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Facility-Wide NPDES Septic Systems Radioactive

Radioactivity Measurements for Los Alamos National Laboratory's Permitted Septic Systems

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Abstract

The purpose of this study is to identify septic tanks containing concentrations of radioactive materials that exceed specified screening levels so that septage exceeding these screening levels is not disposed of at LANL's centralized sanitary treatment plant. LANL has 87 septic systems that have been permitted. Thirty-five are active, 2 are inactive, 18 are abandoned, and 32 have been bypasssed to the centralized sanitary treatment plant. Six systems were identified as having measured concentrations above the screening levels. Of the six systems, four are no longer active and have been abandoned; and two had samples with concentrations that were only marginally above the screening levels. Two additional systems were identified as potentially having measured concentrations above the screening levels and will need to be resampled. Estimates of the measurement and sampling uncertainty were made. The estimated measurement uncertainty was compared to the values reported by the analytical laboratories. The estimated and reported measurement uncertainties tended to agree with one another. Pairs of measurements from duplicate and split samples were compared and found to predominantly agree with one another.

Introduction

The purpose of this study is to identify septic tanks containing concentrations of radioactive materials that exceed specified screening levels so that septage exceeding these screening levels is not disposed of at the Sanitary Wastewater System Consolidation (SWSC) project's centralized sanitary treatment plant. This work is being performed in response to DOE/ALO Finding LANL/EPD/REM 94-9 and under DOE Order 5400.1.

Six systems were identified as having measured concentrations above the screening levels. Of the six systems, four are no longer active and have been abandoned; and two had samples with concentrations that were only marginally above the screening levels. Two additional systems were identified as potentially having measured concentrations above the screening levels and will need to be resampled to confirm whether or not the systems actually have measured concentrations above the screening levels.

LANL's septic tanks were sampled by JCI/JENV. JCI is the primary support contractor for LANL. JENV is JCI's environmental group. JCI/JENV took both liquid and sludge samples from the active systems. The samples were analyzed for gross alpha, gross beta, gross gamma, gamma isotopes (gamma spectroscopy) and tritium

concentrations by the Inorganic Trace Analysis Group (CST-9) and Accu-Labs Research. The results from the sampling and analyses are presented in this report.

Estimates of the measurement and sampling uncertainty were made and are discussed. The estimated measurement uncertainty was compared to the values reported by the analytical laboratories. The estimated and reported measurement uncertainties tended to agree with one another. Other comparisons are also discussed. Results comparing the pairs of measurements for the duplicate and split samples are discussed. These pairs of measurements predominantly agreed with one another.

As shown in Tables 1 and 2, LANL has 87 septic systems that have been permitted. Thirty-five are active, 2 are inactive, 18 are abandoned, and 32 have been bypasssed to the SWSC plant. Table 1 also shows the buildings that are served by each septic system.

Screening Levels

The screening levels are shown in Table 3. Septic systems are allowed to receive sanitary wastes only, but there are no regulatory concentration limits or screening levels for radioactivity set for septic systems by the State of New Mexico, the US Environmental Protection Agency, nor the US Department of Energy. The screening levels are effectively temporary waste acceptance criteria regarding the radioactivity of septage for the SWSC plant. Septage with levels exceeding these screening levels is not to be treated at the SWSC plant. Sources of radioactivity include natural sources (sources in the earth's crust; sources in the human body; decay products of radon; and radionuclides formed by cosmic radiation) and potential sources include medical isotopes, past atmospheric testing of nuclear weapons, and radionuclides from past or current Laboratory operations.

A task force is currently in the process of developing final waste acceptance criteria regarding the presence of radioactivity and nonradioactive contaminants, if any, within the sanitary wastes to be treated by the SWSC plant.

The screening levels used for gross alpha, gross beta and tritium in the liquid phase are based on Safe Drinking Water Act limits or screening levels. The screening levels used for the sludge phase and for gross gamma in the liquid phase are based on screening levels currently being used for the SWSC plant. When grit and screenings from the SWSC plant exceed levels equivalent to the screening levels used for the septic tank sludge, they cannot be disposed of in a municipal landfill (LANL Administrative Procedure LANL-ESH-18-602, "Handling, Disposal and Reuse of Sanitary Treatment Solids," September 8, 1994).

Sampling

Tables 4 and 5 show the systems that were sampled and the kind of samples that were taken. Duplicate and triplicate samples were taken to obtain an indication of the variability of the concentrations of radioactive materials, if any, in the septic tanks. Split samples were taken to obtain an indication of the variability of the analysis methods. Rinse samples were taken to obtain information concerning potential cross-contamination between the sampling equipment and the samples.

Initial sampling and analyses were done first to identify systems which potentially have measured concentrations above the screening levels. More extensive sampling and analyses were done later to confirm whether or not the systems identified as potentially having measured concentrations above the screening levels, actually had measured concentrations above the screening levels. The more extensive later sampling involved taking rinse samples and triplicate samples that were split.

All of the active systems, except those that were dry, were sampled. Seven systems, TA-46-230, TA-53-1016, TA-18-39, TA-18-42, TA-18-120, TA-33-96, and TA-36-61, which were classified as active at the beginning of this study, have been abandoned, have become inactive or are connected to the SWSC plant and are no longer active systems. All of these systems were sampled, except for TA-53-1016, which was dry. If TA-53-1016 is used again, it will need to be sampled.

As shown in Table 5, later sampling was done for three systems that were identified as potentially having measured concentrations above the screening levels, TA-9-109, TA-11-20 and TA-36-61. Later sampling was also done for two systems, TA-16-1153 and TA-72-18, when JCI/UWWS uncovered and made accessible their septic tank hatches. UWWS is JCI's utilities water and wastewater group. The initial sampling was done during August and September of 1995. The later sampling was done during May of 1996.

As shown in Table 6 for the initial sampling, 35 systems were sampled for liquids and 22 for sludge. Thirteen of the 35 tanks that contained liquid did not contain a sufficient depth of sludge to obtain sludge samples. Also as shown in Table 6 for the later sampling, 5 systems were sampled for liquids, 3 for sludge, and 2 of the tanks that contained liquid did not contain a sufficient depth of sludge to obtain sludge samples. Table 7 shows the number of systems sampled by sampling period, physical state of the sample and type of sample.

Table 8 shows the number of samples taken by sampling period, physical state of the sample, analysis and type of sample. There were a total of 49 liquid and 27 sludge samples taken during the initial sampling and 50 liquid and 16 sludge samples taken during the later sampling. During the initial sampling, the samples were put into 500 ml

polyethylene containers; and during the later sampling, the tritium samples were put into 100 ml glass containers and the samples for the other analyses were put into 2 liter polyethylene containers. During the later sampling, 10 ml of concentrated nitric acid was added as a preservative to the 2 liter polyethylene containers prior to adding the liquid sample to obtain a pH of less than 2.

The Analyses

The group B split and the rinse split samples were analyzed by Accu-Labs Research. All the other samples were analyzed by CST-9.

As shown in Tables 9 through 11, there were three sets of analyses performed. The analytical methods for each set of analyses are described in Table 12. Screening analysis methods were used for the first set and were performed on the initial set of samples. These methods were selected prior to the selection of the screening criteria. As shown in Table 13, the minimum detectable activities (MDA) for the screening analysis methods for gross alpha and beta in the liquid phase were above the alpha and beta screening levels, respectively. The MDA for a particular type of radioactivity and physical state of the sample depends on the analytical method selected, the sample size, the counting time, the background level, self-absorption, the presence of other substances in the sample, the counting system geometry and other factors; and needs to be substantially lower than the screening level.

The second set of analyses was performed on the initial set of liquid samples. The analytical methods for the second set of analyses were selected such that their MDAs were below the alpha and beta screening levels for the liquid phase. The third set of analyses was performed on the Group B split samples and the later set of samples. Tables 10 and 11 also show the MDAs reported on a per sample and analysis basis for the second and third set of analyses. The percent moisture content of the sludge samples is also shown in Tables 9 through 11.

Systems With Concentrations Exceeding Both MDAs and Screening Levels

The last column of Tables 9 through 11, indicate which samples had measured concentrations that exceeded both the MDA and the screening level. The septage from the septic or holding tanks from these systems is not being pumped nor disposed of at the SWSC plant, except for TA-49-118 and TA-69-10, which had measured concentrations that only marginally exceeded the screening levels, and for TA-9-109, in which the analysis of the later samples did not confirm measured concentrations above the screening levels.

The following six systems were identified as having measured concentrations above the screening levels.

- TA-18-39 for gross alpha and beta in the liquid,
- TA-18-42 for gross alpha and beta in the liquid,
- TA-33-93 for gross beta and tritium in the liquid,
- TA-36-61 for gross alpha and beta in the liquid,
- TA-49-118 for gross beta in one of the duplicate liquid samples, and
- TA-69-10 for gross alpha in the liquid.

TA-18-39, TA-18-42 and TA-33-93, are no longer active; have been abandoned; have been cleaned or are expected to be cleaned; and were not resampled. Based on the analysis of both the initial and later samples, TA-36-61 had samples with measured concentrations that exceeded both the MDA and the screening level. TA-36-61 has been decontaminated and decommissioned by the Environmental Restoration Program during August, 1996. Two of the systems, TA-49-118 and TA-69-10, which had samples with measured concentrations that exceeded the MDA and marginally exceeded the screening level, were not resampled because of the marginal nature of the exceedances.

TA-9-109, was identified as potentially having measured concentrations above the screening levels based on the analysis of the initial samples. The analysis of the later samples did not confirm that this system had measured concentrations above the screening levels but indicated that the sampling equipment was contaminated (measured concentrations above the screening levels were found in three of the rinse samples).

The following two systems were identified as potentially having measured concentrations above the screening levels and will need to be resampled.

- TA-11-20 for gross beta and gamma in the liquid, and
- TA-54-16 for gross beta in the sludge Group B split sample.

Since during the later sampling TA-11-20 was sampled after TA-9-109 and the sampling equipment was found to be contaminated, there was potential for cross-contamination of the samples taken from TA-11-20. This system will need to be resampled to confirm whether or not the system actually has measured concentrations above the screening levels. TA-54-16, was not identified as having measured concentrations above the screening levels until after the later sampling was performed, when the Group B split samples were analyzed. TA-54-16 will need to be resampled during fiscal year 1997 to confirm whether or not the system actually has measured concentrations above the screening levels.

Sampling and Measurement Uncertainty

Sampling and measurement uncertainty were estimated from the duplicate and split sample measurements. The estimated measurement uncertainty was compared against the values reported by the analytical laboratories; between the earlier and later sampling periods; and between type of sample. The estimated sampling uncertainty was compared between the earlier and later sampling periods and with the estimated measurement uncertainty. The differences between the duplicate and split measurements were also compared. Tables 14 through 16 show the results for the earlier sampling period and Tables 17 through 20 show the results for the later sampling period.

If there were no uncertainty, then the measurement values for a pair of duplicate or split samples would be identical. The pair of measurement values are not identical because of sampling uncertainty and/or measurement uncertainty. Sampling uncertainty occurs because concentrations of a substance can vary between locations within the tank. Sampling uncertainty could also occur for split samples because the concentrations may be nonuniform within the sample being split. Sampling uncertainty for split samples should be small for liquid samples but could be large for sludge samples.

Measurement uncertainty occurs because there are sources of error that get introduced when making a measurement (self-absorption, backscatter, resolving time, geometry, the inherent stochastic nature of radioactive decay, etc.). Measurement errors tend to increase, relatively, when the measured concentration decreases and the absolute value of the measurement error tends to increase as the magnitude of the measurement increases.

If the sampling uncertainty is small, the split samples, when analyzed at two different laboratories, provide information on the size of the measurement uncertainty. The duplicate sample measurements contain both sampling and measurement uncertainty. When there is adequate information on the measurement uncertainty, then the information from the duplicate samples can be used to estimate the sampling uncertainty.

As shown in Tables 14, 17 and 18, the estimated and reported measurement uncertainties tended to agree with one another. For the later sampling period the averages of the estimated and reported measurement uncertainty for the two groupings of split samples (the Group A split samples were analyzed by CST-9 and the Group B split samples by Accu-Labs Research) tended to be approximately within two standard deviations of the average although the individual pair of values often did not agree with one another within a factor two. For the duplicate samples, the estimated and reported uncertainty did agree with one another within a factor of two. For the Group A split samples from the earlier sampling period and the Group B split samples from the later

sampling period, they tended to agree within a factor of two. For the Group A split samples from the earlier sampling period and the Group B split samples from the later sampling, the results were mixed.

There were patterns concerning which tended to be larger, the estimated measurement uncertainty or the reported value. For the split samples from the earlier sampling period, the estimated measurement uncertainty tended to be larger than the reported uncertainty. The reverse was true for the split samples from the later sampling period. For the duplicate sludge samples, the estimated measurement uncertainty was greater than the reported value and the converse was true for the duplicate liquid samples.

For the later sampling period, the estimated measurement uncertainties for the Group A and Group B split samples tended to agree with one another but the reported measurement uncertainty for the same comparison did not. For the later sampling period the averages of the estimated Group A and B split measurement uncertainty tended to be approximately within two standard deviations of the average although the individual pair of values often did not agree with one another within a factor two. For the same comparison, the differences of the averages of the reported values tended to be greater than two standard deviations of the average. When comparing the measurement uncertainty between the Group A and B split samples for both the estimated and reported values, about half of the values were within a factor of two of one another and about half were not.

For the earlier sampling period, the measurement uncertainties for the Group A and B split samples tended not to agree with one another for both the estimated and reported values. For this comparison, they tended to be greater than a factor of two from one another.

There were patterns concerning which tended to be larger, the measurement uncertainty for the Group A or B split samples. For the estimated measurement uncertainty for the later sampling period and for the reported measurement uncertainty, the Group A samples tended to have a larger value than the Group B split samples. For the estimated measurement uncertainty for the earlier sampling period, the converse was true.

The results were mixed when comparing the magnitude of the measurement uncertainties between the earlier and later sampling periods. For the reported values for the Group A split samples, they tended to be within a factor of two of one another. For the estimated values for the Group B split samples, they were greater than a factor of two from one another. For the reported values for the split samples, half of the values were

within a factor of two of one another and half were greater than a factor of two from one another.

There were patterns concerning which tended to be larger, the measurement uncertainty for the earlier or the later sampling period. For the estimated values for the Group B split samples, the earlier values tended to be greater than the later values. The converse was true for the reported values for the Group B split samples. The results were mixed for the reported values for the Group A split samples.

Sampling uncertainty was estimated for both the earlier and later sampling periods. For the later sampling period, sampling uncertainty could only be estimated for the gamma, gross alpha and tritium analyses in the liquid phase. When comparing the results between the earlier and later sampling period for these three cases, the estimates for the earlier sampling period were greater than those for the later sampling period and only in one case of the three cases were they within a factor of two of one another. The magnitude of the sampling uncertainty directly correlates with the magnitude of the measurement.

For the earlier sampling period, the estimated sampling uncertainty was greater than the estimated measurement uncertainty. For the later sampling period, the results were mixed. For the Group A split samples, the estimated sampling uncertainty tended to be less than the estimated measurement uncertainty. For the Group B split samples, the converse was true.

As shown in Tables 15, 16, 19 and 20, the pair of duplicate and split measurements predominantly agreed with one another. Measurement differences for the pair of duplicate and split samples were predominantly within approximately two standard deviations of a zero difference. The exceptions were the following: the gross alpha Group B split liquid measurements for the later sampling period; the gross gamma/gamma spectroscopy and gross beta Group B split sludge measurements for the later sampling period; and the tritium Group B split sludge measurements for the earlier sampling period.

Table 1. Status of LANL's Permitted Septic Systems

Septic System			Buildings Served - Structure Number					
Technical Area	Structure Number	Status	First	Second	Third	Fourth	Fifth	Sixth
0	276	Abandoned	271	--	--	--	--	--
3	1484	Bypassed to SWSC	130	--	--	--	--	--
3	2087	Active	2025	--	--	--	--	--
6	40	Abandoned	1	3	--	--	--	--
6	43	Abandoned	6	--	--	--	--	--
8	30	Active	31	--	--	--	--	--
9	107	Bypassed to SWSC	41	42	43	44	45	46
9	108	Bypassed to SWSC	48	--	--	--	--	--
9	109	Active	50	--	--	--	--	--
9	110	Active	51	--	--	--	--	--
11	20	Active	4	--	--	--	--	--
11	43	Active	3	--	--	--	--	--
14	19	Bypassed to SWSC	6	--	--	--	--	--
15	0	Inactive	312	--	--	--	--	--
15	51	Active	20	--	--	--	--	--
15	61	Active	45	--	--	--	--	--
15	62	Active	44	--	--	--	--	--
15	63	Bypassed to SWSC	40	--	--	--	--	--
15	72	Abandoned						
15	195	Bypassed to SWSC	183	--	--	--	--	--
15	205	Active	185	186	--	--	--	--
15	282	Bypassed to SWSC	280	--	--	--	--	--
15	284	Active	233	--	--	--	--	--
15	286	Bypassed to SWSC	285	--	--	--	--	--
15	423	Bypassed to SWSC	313	--	--	--	--	--
16	175	Active	54	--	--	--	--	--
16	178	Active	210	--	--	--	--	--
16	371	Active	370	--	--	--	--	--
16	381	Active	380	--	--	--	--	--
16	385	Active	389	--	--	--	--	--
16	527	Abandoned						
16	1153	Active	370	--	--	--	--	--
18	39	Abandoned	23	--	--	--	--	--
18	42	Abandoned	32	--	--	--	--	--
18	120	Abandoned	116	--	--	--	--	--
22	45	Abandoned						
22	50	Bypassed to SWSC	34	--	--	--	--	--
22	51	Bypassed to SWSC	5	32	52	--	--	--
33	24	Abandoned						
33	31	Active	19	39	113	114	168	--
33	33	Active	24	--	--	--	--	--
33	93	Active	86	--	--	--	--	--
33	96	Inactive	87	--	--	--	--	--
33	121	Active	1	--	--	--	--	--
33	179	Active	178	--	--	--	--	--
33	206	Abandoned	181	--	--	--	--	--
35	44	Abandoned	1	26	--	--	--	--
35	65	Abandoned	27	29	--	--	--	--
36	17	Bypassed to SWSC	1	22	--	--	--	--
36	61	Abandoned	55	--	--	--	--	--
36	70	Bypassed to SWSC	69	--	--	--	--	--
36	100	Bypassed to SWSC	22	81	84	--	--	--
37	28	Abandoned	1	--	--	--	--	--
39	104	Active	2	100	--	--	--	--
39	132	Active	111	--	--	--	--	--

Table 1. Status of LANL's Permitted Septic Systems

Septic System			Buildings Served - Structure Number					
Technical Area	Structure Number	Status	First	Second	Third	Fourth	Fifth	Sixth
40	24	Active	1	19	23	--	--	--
40	25	Active	11	--	--	--	--	--
46	230	Bypassed to SWSC	175	--	--	--	--	--
48	32	Bypassed to SWSC	29	--	--	--	--	--
49	118	Active	115	--	--	--	--	--
49	119	Active	113	--	--	--	--	--
51	30	Bypassed to SWSC	11	12	--	--	--	--
51	100	Bypassed to SWSC	80	81	82	--	--	--
52	3	Bypassed to SWSC	1	11	--	--	--	--
52	34A	Bypassed to SWSC	33	41	42	--	--	--
52	34B	Bypassed to SWSC	45	--	--	--	--	--
52	95	Bypassed to SWSC	114	115	116	117	--	--
52	97	Bypassed to SWSC	41	42	--	--	--	--
52	98	Bypassed to SWSC	33	--	--	--	--	--
52	99	Active	35	36	--	--	--	--
53	1016	Abandoned	442	--	--	--	--	--
54	16	Active	2	11	--	--	--	--
54	28	Abandoned	22	--	--	--	--	--
54	43	Bypassed to SWSC	39	--	--	--	--	--
54	80	Bypassed to SWSC	37	51	60	--	--	--
54	89	Bypassed to SWSC	34	38	--	--	--	--
54	150	Bypassed to SWSC	117	--	--	--	--	--
54	1016	Bypassed to SWSC	1002	1003	--	--	--	--
54	1018	Bypassed to SWSC	1009	--	--	--	--	--
60	0	Abandoned	17	--	--	--	--	--
63	12	Bypassed to SWSC	3	--	--	--	--	--
63	14	Bypassed to SWSC	1	--	--	--	--	--
66	3	Active	1	--	--	--	--	--
69	9	Active	1	--	--	--	--	--
69	10	Active	2	--	--	--	--	--
72	18	Active	8	--	--	--	--	--

Table 2. Status of LANL's Permitted Septic Systems

Status	Number of Systems
Active	35
Abandoned	18
Bypassed to SWSC	32
Inactive	2
Total	87

Table 3. Screening Levels

Physical State of Sample	Analysis	Screening Level	Units
Liquid	Gross Alpha	15	pCi/L
	Gross Beta	50	pCi/L
	Gross Gamma	1000	pCi/L
	Tritium	20000	pCi/L
Sludge	Gross Alpha	2000	pCi/g
	Gross Beta	2000	pCi/g
	Gross Gamma	2000	pCi/g
	Tritium	2000	pCi/g

Table 4. Systems Initially Sampled

Septic System		Physical State		Sample Type				
				Liquid			Sludge	
Technical Area	Structure Number	Liquid	Sludge	Duplicate	Split	Rinse	Duplicate	Split
0	276							
3	1484							
3	2087	Yes			Yes	Yes		
6	40							
6	43							
8	30	Yes						
9	107							
9	108							
9	109	Yes	Yes	Yes			Yes	
9	110	Yes						
11	20	Yes		Yes		Yes		
11	43	Yes	Yes			Yes		
14	19							
15	0							
15	51	Yes	Yes					
15	61	Yes						
15	62	Yes						
15	63							
15	72							
15	195							
15	205	Yes	Yes					
15	282							
15	284	Yes						
15	286							
15	423							
16	175	Yes	Yes					
16	178	Yes	Yes					
16	371	Yes	Yes					
16	381	Dry	Dry					
16	385	Yes	Yes					
16	527							
16	1153							
18	39	Yes	Yes					
18	42	Yes						
18	120	Yes						
22	45							
22	50							
22	51							
33	24							
33	31	Yes	Yes					
33	33	Dry	Dry					
33	93	Yes	Yes					
33	96	Yes						
33	121	Dry	Dry					
33	179	Yes	Yes					
33	206							
35	44							
35	65							
36	17							
36	61	Yes			Yes	Yes		
36	70							
36	100							
37	28							
39	104	Yes	Yes					
39	132	Yes	Yes					
40	24	Yes	Yes					
40	25	Yes	Yes	Yes			Yes	
46	230	Yes			Yes	Yes		
48	32							
49	118	Yes	Yes	Yes			Yes	
49	119	Yes	Yes					
51	30							
51	100							
52	3							
52	34A							
52	34B							
52	95							
52	97							
52	98							

Table 4. Systems Initially Sampled

Septic System		Physical State		Sample Type				
				Liquid			Sludge	
Technical Area	Structure Number	Liquid	Sludge	Duplicate	Split	Rinse	Duplicate	Split
52	99	Yes	Yes					Yes
53	1016	Dry	Dry					
54	16	Yes	Yes					Yes
54	28							
54	43							
54	80							
54	89							
54	150							
54	1016							
54	1018							
60	0							
63	12							
63	14							
66	3	Yes	Yes		Yes			Yes
69	9	Yes						
69	10	Yes	Yes					
72	18							

Table 5. Systems Sampled Later

Septic System		Physical State		Sample Type				
				Liquid			Sludge	
Technical Area	Structure Number	Liquid	Sludge	Triplicate	Split	Rinse	Triplicate	Split
9	109	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	20	Yes		Yes	Yes	Yes		
16	1153	Yes	Yes					
36	61	Yes		Yes	Yes	Yes		
72	18	Yes	Yes					

Table 6. Number of Systems Sampled By Physical State of the Sample

Sampling Period	Physical State of Sample	Number of Systems
Initial	Liquid	35
	Sludge	22
Later	Liquid	5
	Sludge	3

Table 7. Number of Systems Sampled By Physical State of the Sample and Sample Type

Sampling Period	Physical State of Sample	Type of Sample	Number of Systems
Initial	Liquid	Duplicate	4
		Split	4
		Rinse	5
		Other	27
	Sludge	Duplicate	3
		Split	3
		Other	16
Later	Liquid	Triplicate	3
		Rinse	3
		Other	2
	Sludge	Triplicate	1
		Other	2

Table 8. Number of Samples By Physical State of the Sample, Analysis and Sample Type

Sampling Period	Physical State of Sample	Analysis	Type of Sample	Number of Samples
Initial	Liquid	All	Duplicate	8
			Split	8
			Rinse	5
			Distilled Water Blank	1
			Other	27
			Total	49
	Sludge	All	Duplicate	6
			Split	6
			Other	15
			Total	27
Later	Liquid	Tritium	Triplicate	9
			Triplicate/Split	7
			Rinse	4
			Rinse/Split	3
			Other	2
			Total	25
		Other	Triplicate	9
			Triplicate/Split	7
			Rinse	4
			Rinse/Split	3
			Other	2
			Total	25
	Sludge	Tritium	Triplicate	3
			Triplicate/Split	3
			Other	2
			Total	8
		Other	Triplicate	3
			Triplicate/Split	3
			Other	2
			Total	8

Table 9. Screening Analysis Results for the Initial Sampling Period

Technical Area	Structure Number	Sample Number	Analysis	Physical State	Date Sampled	Date Analyzed	Sample Type	Measurement	Units	Percent Moisture Content	Is the Measurement Greater than the MDA?	Is the Measurement Greater than the MDA and the Screening Level?
3	2087	95.00683	Gross Alpha	Liquid	9/6/95	10/20/95	Split Group A	-0.02	pCi/mL	N/A		
3	2087	95.00683	Gross Beta	Liquid	9/6/95	10/20/95	Split Group A	0.19	pCi/mL	N/A		
3	2087	95.00715	Gross Gamma	Liquid	9/6/95	10/18/95	Split Group A	0.12	pCi/mL	N/A		
3	2087	95.00654	Tritium	Liquid	9/6/95	9/8/95	Split Group A	549.18	pCi/L	N/A		
3	2087	95.00685	Gross Alpha	Liquid	9/6/95	10/20/95	Rinse	-0.02	pCi/mL	N/A		
3	2087	95.00685	Gross Beta	Liquid	9/6/95	10/20/95	Rinse	0.16	pCi/mL	N/A		
3	2087	95.00717	Gross Gamma	Liquid	9/6/95	10/18/95	Rinse	-0.21	pCi/mL	N/A		
3	2087	95.00670	Tritium	Liquid	9/6/95	9/8/95	Rinse	387.26	pCi/L	N/A		
3	2087	95.00684	Gross Alpha	Liquid	9/6/95		Split Group B			N/A		
3	2087	95.00684	Gross Beta	Liquid	9/6/95		Split Group B			N/A		
3	2087	95.00716	Gross Gamma	Liquid	9/6/95		Split Group B			N/A		
3	2087	95.00659	Tritium	Liquid	9/6/95	9/8/95	Split Group B	688.18	pCi/L	N/A		
8	30	95.00704	Gross Alpha	Liquid	9/11/95	10/20/95		0.06	pCi/mL	N/A		
8	30	95.00704	Gross Beta	Liquid	9/11/95	10/20/95		-0.10	pCi/mL	N/A		
8	30	95.00736	Gross Gamma	Liquid	9/11/95	10/18/95		-0.99	pCi/mL	N/A		
8	30	95.00737	Tritium	Liquid	9/11/95	9/15/95		20.63	pCi/L	N/A		
9	109	95.00678	Gross Alpha	Liquid	8/30/95	10/20/95	Duplicate Group B	0.04	pCi/mL	N/A		
9	109	95.00678	Gross Beta	Liquid	8/30/95	10/20/95	Duplicate Group B	-0.07	pCi/mL	N/A		
9	109	95.00710	Gross Gamma	Liquid	8/30/95	10/18/95	Duplicate Group B	0.31	pCi/mL	N/A		
9	109	95.00610	Tritium	Liquid	8/30/95	9/1/95	Duplicate Group B	427.95	pCi/L	N/A		
9	109	95.00759	Gross Alpha	Sludge	8/30/95	10/24/95	Duplicate Group B	13.32	pCi/g	37.86		
9	109	95.00759	Gross Beta	Sludge	8/30/95	10/24/95	Duplicate Group B	9.69	pCi/g	37.86	Yes	
9	109	95.00742	Gross Gamma	Sludge	8/30/95	10/24/95	Duplicate Group B	1.42	pCi/g	37.86		
9	109	95.00611	Tritium	Sludge	8/30/95	9/1/95	Duplicate Group B	1.75	pCi/g	37.86	Yes	
9	109	95.00677	Gross Alpha	Liquid	8/30/95	10/20/95	Duplicate Group A	0.00	pCi/mL	N/A		
9	109	95.00677	Gross Beta	Liquid	8/30/95	10/20/95	Duplicate Group A	0.61	pCi/mL	N/A	Yes	Yes
9	109	95.00709	Gross Gamma	Liquid	8/30/95	10/18/95	Duplicate Group A	0.02	pCi/mL	N/A		
9	109	95.00608	Tritium	Liquid	8/30/95	9/1/95	Duplicate Group A	733.26	pCi/L	N/A		
9	109	95.00758	Gross Alpha	Sludge	8/30/95	10/24/95	Duplicate Group A	5.60	pCi/g	33.07		
9	109	95.00758	Gross Beta	Sludge	8/30/95	10/24/95	Duplicate Group A	4.60	pCi/g	33.07		
9	109	95.00741	Gross Gamma	Sludge	8/30/95	10/24/95	Duplicate Group A	1.96	pCi/g	33.07		
9	109	95.00609	Tritium	Sludge	8/30/95	9/1/95	Duplicate Group A	0.59	pCi/g	33.07	Yes	
9	110	95.00679	Gross Alpha	Liquid	8/30/95	10/20/95		0.00	pCi/mL	N/A		
9	110	95.00679	Gross Beta	Liquid	8/30/95	10/20/95		-0.21	pCi/mL	N/A		
9	110	95.00711	Gross Gamma	Liquid	8/30/95	10/18/95		-0.10	pCi/mL	N/A		
9	110	95.00612	Tritium	Liquid	8/30/95	9/1/95		1334.11	pCi/L	N/A	Yes	
11	20	95.00700	Gross Alpha	Liquid	9/7/95	10/20/95	Duplicate Group B	0.02	pCi/mL	N/A		
11	20	95.00700	Gross Beta	Liquid	9/7/95	10/20/95	Duplicate Group B	0.19	pCi/mL	N/A		
11	20	95.00732	Gross Gamma	Liquid	9/7/95	10/18/95	Duplicate Group B	1.89	pCi/mL	N/A	Yes	Yes
11	20	95.00667	Tritium	Liquid	9/7/95	9/8/95	Duplicate Group B	367.17	pCi/L	N/A		
11	20	95.00699	Gross Alpha	Liquid	9/7/95	10/20/95	Duplicate Group A	0.02	pCi/mL	N/A		
11	20	95.00699	Gross Beta	Liquid	9/7/95	10/20/95	Duplicate Group A	0.10	pCi/mL	N/A		
11	20	95.00731	Gross Gamma	Liquid	9/7/95	10/18/95	Duplicate Group A	0.61	pCi/mL	N/A	Yes	
11	20	95.00666	Tritium	Liquid	9/7/95	9/8/95	Duplicate Group A	0.00	pCi/L	N/A		
11	20	95.00701	Gross Alpha	Liquid	9/7/95	10/20/95	Rinse	0.00	pCi/mL	N/A		
11	20	95.00701	Gross Beta	Liquid	9/7/95	10/20/95	Rinse	-0.08	pCi/mL	N/A		
11	20	95.00733	Gross Gamma	Liquid	9/7/95	10/18/95	Rinse	-0.35	pCi/mL	N/A		
11	20	95.00669	Tritium	Liquid	9/7/95	9/8/95	Rinse	0.00	pCi/L	N/A		
11	43	95.00703	Gross Alpha	Liquid	9/7/95	10/20/95	Rinse	0.06	pCi/mL	N/A		
11	43	95.00703	Gross Beta	Liquid	9/7/95	10/20/95	Rinse	-0.13	pCi/mL	N/A		
11	43	95.00735	Gross Gamma	Liquid	9/7/95	10/18/95	Rinse	-0.78	pCi/mL	N/A		
11	43	95.00668	Tritium	Liquid	9/7/95	9/8/95	Rinse	966.33	pCi/L	N/A		
11	43	95.00702	Gross Alpha	Liquid	9/7/95	10/20/95		0.10	pCi/mL	N/A		
11	43	95.00702	Gross Beta	Liquid	9/7/95	10/20/95		0.17	pCi/mL	N/A		
11	43	95.00734	Gross Gamma	Liquid	9/7/95	10/18/95		-0.59	pCi/mL	N/A		
11	43	95.00664	Tritium	Liquid	9/7/95	9/8/95		0.00	pCi/L	N/A		
11	43	95.00767	Gross Alpha	Sludge	9/7/95	10/24/95		0.77	pCi/g	96.69		
11	43	95.00767	Gross Beta	Sludge	9/7/95	10/24/95		2.91	pCi/g	96.69		
11	43	95.00750	Gross Gamma	Sludge	9/7/95	10/24/95		-4.76	pCi/g	96.69		
11	43	95.00665	Tritium	Sludge	9/7/95	9/8/95		0.39	pCi/g	96.69	Yes	
15	51	95.00557	Gross Alpha	Liquid	8/21/95	10/20/95		0.02	pCi/mL	N/A		
15	51	95.00557	Gross Beta	Liquid	8/21/95	10/20/95		0.19	pCi/mL	N/A		
15	51	95.00582	Gross Gamma	Liquid	8/21/95	10/18/95		-0.13	pCi/mL	N/A		
15	51	95.00514	Tritium	Liquid	8/21/95	8/23/95		609.05	pCi/L	N/A		
15	51	95.00572	Gross Alpha	Sludge	8/21/95	10/24/95		4.63	pCi/g	95.29		
15	51	95.00572	Gross Beta	Sludge	8/21/95	10/24/95		3.43	pCi/g	95.29		
15	51	95.00597	Gross Gamma	Sludge	8/21/95	10/24/95		-3.85	pCi/g	95.29		
15	51	95.00520	Tritium	Sludge	8/21/95	8/23/95		0.00	pCi/g	95.29		
15	61	95.00558	Gross Alpha	Liquid	8/21/95	10/20/95		0.06	pCi/mL	N/A		
15	61	95.00558	Gross Beta	Liquid	8/21/95	10/20/95		0.10	pCi/mL	N/A		
15	61	95.00583	Gross Gamma	Liquid	8/21/95	10/18/95		0.55	pCi/mL	N/A	Yes	
15	61	95.00515	Tritium	Liquid	8/21/95	8/23/95		1421.76	pCi/L	N/A	Yes	
15	62	95.00559	Gross Alpha	Liquid	8/21/95	10/20/95		0.00	pCi/mL	N/A		
15	62	95.00559	Gross Beta	Liquid	8/21/95	10/20/95		0.20	pCi/mL	N/A		
15	62	95.00584	Gross Gamma	Liquid	8/21/95	10/18/95		0.07	pCi/mL	N/A		
15	62	95.00516	Tritium	Liquid	8/21/95	8/23/95		488.48	pCi/L	N/A		
15	205	95.00560	Gross Alpha	Liquid	8/21/95	10/20/95		0.00	pCi/mL	N/A		
15	205	95.00560	Gross Beta	Liquid	8/21/95	10/20/95		-0.03	pCi/mL	N/A		
15	205	95.00585	Gross Gamma	Liquid	8/21/95	10/18/95		0.44	pCi/mL	N/A		
15	205	95.00517	Tritium	Liquid	8/21/95	8/23/95		309.54	pCi/L	N/A		
15	205	95.00573	Gross Alpha	Sludge	8/21/95	10/24/95		6.56	pCi/g	95.59		
15	205	95.00573	Gross Beta	Sludge	8/21/95	10/24/95		28.07	pCi/g	95.59	Yes	

Table 9. Screening Analysis Results for the Initial Sampling Period

Technical Area	Structure Number	Sample Number	Analysis	Physical State	Date Sampled	Date Analyzed	Sample Type	Measurement	Units	Percent Moisture Content	Is the Measurement Greater than the MDA?	Is the Measurement Greater than the MDA and the Screening Level?
15	205	95.00598	Gross Gamma	Sludge	8/21/95	10/24/95		-2.96	pCi/g	95.59		
15	205	95.00521	Tritium	Sludge	8/21/95	8/23/95		0.00	pCi/g	95.59		
15	284	95.00561	Gross Alpha	Liquid	8/21/95	10/20/95		0.02	pCi/mL	N/A		
15	284	95.00561	Gross Beta	Liquid	8/21/95	10/20/95		0.30	pCi/mL	N/A		
15	284	95.00586	Gross Gamma	Liquid	8/21/95	10/18/95		0.22	pCi/mL	N/A		
15	284	95.00518	Tritium	Liquid	8/21/95	8/23/95		276.72	pCi/L	N/A		
16	175	95.00564	Gross Alpha	Liquid	8/23/95	10/23/95		-0.05	pCi/mL	N/A		
16	175	95.00564	Gross Beta	Liquid	8/23/95	10/23/95		0.06	pCi/mL	N/A		
16	175	95.00587	Gross Gamma	Liquid	8/23/95	10/18/95		0.03	pCi/mL	N/A		
16	175	95.00547	Tritium	Liquid	8/23/95	8/24/95		361.81	pCi/L	N/A		
16	175	95.00575	Gross Alpha	Sludge	8/23/95	10/24/95		16.21	pCi/g	54.91	Yes	
16	175	95.00575	Gross Beta	Sludge	8/23/95	10/24/95		11.56	pCi/g	54.91	Yes	
16	175	95.00599	Gross Gamma	Sludge	8/23/95	10/24/95		0.09	pCi/g	54.91		
16	175	95.00555	Tritium	Sludge	8/23/95	8/24/95		0.33	pCi/g	54.91	Yes	
16	178	95.00563	Gross Alpha	Liquid	8/21/95	10/23/95		0.08	pCi/mL	N/A		
16	178	95.00563	Gross Beta	Liquid	8/21/95	10/23/95		0.19	pCi/mL	N/A		
16	178	95.00588	Gross Gamma	Liquid	8/21/95	10/18/95		0.47	pCi/mL	N/A		
16	178	95.00519	Tritium	Liquid	8/21/95	8/23/95		516.12	pCi/L	N/A		
16	178	95.00574	Gross Alpha	Sludge	8/21/95	10/24/95		1.74	pCi/g	96.95		
16	178	95.00574	Gross Beta	Sludge	8/21/95	10/24/95		1.01	pCi/g	96.95		
16	178	95.00600	Gross Gamma	Sludge	8/21/95	10/24/95		-2.92	pCi/g	96.95		
16	178	95.00522	Tritium	Sludge	8/21/95	8/23/95		0.00	pCi/g	96.95		
16	371	95.00565	Gross Alpha	Liquid	8/23/95	10/20/95		0.06	pCi/mL	N/A		
16	371	95.00565	Gross Beta	Liquid	8/23/95	10/20/95		0.12	pCi/mL	N/A		
16	371	95.00589	Gross Gamma	Liquid	8/23/95	10/18/95		0.13	pCi/mL	N/A		
16	371	95.00548	Tritium	Liquid	8/23/95	8/24/95		863.26	pCi/L	N/A		
16	385	95.00627	Gross Alpha	Liquid	8/23/95	10/20/95		0.04	pCi/mL	N/A		
16	385	95.00627	Gross Beta	Liquid	8/23/95	10/20/95		-0.07	pCi/mL	N/A		
16	385	95.00590	Gross Gamma	Liquid	8/23/95	10/18/95		-0.28	pCi/mL	N/A		
16	385	95.00549	Tritium	Liquid	8/23/95	8/24/95		232.11	pCi/L	N/A		
16	385	95.00576	Gross Alpha	Sludge	8/23/95	10/24/95		2.70	pCi/g	98.82		
16	385	95.00576	Gross Beta	Sludge	8/23/95	10/24/95		3.17	pCi/g	98.82		
16	385	95.00601	Gross Gamma	Sludge	8/23/95	10/24/95		-4.38	pCi/g	98.82		
16	385	95.00556	Tritium	Sludge	8/23/95	8/24/95		3.14	pCi/g	98.82	Yes	
18	39	95.00680	Gross Alpha	Liquid	8/30/95	10/20/95		0.35	pCi/mL	N/A		
18	39	95.00680	Gross Beta	Liquid	8/30/95	10/20/95		-0.06	pCi/mL	N/A		
18	39	95.00712	Gross Gamma	Liquid	8/30/95	10/18/95		0.02	pCi/mL	N/A		
18	39	95.00613	Tritium	Liquid	8/30/95	9/1/95		5514.46	pCi/L	N/A	Yes	
18	39	95.00760	Gross Alpha	Sludge	8/30/95	10/24/95		400.27	pCi/g	65.59	Yes	
18	39	95.00760	Gross Beta	Sludge	8/30/95	10/24/95		43.97	pCi/g	65.59	Yes	
18	39	95.00743	Gross Gamma	Sludge	8/30/95	10/24/95		0.46	pCi/g	65.59		
18	39	95.00614	Tritium	Sludge	8/30/95	9/1/95		0.00	pCi/g	65.59		
18	42	95.00681	Gross Alpha	Liquid	8/30/95	10/20/95		0.08	pCi/mL	N/A		
18	42	95.00681	Gross Beta	Liquid	8/30/95	10/20/95		0.34	pCi/mL	N/A		
18	42	95.00713	Gross Gamma	Liquid	8/30/95	10/18/95		0.17	pCi/mL	N/A		
18	42	95.00616	Tritium	Liquid	8/30/95	9/1/95		691.32	pCi/L	N/A		
18	120	95.00682	Gross Alpha	Liquid	8/30/95	10/20/95		0.06	pCi/mL	N/A		
18	120	95.00682	Gross Beta	Liquid	8/30/95	10/20/95		-0.20	pCi/mL	N/A		
18	120	95.00714	Gross Gamma	Liquid	8/30/95	10/18/95		0.11	pCi/mL	N/A		
18	120	95.00615	Tritium	Liquid	8/30/95	9/1/95		484.38	pCi/L	N/A		
33	31	95.00566	Gross Alpha	Liquid	8/23/95	10/20/95		-0.02	pCi/mL	N/A		
33	31	95.00566	Gross Beta	Liquid	8/23/95	10/20/95		0.06	pCi/mL	N/A		
33	31	95.00591	Gross Gamma	Liquid	8/23/95	10/18/95		0.11	pCi/mL	N/A		
33	31	95.00544	Tritium	Liquid	8/23/95	8/24/95		394.25	pCi/L	N/A		
33	31	95.00577	Gross Alpha	Sludge	8/23/95	10/24/95		-0.19	pCi/g	97.24		
33	31	95.00577	Gross Beta	Sludge	8/23/95	10/24/95		5.70	pCi/g	97.24		
33	31	95.00602	Gross Gamma	Sludge	8/23/95	10/24/95		-4.31	pCi/g	97.24		
33	31	95.00552	Tritium	Sludge	8/23/95	8/24/95		0.00	pCi/g	97.24		
33	93	95.00567	Gross Alpha	Liquid	8/23/95	10/23/95		0.06	pCi/mL	N/A		
33	93	95.00567	Gross Beta	Liquid	8/23/95	10/23/95		-0.10	pCi/mL	N/A		
33	93	95.00592	Gross Gamma	Liquid	8/23/95	10/18/95		0.53	pCi/mL	N/A	Yes	
33	93	95.00542	Tritium	Liquid	8/23/95	8/24/95		66523.11	pCi/L	N/A	Yes	Yes
33	93	95.00578	Gross Alpha	Sludge	8/23/95	10/24/95		7.53	pCi/g	95.78		
33	93	95.00578	Gross Beta	Sludge	8/23/95	10/24/95		20.02	pCi/g	95.78	Yes	
33	93	95.00603	Gross Gamma	Sludge	8/23/95	10/24/95		-3.70	pCi/g	95.78		
33	93	95.00551	Tritium	Sludge	8/23/95	8/24/95		1545.55	pCi/g	95.78	Yes	
33	96	95.00568	Gross Alpha	Liquid	8/23/95	10/20/95		0.00	pCi/mL	N/A		
33	96	95.00568	Gross Beta	Liquid	8/23/95	10/20/95		0.09	pCi/mL	N/A		
33	96	95.00593	Gross Gamma	Liquid	8/23/95	10/18/95		0.17	pCi/mL	N/A		
33	96	95.00543	Tritium	Liquid	8/23/95	8/24/95		400.13	pCi/L	N/A		
33	179	95.00569	Gross Alpha	Liquid	8/23/95	10/20/95		-0.02	pCi/mL	N/A		
33	179	95.00569	Gross Beta	Liquid	8/23/95	10/20/95		0.04	pCi/mL	N/A		
33	179	95.00594	Gross Gamma	Liquid	8/23/95	10/18/95		0.42	pCi/mL	N/A		
33	179	95.00545	Tritium	Liquid	8/23/95	8/24/95		271.89	pCi/L	N/A		
33	179	95.00579	Gross Alpha	Sludge	8/23/95	10/24/95		3.67	pCi/g	97.56		
33	179	95.00579	Gross Beta	Sludge	8/23/95	10/24/95		4.67	pCi/g	97.56		
33	179	95.00604	Gross Gamma	Sludge	8/23/95	10/24/95		-4.08	pCi/g	97.56		
33	179	95.00553	Tritium	Sludge	8/23/95	8/24/95		0.00	pCi/g	97.56		
36	61	95.00695	Gross Alpha	Liquid	9/7/95	10/20/95	Split Group A	0.08	pCi/mL	N/A		
36	61	95.00695	Gross Beta	Liquid	9/7/95	10/20/95	Split Group A	-0.16	pCi/mL	N/A		
36	61	95.00727	Gross Gamma	Liquid	9/7/95	10/18/95	Split Group A	-0.39	pCi/mL	N/A		
36	61	95.00655	Tritium	Liquid	9/7/95	9/8/95	Split Group A	0.00	pCi/L	N/A		
36	61	95.00697	Gross Alpha	Liquid	9/7/95	10/20/95	Rinse	0.00	pCi/mL	N/A		

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36	61	95.00697	Gross Beta	Liquid	9/7/95	10/20/95	Rinse	-0.01	pCi/mL	N/A		
36	61	95.00729	Gross Gamma	Liquid	9/7/95	10/18/95	Rinse	-0.40	pCi/mL	N/A		
36	61	95.00671	Tritium	Liquid	9/7/95	9/8/95	Rinse	288.79	pCi/L	N/A		
36	61	95.00696	Gross Alpha	Liquid	9/7/95		Split Group B			N/A		
36	61	95.00696	Gross Beta	Liquid	9/7/95		Split Group B			N/A		
36	61	95.00728	Gross Gamma	Liquid	9/7/95		Split Group B			N/A		
36	61	95.00660	Tritium	Liquid	9/7/95	9/8/95	Split Group B	291.49	pCi/L	N/A		
39	104	95.00570	Gross Alpha	Liquid	8/23/95	10/20/95		0.02	pCi/mL	N/A		
39	104	95.00570	Gross Beta	Liquid	8/23/95	10/20/95		0.16	pCi/mL	N/A		
39	104	95.00595	Gross Gamma	Liquid	8/23/95	10/18/95		0.18	pCi/mL	N/A		
39	104	95.00541	Tritium	Liquid	8/23/95	8/24/95		0.00	pCi/L	N/A		
39	104	95.00580	Gross Alpha	Sludge	8/23/95	10/24/95		4.63	pCi/g	95.05		
39	104	95.00580	Gross Beta	Sludge	8/23/95	10/24/95		3.54	pCi/g	95.05		
39	104	95.00605	Gross Gamma	Sludge	8/23/95	10/24/95		-5.44	pCi/g	95.05		
39	104	95.00550	Tritium	Sludge	8/23/95	8/24/95		0.64	pCi/g	95.05	Yes	
39	132	95.00571	Gross Alpha	Liquid	8/23/95	10/20/95		0.06	pCi/mL	N/A		
39	132	95.00571	Gross Beta	Liquid	8/23/95	10/20/95		0.07	pCi/mL	N/A		
39	132	95.00596	Gross Gamma	Liquid	8/23/95	10/18/95		0.69	pCi/mL	N/A	Yes	
39	132	95.00546	Tritium	Liquid	8/23/95	8/24/95		476.33	pCi/L	N/A		
39	132	95.00581	Gross Alpha	Sludge	8/23/95	10/24/95		1.74	pCi/g	96.99		
39	132	95.00581	Gross Beta	Sludge	8/23/95	10/24/95		2.33	pCi/g	96.99		
39	132	95.00606	Gross Gamma	Sludge	8/23/95	10/24/95		-4.67	pCi/g	96.99		
39	132	95.00554	Tritium	Sludge	8/23/95	8/24/95		0.00	pCi/g	96.99		
40	24	95.00686	Gross Alpha	Liquid	9/5/95	10/20/95		0.02	pCi/mL	N/A		
40	24	95.00686	Gross Beta	Liquid	9/5/95	10/20/95		0.16	pCi/mL	N/A		
40	24	95.00718	Gross Gamma	Liquid	9/5/95	10/18/95		-0.01	pCi/mL	N/A		
40	24	95.00642	Tritium	Liquid	9/5/95	9/8/95		344.56	pCi/L	N/A		
40	24	95.00762	Gross Alpha	Sludge	9/5/95	10/24/95		2.70	pCi/g	92.61		
40	24	95.00762	Gross Beta	Sludge	9/5/95	10/24/95		3.72	pCi/g	92.61		
40	24	95.00745	Gross Gamma	Sludge	9/5/95	10/24/95		-3.04	pCi/g	92.61		
40	24	95.00643	Tritium	Sludge	9/5/95	9/8/95		0.11	pCi/g	92.61		
40	25	95.00775	Gross Alpha	Liquid	9/5/95	10/20/95	Duplicate Group B	0.08	pCi/mL	N/A		
40	25	95.00775	Gross Beta	Liquid	9/5/95	10/20/95	Duplicate Group B	0.29	pCi/mL	N/A		
40	25	95.00774	Gross Gamma	Liquid	9/5/95	10/18/95	Duplicate Group B	0.43	pCi/mL	N/A		
40	25	95.00646	Tritium	Liquid	9/5/95	9/8/95	Duplicate Group B	229.44	pCi/L	N/A		
40	25	95.00771	Gross Alpha	Sludge	9/5/95	10/24/95	Duplicate Group B	3.67	pCi/g	93.78		
40	25	95.00771	Gross Beta	Sludge	9/5/95	10/24/95	Duplicate Group B	3.03	pCi/g	93.78		
40	25	95.00754	Gross Gamma	Sludge	9/5/95	10/24/95	Duplicate Group B	-5.42	pCi/g	93.78		
40	25	95.00647	Tritium	Sludge	9/5/95	9/8/95	Duplicate Group B	1.59	pCi/g	93.78	Yes	
40	25	95.00687	Gross Alpha	Liquid	9/5/95	10/20/95	Duplicate Group A	0.08	pCi/mL	N/A		
40	25	95.00687	Gross Beta	Liquid	9/5/95	10/20/95	Duplicate Group A	0.23	pCi/mL	N/A		
40	25	95.00719	Gross Gamma	Liquid	9/5/95	10/18/95	Duplicate Group A	0.10	pCi/mL	N/A		
40	25	95.00644	Tritium	Liquid	9/5/95	9/8/95	Duplicate Group A	902.44	pCi/L	N/A		
40	25	95.00763	Gross Alpha	Sludge	9/5/95	10/24/95	Duplicate Group A	1.74	pCi/g	97.31		
40	25	95.00763	Gross Beta	Sludge	9/5/95	10/24/95	Duplicate Group A	-0.31	pCi/g	97.31		
40	25	95.00746	Gross Gamma	Sludge	9/5/95	10/24/95	Duplicate Group A	-5.45	pCi/g	97.31		
40	25	95.00645	Tritium	Sludge	9/5/95	9/8/95	Duplicate Group A	0.97	pCi/g	97.31	Yes	
46	230	95.00692	Gross Alpha	Liquid	9/6/95	10/20/95	Split Group A	0.04	pCi/mL	N/A		
46	230	95.00692	Gross Beta	Liquid	9/6/95	10/20/95	Split Group A	0.29	pCi/mL	N/A		
46	230	95.00724	Gross Gamma	Liquid	9/6/95	10/18/95	Split Group A	-0.48	pCi/mL	N/A		
46	230	95.00656	Tritium	Liquid	9/6/95	9/8/95	Split Group A	478.51	pCi/L	N/A		
46	230	95.00694	Gross Alpha	Liquid	9/6/95	10/20/95	Rinse	0.06	pCi/mL	N/A		
46	230	95.00694	Gross Beta	Liquid	9/6/95	10/20/95	Rinse	-0.18	pCi/mL	N/A		
46	230	95.00726	Gross Gamma	Liquid	9/6/95	10/18/95	Rinse	-0.35	pCi/mL	N/A		
46	230	95.00672	Tritium	Liquid	9/6/95	9/8/95	Rinse	502.48	pCi/L	N/A		
46	230	95.00693	Gross Alpha	Liquid	9/6/95		Split Group B			N/A		
46	230	95.00693	Gross Beta	Liquid	9/6/95		Split Group B			N/A		
46	230	95.00725	Gross Gamma	Liquid	9/6/95		Split Group B			N/A		
46	230	95.00661	Tritium	Liquid	9/6/95	9/8/95	Split Group B	0.00	pCi/L	N/A		
49	118	95.00674	Gross Alpha	Liquid	8/30/99	10/20/95	Duplicate Group B	0.02	pCi/mL	N/A		
49	118	95.00674	Gross Beta	Liquid	8/30/99	10/20/95	Duplicate Group B	0.30	pCi/mL	N/A		
49	118	95.00706	Gross Gamma	Liquid	8/30/99	10/18/95	Duplicate Group B	0.65	pCi/mL	N/A	Yes	
49	118	95.00620	Tritium	Liquid	8/30/99	9/1/95	Duplicate Group B	399.55	pCi/L	N/A		
49	118	95.00756	Gross Alpha	Sludge	8/30/99	10/24/95	Duplicate Group B	11.39	pCi/g	71.63		
49	118	95.00756	Gross Beta	Sludge	8/30/99	10/24/95	Duplicate Group B	7.02	pCi/g	71.63	Yes	
49	118	95.00739	Gross Gamma	Sludge	8/30/99	10/24/95	Duplicate Group B	-1.93	pCi/g	71.63		
49	118	95.00621	Tritium	Sludge	8/30/99	9/1/95	Duplicate Group B	1.14	pCi/g	71.63	Yes	
49	118	95.00673	Gross Alpha	Liquid	8/30/99	10/20/95	Duplicate Group A	0.00	pCi/mL	N/A		
49	118	95.00673	Gross Beta	Liquid	8/30/99	10/20/95	Duplicate Group A	-0.26	pCi/mL	N/A		
49	118	95.00705	Gross Gamma	Liquid	8/30/99	10/18/95	Duplicate Group A	0.71	pCi/mL	N/A	Yes	
49	118	95.00622	Tritium	Liquid	8/30/99	9/1/95	Duplicate Group A	3211.30	pCi/L	N/A	Yes	
49	118	95.00755	Gross Alpha	Sludge	8/30/99	10/24/95	Duplicate Group A	7.53	pCi/g	74.35		
49	118	95.00755	Gross Beta	Sludge	8/30/99	10/24/95	Duplicate Group A	7.38	pCi/g	74.35	Yes	
49	118	95.00738	Gross Gamma	Sludge	8/30/99	10/24/95	Duplicate Group A	-3.81	pCi/g	74.35		
49	118	95.00619	Tritium	Sludge	8/30/99	9/1/95	Duplicate Group A	1.18	pCi/g	74.35	Yes	
49	119	95.00675	Gross Alpha	Liquid	8/30/99	10/20/95		0.04	pCi/mL	N/A		
49	119	95.00675	Gross Beta	Liquid	8/30/99	10/20/95		-0.07	pCi/mL	N/A		
49	119	95.00707	Gross Gamma	Liquid	8/30/99	10/18/95		0.28	pCi/mL	N/A		
49	119	95.00618	Tritium	Liquid	8/30/99	9/1/95		798.10	pCi/L	N/A		
49	119	95.00757	Gross Alpha	Sludge	8/30/99	10/24/95		14.28	pCi/g	57.43	Yes	
49	119	95.00757	Gross Beta	Sludge	8/30/99	10/24/95		10.10	pCi/g	57.43	Yes	
49	119	95.00740	Gross Gamma	Sludge	8/30/99	10/24/95		1.16	pCi/g	57.43		
49	119	95.00623	Tritium	Sludge	8/30/99	9/1/95		0.00	pCi/g	57.43		

Table 9. Screening Analysis Results for the Initial Sampling Period

Technical Area	Structure Number	Sample Number	Analysis	Physical State	Date Sampled	Date Analyzed	Sample Type	Measurement	Units	Percent Moisture Content	Is the Measurement Greater than the MDA?	Is the Measurement Greater than the MDA and the Screening Level?
52	99	95.00764	Gross Alpha	Sludge	9/5/95	10/24/95	Split Group A	3.67	pCi/g	95.11		
52	99	95.00764	Gross Beta	Sludge	9/5/95	10/24/95	Split Group A	3.57	pCi/g	95.11		
52	99	95.00747	Gross Gamma	Sludge	9/5/95	10/24/95	Split Group A	-4.55	pCi/g	95.11		
52	99	95.00641	Tritium	Sludge	9/5/95	9/8/95	Split Group A	1.30	pCi/g	95.11	Yes	
52	99	95.00768	Gross Alpha	Sludge	9/5/95		Split Group B			95.11		
52	99	95.00768	Gross Beta	Sludge	9/5/95		Split Group B			95.11		
52	99	95.00751	Gross Gamma	Sludge	9/5/95		Split Group B			95.11		
52	99	95.00663	Tritium	Sludge	9/5/95	9/8/95	Split Group B	0.76	pCi/g	95.11	Yes	
52	99	95.00688	Gross Alpha	Liquid	9/5/95	10/20/95		0.02	pCi/mL	N/A		
52	99	95.00688	Gross Beta	Liquid	9/5/95	10/20/95		-0.02	pCi/mL	N/A		
52	99	95.00720	Gross Gamma	Liquid	9/5/95	10/18/95		0.21	pCi/mL	N/A		
52	99	95.00640	Tritium	Liquid	9/5/95	9/8/95		1461.72	pCi/L	N/A	Yes	
54	16	95.00765	Gross Alpha	Sludge	9/5/95	10/24/95	Split Group A	5.60	pCi/g	63.71		
54	16	95.00765	Gross Beta	Sludge	9/5/95	10/24/95	Split Group A	5.92	pCi/g	63.71		
54	16	95.00748	Gross Gamma	Sludge	9/5/95	10/24/95	Split Group A	-0.45	pCi/g	63.71		
54	16	95.00653	Tritium	Sludge	9/5/95	9/8/95	Split Group A	1.01	pCi/g	63.71	Yes	
54	16	95.00770	Gross Alpha	Sludge	9/5/95		Split Group B			63.71		
54	16	95.00770	Gross Beta	Sludge	9/5/95		Split Group B			63.71		
54	16	95.00753	Gross Gamma	Sludge	9/5/95		Split Group B			63.71		
54	16	95.00662	Tritium	Sludge	9/5/95	9/8/95	Split Group B	0.55	pCi/g	63.71	Yes	
54	16	95.00689	Gross Alpha	Liquid	9/5/95	10/20/95		0.08	pCi/mL	N/A		
54	16	95.00689	Gross Beta	Liquid	9/5/95	10/20/95		0.04	pCi/mL	N/A		
54	16	95.00721	Gross Gamma	Liquid	9/5/95	10/18/95		-0.29	pCi/mL	N/A		
54	16	95.00652	Tritium	Liquid	9/5/95	9/8/95		329.49	pCi/L	N/A		
66	3	95.00690	Gross Alpha	Liquid	9/5/95	10/20/95	Split Group A	0.00	pCi/mL	N/A		
66	3	95.00690	Gross Beta	Liquid	9/5/95	10/20/95	Split Group A	-0.01	pCi/mL	N/A		
66	3	95.00722	Gross Gamma	Liquid	9/5/95	10/18/95	Split Group A	-0.01	pCi/mL	N/A		
66	3	95.00648	Tritium	Liquid	9/5/95	9/8/95	Split Group A	560.57	pCi/L	N/A		
66	3	95.00766	Gross Alpha	Sludge	9/5/95	10/24/95	Split Group A	3.67	pCi/g	97.42		
66	3	95.00766	Gross Beta	Sludge	9/5/95	10/24/95	Split Group A	4.45	pCi/g	97.42		
66	3	95.00749	Gross Gamma	Sludge	9/5/95	10/24/95	Split Group A	-4.58	pCi/g	97.42		
66	3	95.00649	Tritium	Sludge	9/5/95	9/8/95	Split Group A	1.42	pCi/g	97.42	Yes	
66	3	95.00691	Gross Alpha	Liquid	9/5/95		Split Group B			N/A		
66	3	95.00691	Gross Beta	Liquid	9/5/95		Split Group B			N/A		
66	3	95.00723	Gross Gamma	Liquid	9/5/95		Split Group B			N/A		
66	3	95.00650	Tritium	Liquid	9/5/95	9/8/95	Split Group B	1038.96	pCi/L	N/A		
66	3	95.00769	Gross Alpha	Sludge	9/5/95		Split Group B			97.42		
66	3	95.00769	Gross Beta	Sludge	9/5/95		Split Group B			97.42		
66	3	95.00752	Gross Gamma	Sludge	9/5/95		Split Group B			97.42		
66	3	95.00651	Tritium	Sludge	9/5/95	9/8/95	Split Group B	2.74	pCi/g	97.42	Yes	
69	9	95.00676	Gross Alpha	Liquid	8/29/95	10/20/95		0.04	pCi/mL	N/A		
69	9	95.00676	Gross Beta	Liquid	8/29/95	10/20/95		0.13	pCi/mL	N/A		
69	9	95.00708	Gross Gamma	Liquid	8/29/95	10/18/95		0.13	pCi/mL	N/A		
69	9	95.00617	Tritium	Liquid	8/29/95	9/1/95		3034.31	pCi/L	N/A	Yes	
69	10	95.00698	Gross Alpha	Liquid	9/6/95	10/20/95		0.08	pCi/mL	N/A		
69	10	95.00698	Gross Beta	Liquid	9/6/95	10/20/95		0.20	pCi/mL	N/A		
69	10	95.00730	Gross Gamma	Liquid	9/6/95	10/18/95		0.47	pCi/mL	N/A		
69	10	95.00657	Tritium	Liquid	9/6/95	9/8/95		563.47	pCi/L	N/A		
69	10	95.00761	Gross Alpha	Sludge	9/6/95	10/24/95		1.74	pCi/g	96.12		
69	10	95.00761	Gross Beta	Sludge	9/6/95	10/24/95		1.56	pCi/g	96.12		
69	10	95.00744	Gross Gamma	Sludge	9/6/95	10/24/95		-4.44	pCi/g	96.12		
69	10	95.00658	Tritium	Sludge	9/6/95	9/8/95		0.29	pCi/g	96.12	Yes	
		95.00562	Gross Alpha	Liquid		10/20/95	Distilled Water Blank	-0.05	pCi/mL	N/A		
		95.00562	Gross Beta	Liquid		10/20/95	Distilled Water Blank	0.11	pCi/mL	N/A		
		95.00523	Tritium	Liquid		8/23/95	Distilled Water Blank	319.85	pCi/L	N/A		

Table 10. Alpha and Beta Reanalysis for the Initial Sampling Period

Technical Area	Structure Number	Sample Number	Analysis	Physical State	Date Sampled	Date Analyzed	Sample Type	Measurement (pCi/L)	Measurement Uncertainty (2 Sigma) (pCi/L)	Minimum Detectable Activity (pCi/L)	Is the Measurement Greater than the Minimum Detectable Activity?	Is the Measurement Greater than the Minimum Detectable Activity and Greater Than the Screening Level?
3	2087	95.00715	Gross Alpha	Liquid	9/6/95	4/22/96	Split Group A	4.97E-01	3.69E+00	1.25E+01		
3	2087	95.00717	Gross Alpha	Liquid	9/6/95	4/22/96	Rinse	3.33E-01	9.80E-01	3.39E+00		
3	2087	95.00715	Gross Beta	Liquid	9/6/95	4/22/96	Split Group A	3.57E+01	2.54E+00	6.64E+00	Yes	
3	2087	95.00717	Gross Beta	Liquid	9/6/95	4/22/96	Rinse	2.92E+00	1.92E+00	6.31E+00		
8	30	95.00736	Gross Alpha	Liquid	9/11/95	4/22/96		1.57E+00	1.67E+00	5.62E+00		
8	30	95.00736	Gross Beta	Liquid	9/11/95	4/22/96		1.48E+01	2.14E+00	6.50E+00	Yes	
9	109	95.00710	Gross Alpha	Liquid	8/30/95	4/22/96	Duplicate Group B	5.53E+00	1.99E+00	5.95E+00		
9	109	95.00709	Gross Alpha	Liquid	8/30/95	4/22/96	Duplicate Group A	4.10E-01	1.26E+00	4.38E+00		
9	109	95.00710	Gross Beta	Liquid	8/30/95	4/22/96	Duplicate Group B	9.62E+00	2.09E+00	6.57E+00	Yes	
9	109	95.00709	Gross Beta	Liquid	8/30/95	4/22/96	Duplicate Group A	7.06E+00	2.01E+00	6.43E+00	Yes	
9	110	95.00711	Gross Alpha	Liquid	8/30/95	4/22/96		3.07E+00	1.01E+00	3.02E+00	Yes	
9	110	95.00711	Gross Beta	Liquid	8/30/95	4/22/96		6.16E+00	1.94E+00	6.24E+00		
11	20	95.00732	Gross Alpha	Liquid	9/7/95	4/22/96	Duplicate Group B	2.41E+00	8.02E+00	2.70E+01		
11	20	95.00731	Gross Alpha	Liquid	9/7/95	4/22/96	Duplicate Group A	2.09E+00	9.40E+00	3.17E+01		
11	20	95.00733	Gross Alpha	Liquid	9/7/95	4/22/96	Rinse	3.91E-01	8.89E-01	3.06E+00		
11	20	95.00732	Gross Beta	Liquid	9/7/95	4/22/96	Duplicate Group B	5.90E+01	3.06E+00	6.77E+00	Yes	Yes
11	20	95.00731	Gross Beta	Liquid	9/7/95	4/22/96	Duplicate Group A	5.29E+01	2.96E+00	6.86E+00	Yes	Yes
11	20	95.00733	Gross Beta	Liquid	9/7/95	4/22/96	Rinse	1.47E+00	1.89E+00	6.26E+00		
11	43	95.00735	Gross Alpha	Liquid	9/7/95	4/22/96	Rinse	-5.49E-02	9.42E-01	3.33E+00		
11	43	95.00734	Gross Alpha	Liquid	9/7/95	4/22/96		1.26E+00	4.60E+00	1.56E+01		
11	43	95.00735	Gross Beta	Liquid	9/7/95	4/22/96	Rinse	2.82E+00	1.91E+00	6.30E+00		
11	43	95.00734	Gross Beta	Liquid	9/7/95	4/22/96		3.47E+01	2.55E+00	6.73E+00	Yes	
15	51	95.00582	Gross Alpha	Liquid	8/21/95	4/22/96		7.99E+00	1.22E+01	4.12E+01		
15	51	95.00582	Gross Beta	Liquid	8/21/95	4/22/96		4.47E+01	2.85E+00	7.04E+00	Yes	
15	61	95.00583	Gross Alpha	Liquid	8/21/95	4/22/96		-7.49E-02	1.18E+00	4.18E+00		
15	61	95.00583	Gross Beta	Liquid	8/21/95	4/22/96		4.85E+00	1.97E+00	6.41E+00		
15	62	95.00584	Gross Alpha	Liquid	8/21/95	4/22/96		1.03E+00	2.02E+00	6.91E+00		
15	62	95.00584	Gross Beta	Liquid	8/21/95	4/22/96		1.49E+01	2.17E+00	6.59E+00	Yes	
15	205	95.00585	Gross Alpha	Liquid	8/21/95	4/22/96		6.25E+00	2.91E+00	9.36E+00		
15	205	95.00585	Gross Beta	Liquid	8/21/95	4/22/96		2.63E+01	2.36E+00	6.61E+00	Yes	
15	284	95.00586	Gross Alpha	Liquid	8/21/95	4/22/96		9.41E-01	9.41E-01	3.15E+00		
15	284	95.00586	Gross Beta	Liquid	8/21/95	4/22/96		2.14E+00	1.90E+00	6.27E+00		
16	175	95.00587	Gross Alpha	Liquid	8/23/95	4/22/96		4.46E-01	1.40E+00	4.87E+00		
16	175	95.00587	Gross Beta	Liquid	8/23/95	4/22/96		8.42E+00	2.04E+00	6.48E+00	Yes	
16	178	95.00588	Gross Alpha	Liquid	8/21/95	4/22/96		1.89E+00	3.80E+00	1.29E+01		
16	178	95.00588	Gross Beta	Liquid	8/21/95	4/22/96		2.78E+01	2.42E+00	6.72E+00	Yes	
16	371	95.00589	Gross Alpha	Liquid	8/23/95	4/22/96		4.31E-01	1.10E+00	3.81E+00		
16	371	95.00589	Gross Beta	Liquid	8/23/95	4/22/96		1.19E+01	2.05E+00	6.34E+00	Yes	
16	385	95.00590	Gross Alpha	Liquid	8/23/95	4/22/96		8.33E-01	1.37E+00	4.66E+00		
16	385	95.00590	Gross Beta	Liquid	8/23/95	4/22/96		1.66E+01	2.14E+00	6.40E+00	Yes	
18	39	95.00712	Gross Alpha	Liquid	8/30/95	4/22/96		3.51E+03	6.37E+02	1.03E+02	Yes	Yes
18	39	95.00712	Gross Beta	Liquid	8/30/95	4/22/96		1.37E+02	5.80E+00	9.91E+00	Yes	Yes
18	42	95.00713	Gross Alpha	Liquid	8/30/95	4/22/96		8.67E+02	1.01E+02	4.14E+01	Yes	Yes
18	42	95.00713	Gross Beta	Liquid	8/30/95	4/22/96		1.36E+02	5.13E+00	7.11E+00	Yes	Yes
18	120	95.00714	Gross Alpha	Liquid	8/30/95	4/22/96		7.32E-01	1.45E+00	4.98E+00		
18	120	95.00714	Gross Beta	Liquid	8/30/95	4/22/96		8.46E+00	2.04E+00	6.49E+00	Yes	
33	31	95.00591	Gross Alpha	Liquid	8/23/95	4/22/96		1.15E+01	3.25E+00	9.40E+00	Yes	
33	31	95.00591	Gross Beta	Liquid	8/23/95	4/22/96		2.13E+01	2.29E+00	6.65E+00	Yes	
33	93	95.00592	Gross Alpha	Liquid	8/23/95	4/22/96		3.22E-01	1.45E+01	4.81E+01		
33	93	95.00592	Gross Beta	Liquid	8/23/95	4/22/96		3.84E+02	1.12E+01	6.41E+00	Yes	Yes
33	96	95.00593	Gross Alpha	Liquid	8/23/95	4/22/96		2.05E+00	2.58E+00	8.71E+00		
33	96	95.00593	Gross Beta	Liquid	8/23/95	4/22/96		2.84E+01	2.38E+00	6.56E+00	Yes	
33	179	95.00594	Gross Alpha	Liquid	8/23/95	4/22/96		2.48E+00	4.38E+00	1.49E+01		
33	179	95.00594	Gross Beta	Liquid	8/23/95	4/22/96		2.60E+01	2.41E+00	6.79E+00	Yes	
36	61	95.00727	Gross Alpha	Liquid	9/7/95	4/22/96	Split Group A	1.50E+02	7.01E+01	2.12E+02		
36	61	95.00729	Gross Alpha	Liquid	9/7/95	4/22/96	Rinse	6.33E-01	1.01E+00	3.45E+00		
36	61	95.00727	Gross Beta	Liquid	9/7/95	4/22/96	Split Group A	1.30E+02	5.07E+00	7.33E+00	Yes	Yes
36	61	95.00729	Gross Beta	Liquid	9/7/95	4/22/96	Rinse	3.34E+00	1.93E+00	6.32E+00		
39	104	95.00595	Gross Alpha	Liquid	8/23/95	4/22/96		1.55E+01	7.02E+00	2.25E+01		
39	104	95.00595	Gross Beta	Liquid	8/23/95	4/22/96		4.00E+01	2.89E+00	6.83E+00	Yes	
39	132	95.00596	Gross Alpha	Liquid	8/23/95	4/22/96		1.96E+00	6.25E+00	2.12E+01		
39	132	95.00596	Gross Beta	Liquid	8/23/95	4/22/96		3.89E+01	2.86E+00	6.81E+00	Yes	
40	24	95.00718	Gross Alpha	Liquid	9/5/95	4/22/96		1.80E+00	4.12E+00	1.40E+01		
40	24	95.00718	Gross Beta	Liquid	9/5/95	4/22/96		3.37E+01	2.52E+00	6.69E+00	Yes	
40	25	95.00774	Gross Alpha	Liquid	9/5/95	4/22/96	Duplicate Group B	2.54E+00	3.48E+00	1.18E+01		
40	25	95.00719	Gross Alpha	Liquid	9/5/95	4/22/96	Duplicate Group A	4.04E-01	9.52E-01	3.28E+00		
40	25	95.00774	Gross Beta	Liquid	9/5/95	4/22/96	Duplicate Group B	1.21E+00	7.47E+00	2.50E+01		
40	25	95.00719	Gross Beta	Liquid	9/5/95	4/22/96	Duplicate Group A	5.43E+00	1.94E+00	6.28E+00		
46	230	95.00724	Gross Alpha	Liquid	9/6/95	4/22/96	Split Group A	-5.73E-01	1.20E+00	4.33E+00		
46	230	95.00726	Gross Alpha	Liquid	9/6/95	4/22/96	Rinse	3.58E-01	1.06E+00	3.66E+00		
46	230	95.00724	Gross Beta	Liquid	9/6/95	4/22/96	Split Group A	6.58E+00	2.00E+00	6.43E+00	Yes	
46	230	95.00726	Gross Beta	Liquid	9/6/95	4/22/96	Rinse	3.69E+00	1.94E+00	6.35E+00		
49	118	95.00706	Gross Alpha	Liquid	8/30/95	4/22/96	Duplicate Group B	1.00E+01	4.66E+00	1.51E+01		
49	118	95.00705	Gross Alpha	Liquid	8/30/95	4/22/96	Duplicate Group A	3.07E+00	6.04E+00	2.04E+01		
49	118	95.00706	Gross Beta	Liquid	8/30/95	4/22/96	Duplicate Group B	3.73E+01	2.59E+00	6.69E+00	Yes	
49	118	95.00705	Gross Beta	Liquid	8/30/95	4/22/96	Duplicate Group A	5.04E+01	2.86E+00	6.71E+00	Yes	Yes
49	119	95.00707	Gross Alpha	Liquid	8/30/95	4/22/96		6.73E+00	2.85E+00	9.04E+00		
49	119	95.00707	Gross Beta	Liquid	8/30/95	4/22/96		2.52E+01	2.34E+00	6.60E+00	Yes	
52	99	95.00720	Gross Alpha	Liquid	9/5/95	4/22/96		3.61E+00	4.75E+00	1.60E+01		

Table 10. Alpha and Beta Reanalysis for the Initial Sampling Period

Technical Area	Structure Number	Sample Number	Analysis	Physical State	Date Sampled	Date Analyzed	Sample Type	Measurement (pCi/L)	Measurement Uncertainty (2 Sigma) (pCi/L)	Minimum Detectable Activity (pCi/L)	Is the Measrurement Greater than the Minimum Detectable Activity?	Is the Measrurement Greater Than the Screening Level?
52	99	95.00720	Gross Beta	Liquid	9/5/95	4/22/96		3.33E+01	2.53E+00	6.75E+00	Yes	
54	16	95.00721	Gross Alpha	Liquid	9/5/95	4/22/96		7.55E-01	1.62E+00	5.57E+00		
54	16	95.00721	Gross Beta	Liquid	9/5/95	4/22/96		1.25E+01	2.11E+00	6.51E+00	Yes	
66	3	95.00722	Gross Alpha	Liquid	9/5/95	4/22/96	Split Group A	1.69E+00	2.02E+00	6.82E+00		
66	3	95.00722	Gross Beta	Liquid	9/5/95	4/22/96	Split Group A	2.46E+01	2.30E+00	6.50E+00	Yes	
69	9	95.00708	Gross Alpha	Liquid	8/29/95	4/22/96		1.80E+00	1.49E+00	4.95E+00		
69	9	95.00708	Gross Beta	Liquid	8/29/95	4/22/96		1.89E+01	2.18E+00	6.41E+00	Yes	
69	10	95.00730	Gross Alpha	Liquid	9/6/95	4/22/96		2.76E+01	6.77E+00	1.88E+01	Yes	Yes
69	10	95.00730	Gross Beta	Liquid	9/6/95	4/22/96		4.22E+01	8.25E+00	2.58E+01	Yes	

Table 11. Analysis Results for the Split Samples and for the Later Sampling Period

Technical Area	Structure Number	Sample Number	Analysis	Nuclide	Physical State	Date Sampled	Date Analyzed	Sample Type	Measurement	Measurement Uncertainty (2 Sigma)	Minimum Detectable Activity	Units	Percent Moisture Content	Is the Measurement Greater than the Minimum Detectable Activity?	Is the Measurement Greater than the Minimum Detectable Activity and the Screening Level?
3	2087	95.00716	Gamma Spectroscopy	K-40	Liquid	9/9/95	9/15/96	Split Group B	-530	570	1150	pCi/l	–		
3	2087	95.00716	Gross Alpha	–	Liquid	9/9/95	9/15/96	Split Group B	-0.02	1.64	2.9	pCi/l	–		
3	2087	95.00716	Gross Beta	–	Liquid	9/9/95	9/15/96	Split Group B	24	10	4.8	pCi/l	–	Yes	
3	2087	95.00716	Tritium	–	Liquid	9/9/95	9/31/96	Split Group B	202	200	460	pCi/l	–		
9	109	96.00128	Gamma Spectroscopy	K-40	Liquid	5/9/96	9/14/96	Rinse/Split	7.2	71	130	pCi/l	–		
9	109	96.00128	Gamma Spectroscopy	K-40	Liquid	5/9/96	9/14/96	Split Group B	-4	71	130	pCi/l	–		
9	109	96.00130	Gamma Spectroscopy	K-40	Liquid	5/9/96	9/14/96	Split Group B	1.4	78	140	pCi/l	–		
9	109	96.00132	Gamma Spectroscopy	K-40	Liquid	5/9/96	9/14/96	Split Group B	22	73	130	pCi/l	–		
9	109	96.00134	Gamma Spectroscopy	K-40	Liquid	5/9/96	9/15/96	Rinse/Split	-18	77	140	pCi/l	–		
9	109	96.00125	Gross Alpha	–	Liquid	5/9/96	9/4/96	Rinse	34.4	9.5	0.76	pCi/l	–	Yes	Yes
9	109	96.00126	Gross Alpha	–	Liquid	5/9/96	9/15/96	Rinse/Split	61	29	11	pCi/l	–	Yes	Yes
9	109	96.00127	Gross Alpha	–	Liquid	5/9/96	9/4/96	Split Group A	-0.69	0.31	1	pCi/l	–		
9	109	96.00128	Gross Alpha	–	Liquid	5/9/96	9/15/96	Split Group B	1.8	1.4	1.2	pCi/l	–	Yes	
9	109	96.00129	Gross Alpha	–	Liquid	5/9/96	9/4/96	Split Group A	0.8	0.3	1.0	pCi/l	–		
9	109	96.00130	Gross Alpha	–	Liquid	5/9/96	9/15/96	Split Group B	4	2.3	1.8	pCi/l	–	Yes	
9	109	96.00131	Gross Alpha	–	Liquid	5/9/96	9/4/96	Split Group A	-0.01	0.17	0.62	pCi/l	–		
9	109	96.00132	Gross Alpha	–	Liquid	5/9/96	9/15/96	Split Group B	2.9	2.3	2.5	pCi/l	–	Yes	
9	109	96.00133	Gross Alpha	–	Liquid	5/9/96	9/4/96	Rinse	0.46	0.18	1.1	pCi/l	–		
9	109	96.00134	Gross Alpha	–	Liquid	5/9/96	9/15/96	Rinse/Split	0.88	0.95	1.3	pCi/l	–		
9	109	96.00125	Gross Beta	–	Liquid	5/9/96	9/4/96	Rinse	31.1	3.7	2.4	pCi/l	–	Yes	
9	109	96.00126	Gross Beta	–	Liquid	5/9/96	9/15/96	Rinse/Split	59	26	24	pCi/l	–	Yes	Yes
9	109	96.00127	Gross Beta	–	Liquid	5/9/96	9/4/96	Split Group A	7	0.85	2.4	pCi/l	–	Yes	
9	109	96.00128	Gross Beta	–	Liquid	5/9/96	9/15/96	Split Group B	5.9	3.2	2.5	pCi/l	–	Yes	
9	109	96.00129	Gross Beta	–	Liquid	5/9/96	9/4/96	Split Group A	0.3	0.77	2.4	pCi/l	–	Yes	
9	109	96.00130	Gross Beta	–	Liquid	5/9/96	9/15/96	Split Group B	10	4.5	3.7	pCi/l	–	Yes	
9	109	96.00131	Gross Beta	–	Liquid	5/9/96	9/4/96	Split Group A	4.9	0.67	2.3	pCi/l	–	Yes	
9	109	96.00132	Gross Beta	–	Liquid	5/9/96	9/15/96	Split Group B	8.8	4.6	3.9	pCi/l	–	Yes	
9	109	96.00133	Gross Beta	–	Liquid	5/9/96	9/4/96	Rinse	3.4	0.41	2.4	pCi/l	–	Yes	
9	109	96.00134	Gross Beta	–	Liquid	5/9/96	9/15/96	Rinse/Split	3.8	2.2	2.0	pCi/l	–	Yes	
9	109	96.00125	Gross Gamma	–	Liquid	5/9/96	9/4/96	Rinse	50	50	78	pCi/l	–		
9	109	96.00127	Gross Gamma	–	Liquid	5/9/96	9/4/96	Split Group A	70	50	78	pCi/l	–		
9	109	96.00129	Gross Gamma	–	Liquid	5/9/96	9/4/96	Split Group A	90	50	78	pCi/l	–		
9	109	96.00131	Gross Gamma	–	Liquid	5/9/96	9/4/96	Split Group A	40	50	78	pCi/l	–		
9	109	96.00133	Gross Gamma	–	Liquid	5/9/96	9/4/96	Rinse	40	50	78	pCi/l	–		
9	109	96.00143	Tritium	–	Liquid	5/9/96	9/30/96	Split Group A	-101	172	560	pCi/l	–		
9	109	96.00144	Tritium	–	Liquid	5/9/96	9/31/96	Split Group B	40	200	440	pCi/l	–		
9	109	96.00145	Tritium	–	Liquid	5/9/96	9/30/96	Split Group A	-328	190	563	pCi/l	–		
9	109	96.00146	Tritium	–	Liquid	5/9/96	9/31/96	Split Group B	7.2	200	440	pCi/l	–		
9	109	96.00147	Tritium	–	Liquid	5/9/96	9/30/96	Split Group A	307	190	554	pCi/l	–		
9	109	96.00148	Tritium	–	Liquid	5/9/96	9/31/96	Split Group B	10	200	440	pCi/l	–		
9	109	96.00149	Tritium	–	Liquid	5/9/96	9/30/96	Rinse	-269	196	568	pCi/l	–		
9	109	96.00150	Tritium	–	Liquid	5/9/96	9/31/96	Rinse/Split	-8	200	440	pCi/l	–		
9	109	96.00170	Tritium	–	Liquid	5/9/96	9/31/96	Rinse/Split	-120	200	440	pCi/l	–		
9	109	96.00171	Tritium	–	Liquid	5/9/96	9/30/96	Rinse	-49	172	560	pCi/l	–		
9	109	96.00120	Gamma Spectroscopy	K-40	Sludge	5/9/96	9/19/96	Split Group B	18	1.2	0.66	pCi/g	50.5	Yes	
9	109	96.00120	Gamma Spectroscopy	Cs-137	Sludge	5/9/96	9/19/96	Split Group B	0.19	0.04	0.06	pCi/g	50.5	Yes	
9	109	96.00120	Gamma Spectroscopy	Tl-208 @ 583 keV	Sludge	5/9/96	9/19/96	Split Group B	0.49	0.09	0.06	pCi/g	50.5	Yes	
9	109	96.00120	Gamma Spectroscopy	Tl-208 @ 860 keV	Sludge	5/9/96	9/19/96	Split Group B	0.47	0.22	0.47	pCi/g	50.5		
9	109	96.00120	Gamma Spectroscopy	Tl-208	Sludge	5/9/96	9/19/96	Split Group B	0.49	–	–	pCi/g	50.5		
9	109	96.00120	Gamma Spectroscopy	Pb-210 @ 46 keV	Sludge	5/9/96	9/19/96	Split Group B	0.88	0.39	0.47	pCi/g	50.5	Yes	
9	109	96.00120	Gamma Spectroscopy	Bi-212 @ 727keV	Sludge	5/9/96	9/19/96	Split Group B	1.4	0.43	0.86	pCi/g	50.5	Yes	
9	109	96.00120	Gamma Spectroscopy	Pb-212 @ 238 keV	Sludge	5/9/96	9/19/96	Split Group B	1.2	0.14	0.06	pCi/g	50.5	Yes	
9	109	96.00120	Gamma Spectroscopy	Bi-214 @ 609 keV	Sludge	5/9/96	9/19/96	Split Group B	1.01	0.11	0.12	pCi/g	50.5	Yes	
9	109	96.00120	Gamma Spectroscopy	Bi-214 @ 1120 keV	Sludge	5/9/96	9/19/96	Split Group B	0.93	0.24	0.40	pCi/g	50.5	Yes	
9	109	96.00120	Gamma Spectroscopy	Bi-214 @ 1764 keV	Sludge	5/9/96	9/19/96	Split Group B	0.80	0.46	0.59	pCi/g	50.5	Yes	
9	109	96.00120	Gamma Spectroscopy	Bi-214	Sludge	5/9/96	9/19/96	Split Group B	0.91	–	–	pCi/g	50.5		
9	109	96.00120	Gamma Spectroscopy	Pb-214 @ 295 keV	Sludge	5/9/96	9/19/96	Split Group B	0.90	0.13	0.17	pCi/g	50.5	Yes	
9	109	96.00120	Gamma Spectroscopy	Pb-214 @ 351 keV	Sludge	5/9/96	9/19/96	Split Group B	0.98	0.11	0.12	pCi/g	50.5	Yes	
9	109	96.00120	Gamma Spectroscopy	Pb-214	Sludge	5/9/96	9/19/96	Split Group B	0.95	–	–	pCi/g	50.5		
9	109	96.00120	Gamma Spectroscopy	Ra-226 @ 186 keV	Sludge	5/9/96	9/19/96	Split Group B	1.5	0.39	0.72	pCi/g	50.5	Yes	
9	109	96.00120	Gamma Spectroscopy	Ac-228 @ 338 keV	Sludge	5/9/96	9/19/96	Split Group B	1.20	0.44	0.29	pCi/g	50.5	Yes	
9	109	96.00120	Gamma Spectroscopy	Ac-228 @ 911 keV	Sludge	5/9/96	9/19/96	Split Group B	1.40	0.32	0.19	pCi/g	50.5	Yes	
9	109	96.00120	Gamma Spectroscopy	Ac-228 @ 968 keV	Sludge	5/9/96	9/19/96	Split Group B	1.20	0.35	0.31	pCi/g	50.5	Yes	
9	109	96.00120	Gamma Spectroscopy	Ac-228	Sludge	5/9/96	9/19/96	Split Group B	1.3	–	–	pCi/g	50.5		
9	109	96.00120	Gamma Spectroscopy	Th-234 @ 63 keV	Sludge	5/9/96	9/19/96	Split Group B	0.78	0.24	0.41	pCi/g	50.5	Yes	
9	109	96.00120	Gamma Spectroscopy	Th-234 @ 92 keV	Sludge	5/9/96	9/19/96	Split Group B	0.54	0.18	0.28	pCi/g	50.5	Yes	
9	109	96.00120	Gamma Spectroscopy	Th-234	Sludge	5/9/96	9/19/96	Split Group B	0.68	–	–	pCi/g	50.5		
9	109	96.00120	Gamma Spectroscopy	U-235 @ 143 keV	Sludge	5/9/96	9/19/96	Split Group B	0.09	0.2	0.22	pCi/g	50.5		
9	109	96.00120	Gamma Spectroscopy	Total	Sludge	5/9/96	9/19/96	Split Group B	27.4	–	–	pCi/g	50.5		
9	109	96.00122	Gamma Spectroscopy	K-40	Sludge	5/9/96	9/19/96	Split Group B	17	1.8	0.28	pCi/g	70.7	Yes	
9	109	96.00122	Gamma Spectroscopy	Cs-137	Sludge	5/9/96	9/19/96	Split Group B	0.21	0.04	0.06	pCi/g	70.7	Yes	

Table 11. Analysis Results for the Split Samples and for the Later Sampling Period

Technical Area	Structure Number	Sample Number	Analysis	Nuclide	Physical State	Date Sampled	Date Analyzed	Sample Type	Measurement	Measurement Uncertainty (2 Sigma)	Minimum Detectable Activity	Units	Percent Moisture Content	Is the Measurement Greater than the Minimum Detectable Activity?	Is the Measurement Greater than the Minimum Detectable Activity and the Screening Level?
9	109	96.00122	Gamma Spectroscopy	Tl-208 @ 583 keV	Sludge	5/9/96	9/19/96	Split Group B	0.58	0.07	0.09	pCi/g	70.7	Yes	
9	109	96.00122	Gamma Spectroscopy	Tl-208 @ 860 keV	Sludge	5/9/96	9/19/96	Split Group B	0.73	0.29	0.49	pCi/g	70.7	Yes	
9	109	96.00122	Gamma Spectroscopy	Tl-208	Sludge	5/9/96	9/19/96	Split Group B	0.65	–	–	pCi/g	70.7		
9	109	96.00122	Gamma Spectroscopy	Pb-210 @ 46 keV	Sludge	5/9/96	9/19/96	Split Group B	1.9	0.61	0.94	pCi/g	70.7	Yes	
9	109	96.00122	Gamma Spectroscopy	Bi-212 @ 727keV	Sludge	5/9/96	9/19/96	Split Group B	2.2	0.52	0.84	pCi/g	70.7	Yes	
9	109	96.00122	Gamma Spectroscopy	Pb-212 @ 239 keV	Sludge	5/9/96	9/19/96	Split Group B	1.3	0.18	0.07	pCi/g	70.7	Yes	
9	109	96.00122	Gamma Spectroscopy	Bi-214 @ 609 keV	Sludge	5/9/96	9/19/96	Split Group B	1.10	0.12	0.12	pCi/g	70.7	Yes	
9	109	96.00122	Gamma Spectroscopy	Bi-214 @ 1120 keV	Sludge	5/9/96	9/19/96	Split Group B	0.89	0.26	0.39	pCi/g	70.7	Yes	
9	109	96.00122	Gamma Spectroscopy	Bi-214 @ 1764 keV	Sludge	5/9/96	9/19/96	Split Group B	1.20	0.47	0.73	pCi/g	70.7	Yes	
9	109	96.00122	Gamma Spectroscopy	Bi-214	Sludge	5/9/96	9/19/96	Split Group B	1.1	–	–	pCi/g	70.7		
9	109	96.00122	Gamma Spectroscopy	Pb-214 @ 295 keV	Sludge	5/9/96	9/19/96	Split Group B	0.92	0.13	0.18	pCi/g	70.7	Yes	
9	109	96.00122	Gamma Spectroscopy	Pb-214 @ 351 keV	Sludge	5/9/96	9/19/96	Split Group B	0.99	0.11	0.10	pCi/g	70.7	Yes	
9	109	96.00122	Gamma Spectroscopy	Pb-214	Sludge	5/9/96	9/19/96	Split Group B	0.96	–	–	pCi/g	70.7		
9	109	96.00122	Gamma Spectroscopy	Ra-228 @ 186 keV	Sludge	5/9/96	9/19/96	Split Group B	1.5	0.45	0.77	pCi/g	70.7	Yes	
9	109	96.00122	Gamma Spectroscopy	Ac-228 @ 338 keV	Sludge	5/9/96	9/19/96	Split Group B	1.30	0.51	0.29	pCi/g	70.7	Yes	
9	109	96.00122	Gamma Spectroscopy	Ac-228 @ 911 keV	Sludge	5/9/96	9/19/96	Split Group B	1.20	0.32	0.23	pCi/g	70.7	Yes	
9	109	96.00122	Gamma Spectroscopy	Ac-228 @ 968 keV	Sludge	5/9/96	9/19/96	Split Group B	1.40	0.37	0.34	pCi/g	70.7	Yes	
9	109	96.00122	Gamma Spectroscopy	Ac-228	Sludge	5/9/96	9/19/96	Split Group B	1.3	–	–	pCi/g	70.7		
9	109	96.00122	Gamma Spectroscopy	Th-234 @ 63 keV	Sludge	5/9/96	9/19/96	Split Group B	1.10	0.38	0.78	pCi/g	70.7	Yes	
9	109	96.00122	Gamma Spectroscopy	Th-234 @ 92 keV	Sludge	5/9/96	9/19/96	Split Group B	0.96	0.40	0.38	pCi/g	70.7	Yes	
9	109	96.00122	Gamma Spectroscopy	Th-234	Sludge	5/9/96	9/19/96	Split Group B	0.88	–	–	pCi/g	70.7		
9	109	96.00122	Gamma Spectroscopy	U-235 @ 143 keV	Sludge	5/9/96	9/19/96	Split Group B	0.11	0.06	0.13	pCi/g	70.7		
9	109	96.00122	Gamma Spectroscopy	Total	Sludge	5/9/96	9/19/96	Split Group B	29.1	–	–	pCi/g	70.7		
9	109	96.00124	Gamma Spectroscopy	K-40	Sludge	5/9/96	9/19/96	Split Group B	18	1.2	0.66	pCi/g	74	Yes	
9	109	96.00124	Gamma Spectroscopy	Cs-137	Sludge	5/9/96	9/19/96	Split Group B	0.18	0.04	0.07	pCi/g	74	Yes	
9	109	96.00124	Gamma Spectroscopy	Tl-208 @ 583 keV	Sludge	5/9/96	9/19/96	Split Group B	0.64	0.07	0.08	pCi/g	74	Yes	
9	109	96.00124	Gamma Spectroscopy	Tl-208 @ 860 keV	Sludge	5/9/96	9/19/96	Split Group B	0.70	0.24	0.44	pCi/g	74	Yes	
9	109	96.00124	Gamma Spectroscopy	Tl-208	Sludge	5/9/96	9/19/96	Split Group B	0.62	–	–	pCi/g	74		
9	109	96.00124	Gamma Spectroscopy	Pb-210 @ 46 keV	Sludge	5/9/96	9/19/96	Split Group B	0.5	0.35	0.48	pCi/g	74	Yes	
9	109	96.00124	Gamma Spectroscopy	Bi-212 @ 727keV	Sludge	5/9/96	9/19/96	Split Group B	1.7	0.46	0.86	pCi/g	74	Yes	
9	109	96.00124	Gamma Spectroscopy	Pb-212 @ 239 keV	Sludge	5/9/96	9/19/96	Split Group B	1.3	0.16	0.07	pCi/g	74	Yes	
9	109	96.00124	Gamma Spectroscopy	Bi-214 @ 609 keV	Sludge	5/9/96	9/19/96	Split Group B	1.1	0.11	0.12	pCi/g	74	Yes	
9	109	96.00124	Gamma Spectroscopy	Bi-214 @ 1120 keV	Sludge	5/9/96	9/19/96	Split Group B	1.1	0.26	0.36	pCi/g	74	Yes	
9	109	96.00124	Gamma Spectroscopy	Bi-214 @ 1764 keV	Sludge	5/9/96	9/19/96	Split Group B	0.92	0.22	0.21	pCi/g	74	Yes	
9	109	96.00124	Gamma Spectroscopy	Bi-214	Sludge	5/9/96	9/19/96	Split Group B	1.0	–	–	pCi/g	74		
9	109	96.00124	Gamma Spectroscopy	Pb-214 @ 295 keV	Sludge	5/9/96	9/19/96	Split Group B	1.0	0.13	0.18	pCi/g	74	Yes	
9	109	96.00124	Gamma Spectroscopy	Pb-214 @ 351 keV	Sludge	5/9/96	9/19/96	Split Group B	0.96	0.11	0.12	pCi/g	74	Yes	
9	109	96.00124	Gamma Spectroscopy	Pb-214	Sludge	5/9/96	9/19/96	Split Group B	0.99	–	–	pCi/g	74		
9	109	96.00124	Gamma Spectroscopy	Ra-228 @ 186 keV	Sludge	5/9/96	9/19/96	Split Group B	1.9	0.42	0.72	pCi/g	74	Yes	
9	109	96.00124	Gamma Spectroscopy	Ac-228 @ 338 keV	Sludge	5/9/96	9/19/96	Split Group B	1.4	0.53	0.30	pCi/g	74	Yes	
9	109	96.00124	Gamma Spectroscopy	Ac-228 @ 911 keV	Sludge	5/9/96	9/19/96	Split Group B	1.4	0.32	0.19	pCi/g	74	Yes	
9	109	96.00124	Gamma Spectroscopy	Ac-228 @ 968 keV	Sludge	5/9/96	9/19/96	Split Group B	1.5	0.37	0.31	pCi/g	74	Yes	
9	109	96.00124	Gamma Spectroscopy	Ac-228	Sludge	5/9/96	9/19/96	Split Group B	1.4	–	–	pCi/g	74		
9	109	96.00124	Gamma Spectroscopy	Th-234 @ 63 keV	Sludge	5/9/96	9/19/96	Split Group B	0.62	0.23	0.40	pCi/g	74	Yes	
9	109	96.00124	Gamma Spectroscopy	Th-234 @ 92 keV	Sludge	5/9/96	9/19/96	Split Group B	0.51	0.16	0.26	pCi/g	74	Yes	
9	109	96.00124	Gamma Spectroscopy	Th-234	Sludge	5/9/96	9/19/96	Split Group B	0.87	–	–	pCi/g	74		
9	109	96.00124	Gamma Spectroscopy	U-235 @ 143 keV	Sludge	5/9/96	9/19/96	Split Group B	0.01	0.21	0.22	pCi/g	74		
9	109	96.00124	Gamma Spectroscopy	Total	Sludge	5/9/96	9/19/96	Split Group B	29.3	–	–	pCi/g	74		
9	109	96.00119	Gross Alpha	–	Sludge	5/9/96	9/4/96	Split Group A	7.0	3.4	0.66	pCi/g	68.7	Yes	
9	109	96.00120	Gross Alpha	–	Sludge	5/9/96	9/19/96	Split Group B	18	13	6.8	pCi/g	50.6	Yes	
9	109	96.00121	Gross Alpha	–	Sludge	5/9/96	9/4/96	Split Group A	9.0	4.2	0.63	pCi/g	72.7	Yes	
9	109	96.00122	Gross Alpha	–	Sludge	5/9/96	9/19/96	Split Group B	19	13	6.8	pCi/g	70.7	Yes	
9	109	96.00123	Gross Alpha	–	Sludge	5/9/96	9/4/96	Split Group A	10.7	5.7	0.67	pCi/g	62.6	Yes	
9	109	96.00124	Gross Alpha	–	Sludge	5/9/96	9/19/96	Split Group B	16	11	5.6	pCi/g	74	Yes	
9	109	96.00119	Gross Beta	–	Sludge	5/9/96	9/4/96	Split Group A	3.7	0.46	1.3	pCi/g	68.7	Yes	
9	109	96.00120	Gross Beta	–	Sludge	5/9/96	9/19/96	Split Group B	27	16	10	pCi/g	50.6	Yes	
9	109	96.00121	Gross Beta	–	Sludge	5/9/96	9/4/96	Split Group A	4.2	0.53	1.3	pCi/g	72.7	Yes	

Table 11. Analysis Results for the Split Samples and for the Later Sampling Period

Technical Area	Structure Number	Sample Number	Analysis	Nuclide	Physical State	Date Sampled	Date Analyzed	Sample Type	Measurement	Measurement Uncertainty (2 Sigma)	Minimum Detectable Activity	Units	Percent Moisture Content	Is the Measurement Greater than the Minimum Detectable Activity?	Is the Measurement Greater than the Minimum Detectable Activity and the Screening Level?
9	109	96.00122	Gross Beta	--	Sludge	5/9/96	9/19/96	Split Group B	26	14	10	pCi/g	70.7	Yes	
9	109	96.00123	Gross Beta	--	Sludge	5/9/96	9/4/96	Split Group A	11.9	1.6	1.3	pCi/g	92.6	Yes	
9	109	96.00124	Gross Beta	--	Sludge	5/9/96	9/19/96	Split Group B	25	14	10	pCi/g	74	Yes	
9	109	96.00119	Gross Gamma	--	Sludge	5/9/96	9/4/96	Split Group A	2.7	0.3	0.27	pCi/g	68.7	Yes	
9	109	96.00121	Gross Gamma	--	Sludge	5/9/96	9/4/96	Split Group A	2.9	0.3	0.27	pCi/g	72.7	Yes	
9	109	96.00123	Gross Gamma	--	Sludge	5/9/96	9/4/96	Split Group A	2.8	0.3	0.27	pCi/g	92.6	Yes	
9	109	96.00164	Tritium	--	Sludge	5/9/96	9/29/96	Split Group B	0.01	0.06	0.1	pCi/g	39.2		
9	109	96.00165	Tritium	--	Sludge	5/9/96	9/30/96	Split Group A	-0.17	0.23	0.75	pCi/g	25.1		
9	109	96.00166	Tritium	--	Sludge	5/9/96	9/29/96	Split Group B	0.02	0.06	0.1	pCi/g	36.5		
9	109	96.00167	Tritium	--	Sludge	5/9/96	9/30/96	Split Group A	-0.18	0.23	0.75	pCi/g	29.1		
9	109	96.00168	Tritium	--	Sludge	5/9/96	9/29/96	Split Group B	0.01	0.03	0.14	pCi/g	63.9		
9	109	96.00169	Tritium	--	Sludge	5/9/96	9/30/96	Split Group A	-0.13	0.988	3.2	pCi/g	63		
11	20	96.00136	Gamma Spectroscopy	K-40	Liquid	5/9/96	9/15/96	Split Group B	16	60	140	pCi/l	--		
11	20	96.00138	Gamma Spectroscopy	K-40	Liquid	5/9/96	9/15/96	Split Group B	45	74	130	pCi/l	--		
11	20	96.00140	Gamma Spectroscopy	K-40	Liquid	5/9/96	9/15/96	Split Group B	9.1	77	140	pCi/l	--		
11	20	96.00142	Gamma Spectroscopy	K-40	Liquid	5/9/96	9/15/96	Rinse/Split	80	78	130	pCi/l	--		
11	20	96.00135	Gross Alpha	--	Liquid	5/9/96	9/4/96	Split Group A	-1.8	0.95	0.86	pCi/l	--		
11	20	96.00136	Gross Alpha	--	Liquid	5/9/96	9/15/96	Split Group B	1.8	3.1	5.1	pCi/l	--		
11	20	96.00137	Gross Alpha	--	Liquid	5/9/96	9/4/96	Split Group A	-5	1	0.87	pCi/l	--		
11	20	96.00138	Gross Alpha	--	Liquid	5/9/96	9/15/96	Split Group B	2.3	2.7	3.8	pCi/l	--		
11	20	96.00139	Gross Alpha	--	Liquid	5/9/96	9/4/96	Split Group A	-0.56	0.12	0.59	pCi/l	--		
11	20	96.00140	Gross Alpha	--	Liquid	5/9/96	9/15/96	Split Group B	2.5	3.6	5.6	pCi/l	--		
11	20	96.00141	Gross Alpha	--	Liquid	5/9/96	9/4/96	Rinse	-0.5	0.18	0.96	pCi/l	--		
11	20	96.00142	Gross Alpha	--	Liquid	5/9/96	9/15/96	Rinse/Split	0.96	0.92	1.1	pCi/l	--		
11	20	96.00135	Gross Beta	--	Liquid	5/9/96	9/4/96	Split Group A	85	10	2.3	pCi/l	--	Yes	Yes
11	20	96.00136	Gross Beta	--	Liquid	5/9/96	9/15/96	Split Group B	76	30	9.2	pCi/l	--	Yes	Yes
11	20	96.00137	Gross Beta	--	Liquid	5/9/96	9/4/96	Split Group A	71.7	9.4	2.3	pCi/l	--	Yes	Yes
11	20	96.00138	Gross Beta	--	Liquid	5/9/96	9/15/96	Split Group B	72	33	7.6	pCi/l	--	Yes	Yes
11	20	96.00139	Gross Beta	--	Liquid	5/9/96	9/4/96	Split Group A	75	9.8	2.3	pCi/l	--	Yes	Yes
11	20	96.00140	Gross Beta	--	Liquid	5/9/96	9/15/96	Split Group B	68	29	9.8	pCi/l	--	Yes	Yes
11	20	96.00141	Gross Beta	--	Liquid	5/9/96	9/4/96	Rinse	2.6	0.31	2.4	pCi/l	--	Yes	
11	20	96.00142	Gross Beta	--	Liquid	5/9/96	9/15/96	Rinse/Split	2.8	2	2.2	pCi/l	--	Yes	
11	20	96.00136	Gross Gamma	--	Liquid	5/9/96	9/4/96	Split Group A	90	50	76	pCi/l	--	Yes	
11	20	96.00137	Gross Gamma	--	Liquid	5/9/96	9/4/96	Split Group A	60	50	76	pCi/l	--		
11	20	96.00139	Gross Gamma	--	Liquid	5/9/96	9/4/96	Split Group A	40	50	76	pCi/l	--		
11	20	96.00141	Gross Gamma	--	Liquid	5/9/96	9/4/96	Rinse	30	50	76	pCi/l	--		
11	20	96.00161	Tritium	--	Liquid	5/9/96	9/30/96	Split Group A	-34	174	583	pCi/l	--		
11	20	96.00162	Tritium	--	Liquid	5/9/96	9/31/96	Split Group B	7	200	440	pCi/l	--		
11	20	96.00163	Tritium	--	Liquid	5/9/96	9/30/96	Split Group A	25	174	557	pCi/l	--		
11	20	96.00164	Tritium	--	Liquid	5/9/96	9/31/96	Split Group B	100	200	440	pCi/l	--		
11	20	96.00165	Tritium	--	Liquid	5/9/96	9/30/96	Split Group A	-141	170	568	pCi/l	--		
11	20	96.00166	Tritium	--	Liquid	5/9/96	9/31/96	Split Group B	41	200	440	pCi/l	--		
11	20	96.00167	Tritium	--	Liquid	5/9/96	9/30/96	Rinse	340	102	564	pCi/l	--		
11	20	96.00168	Tritium	--	Liquid	5/9/96	9/31/96	Rinse/Split	58	200	440	pCi/l	--		
16	1153	96.00159	Gross Alpha	--	Liquid	5/9/96	9/4/96		0.98	0.29	0.8	pCi/l	--	Yes	
16	1153	96.00159	Gross Beta	--	Liquid	5/9/96	9/4/96		37	4.4	2.4	pCi/l	--	Yes	
16	1153	96.00159	Gross Gamma	--	Liquid	5/9/96	9/4/96		100	50	76	pCi/l	--	Yes	
16	1153	96.00161	Tritium	--	Liquid	5/9/96	9/30/96		531	188	561	pCi/l	--		
16	1153	96.00190	Gross Alpha	--	Sludge	5/9/96	9/4/96		1.2	0.28	0.28	pCi/g	93.4	Yes	
16	1153	96.00190	Gross Beta	--	Sludge	5/9/96	9/4/96		2.3	0.29	1.3	pCi/g	93.4	Yes	
16	1153	96.00190	Gross Gamma	--	Sludge	5/9/96	9/4/96		2.3	0.3	0.27	pCi/g	93.4	Yes	
16	1153	96.00192	Tritium	--	Sludge	5/9/96	9/30/96		-323	171	575	pCi/l	% solids value could not be accurately obtained in the 1% range.		
30	61	95.00728	Gamma Spectroscopy	K-40	Liquid	9/7/96	9/16/96	Split Group B	95	430	790	pCi/l	--		
30	61	96.00104	Gamma Spectroscopy	K-40	Liquid	5/9/96	9/14/96	Split Group B	2.7	79	140	pCi/l	--		
30	61	95.00728	Gross Alpha	--	Liquid	9/7/96	9/16/96	Split Group B	29	13	5.9	pCi/l	--	Yes	Yes
30	61	96.00103	Gross Alpha	--	Liquid	5/9/96	9/4/96	Split Group A	23.7	0.6	0.76	pCi/l	--	Yes	Yes
30	61	96.00104	Gross Alpha	--	Liquid	5/9/96	9/16/96	Split Group B	33	20	7.3	pCi/l	--	Yes	Yes
30	61	96.00105	Gross Alpha	--	Liquid	5/9/96	9/4/96	Split Group A	28.2	0.1	0.78	pCi/l	--	Yes	Yes
30	61	96.00107	Gross Alpha	--	Liquid	5/9/96	9/4/96	Split Group A	25.1	7.3	0.79	pCi/l	--	Yes	Yes
30	61	96.00109	Gross Alpha	--	Liquid	5/9/96	9/4/96	Rinse	0.44	0.14	0.86	pCi/l	--		
30	61	95.00728	Gross Beta	--	Liquid	9/7/96	9/16/96	Split Group B	99	38	12	pCi/l	--	Yes	Yes
30	61	96.00103	Gross Beta	--	Liquid	5/9/96	9/4/96	Split Group A	116	14	2.4	pCi/l	--	Yes	Yes
30	61	96.00104	Gross Beta	--	Liquid	5/9/96	9/16/96	Split Group B	120	57	12	pCi/l	--	Yes	Yes
30	61	96.00105	Gross Beta	--	Liquid	5/9/96	9/4/96	Split Group A	114	14	2.4	pCi/l	--	Yes	Yes
30	61	96.00107	Gross Beta	--	Liquid	5/9/96	9/4/96	Split Group A	120	14	2.4	pCi/l	--	Yes	Yes
30	61	96.00109	Gross Beta	--	Liquid	5/9/96	9/4/96	Rinse	3.6	0.42	2.4	pCi/l	--	Yes	
30	61	96.00103	Gross Gamma	--	Liquid	5/9/96	9/4/96	Split Group A	80	50	76	pCi/l	--	Yes	
30	61	96.00105	Gross Gamma	--	Liquid	5/9/96	9/4/96	Split Group A	60	50	76	pCi/l	--		
30	61	96.00107	Gross Gamma	--	Liquid	5/9/96	9/4/96	Split Group A	80	50	76	pCi/l	--	Yes	
30	61	96.00109	Gross Gamma	--	Liquid	5/9/96	9/4/96	Rinse	30	50	76	pCi/l	--		
30	61	95.00728	Tritium	--	Liquid	9/7/96	9/31/96	Split Group B	170	200	450	pCi/l	--		
30	61	96.00111	Tritium	--	Liquid	5/9/96	9/30/96	Split Group A	52	176	559	pCi/l	--		
30	61	96.00112	Tritium	--	Liquid	5/9/96	9/31/96	Split Group B	190	270	440	pCi/l	--		
30	61	96.00113	Tritium	--	Liquid	5/9/96	9/30/96	Split Group A	419	184	552	pCi/l	--		
30	61	96.00115	Tritium	--	Liquid	5/9/96	9/30/96	Split Group A	594	186	559	pCi/l	--	Yes	
30	61	96.00117	Tritium	--	Liquid	5/9/96	9/30/96	Rinse	-132	190	568	pCi/l	--		
46	230	95.00725	Gamma Spectroscopy	K-40	Liquid	9/6/95	9/16/96	Split Group B	219	460	790	pCi/l	--		
46	230	95.00726	Gross Alpha	--	Liquid	9/6/95	9/16/96	Split Group B	0.97	1.2	1.9	pCi/l	--		
46	230	95.00725	Gross Beta	--	Liquid	9/6/95	9/16/96	Split Group B	6.7	3.6	3.0	pCi/l	--	Yes	
46	230	95.00725	Tritium	--	Liquid	9/16/95	9/31/96	Split Group B	202	280	460	pCi/l	--		
52	99	95.00751	Gamma Spectroscopy	K-40	Sludge	9/5/95	9/7/96	Split Group B	12	13	16	pCi/g	95.7		
52	99	95.00751	Gamma Spectroscopy	Cs-137	Sludge	9/5/95	9/7/96	Split Group B	0.69	0.89	1.2	pCi/g	95.7		
52	99	95.00751	Gamma Spectroscopy	Tl-208 @ 583 keV	Sludge	9/5/95	9/7/96	Split Group B	1.2	0.94	1.2	pCi/g	95.7		
52	99	95.00751	Gamma Spectroscopy	Tl-208 @ 860 keV	Sludge	9/5/95	9/7/96	Split Group B	-2.4	9.0	9.8	pCi/g	95.7		
52	99	95.00751	Gamma Spectroscopy	Tl-209	Sludge	9/5/95	9/7/96	Split Group B	-0.60	--	--	pCi/g	95.7		
52	99	95.00751	Gamma Spectroscopy	Pb-210 @ 46 keV	Sludge	9/5/95	9/7/96	Split Group B	16	6.0	9.9	pCi/g	95.7	Yes	

Table 11. Analysis Results for the Split Samples and for the Later Sampling Period

Technical Area	Structure Number	Sample Number	Analysis	Nuclide	Physical State	Date Sampled	Date Analyzed	Sample Type	Measurement	Measurement Uncertainty (2 Sigma)	Minimum Detectable Activity	Units	Percent Moisture Content	Is the Measurement Greater than the Minimum Detectable Activity?	Is the Measurement Greater than the Minimum Detectable Activity and the Screening Level?
52	99	95.00751	Gamma Spectroscopy	Bi-212 @ 727keV	Sludge	9/5/95	9/7/95	Split Group B	2	13	18	pCi/g	95.7		
52	99	95.00751	Gamma Spectroscopy	Pb-212 @ 238 keV	Sludge	9/5/95	9/7/95	Split Group B	0.82	0.63	1.2	pCi/g	95.7		
52	99	95.00751	Gamma Spectroscopy	Bi-214 @ 609 keV	Sludge	9/5/95	9/7/95	Split Group B	1.3	2	2.5	pCi/g	95.7		
52	99	95.00751	Gamma Spectroscopy	Bi-214 @ 1120 keV	Sludge	9/5/95	9/7/95	Split Group B	0.85	7.7	9.8	pCi/g	95.7		
52	99	95.00751	Gamma Spectroscopy	Bi-214 @ 1764 keV	Sludge	9/5/95	9/7/95	Split Group B	3.1	0.76	0.9	pCi/g	95.7		
52	99	95.00751	Gamma Spectroscopy	Bi-214	Sludge	9/5/95	9/7/95	Split Group B	1.8	–	–	pCi/g	95.7		
52	99	95.00751	Gamma Spectroscopy	Pb-214 @ 295 keV	Sludge	9/5/95	9/7/95	Split Group B	-0.42	2.5	3.3	pCi/g	95.7		
52	99	95.00751	Gamma Spectroscopy	Pb-214 @ 351 keV	Sludge	9/5/95	9/7/95	Split Group B	0.9	1.4	1.9	pCi/g	95.7		
52	99	95.00751	Gamma Spectroscopy	Pb-214	Sludge	9/5/95	9/7/95	Split Group B	0.24	–	–	pCi/g	95.7		
52	99	95.00751	Gamma Spectroscopy	Ra-228 @ 186 keV	Sludge	9/5/95	9/7/95	Split Group B	2	9.8	13	pCi/g	95.7		
52	99	95.00751	Gamma Spectroscopy	Ac-228 @ 338 keV	Sludge	9/5/95	9/7/95	Split Group B	1.9	4	5.4	pCi/g	95.7		
52	99	95.00751	Gamma Spectroscopy	Ac-228 @ 911 keV	Sludge	9/5/95	9/7/95	Split Group B	0.4	3.1	3.9	pCi/g	95.7		
52	99	95.00751	Gamma Spectroscopy	Ac-228 @ 968 keV	Sludge	9/5/95	9/7/95	Split Group B	-2.9	6.4	6.8	pCi/g	95.7		
52	99	95.00751	Gamma Spectroscopy	Ac-228	Sludge	9/5/95	9/7/95	Split Group B	-0.20	–	–	pCi/g	95.7		
52	99	95.00751	Gamma Spectroscopy	Th-234 @ 63 keV	Sludge	9/5/95	9/7/95	Split Group B	0	9.8	9.8	pCi/g	95.7		
52	99	95.00751	Gamma Spectroscopy	Th-234 @ 92 keV	Sludge	9/5/95	9/7/95	Split Group B	9.3	4.1	7.6	pCi/g	95.7		
52	99	95.00751	Gamma Spectroscopy	Th-234	Sludge	9/5/95	9/7/95	Split Group B	3.2	–	–	pCi/g	95.7		
52	99	95.00751	Gamma Spectroscopy	U-235 @ 143 keV	Sludge	9/5/95	9/7/95	Split Group B	-0.92	2.9	3.9	pCi/g	95.7		
52	99	95.00751	Gamma Spectroscopy	Total	Sludge	9/5/95	9/7/95	Split Group B	38.9	–	–	pCi/g	95.7		
52	99	95.00751	Gross Alpha	–	Sludge	9/5/95	9/16/95	Split Group B	380	240	340	pCi/g	95.7	Yes	
52	99	95.00751	Gross Beta	–	Sludge	9/5/95	9/16/95	Split Group B	220	640	910	pCi/g	95.7		
52	99	95.00751	Tritium	–	Sludge	9/5/95	9/29/95	Split Group B	0.01	0.01	0.02	pCi/g	95.7		
54	10	95.00752	Gamma Spectroscopy	K-40	Sludge	9/5/95	9/7/95	Split Group B	230	130	160	pCi/g	63	Yes	
54	10	95.00752	Gamma Spectroscopy	Cs-137	Sludge	9/5/95	9/7/95	Split Group B	-5.9	12	12	pCi/g	63		
54	10	95.00752	Gamma Spectroscopy	Tl-208 @ 583 keV	Sludge	9/5/95	9/7/95	Split Group B	3.5	12	12	pCi/g	63		
54	10	95.00752	Gamma Spectroscopy	Tl-208 @ 860 keV	Sludge	9/5/95	9/7/95	Split Group B	89	92	102	pCi/g	63		
54	10	95.00752	Gamma Spectroscopy	Tl-208	Sludge	9/5/95	9/7/95	Split Group B	45.9	–	–	pCi/g	63		
54	10	95.00752	Gamma Spectroscopy	Pb-210 @ 46 keV	Sludge	9/5/95	9/7/95	Split Group B	0	150	150	pCi/g	63		
54	10	95.00752	Gamma Spectroscopy	Bi-212 @ 727keV	Sludge	9/5/95	9/7/95	Split Group B	96	100	170	pCi/g	63		
54	10	95.00752	Gamma Spectroscopy	Pb-212 @ 238 keV	Sludge	9/5/95	9/7/95	Split Group B	9.3	7.8	15	pCi/g	63		
54	10	95.00752	Gamma Spectroscopy	Bi-214 @ 609 keV	Sludge	9/5/95	9/7/95	Split Group B	-3.8	28	27	pCi/g	63		
54	10	95.00752	Gamma Spectroscopy	Bi-214 @ 1120 keV	Sludge	9/5/95	9/7/95	Split Group B	42	78	96	pCi/g	63		
54	10	95.00752	Gamma Spectroscopy	Bi-214 @ 1764 keV	Sludge	9/5/95	9/7/95	Split Group B	39	70	82	pCi/g	63		
54	10	95.00752	Gamma Spectroscopy	Bi-214	Sludge	9/5/95	9/7/95	Split Group B	26.4	–	–	pCi/g	63		
54	10	95.00752	Gamma Spectroscopy	Pb-214 @ 295 keV	Sludge	9/5/95	9/7/95	Split Group B	32	34	39	pCi/g	63		
54	10	95.00752	Gamma Spectroscopy	Pb-214 @ 351 keV	Sludge	9/5/95	9/7/95	Split Group B	-0.39	20	21	pCi/g	63		
54	10	95.00752	Gamma Spectroscopy	Pb-214	Sludge	9/5/95	9/7/95	Split Group B	15.9	–	–	pCi/g	63		
54	10	95.00752	Gamma Spectroscopy	Ra-228 @ 186 keV	Sludge	9/5/95	9/7/95	Split Group B	-90	190	200	pCi/g	63		
54	10	95.00752	Gamma Spectroscopy	Ac-228 @ 338 keV	Sludge	9/5/95	9/7/95	Split Group B	33	56	61	pCi/g	63		
54	10	95.00752	Gamma Spectroscopy	Ac-228 @ 911 keV	Sludge	9/5/95	9/7/95	Split Group B	23	39	41	pCi/g	63		
54	10	95.00752	Gamma Spectroscopy	Ac-228 @ 968 keV	Sludge	9/5/95	9/7/95	Split Group B	25	68	71	pCi/g	63		
54	10	95.00752	Gamma Spectroscopy	Ac-228	Sludge	9/5/95	9/7/95	Split Group B	27.0	–	–	pCi/g	63		
54	10	95.00752	Gamma Spectroscopy	Th-234 @ 63 keV	Sludge	9/5/95	9/7/95	Split Group B	91	120	140	pCi/g	63		
54	10	95.00752	Gamma Spectroscopy	Th-234 @ 92 keV	Sludge	9/5/95	9/7/95	Split Group B	120	82	89	pCi/g	63	Yes	
54	10	95.00752	Gamma Spectroscopy	Th-234	Sludge	9/5/95	9/7/95	Split Group B	105.50	–	–	pCi/g	63		
54	10	95.00752	Gamma Spectroscopy	U-235 @ 143 keV	Sludge	9/5/95	9/7/95	Split Group B	67	49	54	pCi/g	63	Yes	
54	10	95.00752	Gamma Spectroscopy	Total	Sludge	9/5/95	9/7/95	Split Group B	512	–	–	pCi/g	63		
54	10	95.00753	Gross Alpha	–	Sludge	9/5/95	9/16/95	Split Group B	27	890	410	pCi/g	63		
54	10	95.00753	Gross Beta	–	Sludge	9/5/95	9/15/95	Split Group B	3500	1900	930	pCi/g	63	Yes	Yes
54	10	95.00753	Tritium	–	Sludge	9/5/95	9/20/95	Split Group B	0.1	0.07	0.1	pCi/g	63		
60	3	95.00723	Gamma Spectroscopy	K-40	Liquid	9/5/95	9/15/95	Split Group B	290	440	790	pCi/l	–		
60	3	95.00723	Gross Alpha	–	Liquid	9/5/95	9/15/95	Split Group B	0.88	1.2	1.9	pCi/l	–		
60	3	95.00723	Gross Beta	–	Liquid	9/5/95	9/15/95	Split Group B	21	7.7	3.8	pCi/l	–	Yes	
60	3	95.00723	Tritium	–	Liquid	9/5/95	9/21/95	Split Group B	290	290	450	pCi/l	–		
66	3	95.00753	Gamma Spectroscopy	K-40	Sludge	9/5/95	9/7/95	Split Group B	22	3.2	3.3	pCi/g	98.2	Yes	
66	3	95.00753	Gamma Spectroscopy	Cs-137	Sludge	9/5/95	9/7/95	Split Group B	-0.11	0.38	0.38	pCi/g	98.2		
66	3	95.00753	Gamma Spectroscopy	Tl-208 @ 583 keV	Sludge	9/5/95	9/7/95	Split Group B	0.76	0.33	0.4	pCi/g	98.2	Yes	

Table 11. Analysis Results for the Split Samples and for the Later Sampling Period

Technical Area	Structure Number	Sample Number	Analysis	Nuclide	Physical State	Date Sampled	Date Analyzed	Sample Type	Measurement	Measurement Uncertainty (2 Sigma)	Minimum Detectable Activity	Units	Percent Moisture Content	Is the Measurement Greater than the Minimum Detectable Activity?	Is the Measurement Greater than the Minimum Detectable Activity and the Screening Level?
66	3	95.00753	Gamma Spectroscopy	Tl-208 @ 860 keV	Sludge	9/5/95	9/7/96	Split Group B	1	2.8	2.9	pCi/g	98.2		
66	3	95.00753	Gamma Spectroscopy	Tl-208	Sludge	9/5/95	9/7/96	Split Group B	0.88	–	–	pCi/g	98.2		
66	3	95.00753	Gamma Spectroscopy	Pb-210 @ 46 keV	Sludge	9/5/95	9/7/96	Split Group B	2.1	1.8	2.5	pCi/g	98.2		
66	3	95.00753	Gamma Spectroscopy	Bi-212 @ 727keV	Sludge	9/5/95	9/7/96	Split Group B	-0.23	4.9	4.9	pCi/g	98.2		
66	3	95.00753	Gamma Spectroscopy	Pb-212 @ 238 keV	Sludge	9/5/95	9/7/96	Split Group B	0.9	0.27	0.43	pCi/g	98.2	Yes	
66	3	95.00753	Gamma Spectroscopy	Bi-214 @ 609 keV	Sludge	9/5/95	9/7/96	Split Group B	0.79	0.79	0.85	pCi/g	98.2		
66	3	95.00753	Gamma Spectroscopy	Bi-214 @ 1120 keV	Sludge	9/5/95	9/7/96	Split Group B	-1.8	2.9	2.9	pCi/g	98.2		
66	3	95.00753	Gamma Spectroscopy	Bi-214 @ 1764 keV	Sludge	9/5/95	9/7/96	Split Group B	4.7	1.8	2.8	pCi/g	98.2	Yes	
66	3	95.00753	Gamma Spectroscopy	Bi-214	Sludge	9/5/95	9/7/96	Split Group B	1.2	–	–	pCi/g	98.2		
66	3	95.00753	Gamma Spectroscopy	Pb-214 @ 295 keV	Sludge	9/5/95	9/7/96	Split Group B	0.23	1.1	1.2	pCi/g	98.2		
66	3	95.00753	Gamma Spectroscopy	Pb-214 @ 351 keV	Sludge	9/5/95	9/7/96	Split Group B	1.1	0.57	0.88	pCi/g	98.2	Yes	
66	3	95.00753	Gamma Spectroscopy	Pb-214	Sludge	9/5/95	9/7/96	Split Group B	0.87	–	–	pCi/g	98.2		
66	3	95.00753	Gamma Spectroscopy	Ra-228 @ 186 keV	Sludge	9/5/95	9/7/96	Split Group B	8.8	5.5	6.3	pCi/g	98.2	Yes	
66	3	95.00753	Gamma Spectroscopy	Ac-228 @ 338 keV	Sludge	9/5/95	9/7/96	Split Group B	0.44	1.8	2	pCi/g	98.2		
66	3	95.00753	Gamma Spectroscopy	Ac-228 @ 911 keV	Sludge	9/5/95	9/7/96	Split Group B	1.4	1.3	1.4	pCi/g	98.2		
66	3	95.00753	Gamma Spectroscopy	Ac-228 @ 968 keV	Sludge	9/5/95	9/7/96	Split Group B	4.3	2.1	2.4	pCi/g	98.2	Yes	
66	3	95.00753	Gamma Spectroscopy	Ac-228	Sludge	9/5/95	9/7/96	Split Group B	2.0	–	–	pCi/g	98.2		
66	3	95.00753	Gamma Spectroscopy	Th-234 @ 63 keV	Sludge	9/5/95	9/7/96	Split Group B	5.4	4	4.8	pCi/g	98.2	Yes	
66	3	95.00753	Gamma Spectroscopy	Th-234 @ 92 keV	Sludge	9/5/95	9/7/96	Split Group B	1.8	1.1	2.1	pCi/g	98.2		
66	3	95.00753	Gamma Spectroscopy	Th-234	Sludge	9/5/95	9/7/96	Split Group B	3.50	–	–	pCi/g	98.2		
66	3	95.00753	Gamma Spectroscopy	U-235 @ 143 keV	Sludge	9/5/95	9/7/96	Split Group B	-0.13	1.6	1.9	pCi/g	98.2		
66	3	95.00753	Gamma Spectroscopy	Total	Sludge	9/5/95	9/7/96	Split Group B	41.6	–	–	pCi/g	98.2		
66	3	95.00752	Gross Alpha	–	Sludge	9/5/95	8/15/96	Split Group B	240	230	380	pCi/g	98.2		
66	3	95.00752	Gross Beta	–	Sludge	9/5/95	8/15/96	Split Group B	-300	580	980	pCi/g	98.2		
66	3	95.00752	Tritium	–	Sludge	9/5/95	8/29/96	Split Group B	-0.002	0.01	0.01	pCi/g	98.2		
72	18	96.00172	Gross Alpha	–	Liquid	5/16/96	9/4/96		-3.1	1.1	0.99	pCi/l	–		
72	18	96.00172	Gross Beta	–	Liquid	5/16/96	9/4/96		43.1	5.2	2.4	pCi/l	–	Yes	
72	18	96.00172	Gross Gamma	–	Liquid	5/16/96	9/4/96		80	80	78	pCi/l	–		
72	18	96.00174	Tritium	–	Liquid	5/16/96	9/30/96		183	178	564	pCi/l	–		
72	18	96.00173	Gross Alpha	–	Sludge	5/16/96	9/4/96		3.2	1	0.39	pCi/g	97.1	Yes	
72	18	96.00173	Gross Beta	–	Sludge	5/16/96	9/4/96		2.4	0.29	1.3	pCi/g	97.1	Yes	
72	18	96.00173	Gross Gamma	–	Sludge	5/16/96	9/4/96		2.1	0.6	0.27	pCi/g	97.1	Yes	
72	18	96.00175	Tritium	–	Sludge	5/16/96	9/30/96		-101	174	561	pCi/l	% solids value could not be accurately obtained; in the 1% range.		

Table 12. Analysis Methods

Sampling Period	Analysis Description	Analysis By	Analysis For	Analysis Method
Initial	Screening	CST-9	Gross Alpha	MLR100/Proportional Counting
			Gross Beta	MLR100/Proportional Counting
			Gross Gamma	MLR200/Scintillation Counting
			Tritium	MLR300/Liquid Scintillation
	Reanalysis	CST-9	Gross Alpha	ER100/Proportional Counting
			Gross Beta	ER100/Proportional Counting
Later	Confirmatory	CST-9	Gross Alpha	ER100/Proportional Counting
			Gross Beta	ER100/Proportional Counting
			Gross Gamma	ER150/Scintillation Counting
			Tritium	ER210/Liquid Scintillation
Initial and Later	Split Samples	Accu-Labs	Gross Alpha	EPA Method 900.0/Modified
			Gross Beta	EPA Method 900.0/Modified
			Gamma Spectroscopy	EPA Method 901.1/Modified
			Tritium	EPA Method 906.0/Modified

Table 13. Minimum Detectable Activity for the Screening Analysis Methods

Physical State of the Sample	Analysis	Minimum Detectable Activity	Units
Liquid	Gross Alpha	358	pCi/l
	Gross Beta	564	pCi/l
	Gross Gamma	490	pCi/l
	Tritium	1050	pCi/l
Sludge	Gross Alpha	13.6	pCi/g
	Gross Beta	6.6	pCi/g
	Gross Gamma	2.2	pCi/g
	Tritium	0.26	pCi/g

Table 14. Estimated Measurement and Sampling Uncertainty for the Earlier Sampling Period

Analysis	Physical State	Sample Type	Estimated Measurement plus Sampling Uncertainty (1 Sigma)	Estimated Sampling Uncertainty (1 Sigma)	Measurement Uncertainty (1 Sigma) Estimated	Measurement Uncertainty (1 Sigma) Reported	Source of Estimated Measurement Uncertainty for the Duplicate Samples	Source of Estimated Measurement Uncertainty for the Split Samples	Units
Gross Gamma	Liquid	Duplicates Groups A & B	406	405	23	28	Average of the Estimates from the Later Sampling Period	--	pCi/l
Gross Gamma & Gamma Spectroscopy	Liquid	Splits Groups A & B	--	--	586	239	--	--	pCi/l
Gross Gamma	Liquid	Split Group A	--	--	23	19	--	Average of the Estimates from the Later Sampling Period	pCi/l
Gamma Spectroscopy	Liquid	Split Group B	--	--	585	238	--	Subtracting the estimated measurement uncertainty for the Split Group A Sample	pCi/l
Gross Alpha	Liquid	Duplicates Groups A & B	2.1	1.6	1.3	2.7	Average of the Estimates from the Later Sampling Period	--	pCi/l
Gross Alpha	Liquid	Splits Groups A & B	--	--	61	18	--	--	pCi/l
Gross Alpha	Liquid	Split Group A	--	--	1.3	18	--	Average of the Estimates from the Later Sampling Period	pCi/l
Gross Alpha	Liquid	Split Group B	--	--	61	3.3	--	Subtracting the estimated measurement uncertainty for the Split Group A Sample	pCi/l
Gross Beta	Liquid	Duplicates Groups A & B	6.0	5.8	1.5	1.8	Average of the Estimates from the Later Sampling Period	--	pCi/l
Gross Beta	Liquid	Splits Groups A & B	--	--	14	10	--	--	pCi/l
Gross Beta	Liquid	Split Group A	--	--	1.5	1.6	--	Average of the Estimates from the Later Sampling Period	
Gross Beta	Liquid	Split Group B	--	--	14	10	--	Subtracting the estimated measurement uncertainty for the Split Group A Sample	

Table 14. Estimated Measurement and Sampling Uncertainty for the Earlier Sampling Period

Analysis	Physical State	Sample Type	Estimated Measurement plus Sampling Uncertainty (1 Sigma)	Estimated Sampling Uncertainty (1 Sigma)	Measurement Uncertainty (1 Sigma) Estimated	Reported	Source of Estimated Measurement Uncertainty for the Duplicate Samples	Source of Estimated Measurement Uncertainty for the Split Samples	Units
Tritium	Liquid	Duplicates Groups A & B	971	956	170	399	Assumed the uncertainty of the Group A and B split samples were the same for the later sampling period	--	pCi/l
Tritium	Liquid	Splits Groups A & B	--	--	241	316	--	--	pCi/l
Tritium	Liquid	Split Group A	--	--	170	284	--	Assumed the uncertainty of the Group A and B split samples were the same for the later sampling period	pCi/l
Tritium	Liquid	Split Group B	--	--	170	140	--	Assumed the uncertainty of the Group A and B split samples were the same for the later sampling period	pCi/l
Gross Gamma	Sludge	Duplicates Groups A & B	0.9	0.87	0.22	0.13	Average of the Estimates from the Later Sampling Period	--	pCi/g
Gross Gamma & Gamma Spectroscopy	Sludge	Splits Groups A & B	--	--	271	99	--	--	pCi/g
Gross Gamma	Sludge	Split Group A	--	--	0.22	0.13	--	Average of the Estimates from the Later Sampling Period	pCi/g
Gamma Spectroscopy	Sludge	Split Group B	--	--	271	115	--	Subtracting the estimated measurement uncertainty for the Split Group A Sample	pCi/g
Gross Alpha	Sludge	Duplicates Groups A & B	2.1	--	6.6	4.0	Average of the Estimates from the Later Sampling Period	--	pCi/g
Gross Alpha	Sludge	Splits Groups A & B	--	--	179	191	--	--	pCi/g

Table 14. Estimated Measurement and Sampling Uncertainty for the Earlier Sampling Period

Analysis	Physical State	Sample Type	Estimated Measurement plus Sampling Uncertainty (1 Sigma)	Estimated Sampling Uncertainty (1 Sigma)	Measurement Uncertainty (1 Sigma) Estimated	Reported	Source of Estimated Measurement Uncertainty for the Duplicate Samples	Source of Estimated Measurement Uncertainty for the Split Samples	Units
Gross Alpha	Sludge	Split Group A	--	--	6.6	3.1	--	Average of the Estimates from the Later Sampling Period	pCi/g
Gross Alpha	Sludge	Split Group B	--	--	179	221	--	Subtracting the estimated measurement uncertainty for the Split Group A Sample	pCi/g
Gross Beta	Sludge	Duplicates Groups A & B	2.0	1.6	--	1.1	--	--	pCi/g
Gross Beta	Sludge	Splits Groups A & B	--	--	4936	513	--	--	pCi/g
Gross Beta	Sludge	Split Group A	--	--	--	1.1	--	--	pCi/g
Gross Beta	Sludge	Split Group B	--	--	4936	593	--	Subtracting the estimated measurement uncertainty for the Split Group A Sample	pCi/g
Tritium	Sludge	Duplicates Groups A & B	0.42	0.38	0.19	0.13	Assumed the uncertainty of the Group A and B split samples were the same for the later sampling period	--	pCi/g
Tritium	Sludge	Splits Groups A & B	--	--	0.27	0.11	--	--	pCi/g
Tritium	Sludge	Split Group A	--	--	0.19	0.13	--	Assumed the uncertainty of the Group A and B split samples were the same for the later sampling period	pCi/g
Tritium	Sludge	Split Group B	--	--	0.19	0.021	--	Assumed the uncertainty of the Group A and B split samples were the same for the later sampling period	pCi/g

Table 15. Measurement Difference Between Duplicate and Split Samples for the Earlier Sampling Period

Technical Area	Structure Number	Sample Number	Analysis	Physical State	Sample Type	Measurement	Measurement Difference	Standard Ddeviation of the Measurement Difference: Estimated	Standard Ddeviation of the Measurement Difference: Reported for Split Samples	Units
9	109	95.00709	Gross Gamma	Liquid	Duplicate Group A	20				pCi/l
9	109	95.00710	Gross Gamma	Liquid	Duplicate Group B	310	-290	574	--	pCi/l
11	20	95.00731	Gross Gamma	Liquid	Duplicate Group A	610				pCi/l
11	20	95.00732	Gross Gamma	Liquid	Duplicate Group B	1890	-1280	574	--	pCi/l
40	25	95.00719	Gross Gamma	Liquid	Duplicate Group A	100				pCi/l
40	25	95.00774	Gross Gamma	Liquid	Duplicate Group B	430	-330	574	--	pCi/l
49	118	95.00705	Gross Gamma	Liquid	Duplicate Group A	710				pCi/l
49	118	95.00706	Gross Gamma	Liquid	Duplicate Group B	650	60	574	--	pCi/l
3	2087	95.00715	Gross Gamma	Liquid	Split Group A	120				pCi/l
3	2087	95.00716	Gamma Spectroscopy	Liquid	Split Group B	-530	650	586	285	pCi/l
36	61	95.00727	Gross Gamma	Liquid	Split Group A	-390				pCi/l
36	61	95.00728	Gamma Spectroscopy	Liquid	Split Group B	85	-475	586	216	pCi/l
46	230	95.00724	Gross Gamma	Liquid	Split Group A	-460				pCi/l
46	230	95.00725	Gamma Spectroscopy	Liquid	Split Group B	210	-670	586	226	pCi/l
66	3	95.00722	Gross Gamma	Liquid	Split Group A	-10				pCi/l
66	3	95.00723	Gamma Spectroscopy	Liquid	Split Group B	290	-300	586	220	pCi/l
9	109	95.00709	Gross Alpha	Liquid	Duplicate Group A	0.41				pCi/l
9	109	95.00710	Gross Alpha	Liquid	Duplicate Group B	5.5	-5.1	3.0		pCi/l
11	20	95.00731	Gross Alpha	Liquid	Duplicate Group A	2.1				pCi/l
11	20	95.00732	Gross Alpha	Liquid	Duplicate Group B	2.4	-0.32	3.0		pCi/l
40	25	95.00719	Gross Alpha	Liquid	Duplicate Group A	0.40				pCi/l
40	25	95.00774	Gross Alpha	Liquid	Duplicate Group B	2.5	-2.1	3.0		pCi/l
49	118	95.00705	Gross Alpha	Liquid	Duplicate Group A	3.1				pCi/l
49	118	95.00706	Gross Alpha	Liquid	Duplicate Group B	10	-6.9	3.0		pCi/l
3	2087	95.00715	Gross Alpha	Liquid	Split Group A	0.50				pCi/l
3	2087	95.00716	Gross Alpha	Liquid	Split Group B	-0.020	0.52	61	2.0	pCi/l
36	61	95.00727	Gross Alpha	Liquid	Split Group A	150				pCi/l
36	61	95.00728	Gross Alpha	Liquid	Split Group B	29	121	61	36	pCi/l
46	230	95.00724	Gross Alpha	Liquid	Split Group A	-0.6				pCi/l
46	230	95.00725	Gross Alpha	Liquid	Split Group B	1.0	-1.5	61	0.85	pCi/l
66	3	95.00722	Gross Alpha	Liquid	Split Group A	1.7				pCi/l
66	3	95.00723	Gross Alpha	Liquid	Split Group B	0.88	0.81	61	1.2	pCi/l
9	109	95.00709	Gross Beta	Liquid	Duplicate Group A	7.1				pCi/l
9	109	95.00710	Gross Beta	Liquid	Duplicate Group B	10	-2.6	8.5		pCi/l
11	20	95.00731	Gross Beta	Liquid	Duplicate Group A	53				pCi/l
11	20	95.00732	Gross Beta	Liquid	Duplicate Group B	59	-6.1	8.5		pCi/l
40	25	95.00719	Gross Beta	Liquid	Duplicate Group A	5.4				pCi/l
40	25	95.00774	Gross Beta	Liquid	Duplicate Group B	1.2	4.2	8.5		pCi/l
49	118	95.00705	Gross Beta	Liquid	Duplicate Group A	50				pCi/l

Table 15. Measurement Difference Between Duplicate and Split Samples for the Earlier Sampling Period

Technical Area	Structure Number	Sample Number	Analysis	Physical State	Sample Type	Measurement	Measurement Difference	Standard Ddeviation of the Measurement Difference: Estimated	Standard Ddeviation of the Measurement Difference: Reported for Split Samples	Units
49	118	95.00706	Gross Beta	Liquid	Duplicate Group B	37	13	8.5		pCi/l
3	2087	95.00715	Gross Beta	Liquid	Split Group A	36				pCi/l
3	2087	95.00716	Gross Beta	Liquid	Split Group B	24	12	14	5.2	pCi/l
36	61	95.00727	Gross Beta	Liquid	Split Group A	130				pCi/l
36	61	95.00728	Gross Beta	Liquid	Split Group B	99	31	14	18	pCi/l
46	230	95.00724	Gross Beta	Liquid	Split Group A	6.6				pCi/l
46	230	95.00725	Gross Beta	Liquid	Split Group B	6.7	-0.12	14	2.0	pCi/l
66	3	95.00722	Gross Beta	Liquid	Split Group A	25				pCi/l
66	3	95.00723	Gross Beta	Liquid	Split Group B	21	3.6	14	4.0	pCi/l
9	109	95.00608	Tritium	Liquid	Duplicate Group A	733				pCi/l
9	109	95.00610	Tritium	Liquid	Duplicate Group B	428	305	1373		pCi/l
11	20	95.00666	Tritium	Liquid	Duplicate Group A	0.0				pCi/l
11	20	95.00667	Tritium	Liquid	Duplicate Group B	367	-367	1373		pCi/l
40	25	95.00644	Tritium	Liquid	Duplicate Group A	902				pCi/l
40	25	95.00646	Tritium	Liquid	Duplicate Group B	229	673	1373		pCi/l
49	118	95.00622	Tritium	Liquid	Duplicate Group A	3211				pCi/l
49	118	95.00620	Tritium	Liquid	Duplicate Group B	400	2812	1373		pCi/l
3	2087	95.00654	Tritium	Liquid	Split Group A	549				pCi/l
3	2087	95.00716	Tritium	Liquid	Split Group B	202	347	241	362	pCi/l
36	61	95.00655	Tritium	Liquid	Split Group A	0.0				pCi/l
36	61	95.00728	Tritium	Liquid	Split Group B	170	-170	241	140	pCi/l
46	230	95.00656	Tritium	Liquid	Split Group A	479				pCi/l
46	230	95.00725	Tritium	Liquid	Split Group B	202	277	241	342	pCi/l
66	3	95.00648	Tritium	Liquid	Split Group A	561				pCi/l
66	3	95.00723	Tritium	Liquid	Split Group B	260	301	241	365	pCi/l
9	109	95.00741	Gross Gamma	Sludge	Duplicate Group A	2.0				pCi/g
9	109	95.00742	Gross Gamma	Sludge	Duplicate Group B	1.4	0.54	1.3		pCi/g
40	25	95.00746	Gross Gamma	Sludge	Duplicate Group A	-5.5				pCi/g
40	25	95.00754	Gross Gamma	Sludge	Duplicate Group B	-5.4	-0.030	1.3		pCi/g
49	118	95.00738	Gross Gamma	Sludge	Duplicate Group A	-3.8				pCi/g
49	118	95.00739	Gross Gamma	Sludge	Duplicate Group B	-1.9	-1.9	1.3		pCi/g
52	99	95.00747	Gross Gamma	Sludge	Split Group A	-4.6				pCi/g
52	99	95.00751	Gamma Spectroscopy	Sludge	Split Group B	37	-41	271	14	pCi/g
54	16	95.00748	Gross Gamma	Sludge	Split Group A	-0.45				pCi/g
54	16	95.00752	Gamma Spectroscopy	Sludge	Split Group B	512	-512	271	198	pCi/g
66	3	95.00749	Gross Gamma	Sludge	Split Group A	-4.6				pCi/g
66	3	95.00753	Gamma Spectroscopy	Sludge	Split Group B	42	-46	271	5.4	pCi/g
9	109	95.00758	Gross Alpha	Sludge	Duplicate Group A	5.6				pCi/g
9	109	95.00759	Gross Alpha	Sludge	Duplicate Group B	13	-7.7	2.9		pCi/g
40	25	95.00763	Gross Alpha	Sludge	Duplicate Group A	1.7				pCi/g
40	25	95.00771	Gross Alpha	Sludge	Duplicate Group B	3.7	-1.9	2.9		pCi/g
49	118	95.00755	Gross Alpha	Sludge	Duplicate Group A	7.5				pCi/g
49	118	95.00756	Gross Alpha	Sludge	Duplicate Group B	11	-3.9	2.9		pCi/g

Table 15. Measurement Difference Between Duplicate and Split Samples for the Earlier Sampling Period

Technical Area	Structure Number	Sample Number	Analysis	Physical State	Sample Type	Measurement	Measurement Difference	Standard Ddeviation of the Measurement Difference: Estimated	Standard Ddeviation of the Measurement Difference: Reported for Split Samples	Units
52	99	95.00764	Gross Alpha	Sludge	Split Group A	3.7				pCi/g
52	99	95.00751	Gross Alpha	Sludge	Split Group B	380	-376	179	120	pCi/g
54	16	95.00765	Gross Alpha	Sludge	Split Group A	5.6				pCi/g
54	16	95.00753	Gross Alpha	Sludge	Split Group B	27	-21	179	345	pCi/g
66	3	95.00766	Gross Alpha	Sludge	Split Group A	3.7				pCi/g
66	3	95.00752	Gross Alpha	Sludge	Split Group B	240	-236	179	115	pCi/g
9	109	95.00758	Gross Beta	Sludge	Duplicate Group A	4.6				pCi/g
9	109	95.00759	Gross Beta	Sludge	Duplicate Group B	10	-5.1	2.8		pCi/g
40	25	95.00763	Gross Beta	Sludge	Duplicate Group A	-0.31				pCi/g
40	25	95.00771	Gross Beta	Sludge	Duplicate Group B	3.0	-3.3	2.8		pCi/g
49	118	95.00755	Gross Beta	Sludge	Duplicate Group A	7.4				pCi/g
49	118	95.00756	Gross Beta	Sludge	Duplicate Group B	7.0	0.36	2.8		pCi/g
52	99	95.00764	Gross Beta	Sludge	Split Group A	3.6				pCi/g
52	99	95.00751	Gross Beta	Sludge	Split Group B	220	-216	4936	270	pCi/g
54	16	95.00765	Gross Beta	Sludge	Split Group A	5.9				pCi/g
54	16	95.00753	Gross Beta	Sludge	Split Group B	8500	-8494	4936	950	pCi/g
66	3	95.00766	Gross Beta	Sludge	Split Group A	4.5				pCi/g
66	3	95.00752	Gross Beta	Sludge	Split Group B	-300	304	4936	280	pCi/g
9	109	95.00609	Tritium	Sludge	Duplicate Group A	0.59				pCi/g
9	109	95.00611	Tritium	Sludge	Duplicate Group B	1.8	-1.2	0.60		pCi/g
40	25	95.00645	Tritium	Sludge	Duplicate Group A	1.0				pCi/g
40	25	95.00647	Tritium	Sludge	Duplicate Group B	1.6	-0.62	0.60		pCi/g
49	118	95.00619	Tritium	Sludge	Duplicate Group A	1.2				pCi/g
49	118	95.00621	Tritium	Sludge	Duplicate Group B	1.1	0.040	0.60		pCi/g
52	99	95.00641	Tritium	Sludge	Split Group A	1.3				pCi/g
52	99	95.00751	Tritium	Sludge	Split Group B	0.010	1.3	0.27	0.13	pCi/g
54	16	95.00653	Tritium	Sludge	Split Group A	1.0				pCi/g
54	16	95.00753	Tritium	Sludge	Split Group B	0.10	0.90999999	0.27	0.13	pCi/g
66	3	95.00649	Tritium	Sludge	Split Group A	1.4				pCi/g
66	3	95.00752	Tritium	Sludge	Split Group B	-0.0020	1.4	0.27	0.13	pCi/g

Table 16. Average Measurement Difference Between Duplicate and Split Samples for the Earlier Sampling Period

Analysis	Physical State	Sample Type	Average Measurement	Average Measurement Difference	Standard Ddeviation of the Average Measurement Difference: Estimated	Standard Ddeviation of the Average Measurement Difference: Reported for Split Samples	Units
Gross Gamma	Liquid	Duplicate Group A	360				pCi/l
Gross Gamma	Liquid	Duplicate Group B	820	-460	331	--	pCi/l
Gross Gamma	Liquid	Split Group A	-185	--	--	--	pCi/l
Gamma Spectroscopy	Liquid	Split Group B	14	-199	338	276	pCi/l
Gross Alpha	Liquid	Duplicate Group A	1.5	--	--	--	pCi/l
Gross Alpha	Liquid	Duplicate Group B	5.1	-3.6	1.7	--	pCi/l
Gross Alpha	Liquid	Split Group A	38	--	--	--	pCi/l
Gross Alpha	Liquid	Split Group B	7.7	30	35	21	pCi/l
Gross Beta	Liquid	Duplicate Group A	28.9	--	--	--	pCi/l
Gross Beta	Liquid	Duplicate Group B	26.8	2.2	4.9	--	pCi/l
Gross Beta	Liquid	Split Group A	49	--	--	--	pCi/l
Gross Beta	Liquid	Split Group B	38	12	8.0	11	pCi/l
Tritium	Liquid	Duplicate Group A	1212	--	--	--	pCi/l
Tritium	Liquid	Duplicate Group B	356	856	793	--	pCi/l
Tritium	Liquid	Split Group A	397	--	--	--	pCi/l
Tritium	Liquid	Split Group B	209	189	139	365	pCi/l
Gross Gamma	Sludge	Duplicate Group A	-2.4	--	--	--	pCi/g
Gross Gamma	Sludge	Duplicate Group B	-2.0	-0.5	0.73	--	pCi/g
Gross Gamma	Sludge	Split Group A	-3.2	--	--	--	pCi/g
Gamma Spectroscopy	Sludge	Split Group B	197	-200	156	140	pCi/g
Gross Alpha	Sludge	Duplicate Group A	5.0	--	--	--	pCi/g
Gross Alpha	Sludge	Duplicate Group B	9.5	-4.5	1.7	--	pCi/g
Gross Alpha	Sludge	Split Group A	4.3	--	--	--	pCi/g
Gross Alpha	Sludge	Split Group B	216	-211	103	271	pCi/g
Gross Beta	Sludge	Duplicate Group A	3.9	--	--	--	pCi/g
Gross Beta	Sludge	Duplicate Group B	6.6	-2.7	1.6	--	pCi/g
Gross Beta	Sludge	Split Group A	4.6	--	--	--	pCi/g
Gross Beta	Sludge	Split Group B	2807	-2802	2850	726	pCi/g
Tritium	Sludge	Duplicate Group A	0.91	--	--	--	pCi/g
Tritium	Sludge	Duplicate Group B	1.5	-0.58	0.35	--	pCi/g
Tritium	Sludge	Split Group A	1.2	--	--	--	pCi/g
Tritium	Sludge	Split Group B	0.036	1.2	0.15	0.16	pCi/g

Table 17. Measurement and Sampling Uncertainty for the Later Sampling Period

Technical Area	Structure Number	Analysis	Physical State	Sample Type	Measurement Uncertainty (1 Sigma) Estimated	Measurement Uncertainty (1 Sigma) Reported	Estimated Measurement Plus Sampling Uncertainty (1 Sigma)	Estimated Sampling Uncertainty (1 Sigma)	Units
9	109	Gross Gamma/ Gamma Spectroscopy	Liquid	Group A and B Splits	29	45	--	--	pCi/l
9	109	Gross Gamma/ Gamma Spectroscopy	Liquid	Group A Splits	21	25	15	--	pCi/l
9	109	Gross Gamma/ Gamma Spectroscopy	Liquid	Group B Splits	20	37	14	--	pCi/l
11	20	Gross Gamma/ Gamma Spectroscopy	Liquid	Group A and B Splits	31	46	--	--	pCi/l
11	20	Gross Gamma/ Gamma Spectroscopy	Liquid	Group A Splits	24	25	25	7.3	pCi/l
11	20	Gross Gamma/ Gamma Spectroscopy	Liquid	Group B Splits	19	39	20	7.3	pCi/l
9	109	Gross Alpha	Liquid	Group A and B Splits	0.71	1.0	--	--	pCi/l
9	109	Gross Alpha	Liquid	Group A Splits	0.25	0.12	0.91	0.87	pCi/l
9	109	Gross Alpha	Liquid	Group B Splits	0.67	1.0	1.1	0.87	pCi/l
11	20	Gross Alpha	Liquid	Group A and B Splits	2.4	1.6	--	--	pCi/l
11	20	Gross Alpha	Liquid	Group A Splits	2.3	0.31	2.3	--	pCi/l
11	20	Gross Alpha	Liquid	Group B Splits	0.57	1.6	0.47	--	pCi/l
9	109	Gross Beta	Liquid	Group A and B Splits	2.8	2.1	--	--	pCi/l
9	109	Gross Beta	Liquid	Group A Splits	1.5	0.37	1.1	--	pCi/l
9	109	Gross Beta	Liquid	Group B Splits	2.4	2.1	2.1	--	pCi/l
11	20	Gross Beta	Liquid	Group A and B Splits	5.3	16	--	--	pCi/l
11	20	Gross Beta	Liquid	Group A Splits	--	4.5	6.9	--	pCi/l
11	20	Gross Beta	Liquid	Group B Splits	--	15	3.5	--	pCi/l
9	109	Tritium	Liquid	Group A and B Splits	321	156	--	--	pCi/l
9	109	Tritium	Liquid	Group A Splits	321	86	322	19	pCi/l
9	109	Tritium	Liquid	Group B Splits	7.4	130	20	19	pCi/l
11	20	Tritium	Liquid	Group A and B Splits	74	156	--	--	pCi/l
11	20	Tritium	Liquid	Group A Splits	72	86	84	44	pCi/l
11	20	Tritium	Liquid	Group B Splits	17	130	47	44	pCi/l

Table 17. Measurement and Sampling Uncertainty for the Later Sampling Period

Technical Area	Structure Number	Analysis	Physical State	Sample Type	Measurement Uncertainty (1 Sigma) Estimated	Measurement Uncertainty (1 Sigma) Reported	Estimated Measurement Plus Sampling Uncertainty (1 Sigma)	Estimated Sampling Uncertainty (1 Sigma)	Units
9	109	Gross Gamma/ Gamma Spectroscopy	Sludge	Group A and B Splits	0.92	0.94	--	--	pCi/g
9	109	Gross Gamma/ Gamma Spectroscopy	Sludge	Group A Splits	0.22	0.15	0.10	--	pCi/g
9	109	Gross Gamma/ Gamma Spectroscopy	Sludge	Group B Splits	0.89	0.93	0.87	--	pCi/g
9	109	Gross Alpha	Sludge	Group A and B Splits	7.3	6.9	--	--	pCi/g
9	109	Gross Alpha	Sludge	Group A Splits	6.6	3.0	5.9	--	pCi/g
9	109	Gross Alpha	Sludge	Group B Splits	3.2	6.2	1.5	--	pCi/g
9	109	Gross Beta	Sludge	Group A and B Splits	5.5	7.2	--	--	pCi/g
9	109	Gross Beta	Sludge	Group A Splits	5.0	0.48	4.6	--	pCi/g
9	109	Gross Beta	Sludge	Group B Splits	2.3	7.2	1.0	--	pCi/g
9	109	Tritium	Sludge	Group A and B Splits	0.031	0.30	--	--	pCi/g
9	109	Tritium	Sludge	Group A Splits	0.012	0.30	0.0058	--	pCi/g
9	109	Tritium	Sludge	Group B Splits	0.028	0.026	0.026	--	pCi/g

Table 18. Measurement and Sampling Uncertainty for the Later Sampling Period, Summary Statistics

Physical State	Analysis	Sample Type	Statistic	Measurement Uncertainty (1 Sigma) Estimated	Measurement Uncertainty (1 Sigma) Reported	Estimated Measurement Plus Sampling Uncertainty (1 Sigma)	Estimated Sampling Uncertainty (1 Sigma)	Units
Liquid	Gross Gamma/ Gamma Spectroscopy	Group A and B Splits	Minimum	29	45	--	--	pCi/l
			Maximum	31	46	--	--	pCi/l
			Average	29	45	--	--	pCi/l
			Standard Deviation	1.2	0.88	--	--	pCi/l
			Sample Size	2	2	--	--	
		Group A Splits	Minimum	21	25	15	7.3	pCi/l
			Maximum	24	25	25	7.3	pCi/l
			Average	23	25	20	7.3	pCi/l
			Standard Deviation	2.2	0	7	--	pCi/l
			Sample Size	2	2	2	1	
		Group B Splits	Minimum	19	37	14	7.3	pCi/l
			Maximum	20	38	20	7.3	pCi/l
			Average	20	38	17	7.3	pCi/l
			Standard Deviation	0.62	1	4.7	--	pCi/l
			Sample Size	2	2	2	1	
	Gross Alpha	Group A and B Splits	Minimum	0.71	1	--	--	pCi/l
			Maximum	2.4	1.6	--	--	pCi/l
			Average	1.6	1.3	--	--	pCi/l
			Standard Deviation	1.2	0.41	--	--	pCi/l
			Sample Size	2	2	--	--	
		Group A Splits	Minimum	0.25	0.12	0.91	0.87	pCi/l
			Maximum	2.3	0.31	2.3	0.87	pCi/l
			Average	1.3	0.21	1.6	0.87	pCi/l
			Standard Deviation	1.5	0.14	0.99	--	pCi/l
			Sample Size	2	2	2	1	
		Group B Splits	Minimum	0.57	1	0.47	0.87	pCi/l
			Maximum	0.67	1.6	1.1	0.87	pCi/l
			Average	0.62	1.3	0.79	0.87	pCi/l
			Standard Deviation	0.07	0.39	0.44	--	pCi/l
			Sample Size	2	2	2	1	
	Gross Beta	Group A and B Splits	Minimum	2.8	2.1	--	--	pCi/l
			Maximum	5.3	16	--	--	pCi/l
			Average	4.1	9.1	--	--	pCi/l
			Standard Deviation	1.7	9.8	--	--	pCi/l
			Sample Size	2	2	--	--	
		Group A Splits	Minimum	1.5	0.37	1.1	--	pCi/l
			Maximum	1.5	4.6	6.9	--	pCi/l
			Average	1.5	2.5	4.0	--	pCi/l
			Standard Deviation	--	3.0	4.1	--	pCi/l
			Sample Size	1	2	2	--	
		Group B Splits	Minimum	2.4	2.1	2.1	--	pCi/l
			Maximum	2.4	15	3.5	--	pCi/l
			Average	2.4	8.7	2.8	--	pCi/l
			Standard Deviation	--	9.4	0.99	--	pCi/l
			Sample Size	1	2	2	--	

Table 18. Measurement and Sampling Uncertainty for the Later Sampling Period, Summary Statistics

Physical State	Analysis	Sample Type	Statistic	Measurement Uncertainty (1 Sigma) Estimated	Measurement Uncertainty (1 Sigma) Reported	Estimated Measurement Plus Sampling Uncertainty (1 Sigma)	Estimated Sampling Uncertainty (1 Sigma)	Units
Liquid	Tritium	Group A and B Splits	Minimum	74	156	--	--	pCi/l
			Maximum	321	156	--	--	pCi/l
			Average	197	156	--	--	pCi/l
			Standard Deviation	175	0.017	--	--	pCi/l
			Sample Size	2	2	--	--	
		Group A Splits	Minimum	72	86	84	19	pCi/l
			Maximum	321	86	322	44	pCi/l
			Average	196	86	203	32	pCi/l
			Standard Deviation	176	0.030	168	18	pCi/l
			Sample Size	2	2	2	2	
		Group B Splits	Minimum	7.4	130	20	19	pCi/l
			Maximum	17	130	47	44	pCi/l
			Average	12	130	34	32	pCi/l
			Standard Deviation	6.5	0	19	18	pCi/l
			Sample Size	2	2	2	2	
Sludge	Gross Gamma/ Gamma Spectroscopy	Group A and B Splits	Minimum	0.92	0.94	--	--	pCi/g
			Maximum	0.92	0.94	--	--	pCi/g
			Average	0.92	0.94	--	--	pCi/g
			Standard Deviation	--	--	--	--	
			Sample Size	1	1	--	--	
		Group A Splits	Minimum	0.22	0.15	0.10	--	pCi/g
			Maximum	0.22	0.15	0.10	--	pCi/g
			Average	0.22	0.15	0.10	--	pCi/g
			Standard Deviation	--	--	--	--	
			Sample Size	1	1	1	--	
		Group B Splits	Minimum	0.89	0.93	0.87	--	pCi/g
			Maximum	0.89	0.93	0.87	--	pCi/g
			Average	0.89	0.93	0.87	--	pCi/g
			Standard Deviation	--	--	--	--	
			Sample Size	1	1	1	--	
	Gross Alpha	Group A and B Splits	Minimum	7.3	6.9	--	--	pCi/g
			Maximum	7.3	6.9	--	--	pCi/g
			Average	7.3	6.9	--	--	pCi/g
			Standard Deviation	--	--	--	--	
			Sample Size	1	1	--	--	
		Group A Splits	Minimum	6.6	3.0	5.9	--	pCi/g
			Maximum	6.6	3.0	5.9	--	pCi/g
			Average	6.6	3.0	5.9	--	pCi/g
			Standard Deviation	--	--	--	--	
			Sample Size	1	1	1	--	
		Group B Splits	Minimum	3.2	6.2	1.5	--	pCi/g
			Maximum	3.2	6.2	1.5	--	pCi/g
			Average	3.2	6.2	1.5	--	pCi/g
			Standard Deviation	--	--	--	--	
			Sample Size	1	1	1	--	
	Gross Beta	Group A and B Splits	Minimum	5.5	7.2	--	--	pCi/g
			Maximum	5.5	7.2	--	--	pCi/g
			Average	5.5	7.2	--	--	pCi/g
			Standard Deviation	--	--	--	--	
			Sample Size	1.0	1.0	--	--	

Table 18. Measurement and Sampling Uncertainty for the Later Sampling Period, Summary Statistics

Physical State	Analysis	Sample Type	Statistic	Measurement Uncertainty (1 Sigma) Estimated	Measurement Uncertainty (1 Sigma) Reported	Estimated Measurement Plus Sampling Uncertainty (1 Sigma)	Estimated Sampling Uncertainty (1 Sigma)	Units
Sludge	Gross Beta	Group A Splits	Minimum	5.0	0.5	4.6	--	pCi/g
			Maximum	5.0	0.5	4.6	--	pCi/g
			Average	5.0	0.5	4.6	--	pCi/g
			Standard Deviation	--	--	--	--	
			Sample Size	1	1	1	--	
		Group B Splits	Minimum	2.3	7.2	1.0	--	pCi/g
			Maximum	2.3	7.2	1.0	--	pCi/g
			Average	2.3	7.2	1.0	--	pCi/g
			Standard Deviation	--	--	--	--	
			Sample Size	1	1	1	--	
		Group A and B Splits	Minimum	0.031	0.30	--	--	pCi/g
			Maximum	0.031	0.30	--	--	pCi/g
			Average	0.031	0.30	--	--	pCi/g
			Standard Deviation	--	--	--	--	
			Sample Size	1	1	--	--	
		Group A Splits	Minimum	0.012	0.30	0.0058	--	pCi/g
			Maximum	0.012	0.30	0.0058	--	pCi/g
			Average	0.012	0.30	0.0058	--	pCi/g
			Standard Deviation	--	--	--	--	
			Sample Size	1	1	1	--	
		Group B Splits	Minimum	0.028	0.026	0.026	--	pCi/g
			Maximum	0.028	0.026	0.026	--	pCi/g
			Average	0.028	0.026	0.026	--	pCi/g
			Standard Deviation	--	--	--	--	
			Sample Size	1	1	1	--	

Table 19. Measurement Difference Between Split Samples For the Later Sampling Period

Technical Area	Structure Number	Sample Number	Analysis	Physical State	Sample Type	Measurement	Measurement Difference Between the Split Samples	Standard Deviation of the Measurement Difference: Estimated	Standard Deviation of the Measurement Difference: Reported	Units
9	109	96.00125	Gross Gamma	Liquid	Rinse	50				pCi/l
9	109	96.00126	Gamma Spectroscopy	Liquid	Rinse/Split	7.2	43	--	43	pCi/l
9	109	96.00127	Gross Gamma	Liquid	Split Group A	70				pCi/l
9	109	96.00128	Gamma Spectroscopy	Liquid	Split Group B	-4	74	29	43	pCi/l
9	109	96.00129	Gross Gamma	Liquid	Split Group A	60				pCi/l
9	109	96.00130	Gamma Spectroscopy	Liquid	Split Group B	1.4	59	29	46	pCi/l
9	109	96.00131	Gross Gamma	Liquid	Split Group A	40				pCi/l
9	109	96.00132	Gamma Spectroscopy	Liquid	Split Group B	22	18	29	44	pCi/l
9	109	96.00133	Gross Gamma	Liquid	Rinse	40				pCi/l
9	109	96.00134	Gamma Spectroscopy	Liquid	Rinse/Split	-16	56	--	46	pCi/l
11	20	96.00135	Gross Gamma	Liquid	Split Group A	90				pCi/l
11	20	96.00136	Gamma Spectroscopy	Liquid	Split Group B	15	75	31	47	pCi/l
11	20	96.00137	Gross Gamma	Liquid	Split Group A	60				pCi/l
11	20	96.00138	Gamma Spectroscopy	Liquid	Split Group B	45	15	31	45	pCi/l
11	20	96.00139	Gross Gamma	Liquid	Split Group A	40				pCi/l
11	20	96.00140	Gamma Spectroscopy	Liquid	Split Group B	6.1	34	31	46	pCi/l
11	20	96.00141	Gross Gamma	Liquid	Rinse	30				pCi/l
11	20	96.00142	Gamma Spectroscopy	Liquid	Rinse/Split	80	-50	--	45	pCi/l
36	61	96.00103	Gross Gamma	Liquid	Split Group A	80				pCi/l
36	61	96.00104	Gamma Spectroscopy	Liquid	Split Group B	2.7	77	--	46	pCi/l
9	109	96.00125	Gross Alpha	Liquid	Rinse	34.4				pCi/l
9	109	96.00126	Gross Alpha	Liquid	Rinse/Split	61	-27	--	15	pCi/l
9	109	96.00127	Gross Alpha	Liquid	Split Group A	-0.59				pCi/l
9	109	96.00128	Gross Alpha	Liquid	Split Group B	1.8	-2.4	0.71	0.71	pCi/l
9	109	96.00129	Gross Alpha	Liquid	Split Group A	0.8				pCi/l
9	109	96.00130	Gross Alpha	Liquid	Split Group B	4	-3.2	0.71	1.2	pCi/l
9	109	96.00131	Gross Alpha	Liquid	Split Group A	-0.91				pCi/l
9	109	96.00132	Gross Alpha	Liquid	Split Group B	2.9	-3.8	0.71	1.2	pCi/l
9	109	96.00133	Gross Alpha	Liquid	Rinse	0.46				pCi/l
9	109	96.00134	Gross Alpha	Liquid	Rinse/Split	0.88	-0.42	--	0.5	pCi/l
11	20	96.00135	Gross Alpha	Liquid	Split Group A	-1.6				pCi/l
11	20	96.00136	Gross Alpha	Liquid	Split Group B	1.6	-3.2	2.4	1.6	pCi/l
11	20	96.00137	Gross Alpha	Liquid	Split Group A	-5				pCi/l
11	20	96.00138	Gross Alpha	Liquid	Split Group B	2.3	-7.3	2.4	1.4	pCi/l
11	20	96.00139	Gross Alpha	Liquid	Split Group A	-0.58				pCi/l
11	20	96.00140	Gross Alpha	Liquid	Split Group B	2.5	-3.1	2.4	1.8	pCi/l
11	20	96.00141	Gross Alpha	Liquid	Rinse	-0.5				pCi/l
11	20	96.00142	Gross Alpha	Liquid	Rinse/Split	0.95	-1.5	--	0.47	pCi/l
36	61	96.00103	Gross Alpha	Liquid	Split Group A	23.7				pCi/l
36	61	96.00104	Gross Alpha	Liquid	Split Group B	33	-9.3	--	11	pCi/l
9	109	96.00125	Gross Beta	Liquid	Rinse	31.1				pCi/l
9	109	96.00126	Gross Beta	Liquid	Rinse/Split	56	-25	--	13	pCi/l
9	109	96.00127	Gross Beta	Liquid	Split Group A	7				pCi/l
9	109	96.00128	Gross Beta	Liquid	Split Group B	5.9	1.1	2.8	1.7	pCi/l
9	109	96.00129	Gross Beta	Liquid	Split Group A	6.3				pCi/l
9	109	96.00130	Gross Beta	Liquid	Split Group B	10	-3.7	2.8	2.3	pCi/l
9	109	96.00131	Gross Beta	Liquid	Split Group A	4.9				pCi/l
9	109	96.00132	Gross Beta	Liquid	Split Group B	8.8	-3.9	2.8	2.3	pCi/l
9	109	96.00133	Gross Beta	Liquid	Rinse	3.4				pCi/l
9	109	96.00134	Gross Beta	Liquid	Rinse/Split	3.8	-0.40	--	1.1	pCi/l

Table 19. Measurement Difference Between Split Samples For the Later Sampling Period

Technical Area	Structure Number	Sample Number	Analysis	Physical State	Sample Type	Measurement	Measurement Difference Between the Split Samples	Standard Deviation of the Measurement Difference: Estimated	Standard Deviation of the Measurement Difference: Reported	Units
11	20	96.00135	Gross Beta	Liquid	Split Group A	85				pCi/l
11	20	96.00136	Gross Beta	Liquid	Split Group B	75	10	5.3	16	pCi/l
11	20	96.00137	Gross Beta	Liquid	Split Group A	71.7				pCi/l
11	20	96.00138	Gross Beta	Liquid	Split Group B	72	-0.30	5.3	17	pCi/l
11	20	96.00139	Gross Beta	Liquid	Split Group A	75				pCi/l
11	20	96.00140	Gross Beta	Liquid	Split Group B	68	7.0	5.3	15	pCi/l
11	20	96.00141	Gross Beta	Liquid	Rinse	2.5				pCi/l
11	20	96.00142	Gross Beta	Liquid	Rinse/Split	2.9	-0.40	--	1.0	pCi/l
36	61	96.00103	Gross Beta	Liquid	Split Group A	115				pCi/l
36	61	96.00104	Gross Beta	Liquid	Split Group B	120	-5.0	--	29	pCi/l
9	109	96.00143	Tritium	Liquid	Split Group A	-101				pCi/l
9	109	96.00144	Tritium	Liquid	Split Group B	46	-147	321	156	pCi/l
9	109	96.00145	Tritium	Liquid	Split Group A	-328				pCi/l
9	109	96.00146	Tritium	Liquid	Split Group B	7.2	-335	321	154	pCi/l
9	109	96.00147	Tritium	Liquid	Split Group A	307				pCi/l
9	109	96.00148	Tritium	Liquid	Split Group B	16	291	321	158	pCi/l
9	109	96.00149	Tritium	Liquid	Rinse	-288				pCi/l
9	109	96.00150	Tritium	Liquid	Rinse/Split	-8	-280	--	154	pCi/l
9	109	96.00170	Tritium	Liquid	Rinse/Split	-120	71	--	156	pCi/l
9	109	96.00171	Tritium	Liquid	Rinse	-49				pCi/l
11	20	96.00151	Tritium	Liquid	Split Group A	-34				pCi/l
11	20	96.00152	Tritium	Liquid	Split Group B	7	-41	74	156	pCi/l
11	20	96.00153	Tritium	Liquid	Split Group A	25				pCi/l
11	20	96.00154	Tritium	Liquid	Split Group B	100	-75	74	156	pCi/l
11	20	96.00155	Tritium	Liquid	Split Group A	-141				pCi/l
11	20	96.00156	Tritium	Liquid	Split Group B	41	-182	74	155	pCi/l
11	20	96.00157	Tritium	Liquid	Rinse	340				pCi/l
11	20	96.00158	Tritium	Liquid	Rinse/Split	56	284	--	159	pCi/l
36	61	96.00111	Tritium	Liquid	Split Group A	52				pCi/l
36	61	96.00112	Tritium	Liquid	Split Group B	190	-138	--	161	pCi/l
9	109	96.00119	Gross Gamma	Sludge	Split Group A	2.7				pCi/g
9	109	96.00120	Gamma Spectroscopy	Sludge	Split Group B	27	-25	0.92	0.86	pCi/g
9	109	96.00121	Gross Gamma	Sludge	Split Group A	2.6				pCi/g
9	109	96.00122	Gamma Spectroscopy	Sludge	Split Group B	29	-26	0.92	1.1	pCi/g
9	109	96.00123	Gross Gamma	Sludge	Split Group A	2.8				pCi/g
9	109	96.00124	Gamma Spectroscopy	Sludge	Split Group B	28	-26	0.92	0.85	pCi/g
9	109	96.00119	Gross Alpha	Sludge	Split Group A	7.6				pCi/g
9	109	96.00120	Gross Alpha	Sludge	Split Group B	18	-10	7.3	6.7	pCi/g
9	109	96.00121	Gross Alpha	Sludge	Split Group A	9.6				pCi/g
9	109	96.00122	Gross Alpha	Sludge	Split Group B	19	-9.4	7.3	6.8	pCi/g
9	109	96.00123	Gross Alpha	Sludge	Split Group A	18.7				pCi/g
9	109	96.00124	Gross Alpha	Sludge	Split Group B	16	2.7	7.3	7.0	pCi/g
9	109	96.00119	Gross Beta	Sludge	Split Group A	3.7				pCi/g
9	109	96.00120	Gross Beta	Sludge	Split Group B	27	-23	5.5	7.5	pCi/g
9	109	96.00121	Gross Beta	Sludge	Split Group A	4.2				pCi/g
9	109	96.00122	Gross Beta	Sludge	Split Group B	26	-22	5.5	7.0	pCi/g
9	109	96.00123	Gross Beta	Sludge	Split Group A	11.9				pCi/g
9	109	96.00124	Gross Beta	Sludge	Split Group B	25	-13	5.5	7.0	pCi/g
9	109	96.00164	Tritium	Sludge	Split Group B	0.01	-0.18	0.031	0.12	pCi/g
9	109	96.00165	Tritium	Sludge	Split Group A	-0.17				pCi/g
9	109	96.00166	Tritium	Sludge	Split Group B	0.020	-0.20	0.031	0.12	pCi/g
9	109	96.00167	Tritium	Sludge	Split Group A	-0.18				pCi/g
9	109	96.00168	Tritium	Sludge	Split Group B	0.010	-0.14	0.031	0.49	pCi/g
9	109	96.00169	Tritium	Sludge	Split Group A	-0.13				pCi/g

Table 20. Measurement Difference Between Split Samples For the Later Sampling Period, Summary Statistics

Physical State	Analysis	Sample Type	Statistic	Measurement	Measurement Difference Between the Split Samples	Standard Deviation of the Measurement Difference: Estimated	Standard Deviation of the Measurement Difference: Reported	Units
Liquid	Gross Gamma/ Gamma Spectroscopy	Split Group A	Minimum	40	15	29	43	pCi/l
			Maximum	90	77	31	47	pCi/l
			Average	63	50	30	45	pCi/l
			Standard Devialton of the Mean	7.7	11	0.39	0.55	pCi/l
			Sample Size	7	7	7	7	
		Split Group B	Minimum	-4	--	--	--	pCi/l
			Maximum	45	--	--	--	pCi/l
			Average	13	--	--	--	pCi/l
			Standard Devialton of the Mean	6.8	--	--	--	pCi/l
			Sample Size	7	--	--	--	
		Rinse	Minimum	30	-50	--	43	pCi/l
			Maximum	50	56	--	46	pCi/l
			Average	40	16	--	45	pCi/l
			Standard Devialton of the Mean	7.1	41	--	0.94	pCi/l
			Sample Size	3	3	--	3	
		Rinse/Split	Minimum	-16	--	--	--	pCi/l
			Maximum	80	--	--	--	pCi/l
			Average	24	--	--	--	pCi/l
			Standard Devialton of the Mean	35	--	--	--	pCi/l
			Sample Size	3	--	--	--	
	Gross Alpha	Split Group A	Minimum	-5	-9.3	0.71	0.71	pCi/l
			Maximum	24	-2.4	2.4	11	pCi/l
			Average	2.3	-4.6	1.6	2.6	pCi/l
			Standard Devialton of the Mean	3.9	1.1	0.38	1.4	pCi/l
			Sample Size	7	7	7	7	
		Split Group B	Minimum	1.6	--	--	--	pCi/l
			Maximum	33	--	--	--	pCi/l
			Average	6.9	--	--	--	pCi/l
			Standard Devialton of the Mean	4.7	--	--	--	pCi/l
			Sample Size	7	--	--	--	
		Rinse	Minimum	-0.5	-26.6	--	0.47	pCi/l
			Maximum	34.4	-0.42	--	15	pCi/l
			Average	11	-9.5	--	5.4	pCi/l
			Standard Devialton of the Mean	14	10	--	6.0	pCi/l
			Sample Size	3	3	--	3	

Table 20. Measurement Difference Between Split Samples For the Later Sampling Period, Summary Statistics

Physical State	Analysis	Sample Type	Statistic	Measurement	Measurement Difference Between the Split Samples	Standard Deviation of the Measurement Difference: Estimated	Standard Deviation of the Measurement Difference: Reported	Units
Liquid	Gross Alpha	Rinse/Split	Minimum	0.88	--	--	--	pCi/l
			Maximum	61	--	--	--	pCi/l
			Average	21	--	--	--	pCi/l
			Standard Deviaiton of the Mean	25	--	--	--	pCi/l
			Sample Size	3	--	--	--	
	Gross Beta	Split Group A	Minimum	4.9	-5	2.8	1.7	pCi/l
			Maximum	115	10	5.3	29	pCi/l
			Average	52	0.74	4.1	12	pCi/l
			Standard Deviaiton of the Mean	18	2.4	0.55	4.2	pCi/l
			Sample Size	7	7	7	7	
		Split Group B	Minimum	5.9	--	--	--	pCi/l
			Maximum	120	--	--	--	pCi/l
			Average	51	--	--	--	pCi/l
			Standard Deviaiton of the Mean	18	--	--	--	pCi/l
			Sample Size	7	--	--	--	
		Rinse	Minimum	2.5	-25	--	1.0	pCi/l
			Maximum	31	-0.4	--	13	pCi/l
			Average	12	-8.6	--	5.1	pCi/l
			Standard Deviaiton of the Mean	11	10	--	4.9	pCi/l
			Sample Size	3	3	--	3	
		Rinse/Split	Minimum	2.9	--	--	--	pCi/l
			Maximum	56	--	--	--	pCi/l
			Average	21	--	--	--	pCi/l
			Standard Deviaiton of the Mean	21	--	--	--	pCi/l
			Sample Size	3	--	--	--	
	Tritium	Split Group A	Minimum	-328	-335	74	154	pCi/l
			Maximum	307	291	321	161	pCi/l
			Average	-31	-90	197	157	pCi/l
			Standard Deviaiton of the Mean	80	79	55	0.92	pCi/l
			Sample Size	7	7	7	7	
		Split Group B	Minimum	7				pCi/l
			Maximum	190				pCi/l
			Average	58				pCi/l
			Standard Deviaiton of the Mean	-31				pCi/l
			Sample Size	7				

Table 20. Measurement Difference Between Split Samples For the Later Sampling Period, Summary Statistics

Physical State	Analysis	Sample Type	Statistic	Measurement	Measurement Difference Between the Split Samples	Standard Deviation of the Measurement Difference: Estimated	Standard Deviation of the Measurement Difference: Reported	Units
Liquid	Tritium	Rinse	Minimum	-288	-280	--	154	pCi/l
			Maximum	340	284	--	159	pCi/l
			Average	1	25	--	156	pCi/l
			Standard Deviaiton of the Mean	224	201	--	1.6	pCi/l
			Sample Size	3	3		3	
		Rinse/Split	Minimum	-120	--	--	--	pCi/l
			Maximum	56	--	--	--	pCi/l
			Average	-24	--	--	--	pCi/l
			Standard Deviaiton of the Mean	-31	--	--	--	pCi/l
			Sample Size	3	--	--	--	
Sludge	Gross Gamma/ Gamma Spectroscopy	Split Group A	Minimum	2.6	-26	0.92	0.85	pCi/g
			Maximum	2.8	-25	0.92	1.1	pCi/g
			Average	2.7	-26	0.92	0.94	pCi/g
			Standard Deviaiton	0.071	0.65	0.0	0.094	pCi/g
			Sample Size	3	3	3	3	
		Split Group B	Minimum	27	--	--	--	pCi/g
			Maximum	29	--	--	--	pCi/g
			Average	28	--	--	--	pCi/g
			Standard Deviaiton	0.62	--	--	--	pCi/g
			Sample Size	3	--	--	--	
	Gross Alpha	Split Group A	Minimum	7.6	-10	7.3	6.7	pCi/g
			Maximum	19	2.7	7.3	7.0	pCi/g
			Average	12	-5.7	7.3	6.9	pCi/g
			Standard Deviaiton	4.2	5.2	0.0	0.10	pCi/g
			Sample Size	3	3	3	3	
		Split Group B	Minimum	16	--	--	--	pCi/g
			Maximum	19	--	--	--	pCi/g
			Average	18	--	--	--	pCi/g
			Standard Deviaiton	1.1	--	--	--	pCi/g
			Sample Size	3	--	--	--	
	Gross Beta	Split Group A	Minimum	3.7	-23	5.5	7.0	pCi/g
			Maximum	12	-13	5.5	7.5	pCi/g
			Average	6.6	-19	5.5	7.2	pCi/g
			Standard Deviaiton	3.3	3.9	0.0	0.20	pCi/g
			Sample Size	3	3	3	3	
		Split Group B	Minimum	25	--	--	--	pCi/g
			Maximum	27	--	--	--	pCi/g
			Average	26	--	--	--	pCi/g
			Standard Deviaiton	0.71	--	--	--	pCi/g
			Sample Size	3	--	--	--	

Table 20. Measurement Difference Between Split Samples For the Later Sampling Period, Summary Statistics

Physical State	Analysis	Sample Type	Statistic	Measurement	Measurement Difference Between the Split Samples	Standard Deviation of the Measurement Difference: Estimated	Standard Deviation of the Measurement Difference: Reported	Units
Sludge	Tritium	Split Group A	Minimum	-0.18	-0.20	0.031	0.12	pCi/g
			Maximum	-0.13	-0.14	0.031	0.49	pCi/g
			Average	-0.16	-0.17	0.031	0.24	pCi/g
			Standard Deviaiton	0.019	0.022	0.0	0.15	pCi/g
			Sample Size	3	3	3	3	
		Split Group B	Minimum	0.010	--	--	--	pCi/g
			Maximum	0.020	--	--	--	pCi/g
			Average	0.013	--	--	--	pCi/g
			Standard Deviaiton	0.0041	--	--	--	pCi/g
			Sample Size	3	--	--	--	

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