63	1834	2.52	46.22	2.96	0.07			4.48	11.87	25317	683.56	4.03	10.25	21859	590.19
	566D3	620.63	1640	2.66	43.62	2.64	0.07			4.44				3.87			
				0.785													

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
FD000421	T1421D1	144.6	2212	2.23	49.33	15.30	0.34	1.33	1.16					1.12			
	T1421D2	144.6	775	3.97	30.77	5.36	0.21										
	T1421D3	144.6	561	4.65	26.09	3.88	0.18										
	T2421D1	213.97	1035	3.73	38.61	4.84	0.18										
	T2421D2	213.97	1950	2.43	47.39	9.11	0.22	2.84	1.68					1.46			
	T2421D3	213.97	812	3.86	31.34	3.79	0.15										
	T3421D1	403.79	2013	2.39	48.11	4.99	0.12										
	T3421D2	403.79	2578	2.17	55.94	6.38	0.14										
	T3421D3	403.79	1022	3.48	35.57	2.53	0.09	26.02	5.10					2.77			
	421D1	463.23	1443	2.78	40.12	3.12	0.09			3.60				3.48			
	421D2	463.23	1565	2.77	43.35	3.38	0.09			5.69	19.01	40538	1094.51	4.95	13.71	29242	789.52
	421D3	463.23	883	3.72	32.85	1.91	0.07			9.72				5.29			
FD000579	T1579D1	163.5	1919	2.39	45.86	11.74	0.28	1.40	1.18					1.14			
	T1579D2	163.5	951	3.54	33.67	5.82	0.21										
	T1579D3	163.5	646	4.65	30.04	3.95	0.18										
	T2579D1	180	764	3.91	29.87	4.24	0.17										
	T2579D2	180	1162	3.14	36.49	6.46	0.20	2.63	1.62					1.43			
	T2579D3	180	1023	3.36	34.37	5.68	0.19										
	T3579D1	180	574	4.53	26.00	3.19	0.14										
	T3579D2	180	971	3.47	33.69	5.39	0.19										
	T3579D3	180	538	4.78	25.72	2.99	0.14	5.93	2.44					1.86			

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	579D1	600	93	13.14	12.22	0.16	0.02			0.18				0.18			
	579D2	600	169	9.2	15.55	0.28	0.03			0.46	1.25	2656.06	71.71	0.40	1.04	2217.05	59.86
	579D3	600	149	10.04	14.96	0.25	0.02			0.60				0.46			
FD000582	T1582D1	94.05	1399	2.87	40.15	14.88	0.43	1.35	1.16					1.12			
	T1582D2	94.05	1088	3.34	36.34	11.57	0.39										
	T1582D3	94.05	1122	3.28	36.80	11.93	0.39										
	T2582D1	222.52	1399	2.98	41.69	6.29	0.19										
	T2582D2	222.52	2943	2.01	59.15	13.23	0.27	5.10	2.26					1.77			
	T2582D3	222.52	3020	2	60.40	13.57	0.27										
	T3582D1	165.88	782	4	31.28	4.71	0.19										
	T3582D2	165.88	1970	2.5	49.25	11.88	0.30										
	T3582D3	165.88	1874	2.53	47.41	11.30	0.29	32.50	5.70					2.92			
	582D1	120.96	338	6.26	21.16	2.79	0.17			3.24				3.13			
	582D2	120.96	1214	3.11	37.76	10.04	0.31			22.66	87.45	186470	5034.70	17.78	52.48	111888	3020.98
	582D3	120.96	1306	3.03	39.57	10.80	0.33			61.55				31.56			
FD000569	T1569D1	300	3138	1.9	59.62	10.46	0.20	2.00	1.41					1.30			
	T1569D2	300	2905	1.97	57.23	9.68	0.19										
	T1569D3	300	925	3.65	33.76	3.08	0.11										
	T2569D1	107.64	897	3.59	32.20	8.33	0.30										
	T2569D2	107.64	597	4.42	26.39	5.55	0.25	5.30	2.30					1.79			
	T2569D3	107.64	796	3.73	29.69	7.40	0.28										

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	T3569D1	283.65	1311	2.94	38.54	4.62	0.14										
	T3569D2	283.65	1337	2.98	39.84	4.71	0.14										
	T3569D3	283.65	2013	2.41	48.51	7.10	0.17	3.47	1.86					1.57			
	569D1	577	1333	3	39.99	2.31	0.07			3.26				2.99			
	569D2	577	1429	2.92	41.73	2.48	0.07			5.70	13.44	28661	773.85	4.44	11.20	23883	644.84
	569D3	577	1388	2.95	40.95	2.41	0.07			4.48				3.77			
10/05 acquisitions																	
T01	T01det1	60	994	3.22	32.01	16.57	0.53										
T01	T01det2	60	984	3.27	32.18	16.40	0.54										
T01	T01det3	100	1199	2.97	35.61	11.99	0.36										
T02	T02det1	69.06	990	3.29	32.57	14.34	0.47										
T02	T02det2	60	996	3.27	32.57	16.60	0.54										
T02	T02det3	69.06	1046	3.21	33.58	15.15	0.49										
T03	T03det1	72.82	807	3.66	29.54	11.08	0.41										
T03	T03det2	72.82	1163	3	34.89	15.97	0.48										
T03	T03det3	60	986	3.34	32.93	16.43	0.55										
	0.00047	0.027						16.53									
FD000404	T1404D1	159.79	1995	2.34	46.68	12.49	0.29	1.36	1.17					1.13			
	T1404D2	159.79	1495	2.77	41.41	9.36	0.26										
	T1404D3	159.79	158	9.62	15.20	0.99	0.10										
	T2404D1	321.56	2684	2.05	55.02	8.35	0.17										
	T2404D2	321.56	1249	3.12	38.97	3.88	0.12	5.10	2.26					1.77			
	T2404D3	321.56	812	3.85	31.26	2.53	0.10										

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	T3404D1	301.06	566	4.81	27.22	1.88	0.09										
	T3404D2	301.06	484	5.21	25.22	1.61	0.08										
	T3404D3	301.06	599	4.59	27.49	1.99	0.09	9.79	3.13					2.15			
	404D1	600	216	7.89	17.04	0.36	0.03			0.42				0.41			
	404D2	600	384	5.8	22.27	0.64	0.04			1.44	2.80	5977.85	161.40	1.13	2.18	4657.33	125.75
	404D3	600	180	9.07	16.33	0.30	0.03			0.94				0.64			
FD000384	T1384D1	143.04	1643	2.61	42.88	11.49	0.30	1.53	1.24					1.18			
	T1384D2	143.04	1791	2.49	44.60	12.52	0.31										
	T1384D3	143.04	1069	3.27	34.96	7.47	0.24										
	T2384D1	141.76	1344	2.87	38.57	9.48	0.27										
	T2384D2	141.76	1515	2.75	41.66	10.69	0.29	1.81	1.34					1.25			
	T2384D3	141.76	381	5.66	21.56	2.69	0.15										
	T3384D1	241.54	1619	2.64	42.74	6.70	0.18										
	T3384D2	241.54	733	4.01	29.39	3.03	0.12										
	T3384D3	241.54	536	4.81	25.78	2.22	0.11	-129.60	N/A					N/A			
	384D1	600	409	5.75	23.52	0.68	0.04			0.84				0.80			
	384D2	600	927	3.66	33.93	1.55	0.06			2.08	N/A	N/A	N/A	1.93	N/A	N/A	N/A
	384D3	600	1408	2.93	41.25	2.35	0.07			N/A				N/A			
FD000400	T1400D1	133.4	1480	2.7	39.96	11.09	0.30	1.51	1.23					1.17			
	T1400D2	133.4	1190	3.08	36.65	8.92	0.27										
	T1400D3	133.4	539	4.64	25.01	4.04	0.19										

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	T2400D1	242.47	1780	2.53	45.03	7.34	0.19										
	T2400D2	242.47	1330	2.92	38.84	5.49	0.16	3.22	1.79					1.53			
	T2400D3	242.47	692	4.2	29.06	2.85	0.12										
	T3400D1	300.53	1118	3.25	36.34	3.72	0.12										
	T3400D2	300.53	1065	3.41	36.32	3.54	0.12										
	T3400D3	300.53	639	4.39	28.05	2.13	0.09	13.74	3.71					2.36			
	400D1	600	82	14.19	11.64	0.14	0.02			0.17				0.16			
	400D2	600	210	8.55	17.96	0.35	0.03			0.63	4.22	8995.75	242.89	0.53	2.87	6124.97	165.37
	400D3	600	554	4.77	26.43	0.92	0.04			3.42				2.18			
FD000398	T1398D1	113.87	1260	2.95	37.17	11.07	0.33	1.54	1.24					1.18			
	T1398D2	113.87	1152	3.09	35.60	10.12	0.31										
	T1398D3	113.87	195	7.83	15.27	1.71	0.13										
	T2398D1	319.15	2791	2	55.82	8.75	0.17										
	T2398D2	319.15	413	5.83	24.08	1.29	0.08	101.81	10.09					3.73			
	T2398D3	319.15	931	3.58	33.33	2.92	0.10										
	T3398D1	333.87	149	10.69	15.93	0.45	0.05										
	T3398D2	333.87	817	3.91	31.94	2.45	0.10										
	T3398D3	333.87	964	3.52	33.93	2.89	0.10	10.00	3.16					2.16			
	398D1	600	186	8.98	16.70	0.31	0.03			0.38				0.37			
	398D2	600	679	4.31	29.26	1.13	0.05			11.42	15.70	33480	903.97	4.22	7.25	15460	417.42
	398D3	600	740	4.09	30.27	1.23	0.05			3.90				2.67			
10/09 Acquisitions																	

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
T01	T01det1	60	977	3.27	31.95	16.28	0.53										
T01	T01det2	60	984	3.27	32.18	16.40	0.54										
T01	T01det3	100	1199	2.97	35.61	11.99	0.36										
T02	T02det1	69.06	990	3.29	32.57	14.34	0.47										
T02	T02det2	60	963	3.33	32.07	16.05	0.53										
T02	T02det3	69.06	1046	3.21	33.58	15.15	0.49										
T03	T03det1	72.82	807	3.66	29.54	11.08	0.41										
T03	T03det2	72.82	1163	3	34.89	15.97	0.48										
T03	T03det3	60	950	3.35	31.83	15.83	0.53										
	0.00047	0.027						16.06									
FD000415	T1415D1	319.3	3780	1.71	64.64	11.84	0.20	1.38	1.17					1.13			
	T1415D2	319.3	829	4	33.16	2.60	0.10										
	T1415D3	319.3	206	8.3	17.10	0.65	0.05										
	T2415D1	300	873	3.7	32.30	2.91	0.11										
	T2415D2	300	467	5.24	24.47	1.56	0.08	14.71	3.84					2.40			
	T2415D3	300	428	5.52	23.63	1.43	0.08										
	T3415D1	300	250	7.53	18.83	0.83	0.06										
	T3415D2	300	490	5.26	25.77	1.63	0.09										
	T3415D3	300	508	5.12	26.01	1.69	0.09	11.50	3.39					2.25			
	415D1	3600	725	4.84	35.09	0.20	0.01			0.24				0.23			
	415D2	3600	1675	2.96	49.58	0.47	0.01			1.78	3.03	6454.12	174.26	1.12	2.01	4290.05	115.83
	415D3	3600	1068	3.77	40.26	0.30	0.01			1.01				0.67			

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
FD000571	T1571D1	126.37	1300	2.98	38.74	10.29	0.31	2.35	1.53					1.37			
	T1571D2	126.37	1541	2.81	43.30	12.19	0.34										
	T1571D3	126.37	1873	2.51	47.01	14.82	0.37										
	T2571D1	101.34	541	4.86	26.29	5.34	0.26										
	T2571D2	101.34	1294	3.04	39.34	12.77	0.39	4.01	2.00					1.64			
	T2571D3	101.34	1532	2.83	43.36	15.12	0.43										
	T3571D1	242.16	1247	3.14	39.16	5.15	0.16										
	T3571D2	242.16	2459	2.27	55.82	10.15	0.23										
	T3571D3	242.16	3171	1.98	62.79	13.09	0.26	81.19	9.01					3.56			
	571D1	198.73	687	4.29	29.47	3.46	0.15			5.30				4.75			
	571D2	198.73	1741	2.67	46.48	8.76	0.23			17.53	139.04	296464	8004.54	14.38	65.10	138802	3747.64
	571D3	198.73	2563	2.19	56.13	12.90	0.28			116.21				45.97			
FD000377	T1377D1	98.9	1126	3.09	34.79	11.39	0.35	1.44	1.20					1.15			
	T13772	98.9	1009	3.36	33.90	10.20	0.34										
	T1377D3	98.9	522	4.65	24.27	5.28	0.25										
	T2377D1	148.76	1148	3.11	35.70	7.72	0.24										
	T2377D2	148.76	1117	3.36	37.53	7.51	0.25	2.26	1.50					1.35			
	T2377D3	148.76	721	4.02	28.98	4.85	0.19										
	T3377D1	177.82	1091	3.17	34.58	6.14	0.19										
	T3377D2	177.82	1033	3.39	35.02	5.81	0.20										
	T3377D3	177.82	293	6.32	18.52	1.65	0.10	11.71	3.42					2.26			

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	377D1	351	77	13.25	10.20	0.22	0.03			0.26				0.25			
	377D2	351	145	10.12	14.67	0.41	0.04			0.62	1.83	3902.02	105.35	0.56	1.44	3061.60	82.66
	377D3	351	97	12.93	12.54	0.28	0.04			0.95				0.62			
FD000411	T1411D1	95.02	1167	3.06	35.71	12.28	0.38	1.32	1.15					1.11			
	T1411D2	95.02	594	4.38	26.02	6.25	0.27										
	T1411D3	95.02	189	8.11	15.33	1.99	0.16										
	T2411D1	89.25	522	4.69	24.48	5.85	0.27										
	T2411D2	89.25	358	5.71	20.44	4.01	0.23	4.31	2.08					1.68			
	T2411D3	89.25	503	4.89	24.60	5.64	0.28										
	T3411D1	152.98	343	5.96	20.44	2.24	0.13										
	T3411D2	152.98	574	4.65	26.69	3.75	0.17										
	T3411D3	152.98	448	5.23	23.43	2.93	0.15	5.86	2.42					1.85			
	411D1	1000	84	18	15.12	0.08	0.02			0.10				0.09			
	411D2	1000	287	7.52	21.58	0.29	0.02			0.60	1.15	2446.32	66.05	0.48	0.92	1969.06	53.16
	411D3	1000	188	10.45	19.65	0.19	0.02			0.46				0.35			
FD000389	T1389D1	116.23	1408	5.63	79.27	12.11	0.68	1.60	1.27					1.20			
	T1389D2	116.53	465	5.27	24.51	3.99	0.21										
	T1389D3	116.23	193	8.44	16.29	1.66	0.14										
	T2389D1	170.94	751	3.98	29.89	4.39	0.17										
	T2389D2	170.94	565	4.87	27.52	3.31	0.16	189.59	13.77					4.19			
	T2389D3	170.94	328	6.3	20.66	1.92	0.12										

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	T3389D1	300	623	4.56	28.41	2.08	0.09										
	T3389D2	300	1065	3.37	35.89	3.55	0.12										
	T3389D3	300	554	4.89	27.09	1.85	0.09	573.56	23.95					5.02			
	389D1	184.75	385	5.63	21.68	2.08	0.12			2.64				2.49			
	389D2	184.75	595	4.63	27.55	3.22	0.15			44.34	90.54	193043	5212.15	13.48	25.10	53523	1445.13
	389D3	184.75	336	6.28	21.10	1.82	0.11			43.56				9.13			
FD000386	T1386D1	300	3379	1.81	61.16	11.26	0.20	1.49	1.22					1.17			
	T1386D2	300	3676	1.74	63.96	12.25	0.21										
	T1386D3	300	2859	1.98	56.61	9.53	0.19										
	T2386D1	258.3	2546	2.08	52.96	9.86	0.21										
	T2386D2	258.3	3243	1.85	60.00	12.56	0.23	1.43	1.20					1.15			
	T2386D3	258.3	1002	4.96	49.70	3.88	0.19										
	T3386D1	300	2066	4.56	94.21	6.89	0.31										
	T3386D2	300	2392	2.19	52.38	7.97	0.17										
	T3386D3	300	487	4.96	24.16	1.62	0.08	741.03	27.22					5.22			
	386D1	600	306	6.66	20.38	0.51	0.03			0.62				0.59			
	386D2	600	792	4.07	32.23	1.32	0.05			1.58	45.80	97658	2636.75	1.51	10.46	22309	602.35
	386D3	600	961	3.63	34.88	1.60	0.06			43.60				8.36			
FD000391	T1391D1	74.45	810	3.72	30.13	10.88	0.40	1.52	1.23					1.17			
	T1391D2	74.45	810	3.75	30.38	10.88	0.41										
	T1391D3	74.45	387	5.42	20.98	5.20	0.28										

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	T2391D1	90.82	834	3.64	30.36	9.18	0.33										
	T2391D2	90.82	906	3.56	32.25	9.98	0.36	1.75	1.32					1.24			
	T2391D3	90.82	132	10	13.20	1.45	0.15										
	T3391D1	360.76	1843	2.5	46.08	5.11	0.13										
	T3391D2	360.76	498	5	24.90	1.38	0.07										
	T3391D3	360.76	553	4.64	25.66	1.53	0.07	53.69	7.33					3.27			
	391D1	590.85	199	8.64	17.19	0.34	0.03			0.42				0.40			
	391D2	590.85	480	5.48	26.30	0.81	0.04			1.08	10.53	22455	606.28	1.00	5.43	11588	312.87
	391D3	590.85	729	4.19	30.55	1.23	0.05			9.04				4.03			
10/10 Acquisitions																	
T01	T01det1	60	979	3.28	32.11	16.32	0.54										
T02	T02det1	60	969	3.28	31.78	16.15	0.53										
T03	T03det1	43.38	686	3.95	27.10	15.81	0.62										
	0.00047	0.027						16.09									
FD000390	T1390D1	313.67	3644	1.76	64.13	11.62	0.20	1.48	1.22					1.16			
	T1390D2	313.67	3267	1.94	63.38	10.42	0.20										
	T1390D3	313.67	1151	3.77	43.39	3.67	0.14										
	T2390D1	490.05	3767	1.76	66.30	7.69	0.14										
	T2390D2	490.05	3938	1.77	69.70	8.04	0.14	2.66	1.63					1.43			
	T2390D3	490.05	1367	3.56	48.67	2.79	0.10										

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	T3390D1	501.72	1343	3.1	41.63	2.68	0.08										
	T3390D2	501.72	1039	4	41.56	2.07	0.08										
	T3390D3	501.72	1387	3.55	49.24	2.76	0.10	92.92	9.64					3.66			
	390D1	2136.4	1610	3.22	51.84	0.75	0.02			0.92				0.88			
	390D2	2136.4	4254	2	85.08	1.99	0.04			3.25	29.14	62142	1677.83	2.85	13.22	28184	760.96
	390D3	2136.4	5536	1.84	101.86	2.59	0.05			24.98				9.49			
FD000380	T1380D1	144.89	1751	2.46	43.07	12.09	0.30	1.35	1.16					1.12			
	T1380D2	144.89	1001	3.36	33.63	6.91	0.23										
	T1380D3	144.89	383	5.67	21.72	2.64	0.15										
	T2380D1	250.75	1413	2.79	39.42	5.64	0.16										
	T2380D2	250.75	1399	2.89	40.43	5.58	0.16	3.18	1.78					1.52			
	T2380D3	250.75	193	8.38	16.17	0.77	0.06										
	T3380D1	600	2229	2.27	50.60	3.72	0.08										
	T3380D2	600	488	5.23	25.52	0.81	0.04										
	T3380D3	600	277	7.49	20.75	0.46	0.03	-197.83	N/A					N/A			
	380D1	1001.8	195	9.11	17.76	0.19	0.02			0.23				0.22			
	380D2	1001.8	517	5.1	26.37	0.52	0.03			0.92	N/A	N/A	N/A	0.79	N/A	N/A	N/A
	380D3	1001.8	544	4.8	26.11	0.54	0.03			N/A				N/A			
FD000401	T1401D1	300	2987	1.93	57.65	9.96	0.19	1.63	1.28					1.20			
	T1401D2	300	2312	2.21	51.10	7.71	0.17										
	T1401D3	300	797	3.9	31.08	2.66	0.10										

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	T2401D1	300	1872	2.46	46.05	6.24	0.15										
	T2401D2	300	1213	3.14	38.09	4.04	0.13	4.24	2.06					1.67			
	T2401D3	300	447	5.45	24.36	1.49	0.08										
	T3401D1	300	1010	3.39	34.24	3.37	0.11										
	T3401D2	300	317	6.57	20.83	1.06	0.07										
	T3401D3	300	262	7.53	19.73	0.87	0.07	23.27	4.82					2.70			
	401D1	600	51	20.28	10.34	0.09	0.02			0.11				0.10			
	401D2	600	151	9.9	14.95	0.25	0.02			0.52	1.50	3205.35	86.54	0.42	1.01	2160.98	58.35
	401D3	600	109	12.57	13.70	0.18	0.02			0.88				0.49			
FD000381	T1381D1	146.14	1612	2.62	42.23	11.03	0.29	1.47	1.21					1.16			
	T1381D2	146.14	984	3.38	33.26	6.73	0.23										
	T1381D3	146.14	448	5.17	23.16	3.07	0.16										
	T2381D1	190.81	1050	3.24	34.02	5.50	0.18										
	T2381D2	190.81	1134	3.14	35.61	5.94	0.19	2.83	1.68					1.46			
	T2381D3	190.81	170	8.94	15.20	0.89	0.08										
	T3381D1	300	1177	3.09	36.37	3.92	0.12										
	T3381D2	300	171	9.57	16.36	0.57	0.05										
	T3381D3	300	136	10.76	14.63	0.45	0.05	111.92	10.58					3.80			
	381D1	1757.5	182	9.97	18.15	0.10	0.01			0.13				0.12			
	381D2	1757.5	443	5.73	25.38	0.25	0.01			0.42	3.82	8153.98	220.16	0.37	1.66	3548.31	95.80
	381D3	1757.5	544	5.14	27.96	0.31	0.02			3.27				1.18			

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
FD000392	T1392D1	110.11	1394	2.85	39.73	12.66	0.36	1.59	1.26					1.19			
	T1392D2	110.11	1044	3.38	35.29	9.48	0.32										
	T1392D3	110.11	894	3.7	33.08	8.12	0.30										
	T2392D1	68.63	409	5.41	22.13	5.96	0.32										
	T2392D2	68.63	734	4	29.36	10.70	0.43	3.37	1.83					1.55			
	T2392D3	68.63	667	4.38	29.21	9.72	0.43										
	T3392D1	149.01	601	4.44	26.68	4.03	0.18										
	T3392D2	149.01	1463	2.85	41.70	9.82	0.28										
	T3392D3	149.01	1091	3.4	37.09	7.32	0.25	16.15	4.02					2.46			
	392D1	517.31	1303	3.06	39.87	2.52	0.08			3.17				3.00			
	329D2	517.31	3060	2	61.20	5.92	0.12			10.85	39.44	84102	2270.75	9.17	27.74	59153	1597.13
	392D3	517.31	3272	1.95	63.80	6.33	0.12			25.42				15.56			
10/11 Acquisitions																	
T01	T01det1	60	989	3.27	32.34	16.48	0.54										
T02	T02det1	60	1040	3.16	32.86	17.33	0.55										
T03	T03det1	60	973	3.4	33.08	16.22	0.55										
	0.00047	0.027						16.68									
FD000387	T1387D1	133.37	2087	2.34	48.84	15.65	0.37	1.37	1.17					1.13			
	T1387D2	133.37	3037	1.99	60.44	22.77	0.45										
	T1387D3	133.37	1611	2.83	45.59	12.08	0.34										

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	T2387D1	136.32	1787	2.54	45.39	13.11	0.33										
	T2387D2	136.32	1995	2.55	50.87	14.63	0.37	7.50	2.74					1.99			
	T2387D3	136.32	1698	2.75	46.70	12.46	0.34										
	T3387D1	268.04	1024	3.64	37.27	3.82	0.14										
	T3387D2	268.04	3380	1.98	66.92	12.61	0.25										
	T3387D3	268.04	3180	2.04	64.87	11.86	0.24	-171.08	N/A					N/A			
	387D1	3600	12398	1.06	131.42	3.44	0.04			4.03				3.88			
	387D2	3600	44682	0.54	241.28	12.41	0.07			34.00	N/A	N/A	N/A	24.72	N/A	N/A	N/A
	387D3	3600	43061	0.55	236.84	11.96	0.07			N/A				N/A			
FD000395	T1395D1	101.45	1143	3.11	35.55	11.27	0.35	1.66	1.29					1.21			
	T1395D2	101.45	462	5.21	24.07	4.55	0.24										
	T1395D3	101.45	301	6.69	20.14	2.97	0.20										
	T2395D1	300	1275	3.06	39.02	4.25	0.13										
	T2395D2	300	706	4.3	30.36	2.35	0.10	32.36	5.69					2.92			
	T2395D3	300	1549	2.78	43.06	5.16	0.14										
	T3395D1	222.44	294	6.53	19.20	1.32	0.09										
	T3395D2	222.44	861	3.81	32.80	3.87	0.15										
	T3395D3	222.44	854	3.87	33.05	3.84	0.15	19.86	4.46					2.59			
	395D1	523.43	653	4.3	28.08	1.25	0.05			1.61				1.51			
	395D2	523.43	962	3.81	36.65	1.84	0.07			10.45	25.43	54223	1464.01	5.37	14.66	31262	844.08
	395D3	523.43	1570	2.81	44.12	3.00	0.08			13.37				7.78			

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
FD000383	T1383D1	127.91	1831	2.45	44.86	14.31	0.35	1.43	1.20					1.15			
	T1383D2	127.91	2162	2.3	49.73	16.90	0.39										
	T1383D3	127.91	1450	2.85	41.33	11.34	0.32										
	T2383D1	134.84	1689	2.55	43.07	12.53	0.32										
	T2383D2	134.84	2437	2.18	53.13	18.07	0.39	1.40	1.18					1.14			
	T2383D3	134.84	853	3.84	32.76	6.33	0.24										
	T3383D1	255.64	2522	2.12	53.47	9.87	0.21										
	T3383D2	255.64	2106	2.38	50.12	8.24	0.20										
	T3383D3	255.64	1605	2.83	45.42	6.28	0.18	92.28	9.61					3.66			
	383D1	317.5	850	3.83	32.56	2.68	0.10			3.20				3.07			
	383D2	317.5	1962	2.51	49.25	6.18	0.16			7.32	69.10	147333	3977.99	7.04	32.41	69098	1865.64
	383D3	317.5	1936	2.55	49.37	6.10	0.16			58.58				22.30			
FD000388	T1388D1	100.32	1192	3.07	36.59	11.88	0.36	1.55	1.25					1.18			
	T1388D2	100.32	1177	3.13	36.84	11.73	0.37										
	T1388D3	100.32	395	5.55	21.92	3.94	0.22										
	T2388D1	205.54	1868	2.46	45.95	9.09	0.22										
	T2388D2	205.54	779	3.99	31.08	3.79	0.15	11.92	3.45					2.27			
	T2388D3	205.54	879	3.76	33.05	4.28	0.16										
	T3388D1	95.28	105	11.4	11.97	1.10	0.13										
	T3388D2	95.28	242	7.28	17.62	2.54	0.18										
	T3388D3	95.28	353	6.06	21.39	3.70	0.22	-50.20	N/A					N/A			

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	388D1	557.83	634	4.51	28.59	1.14	0.05			1.42				1.34			
	388D2	557.83	1334	3.14	41.89	2.39	0.08			8.26	N/A	N/A	N/A	5.43	N/A	N/A	N/A
	388D3	557.83	2252	2.4	54.05	4.04	0.10			N/A				N/A			
FD000583	T1583D1	277.12	2409	2.14	51.55	8.69	0.19	1.93	1.39					1.28			
	T1583D2	277.12	473	5.23	24.74	1.71	0.09										
	T1583D3	277.12	85	18.08	15.37	0.31	0.06										
	T2583D1	300	404	5.68	22.95	1.35	0.08										
	T2583D2	300	222	7.81	17.34	0.74	0.06	27.93	5.29					2.82			
	T2583D3	300	292	6.63	19.36	0.97	0.06										
	T3583D1	300.88	95	12.95	12.30	0.32	0.04										
	T3583D2	300.88	127	12.3	15.62	0.42	0.05										
	T3583D3	300.88	381	5.98	22.78	1.27	0.08	14.32	3.78					2.38			
	583D1	1021.6	52	23.94	12.45	0.05	0.01			0.07				0.07			
	583D2	1021.6	146	11.43	16.69	0.14	0.02			0.76	1.21	2582.79	69.74	0.40	0.71	1516.05	40.93
	583D3	1021.6	104	14.3	14.87	0.10	0.01			0.39				0.24			
FD000596	T1596D1	300	2248	2.23	50.13	7.49	0.17	2.63	1.62					1.43			
	T1596D2	300	906	3.71	33.61	3.02	0.11										
	T1596D3	300	409	5.82	23.80	1.36	0.08										
	T2596D1	300	913	3.63	33.14	3.04	0.11										
	T2596D2	300	847	3.86	32.69	2.82	0.11	8.35	2.89					2.05			
	T2596D3	300	540	5.01	27.05	1.80	0.09										

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	T3596D1	300	585	4.74	27.73	1.95	0.09										
	T3596D2	300	569	4.9	27.88	1.90	0.09										
	T3596D3	300	1261	3.09	38.96	4.20	0.13	4.20	2.05					1.67			
	596D1	3600	4117	1.7	69.99	1.14	0.02			1.85				1.63			
	596D2	3600	2971	2.08	61.80	0.83	0.02			2.38	4.71	10053	271.43	1.70	3.71	7919.99	213.84
	596D3	3600	838	4.55	38.13	0.23	0.01			0.48				0.39			
FD000581	T1581D1	105.61	1347	2.83	38.12	12.75	0.36	1.31	1.15					1.11			
	T1581D2	105.61	1211	3.04	36.81	11.47	0.35										
	T1581D3	105.61	320	6.12	19.58	3.03	0.19										
	T2581D1	183.18	1972	2.33	45.95	10.77	0.25										
	T2581D2	183.18	892	3.55	31.67	4.87	0.17	3.51	1.87					1.57			
	T2581D3	183.18	44	19.47	8.57	0.24	0.05										
	T3581D1	300	1453	2.76	40.10	4.84	0.13										
	T3581D2	300	85	14.67	12.47	0.28	0.04										
	T3581D3	300	295	6.74	19.88	0.98	0.07	19.37	4.40					2.58			
	581D1	3600	186	12.34	22.95	0.05	0.01			0.06				0.06			
	581D2	3600	442	6.73	29.75	0.12	0.01			0.23	0.83	1766.60	47.70	0.19	0.57	1207.61	32.61
	581D3	3600	441	6.65	29.33	0.12	0.01			0.54				0.32			
10/12 Acquisitions																	

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
T01	T01det1	60	902	3.47	31.30	15.03	0.52										
T02	T02det1	60	1036	3.17	32.84	17.27	0.55										
T03	T03det1	60	884	3.5	30.94	14.73	0.52										
	0.00047	0.027						15.68									
FD000597	T1597D1	156.85	1287	2.95	37.97	8.21	0.24	1.94	1.39					1.28			
	T1597D2	156.85	507	4.9	24.84	3.23	0.16										
	T1597D3	156.85	393	5.57	21.89	2.51	0.14										
	T2597D1	314.41	789	3.91	30.85	2.51	0.10										
	T2597D2	314.41	1029	3.4	34.99	3.27	0.11	5.75	2.40					1.84			
	T2597D3	314.41	368	4.07	14.98	1.17	0.05										
	T3597D1	129.27	213	7.94	16.91	1.65	0.13										
	T3597D2	129.27	403	5.57	22.45	3.12	0.17										
	T3597D3	129.27	1285	2.96	38.04	9.94	0.29	1.71	1.31					1.23			
	597D1	1800	211	10.16	21.44	0.12	0.01			0.16				0.15			
	597D2	1800	979	3.69	36.13	0.54	0.02			1.30	2.48	5283.95	142.67	1.00	2.10	4473.02	120.77
	597D3	1800	1392	3.06	42.60	0.77	0.02			1.01				0.95			
FD000595	T1595D1	151.16	1793	2.46	44.11	11.86	0.29	1.32	1.15					1.11			
	T1595D2	151.16	562	4.55	25.57	3.72	0.17										
	T1595D3	151.16	639	4.28	27.35	4.23	0.18										

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	T2595D1	174.03	651	4.22	27.47	3.74	0.16										
	T2595D2	174.03	1275	3	38.25	7.33	0.22	2.15	1.47					1.33			
	T2595D3	174.03	659	4.21	27.74	3.79	0.16										
	T3595D1	237.51	700	4.14	28.98	2.95	0.12										
	T3595D2	237.51	1224	3.04	37.21	5.15	0.16										
	T3595D3	237.51	472	5.1	24.07	1.99	0.10	7.90	2.81					2.02			
	595D1	392.45	6	119	7.14	0.02	0.02			0.02				0.02			
	595D2	392.45	19	36	6.84	0.05	0.02			0.07	0.10	204.28	5.52	0.06	0.09	184.72	4.99
	595D3	392.45	1	615	6.15	0.00	0.02			0.01				0.01			
FD000578	T1578D1	261.03	1009	3.38	34.10	3.87	0.13	4.06	2.01					1.65			
	T1578D2	261.03	374	6.01	22.48	1.43	0.09										
	T1578D3	261.03	393	5.74	22.56	1.51	0.09										
	T2578D1	102.06	184	8.25	15.18	1.80	0.15										
	T2578D2	102.06	415	5.34	22.16	4.07	0.22	3.87	1.97					1.62			
	T2578D3	102.06	600	4.3	25.80	5.88	0.25										
	T3578D1	300	342	5.99	20.49	1.14	0.07										
	T3578D2	300	1898	2.42	45.93	6.33	0.15										
	T3578D3	300	593	4.67	27.69	1.98	0.09	7.99	2.83					2.03			
	578D1	402.28	0	0	0.00	0.00	0.00			0.00				0.00			
	578D2	402.28	5	157	7.85	0.01	0.02			0.02	0.07	142.02	3.83	0.02	0.05	107.52	2.90
	578D3	402.28	6	117	7.02	0.01	0.02			0.04				0.03			

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
FD000414	T1414D1	154.69	1971	2.38	46.91	12.74	0.30	2.94	1.72					1.48			
	T1414D2	154.69	2039	2.36	48.12	13.18	0.31										
	T1414D3	154.69	468	5.13	24.01	3.03	0.16										
	T2414D1	63.11	771	3.84	29.61	12.22	0.47										
	T2414D2	63.11	537	4.65	24.97	8.51	0.40	45.04	6.71					3.15			
	T2414D3	63.11	205	8.07	16.54	3.25	0.26										
	T3414D1	300	2385	2.19	52.23	7.95	0.17										
	T3414D2	300	2408	2.22	53.46	8.03	0.18										
	T3414D3	300	981	3.61	35.41	3.27	0.12	26.67	5.16					2.79			
	414D1	655.81	4864	1.53	74.42	7.42	0.11			12.73				11.00			
	414D2	655.81	5352	1.46	78.14	8.16	0.12			54.77	81.35	173454	4683.27	25.69	44.17	94173	2542.67
	414D3	655.81	1759	2.65	46.61	2.68	0.07			13.85				7.48			
FD000402	T1402D1	324.1	1307	2.98	38.95	4.03	0.12	4.23	2.06					1.67			
	T1402D2	324.1	1674	2.62	43.86	5.17	0.14										
	T1402D3	324.1	408	5.87	23.95	1.26	0.07										
	T2402D1	300	1445	2.81	40.60	4.82	0.14										
	T2402D2	300	678	4.27	28.95	2.26	0.10	9.35	3.06					2.12			
	T2402D3	300	773	4.9	37.88	2.58	0.13										
	T3402D1	300	569	4.62	26.29	1.90	0.09										
	T3402D2	300	673	4.23	28.47	2.24	0.09										
	T3402D3	300	1072	3.28	35.16	3.57	0.12	5.35	2.31					1.80			
	402D1	1200	392	6.12	23.99	0.33	0.02			0.67				0.55			

Sample	File Name	Count Time	Area	% s	s	cps	s cps	1/T	Cf= SQRT(1/T)	Corr. cps	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)	C_f of ln1/T	Corr. Sum (cps)	Drum Activity (dps)	Drum Activity (nCi)
	402D2	1200	699	4.33	30.27	0.58	0.03			1.78	3.94	8397.97	226.75	1.24	2.94	6262.51	169.09
	402D3	1200	771	4.05	31.23	0.64	0.03			1.49				1.16			