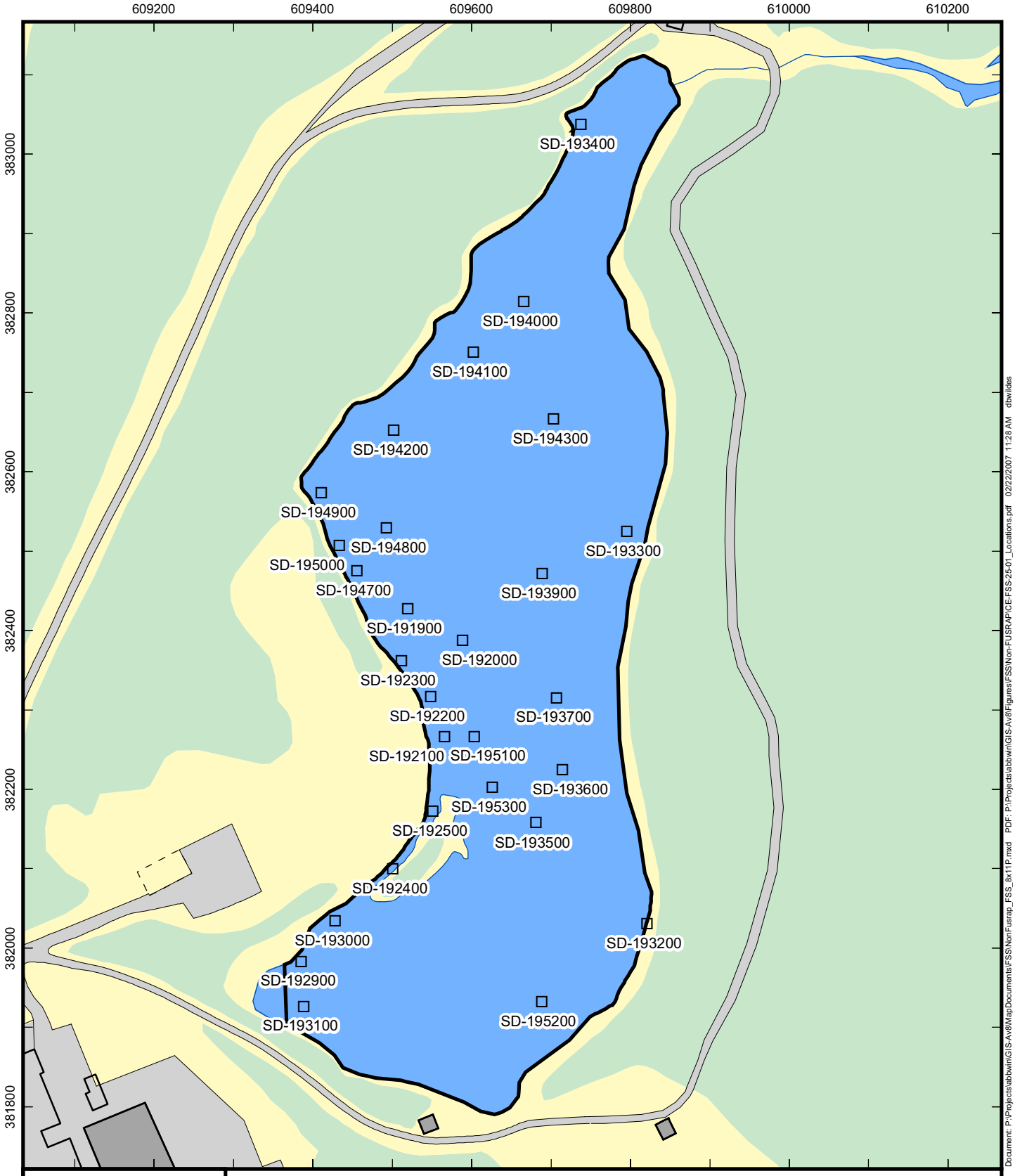
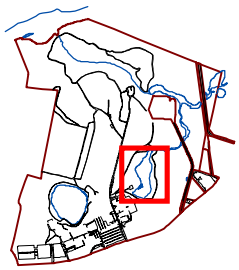
APPENDIX F

SURVEY UNIT CE-FSS-25-01
RESULTS AND DATA EVALUATION



CT State Plane NAD 27 Feet:



Legend

- Soil Sample Location
- Survey Unit
- Forest
- Open
- Water
- Road
- Former Building

N

0 85 170 Feet

Prepared by DBW | Checked by HTD

Sample Locations
Survey Unit CE-FSS-25-01

Final Status Survey
CE Windsor Site
Windsor, Connecticut

MACTEC

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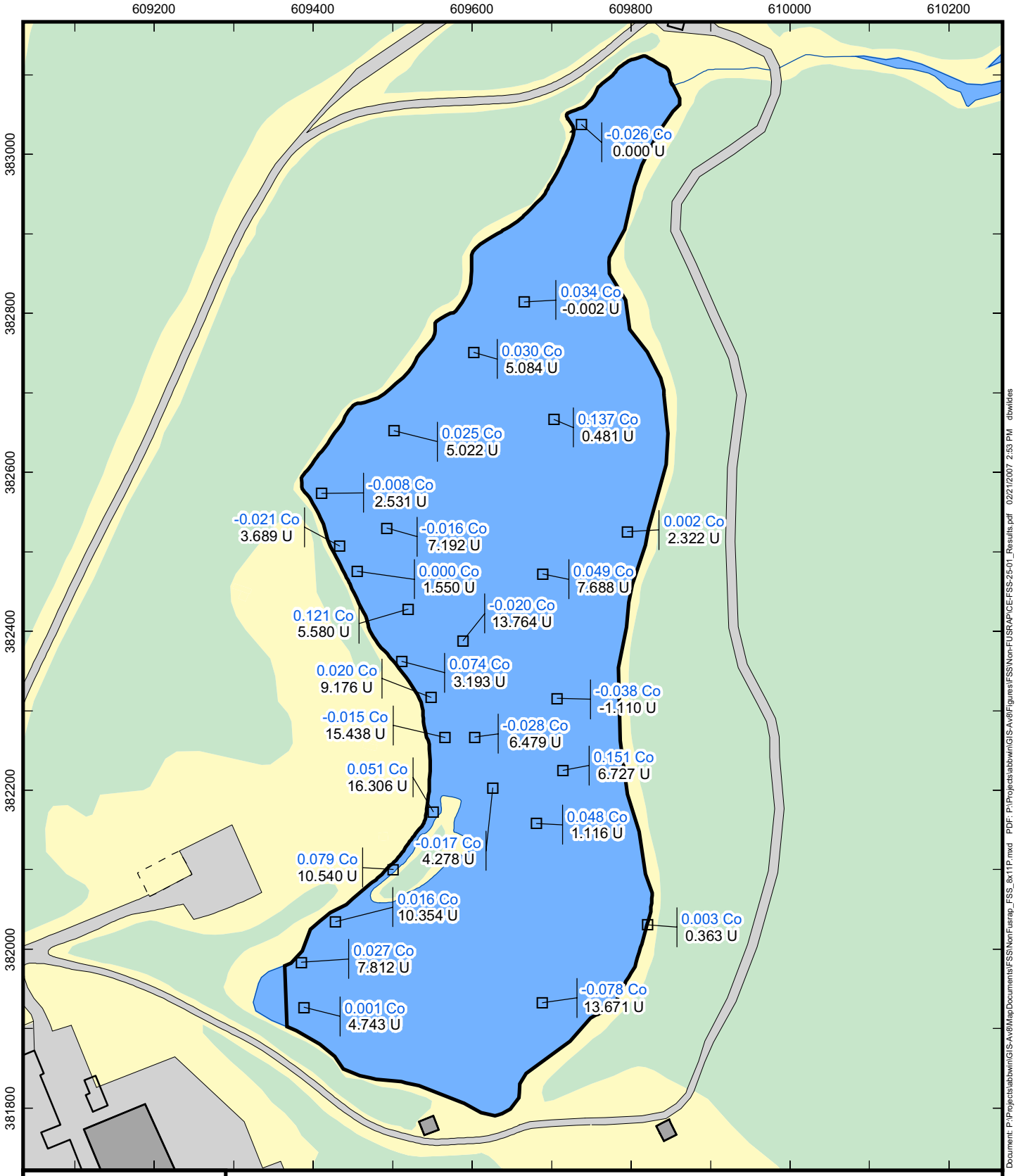

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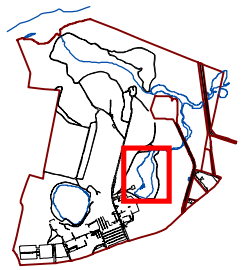

Legend

Co-60 (pCi/g)
Total U (pCi/g) ☐ Soil Sample Location

Survey Unit

Forest
Open
Water
Road
Former Building

N

0 85 170 Feet

Prepared by DBW | Checked by HTD

Sample Results
Survey Unit CE-FSS-25-01

Final Status Survey
CE Windsor Site
Windsor, Connecticut

MACTEC

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Survey Unit CE-FSS-25-01

Final Status Survey Volumetric Soil Sample Results

Sample ID	Co-60				U-235				Total U	Sum of
	Activity	Uncert.	MDC	Qualifier	Activity	Uncert.	MDC	Qualifier	(pCi/g)	Fraction
SD-191900	1.21E-01	2.64E-01	0.161	U	1.80E-01	9.02E-01	6.11E-01	U	5.6	0.034
SD-192000	-2.04E-02	9.45E-02	1.54E-01	U	4.44E-01	6.92E-01	5.94E-01	U	13.8	0.021
SD-192100	-1.45E-02	6.74E-02	1.12E-01	U	4.98E-01	3.46E-01	5.04E-01	U	15.4	0.025
SD-192200	2.04E-02	8.03E-02	1.37E-01	U	2.96E-01	9.11E-01	6.07E-01	U	9.2	0.021
SD-192300	7.42E-02	5.63E-02	1.64E-01	U	1.03E-01	6.51E-01	5.27E-01	U	3.2	0.021
SD-192400	7.86E-02	9.87E-02	1.83E-01	U	3.40E-01	6.47E-01	6.48E-01	U	10.5	0.035
SD-192500	5.05E-02	9.29E-02	1.69E-01	U	5.26E-01	6.16E-01	5.29E-01	U	16.3	0.039
SD-192900	2.67E-02	8.11E-02	1.44E-01	U	2.52E-01	3.35E-01	5.09E-01	U	7.8	0.019
SD-193000	1.60E-02	3.14E-02	5.63E-02	U	3.34E-01	2.28E-01	2.79E-01		10.4	0.022
SD-193100	5.57E-04	1.56E-02	2.76E-02	U	1.53E-01	1.30E-01	1.56E-01	U	4.7	0.009
SD-193200	2.69E-03	2.44E-02	4.32E-02	U	1.17E-02	1.53E-01	1.91E-01	U	0.4	0.001
SD-193300	1.55E-03	2.24E-02	4.33E-02	U	7.49E-02	1.34E-01	1.83E-01	U	2.3	0.004
SD-193400	-2.60E-02	1.39E-01	2.24E-01	U	0.00E+00	5.89E-01	7.71E-01	U	0.0	-0.005
SD-193500	4.84E-02	9.94E-02	1.86E-01	U	3.60E-02	4.57E-01	6.64E-01	U	1.1	0.012
SD-193600	1.51E-01	9.02E-02	1.57E-01	U	2.17E-01	5.78E-01	5.33E-01	U	6.7	0.042
SD-193700	-3.82E-02	1.15E-01	1.99E-01	U	-3.58E-02	4.79E-01	7.20E-01	U	-1.1	-0.010
SD-193900	4.88E-02	6.92E-02	1.77E-01	U	2.48E-01	5.17E-01	7.92E-01	U	7.7	0.024
SD-194000	3.44E-02	3.36E-02	5.43E-02	U	-5.50E-05	1.54E-01	2.68E-01	U	0.0	0.007
SD-194100	2.96E-02	4.99E-02	1.02E-01	U	1.64E-01	2.57E-01	4.33E-01	U	5.1	0.015
SD-194200	2.50E-02	4.13E-02	8.90E-02	U	1.62E-01	1.93E-01	3.43E-01	U	5.0	0.014
SD-194300	1.37E-01	1.01E-01	1.57E-01	U	1.55E-02	3.70E-01	5.51E-01	U	0.5	0.028
SD-194700	0.00E+00	1.40E-01	1.11E-01	U	5.00E-02	2.80E-01	4.13E-01	U	1.6	0.003
SD-194800	-1.57E-02	7.79E-02	1.29E-01	U	2.32E-01	5.70E-01	5.34E-01	U	7.2	0.010
SD-194900	-2.16E-02	2.87E-02	4.74E-02	U	8.72E-02	1.04E-01	2.01E-01	U	2.7	0.001
SD-194900 DUP	6.01E-03	3.97E-02	6.63E-02	U	7.61E-02	1.56E-01	2.84E-01	U	2.4	0.005
SD-194900 AVE	-7.80E-03				8.17E-02				2.5	0.003
SD-195000	-2.14E-02	2.96E-02	4.08E-02	U	1.19E-01	1.13E-01	2.22E-01	U	3.7	0.002
SD-195100	-2.78E-02	9.43E-02	1.56E-01	U	2.09E-01	7.12E-01	6.31E-01	U	6.5	0.006
SD-195200	-7.82E-02	9.15E-02	1.42E-01	U	4.41E-01	4.70E-01	6.76E-01	U	13.7	0.009
SD-195300	-1.73E-02	8.50E-02	1.44E-01	U	1.38E-01	3.40E-01	5.08E-01	U	4.3	0.004

Survey Unit CE-FSS-25-01

One-Minute Static Field Measurement Results

Sample ID	Static Count Rate (cpm)	Ambient Background (cpm)	Net (cpm)	pCi/g
SD-191900	NA	NA	NA	NA
SD-192000	NA	NA	NA	NA
SD-192100	NA	NA	NA	NA
SD-192200	NA	NA	NA	NA
SD-192300	NA	NA	NA	NA
SD-192400	NA	NA	NA	NA
SD-192500	NA	NA	NA	NA
SD-192900	NA	NA	NA	NA
SD-193000	NA	NA	NA	NA
SD-193100	NA	NA	NA	NA
SD-193200	NA	NA	NA	NA
SD-193300	NA	NA	NA	NA
SD-193400	NA	NA	NA	NA
SD-193500	NA	NA	NA	NA
SD-193600	NA	NA	NA	NA
SD-193700	NA	NA	NA	NA
SD-193900	NA	NA	NA	NA
SD-194000	NA	NA	NA	NA
SD-194100	NA	NA	NA	NA
SD-194200	NA	NA	NA	NA
SD-194300	NA	NA	NA	NA
SD-194700	NA	NA	NA	NA
SD-194800	NA	NA	NA	NA
SD-194900	NA	NA	NA	NA
SD-195000	NA	NA	NA	NA
SD-195100	NA	NA	NA	NA
SD-195200	NA	NA	NA	NA
SD-195300	NA	NA	NA	NA

Survey Unit CE-FSS-25-01

Final Status Survey Sample GPS Coordinates

Sample ID	X_Coord	Y_Coord
SD-191900	609428.50	382034.70
SD-192000	609821.10	382030.70
SD-192100	609795.30	382525.30
SD-192200	609737.40	383037.50
SD-192300	609519.40	382427.80
SD-192400	609588.40	382388.20
SD-192500	609566.20	382266.30
SD-192900	609548.10	382316.60
SD-193000	609511.40	382362.30
SD-193100	609500.90	382100.50
SD-193200	609551.40	382173.00
SD-193300	609385.40	381983.80
SD-193400	609388.40	381926.90
SD-193500	609680.70	382157.80
SD-193600	609714.40	382225.20
SD-193700	609707.30	382315.60
SD-193900	609688.70	382472.10
SD-194000	609665.60	382814.40
SD-194100	609602.10	382750.80
SD-194200	609502.10	382652.20
SD-194300	609703.20	382666.40
SD-194700	609455.40	382475.30
SD-194800	609492.60	382529.90
SD-194900	609410.80	382573.60
SD-195000	609433.30	382507.20
SD-195100	609603.20	382267.10
SD-195200	609688.20	381932.80
SD-195300	609625.90	382203.00

Descriptive Statistics Report

Summary Section of 25-01 Co-60

Count	Mean	Standard Deviation	Standard Error	Minimum	Maximum	Range
28	2.139632E-02	5.345272E-02	1.010161E-02	-0.0782	0.151	0.2292

Counts Section of 25-01 Co-60

Rows	Sum of Frequencies	Missing Values	Distinct Values	Sum	Total Sum Squares	Adjusted Sum Squares
28	28	0	28	0.599097	8.996268E-02	7.714421E-02

Means Section of 25-01 Co-60

Parameter	Mean	Median	Geometric Mean	Harmonic Mean	Sum	Mode
Value	2.139632E-02	0.009345	2.564434E-02	1.020565E-02	0.599097	
Std Error	1.010161E-02				0.2828452	
95% LCL	6.695219E-04	-0.0157	1.137159E-02	4.089408E-03	1.874661E-02	
95% UCL	4.212312E-02	0.0296	5.783116E-02	-2.059123E-02	1.179447	
T-Value	2.118109					
Prob Level	4.351593E-02					
Count	28		17	27		0

The geometric mean confidence interval assumes that the ln(y) are normally distributed.
The harmonic mean confidence interval assumes that the 1/y are normally distributed.

Variation Section of 25-01 Co-60

Parameter	Variance	Standard Deviation	Unbiased Std Dev	Std Error of Mean	Interquartile Range	Range
Value	2.857193E-03	5.345272E-02	5.394983E-02	1.010161E-02	0.0656	0.2292
Std Error	8.302199E-04	1.098268E-02		2.075532E-03		
95% LCL	1.785973E-03	4.226077E-02		7.986534E-03		
95% UCL	0.0052935	7.275645E-02		1.374968E-02		

Skewness and Kurtosis Section of 25-01 Co-60

Parameter	Skewness	Kurtosis	Fisher's g1	Fisher's g2	Coefficient of Variation	Coefficient of Dispersion
Value	0.8204732	3.364096	0.8676648	0.6878268	2.49822	4.296044
Std Error	0.3324894	0.9273942			1.012191	

Trimmed Section of 25-01 Co-60

Parameter	5% Trimmed	10% Trimmed	15% Trimmed	25% Trimmed	35% Trimmed	45% Trimmed
Trim-Mean	1.931655E-02	1.575612E-02	1.383352E-02	1.194979E-02	1.157821E-02	9.810714E-03
Trim-Std Dev	4.242265E-02	0.032731	2.704725E-02	1.949457E-02	1.208828E-02	9.462228E-03
Count	25	22	20	14	8	3

Descriptive Statistics Report

Mean-Deviation Section of 25-01 Co-60

Parameter	|X-Mean|	|X-Median|	(X-Mean)^2	(X-Mean)^3	(X-Mean)^4
Average	4.060315E-02	4.014654E-02	2.75515E-03	1.18654E-04	2.553636E-05
Std Error	6.075866E-03		8.005691E-04	5.397103E-05	9.897222E-06

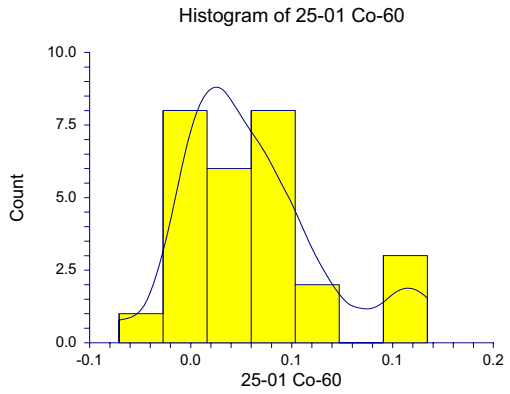
Quartile Section of 25-01 Co-60

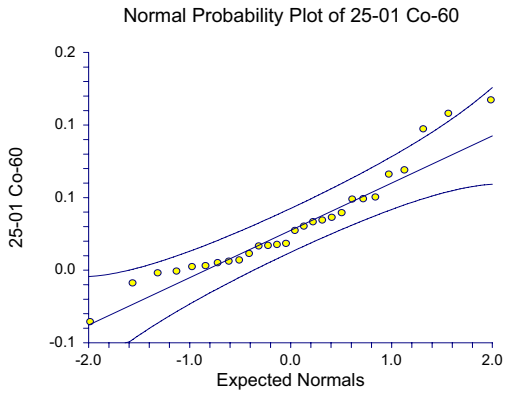
Parameter	10th Percentile	25th Percentile	50th Percentile	75th Percentile	90th Percentile
Value	-0.02884	-0.0169	0.009345	0.0487	0.1226
95% LCL		-0.0278	-0.0157	0.025	
95% UCL		0.000557	0.0296	0.121	

Normality Test Section of 25-01 Co-60

Test Name	Test Value	Prob Level	10% Critical Value	5% Critical Value	Decision (5%)
Shapiro-Wilk W	0.930962	6.519346E-02			Can't reject normality
Anderson-Darling	0.7521482	5.029794E-02			Can't reject normality
Martinez-Iglewicz	1.227479		1.158157	1.244733	Can't reject normality
Kolmogorov-Smirnov	0.1368157		0.151	0.164	Can't reject normality
D'Agostino Skewness	1.943995	5.189601E-02	1.645	1.960	Can't reject normality
D'Agostino Kurtosis	0.9637	0.335218	1.645	1.960	Can't reject normality
D'Agostino Omnibus	4.7078	0.095000	4.605	5.991	Can't reject normality

Plots Section of 25-01 Co-60





Descriptive Statistics Report

Percentile Section of 25-01 Co-60

Percentile	Value	95% LCL	95% UCL	Exact Conf. Level
99	0.151			
95	0.1447			
90	0.1226			
85	0.07706	0.0344	0.151	97.17276
80	0.05524	0.0267	0.137	96.96629
75	0.0487	0.025	0.121	95.39742
70	0.0386	0.016	0.0786	96.35831
65	0.029165	0.00269	0.0742	95.27109
60	0.02568	0	0.0488	96.04232
55	0.02018	-0.0078	0.0484	96.3315
50	0.009345	-0.0157	0.0296	95.01502
45	0.001607	-0.0173	0.0267	95.98952
40	0.0003342	-0.0204	0.025	96.73497
35	-0.00663	-0.0214	0.016	95.27109
30	-0.01486	-0.026	0.00269	96.35831
25	-0.0169	-0.0278	0.000557	95.39742
20	-0.0206	-0.0782	-0.0078	95.8995
15	-0.02439	-0.0782	-0.0145	97.17276
10	-0.02884			
5	-0.0602			
1	-0.0782			

Percentile Formula: Ave X(p[n+1])

Stem-Leaf Plot Section of 25-01 Co-60

Depth	Stem	Leaves
1	S	7
1	F	
6	T	32222
10	-0*	1110
(5)	0*	00001
13	T	22223
8	F	445
5	S	77
3	.	
3	1*	
3	T	23
High		15

Unit = .01 Example: 1 |2 Represents 0.12

Descriptive Statistics Report

Summary Section of 25-01 Total U

Count	Mean	Standard Deviation	Standard Error	Minimum	Maximum	Range
28	5.860714	4.88841	0.9238226	-1.1	16.3	17.4

Counts Section of 25-01 Total U

Rows	Sum of Frequencies	Missing Values	Distinct Values	Sum	Total Sum Squares	Adjusted Sum Squares
28	28	0	27	164.1	1606.95	645.2068

Means Section of 25-01 Total U

Parameter	Mean	Median	Geometric Mean	Harmonic Mean	Sum	Mode
Value	5.860714	5.05	4.695948	2.943034	164.1	0
Std Error	0.9238226				25.86703	
95% LCL	3.965187	2.3	3.123296	1.673973	111.0252	
95% UCL	7.756242	7.2	7.060465	12.167	217.1748	
T-Value	6.343983					
Prob Level	8.591234E-07					
Count	28		25	26		2

The geometric mean confidence interval assumes that the ln(y) are normally distributed.
The harmonic mean confidence interval assumes that the 1/y are normally distributed.

Variation Section of 25-01 Total U

Parameter	Variance	Standard Deviation	Unbiased Std Dev	Std Error of Mean	Interquartile Range	Range
Value	23.89655	4.88841	4.933872	0.9238226	7.075	17.4
Std Error	5.45778	0.7894661		0.1491951		
95% LCL	14.93724	3.864873		0.7303923		
95% UCL	44.27296	6.653793		1.257449		

Skewness and Kurtosis Section of 25-01 Total U

Parameter	Skewness	Kurtosis	Fisher's g1	Fisher's g2	Coefficient of Variation	Coefficient of Dispersion
Value	0.6053237	2.460561	0.6401404	-0.4005854	0.8340979	0.761669
Std Error	0.2666122	0.5788071			0.1158564	

Trimmed Section of 25-01 Total U

Parameter	5% Trimmed	10% Trimmed	15% Trimmed	25% Trimmed	35% Trimmed	45% Trimmed
Trim-Mean	5.664286	5.466964	5.27551	5.164286	5.2	5.078571
Trim-Std Dev	4.247828	3.623996	2.905429	1.84291	1.106492	0.3097618
Count	25	22	20	14	8	3

Descriptive Statistics Report

Mean-Deviation Section of 25-01 Total U

Parameter	|X-Mean|	|X-Median|	(X-Mean)^2	(X-Mean)^3	(X-Mean)^4
Average	3.919388	3.846429	23.0431	66.95746	1306.52
Std Error	0.555656		5.262859	30.24344	405.1139

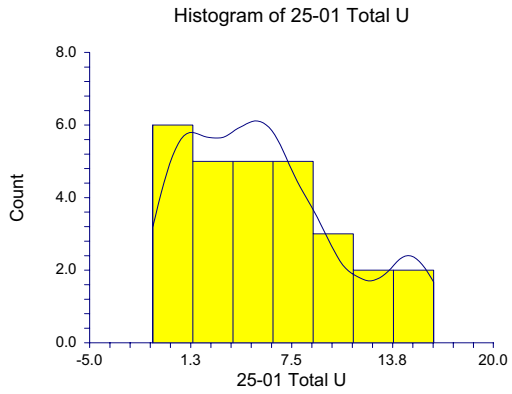
Quartile Section of 25-01 Total U

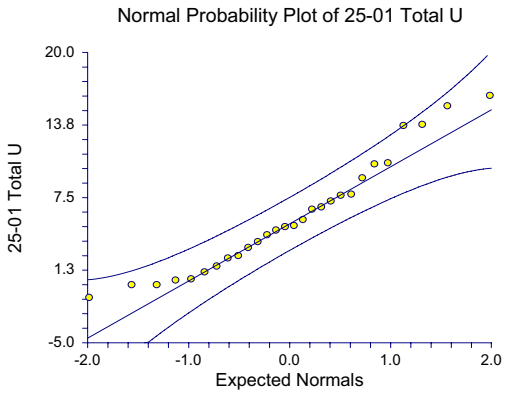
Parameter	10th Percentile	25th Percentile	50th Percentile	75th Percentile	90th Percentile
Value	0	1.775	5.05	8.85	13.96
95% LCL		0	2.3	6.5	
95% UCL		4.3	7.2	13.8	

Normality Test Section of 25-01 Total U

Test Name	Test Value	Prob Level	10% Critical Value	5% Critical Value	Decision (5%)
Shapiro-Wilk W	0.9407038	0.1151862			Can't reject normality
Anderson-Darling	0.4881448	0.2231513			Can't reject normality
Martinez-Iglewicz	1.010276		1.158157	1.244733	Can't reject normality
Kolmogorov-Smirnov	9.754639E-02		0.151	0.164	Can't reject normality
D'Agostino Skewness	1.478822	0.1391878	1.645	1.960	Can't reject normality
D'Agostino Kurtosis	-0.3433	0.731393	1.645	1.960	Can't reject normality
D'Agostino Omnibus	2.3048	0.315885	4.605	5.991	Can't reject normality

Plots Section of 25-01 Total U





Descriptive Statistics Report

Percentile Section of 25-01 Total U

Percentile	Value	95% LCL	95% UCL	Exact Conf. Level
99	16.3			
95	15.895			
90	13.96			
85	12.58	7.7	16.3	97.17276
80	10.42	6.7	15.4	96.96629
75	8.85	6.5	13.8	95.39742
70	7.73	5.1	13.7	96.35831
65	7.125	5	10.5	95.27109
60	6.58	3.7	9.2	96.04232
55	5.575	3.2	7.8	96.3315
50	5.05	2.3	7.2	95.01502
45	4.715	1.6	6.7	95.98952
40	4.06	1.1	6.5	96.73497
35	3.275	0.5	5.1	95.27109
30	2.44	0.4	5	96.35831
25	1.775	0	4.3	95.39742
20	0.98	-1.1	3.2	95.8995
15	0.435	-1.1	2.5	97.17276
10	0			
5	-0.605			
1	-1.1			

Percentile Formula: Ave X(p[n+1])

Stem-Leaf Plot Section of 25-01 Total U

Depth	Stem	Leaves
2	-0*	10
7	0*	00011
11	T	2233
(5)	F	44555
12	S	66777
7	.	9
6	1*	00
4	T	33
2	F	5
1	S	6

Unit = 1 Example: 1 |2 Represents 12

Descriptive Statistics Report

Summary Section of 25-01 SOF

Count	Mean	Standard Deviation	Standard Error	Minimum	Maximum	Range
28	1.482143E-02	1.327781E-02	2.50927E-03	-0.01	0.042	0.052

Counts Section of 25-01 SOF

Rows	Sum of Frequencies	Missing Values	Distinct Values	Sum	Total Sum Squares	Adjusted Sum Squares
28	28	0	23	0.415	0.010911	4.760107E-03

Means Section of 25-01 SOF

Parameter	Mean	Median	Geometric Mean	Harmonic Mean	Sum	Mode
Value	1.482143E-02	0.013	1.141617E-02	7.597136E-03	0.415	0.021
Std Error	2.50927E-03				7.025957E-02	
95% LCL	9.672831E-03	0.004	7.618601E-03	4.627986E-03	0.2708393	
95% UCL	1.997003E-02	0.021	1.710668E-02	2.119525E-02	0.5591607	
T-Value	5.906669					
Prob Level	2.706503E-06					
Count	28		26	28		3

The geometric mean confidence interval assumes that the ln(y) are normally distributed.
The harmonic mean confidence interval assumes that the 1/y are normally distributed.

Variation Section of 25-01 SOF

Parameter	Variance	Standard Deviation	Unbiased Std Dev	Std Error of Mean	Interquartile Range	Range
Value	1.763003E-04	1.327781E-02	0.0134013	2.50927E-03	0.0195	0.052
Std Error	3.904234E-05	2.079191E-03		3.929301E-04		
95% LCL	1.102017E-04	0.0104977		1.983878E-03		
95% UCL	3.266302E-04	1.807291E-02		3.41546E-03		

Skewness and Kurtosis Section of 25-01 SOF

Parameter	Skewness	Kurtosis	Fisher's g1	Fisher's g2	Coefficient of Variation	Coefficient of Dispersion
Value	0.3123701	2.373168	0.3303368	-0.5058603	0.8958523	0.8379121
Std Error	0.2892173	0.4022204			0.1553864	

Trimmed Section of 25-01 SOF

Parameter	5% Trimmed	10% Trimmed	15% Trimmed	25% Trimmed	35% Trimmed	45% Trimmed
Trim-Mean	1.465873E-02	1.429464E-02	1.381633E-02	1.357143E-02	1.364286E-02	1.285714E-02
Trim-Std Dev	1.115937E-02	9.528745E-03	8.082035E-03	6.308898E-03	0.0047009	1.992048E-03
Count	25	22	20	14	8	3

Descriptive Statistics Report

Mean-Deviation Section of 25-01 SOF

Parameter	|X-Mean|	|X-Median|	(X-Mean)^2	(X-Mean)^3	(X-Mean)^4
Average	1.095153E-02	1.089286E-02	1.700038E-04	6.924006E-07	6.858765E-08
Std Error	1.509263E-03		3.764797E-05	6.273769E-07	2.400339E-08

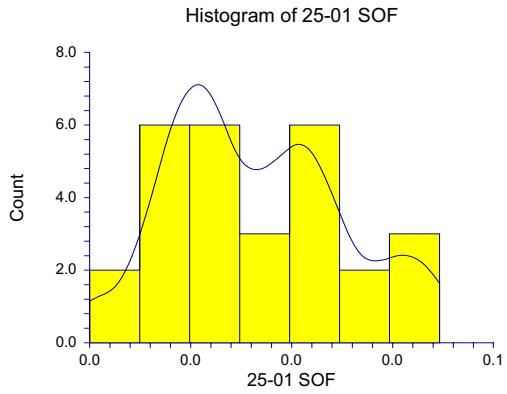
Quartile Section of 25-01 SOF

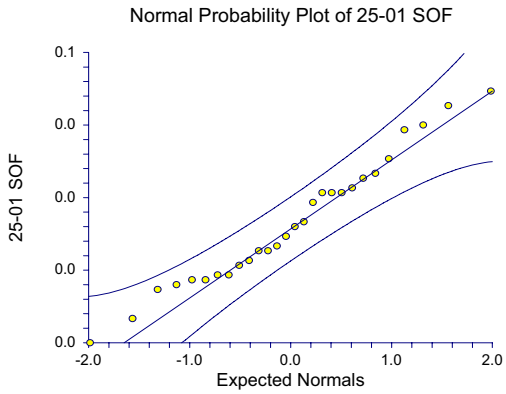
Parameter	10th Percentile	25th Percentile	50th Percentile	75th Percentile	90th Percentile
Value	0.0004	0.004	0.013	0.0235	0.0354
95% LCL		0.001	0.004	0.019	
95% UCL		0.009	0.021	0.035	

Normality Test Section of 25-01 SOF

Test Name	Test Value	Prob Level	10% Critical Value	5% Critical Value	Decision (5%)
Shapiro-Wilk W	0.970812	0.6025229			Can't reject normality
Anderson-Darling	0.3344944	0.5079775			Can't reject normality
Martinez-Iglewicz	0.9815401		1.158157	1.244733	Can't reject normality
Kolmogorov-Smirnov	0.1060278		0.151	0.164	Can't reject normality
D'Agostino Skewness	0.7867761	0.431413	1.645	1.960	Can't reject normality
D'Agostino Kurtosis	-0.5223	0.601451	1.645	1.960	Can't reject normality
D'Agostino Omnibus	0.8918	0.640238	4.605	5.991	Can't reject normality

Plots Section of 25-01 SOF





Descriptive Statistics Report

Percentile Section of 25-01 SOF

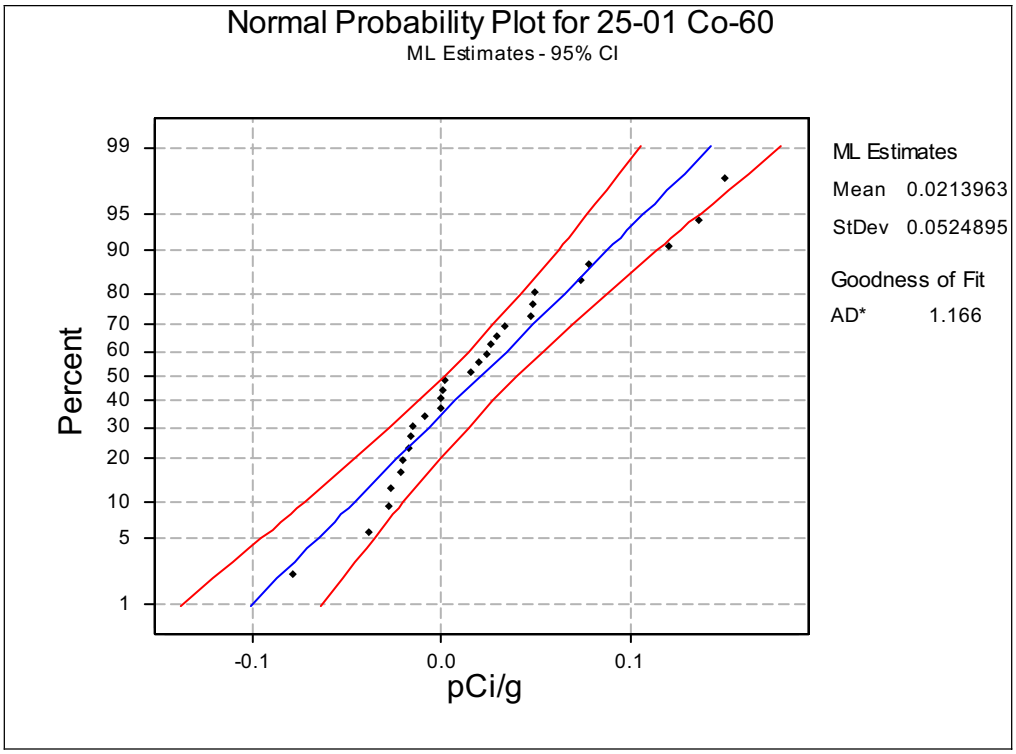
Percentile	Value	95% LCL	95% UCL	Exact Conf. Level
99	0.042			
95	0.04065			
90	0.0354			
85	0.0319	0.021	0.042	97.17276
80	0.0256	0.021	0.039	96.96629
75	0.0235	0.019	0.035	95.39742
70	0.0213	0.014	0.034	96.35831
65	0.021	0.012	0.028	95.27109
60	0.0198	0.009	0.024	96.04232
55	0.01495	0.007	0.022	96.3315
50	0.013	0.004	0.021	95.01502
45	0.0101	0.004	0.021	95.98952
40	0.009	0.003	0.019	96.73497
35	0.0073	0.003	0.014	95.27109
30	0.0054	0.002	0.012	96.35831
25	0.004	0.001	0.009	95.39742
20	0.003	-0.01	0.007	95.8995
15	0.00235	-0.01	0.006	97.17276
10	0.0004			
5	-0.00775			
1	-0.01			

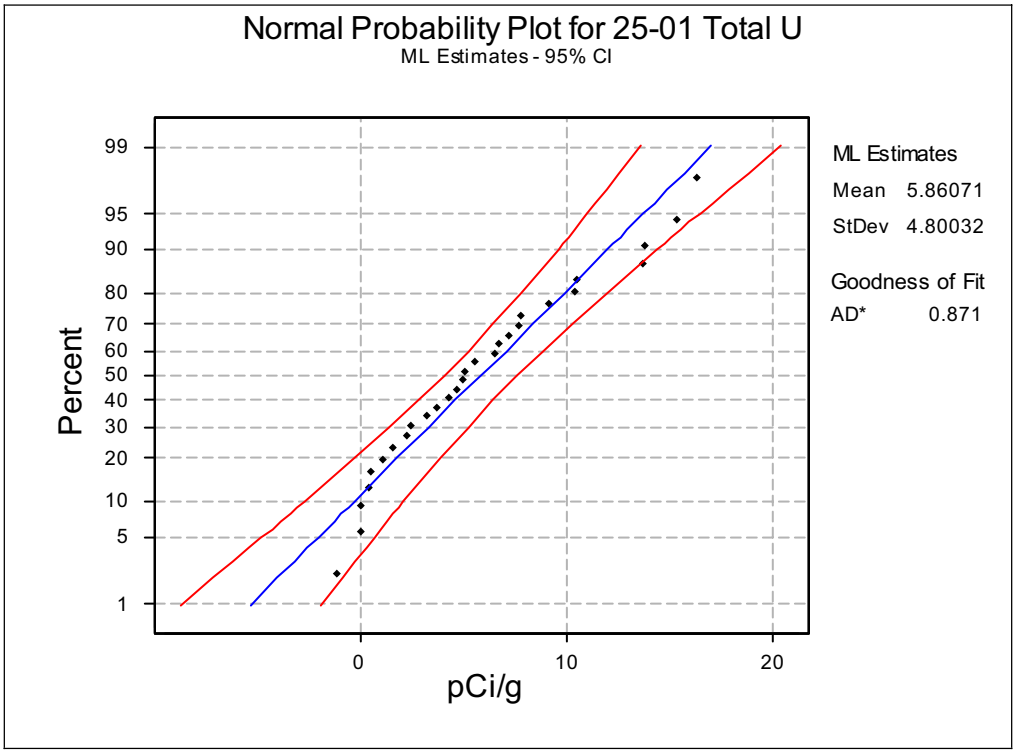
Percentile Formula: Ave X(p[n+1])

Stem-Leaf Plot Section of 25-01 SOF

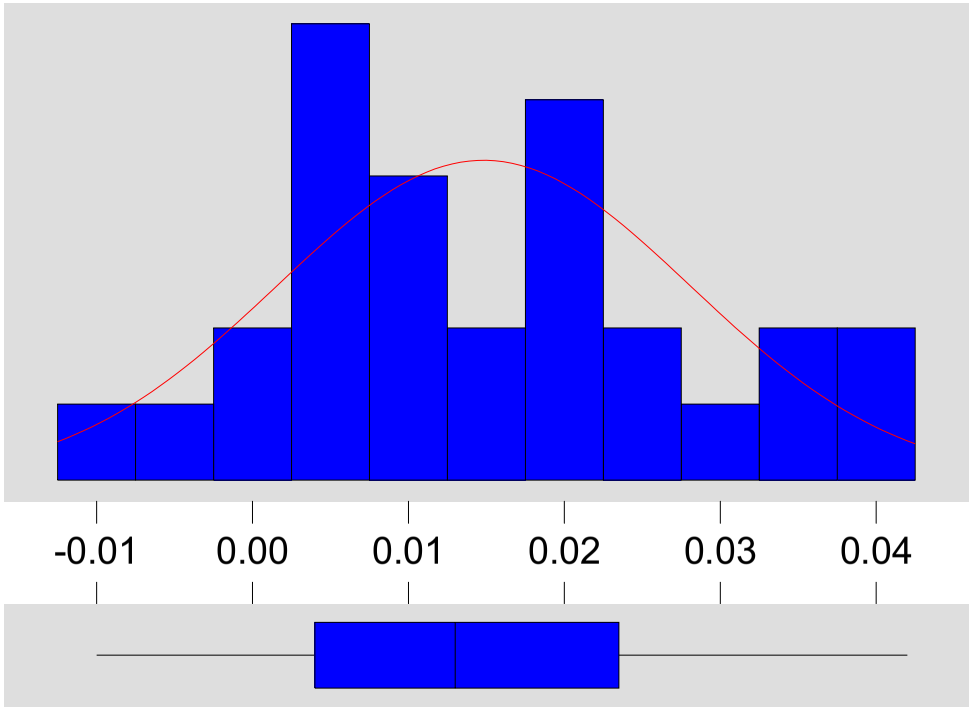
Depth	Stem	Leaves
1	-1*	0
2	.	5
2	-0*	
8	0*	123344
12	.	6799
(3)	1*	024
13	.	59
11	2*	11124
6	.	58
4	3*	4
3	.	59
1	4*	2

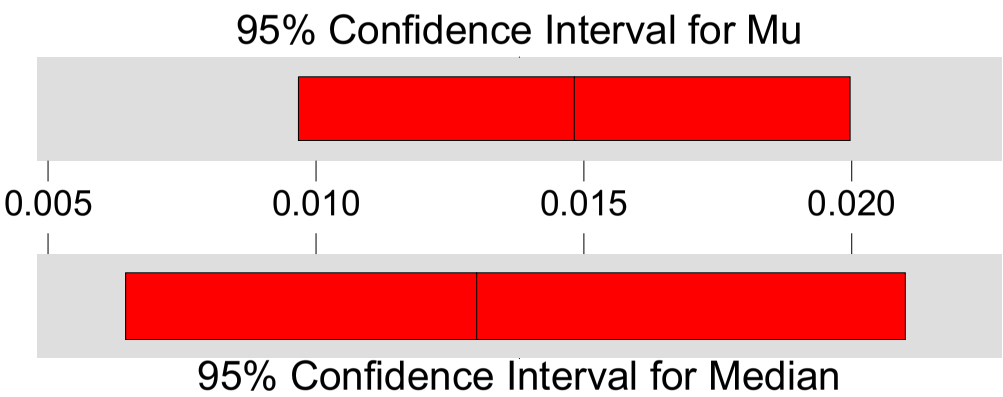
Unit = .001 Example: 1 |2 Represents 0.012


Normal Probability Plot for 25-01 Co-60
ML Estimates - 95% CI
Percent
99
95
90
80
70
60
50
40
30
20
10
5
1
-0.1
0.0
0.1
pCi/g
ML Estimates
Mean 0.0213963
StDev 0.0524895
Goodness of Fit
AD* 1.166


Normal Probability Plot for 25-01 Total U
ML Estimates - 95% CI
Percent
99
95
90
80
70
60
50
40
30
20
10
5
1
0
10
20
pCi/g
ML Estimates
Mean 5.86071
StDev 4.80032
Goodness of Fit
AD* 0.871

Descriptive Statistics





Variable: 25-01 SOF

Anderson-Darling Normality Test

A-Squared:	0.334
P-Value:	0.489
Mean	1.48E-02
StDev	1.33E-02
Variance	1.76E-04
Skewness	0.330337
Kurtosis	-5.1E-01
N	28
Minimum	-1.0E-02
1st Quartile	4.00E-03
Median	1.30E-02
3rd Quartile	2.35E-02
Maximum	4.20E-02

95% Confidence Interval for Mu

9.67E-03	2.00E-02

95% Confidence Interval for Sigma

1.05E-02	1.81E-02

95% Confidence Interval for Median

6.45E-03	2.10E-02

One-Sample T-Test Report

Variable 25-01 SOF

Descriptive Statistics Section

Variable	Count	Mean	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
25-01 SOF	28	1.482143E-02	1.327781E-02	2.50927E-03	9.672831E-03	1.997003E-02

T for Confidence Limits = 2.0518

Tests of Assumptions Section

Assumption	Value	Probability	Decision(5%)
Skewness Normality	0.7868	0.431413	Cannot reject normality
Kurtosis Normality	-0.5223	0.601451	Cannot reject normality
Omnibus Normality	0.8918	0.640238	Cannot reject normality
Correlation Coefficient			

T-Test For Difference Between Mean and Value Section

Alternative Hypothesis	T-Value	Prob Level	Decision (5%)	Power (Alpha=.05)	Power (Alpha=.01)
25-01 SOF<>1	-392.6155	0.000000	Reject H0	1.000000	1.000000
25-01 SOF<1	-392.6155	0.000000	Reject H0	1.000000	1.000000
25-01 SOF>1	-392.6155	1.000000	Accept H0	0.000000	0.000000

Nonparametric Tests Section

Quantile (Sign) Test

Null Quantile (Q0)	Quantile Proportion	Number Lower	Number Higher	H1:Q<>Q0 Prob Level	H1:Q<Q0 Prob Level	H1:Q>Q0 Prob Level
1	0.5	28	0	0.000000	0.000000	1.000000

Wilcoxon Signed-Rank Test for Difference in Medians

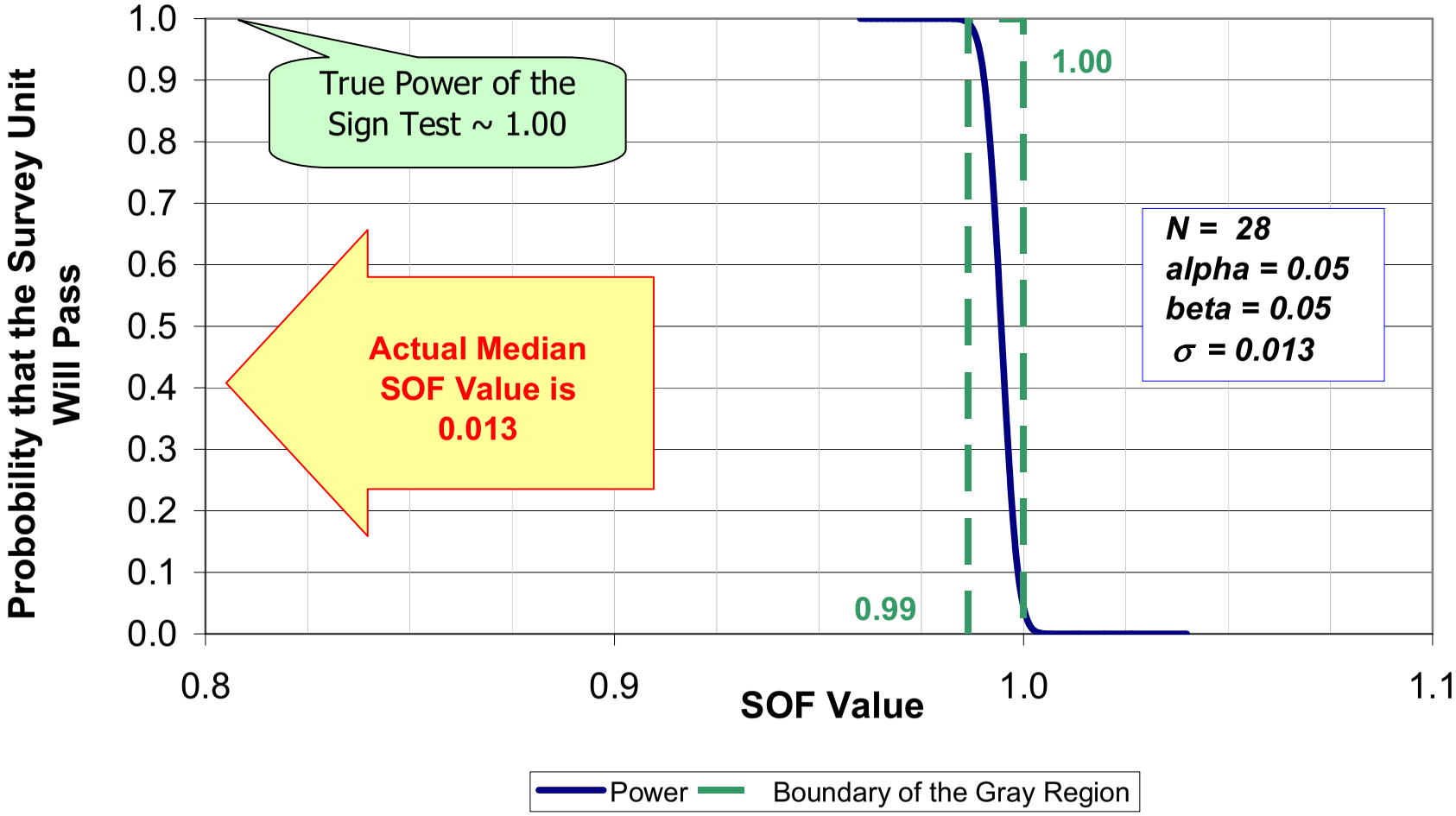
W Sum Ranks	Mean of W	Std Dev of W	Number of Zeros	Number Sets of Ties	Multiplicity Factor
0	203	43.90473	0	4	42

	Exact Probability		Approximation Without Continuity Correction			Approximation With Continuity Correction		
Alternative Hypothesis	Prob Level	Decision (5%)	Z-Value	Prob Level	Decision (5%)	Z-Value	Prob Level	Decision (5%)
Median<>1			4.6236	0.000004	Reject H0	1.0000	0.000004	Reject H0
Median<1			-4.6236	0.000002	Reject H0	-4.6123	0.000002	Reject H0
Median>1			-4.6236	0.999998	Accept H0	-4.6350	0.999998	Accept H0

Retrospective Power of the Sign Test

Surface Soil Volumetric Measurements SOF Values

Survey Unit CE-FSS-25-01



SDG # CE160 (2 coolers)

Chain Of Custody/Analysis Request Form

CE Windsor Site

Harding ESE
Jayne Connolly
207-828-3455

Lab: GEL 65903%

Sample #		Sample Date	Sample Time	Field Sample ID	Qty Total	Qty Each	Bottle Size and Material		Preservative	Media	Method	Fraction
001	1833	8/19/02	11:20	SD192100	4							
		U-isotope by alpha; Co/Cs by gamma				4	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T
002	1834	8/19/02	11:30	SD192200	4							
		U-isotope by alpha; Co/Cs by gamma				4	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T
003	1835	8/19/02	11:45	SD192300	4							
		U-isotope by alpha; Co/Cs by gamma				4	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T
004	1836	8/19/02	13:12	SD192400	4							
		U-isotope by alpha; Co/Cs by gamma				4	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T
005	1837	8/19/02	13:22	SD192500	4							
		U-isotope by alpha; Co/Cs by gamma				4	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GA	
006	1838	8/19/02	15:50	SD192600	1							
		U-isotope by alpha; Co/Cs by gamma				1	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GA	
007	1840	8/19/02	14:10	SD192800	3							
		U-isotope by alpha; Co/Cs by gamma				3	500 mL	Nalgene Plastic	NONE	SED	ALPHA/G	

Is there an email for extra sample added?

6

Sample #	Sample Date	Sample Time	Field Sample ID	Qty Total	Qty Each	Bottle Size and Material		Preservative	Media	Method	Fraction
008 1841	8/19/02	14:20	SD192900	4							
	U-isotope by alpha; Co/Cs by gamma				4	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T
p09 1842	8/19/02	14:30	SD193000	3							
	U-isotope by alpha; Co/Cs by gamma				3	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T
010 1843	8/19/02	14:40	SD193100	3							
	U-isotope by alpha; Co/Cs by gamma				3	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T
011 1844	8/19/02	15:05	SD193200	4							
	U-isotope by alpha; Co/Cs by gamma				4	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T
012 1845	8/19/02	15:30	SD193300	1							
	U-isotope by alpha; Co/Cs by gamma				1	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T
013 1846	8/19/02	16:00	SD193400	4							
	U-isotope by alpha; Co/Cs by gamma				4	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T
014 1931	8/20/02	8:45	SB202502	1							
	U-isotopes by alpha; Co/Cs by gamma				1	250 ml	nalgene plastic	NONE	SOIL	ALPHA/GAMMA	T
(field QC) 015 1932	8/20/02	8:45	SB202502DUP	1							
	U-isotopes by alpha;Co/Cs by gamma				1	250 ml	nalgene plastic	none	SOIL	ALPHA/GAMMA	T
016 1933	8/20/02	9:20	SB202604	1							
	U-isotope by alpha, CO/Cs by gamma				1	250 ml	plastic	none	SOIL	ALPHA/GAMMA	T
(field QC) 017 1934	8/20/02	9:20	SB202604DUP	1							
	U by alpha, Co/Cs by gamma				1	250 ml	plastic	none	SOIL	ALPHA/GAMMA	T

Sample #	Sample Date	Sample Time	Field Sample ID	Qty Total	Qty Each	Bottle Size and Material		Preservative	Media	Method	Fraction
018 1935	8/20/02	9:30	SB202610	2							
			U by alpha, CO/CS by gamma		2	250 ml	plastic	none	SOIL	ALPHA/GAMMA	T
019 1936	8/20/02	8:55	SB202510	2							
			U by alpha, Co/Cs by gamma		2	250 ml	plastic	none	SOIL	ALPHA/GAMMA	T

SDG Number: 160 *Start Date:* 8/19/02 *End Date:* 8/21/02

Relinquished: [illegible] *Date:* 8/21/02 *Time:* 1400 hrs *Received:* [illegible] *Date:* 8/22/02 *Time:* 0845

Relinquished: _____ *Date:* __/__/__ *Time:* ____ *Received:* _____ *Date:* __/__/__ *Time:* ____

Chain Of Custody/Analysis Request Form

CE Windsor Site

Harding ESE
Jayme Connolly
207-828-3455

Lab: GEL 65904

Sample #	Sample Date	Sample Time	Field Sample ID	Qty Total	Qty Each	Bottle Size and Material		Preservative	Media	Method	Fraction
001 1684	8/21/02	10:55	SB102500	2							
	U-isotope by alpha; Co/Cs by gamma				2	250 mL	Nalgene Plastic	NONE	SOIL	ALPHA/GAMMA	T
002 1687	8/21/02	11:25	SB102508	2							
	U-isotope by alpha; Co/Cs by gamma				2	250 mL	Nalgene Plastic	NONE	SOIL	ALPHA/GAMMA	T
003 1691	8/21/02	11:50	SB102604	2							
	U-isotope by alpha; Co/Cs by gamma				2	250 mL	Nalgene Plastic	NONE	SOIL	ALPHA/GAMMA	T
004 1697	8/21/02	13:20	SB102708	2							
	U-isotope by alpha; Co/Cs by gamma				2	250 mL	Nalgene Plastic	NONE	SOIL	ALPHA/GAMMA	T
005 1699	8/21/02	13:35	SB102800	1							
	U-isotope by alpha; Co/Cs by gamma				1	250 mL	Nalgene Plastic	NONE	SOIL	ALPHA/GAMMA	T
Field QC 006 1700	8/21/02	13:35	SB102800DUP	1							
	U-isotope by alpha; Co/Cs by gamma				1	250 mL	Nalgene Plastic	NONE	SOIL	ALPHA/GAMMA	T
007 1702	8/21/02	13:55	SB102808	2							
	U-isotope by alpha; Co/Cs by gamma				2	250 mL	Nalgene Plastic	NONE	SOIL	ALPHA/GAMMA	T

Sample #	Sample Date	Sample Time	Field Sample ID	Qty Total	Qty Each	Bottle Size and Material		Preservative	Media	Method	Fraction
008 1707	8/21/02	14:35	SB102908	2							
	U-isotope by alpha; Co/Cs by gamma				2	250 mL	Nalgene Plastic	NONE	SOIL	ALPHA/GAMMA	T
009 1847	8/20/02	10:10	SD193500	3							
	U-isotope by alpha; Co/Cs by gamma				3	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T
010 1849	8/20/02	10:15	SD193600	3							
	U-isotope by alpha; Co/Cs by gamma				3	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T
011 1850	8/20/02	10:30	SD193700	3							
	U-isotope by alpha; Co/Cs by gamma				3	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T
012 1860	8/20/02	15:30	SD194700	3							
	U-isotope by alpha; Co/Cs by gamma				3	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T
013 1862	8/20/02	16:00	SD194900	1							
	U-isotope by alpha; Co/Cs by gamma				1	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T
014 1863	8/20/02	16:05	SD195000	1							
	U-isotope by alpha; Co/Cs by gamma				1	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T
015 1864	8/21/02	8:45	SD195100	3							
	U-isotope by alpha; Co/Cs by gamma				3	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T
016 1866	8/21/02	11:30	SD195300	3							
	U-isotope by alpha; Co/Cs by gamma				3	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T
Field QC 017 2001	8/20/02	16:00	SD194900DUP	1							
	U-isotopes by alpha,Co/Cs by gamma				1	500 ml	plastic	none	SED	ALPHA/GAMMA	T

Sample #	Sample Date	Sample Time	Field Sample ID	Qty Total	Qty Each	Bottle Size and Material	Preservative	Media	Method	Fraction

SDG Number: 161 Start Date: 8/20/02 End Date: 8/21/02

Relinquished: [signature] Date: 8/21/02 Time: 1700 Received: [signature] Date: 8/22/02 Time: 0845

Relinquished: _____ Date: __/__/__ Time: ____ Received: _____ Date: __/__/__ Time: ____

Chain Of Custody/Analysis Request Form

CE Windsor Site

Harding ESE
Jayme Connolly
207-828-3455

65957/

Lab: GEL

Sample #	Sample Date	Sample Time	Field Sample ID	Qty Total	Qty Each	Bottle Size and Material		Preservative	Media	Method	Fraction
001 1710	8/20/02	15:45	SB103003	2							
	U-isotope by alpha; Co/Cs by gamma				2	250 mL	Nalgene Plastic	NONE	SOIL	ALPHA/GAMMA	T
002 1712	8/20/02	15:55	SB103007	2							
	U-isotope by alpha; Co/Cs by gamma				2	250 mL	Nalgene Plastic	NONE	SOIL	ALPHA/GAMMA	T
field QC 003 1713	8/20/02	15:55	SB103007DUP	2							
	U-isotope by alpha; Co/Cs by gamma				2	250 mL	Nalgene Plastic	NONE	SOIL	ALPHA/GAMMA	T
004 1716	8/20/02	16:50	SB103103	2							
	U-isotope by alpha; Co/Cs by gamma				2	250 mL	Nalgene Plastic	NONE	SOIL	ALPHA/GAMMA	T
005 1718	8/20/02	17:00	SB103107	2							
	U-isotope by alpha; Co/Cs by gamma				2	250 mL	Nalgene Plastic	NONE	SOIL	ALPHA/GAMMA	T
006 1722	8/20/02	16:05	SB103203	2							
	U-isotope by alpha; Co/Cs by gamma				2	250 mL	Nalgene Plastic	NONE	SOIL	ALPHA/GAMMA	T
007 1724	8/20/02	16:15	SB103207	2							
	U-isotope by alpha; Co/Cs by gamma				2	250 mL	Nalgene Plastic	NONE	SOIL	ALPHA/GAMMA	T

Sample #	Sample Date	Sample Time	Field Sample ID	Qty Total	Qty Each	Bottle Size and Material		Preservative	Media	Method	Fraction
008 1728	8/20/02	16:28	SB103303	2							
	U-isotope by alpha; Co/Cs by gamma				2	250 mL	Nalgene Plastic	NONE	SOIL	ALPHA/GAMMA	T
009 1730	8/20/02	16:40	SB103307	2							
	U-isotope by alpha; Co/Cs by gamma				2	250 mL	Nalgene Plastic	NONE	SOIL	ALPHA/GAMMA	T
010 1831	8/19/02	10:15	SD191900	3							
	U-isotope by alpha; Co/Cs by gamma				3	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T
011 1832	8/19/02	10:45	SD192000	3							
	U-isotope by alpha; Co/Cs by gamma				3	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T
012 1852	8/20/02	11:02	SD193900	3							
	U-isotope by alpha; Co/Cs by gamma				3	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T
013 1853	8/20/02	13:00	SD194000	3							
	U-isotope by alpha; Co/Cs by gamma				3	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T
014 1854	8/20/02	13:15	SD194100	3							
	U-isotope by alpha; Co/Cs by gamma				3	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T
015 1855	8/20/02	13:40	SD194200	3							
	U-isotope by alpha; Co/Cs by gamma				3	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T
016 1856	8/20/02	13:50	SD194300	3							
	U-isotope by alpha; Co/Cs by gamma				3	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T
017 1861	8/20/02	15:45	SD194800	3							
	U-isotope by alpha; Co/Cs by gamma				3	500 mL	Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T

Sample #	Sample Date	Sample Time	Field Sample ID	Qty Total	Qty Each	Bottle Size and Material	Preservative	Media	Method	Fraction
016 1865	8/21/02	9:45	SD195200	3						
	U-isotope by alpha; Co/Cs by gamma				3	500 mL Nalgene Plastic	NONE	SED	ALPHA/GAMMA	T

SDG Number: 162 *Start Date:* 8/19/02 *End Date:* 8/22/02

Relinquished: E Sandy *Date:* 8/22/02 *Time:* ____ *Received:* Paulette Hibbard 8/23/02 *Time:* 0900

Relinquished: ____ *Date:* __/__/__ *Time:* ____ *Received:* ____ *Date:* __/__/__ *Time:* ____

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2040 Savage Road Charleston SC 29407 – (843) 556–8171 – www.gel.com

Certificate of Analysis

Company : MACTEC Engineering and Consulting
Address : 511 Congress Street
Portland, Maine 04112
Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID: SD191900
Sample ID: 65957010
Matrix: Soil
Collect Date: 19–AUG–02
Receive Date: 23–AUG–02
Collector: Client

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		1.44	+/–0.346	0.160	+/–0.422	0.500	pCi/g		RDD	09/10/02	1330	198875	1
U235		0.134	+/–0.112	0.148	+/–0.114	0.500	pCi/g						
U238		0.589	+/–0.220	0.112	+/–0.241	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		2.27	+/–0.369	0.142	+/–0.369	0.200	pCi/g		CRB	09/09/02	1030	198106	2
Cobalt–60		0.121	+/–0.264	0.161	+/–0.264	0.200	pCi/g						
Potassium–40		4.32	+/–2.80	1.71	+/–2.80	1.00	pCi/g						
Radium–226		0.218	+/–0.428	0.268	+/–0.428	1.00	pCi/g						
Thorium–232		0.456	+/–0.270	0.173	+/–0.270		pCi/g						
Uranium–235		0.180	+/–0.902	0.611	+/–0.902	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	09/02/02	1429	197992
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/27/02	1536	197105

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	103	(25%–125%)

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported

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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID: SB191900
Sample ID: 65957010

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

A The TIC is a suspected aldol–condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy––Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/–RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Company : MACTEC Engineering and Consulting
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Portland, Maine 04112
Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD192000	Project:	HLAI00102
Sample ID:	65957011	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	19–AUG–02		
Receive Date:	23–AUG–02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		1.32	+/–0.297	0.171	+/–0.365	0.500	pCi/g		RDD	09/10/02	1330	198875	1
U235		0.106	+/–0.0883	0.117	+/–0.0899	0.500	pCi/g						
U238		1.04	+/–0.261	0.117	+/–0.310	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		2.74	+/–0.410	0.117	+/–0.410	0.200	pCi/g		CRB	09/09/02	1241	198106	2
Cobalt–60		–0.0204	+/–0.0945	0.154	+/–0.0945	0.200	pCi/g						
Potassium–40		4.55	+/–2.17	1.32	+/–2.17	1.00	pCi/g						
Radium–226		0.363	+/–0.309	0.235	+/–0.309	1.00	pCi/g						
Thorium–232		0.306	+/–0.252	0.155	+/–0.252		pCi/g						
Uranium–235		0.444	+/–0.692	0.594	+/–0.692	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	09/02/02	1429	197992
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/27/02	1536	197105

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	111	(25%–125%)

Notes:

The Qualifiers in this report are defined as follows :

* A quality control analyte recovery is outside of specified acceptance criteria
** Analyte is a surrogate compound
< Result is less than value reported

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Report Date: February 8, 2007

Portland, Maine 04112
Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Client Sample ID: SB192000
Sample ID: 65957011

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

> Result is greater than value reported
A The TIC is a suspected aldol–condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy––Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/–RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Company : MACTEC Engineering and Consulting
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Portland, Maine 04112
Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID: SD192100
Sample ID: 65903001
Matrix: Soil
Collect Date: 19–AUG–02
Receive Date: 22–AUG–02
Collector: Client

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		1.98	+/–0.466	0.226	+/–0.572	0.500	pCi/g		AB1	09/05/02	1626	198181	1
U235		0.0998	+/–0.127	0.241	+/–0.128	0.500	pCi/g						
U238		1.45	+/–0.404	0.275	+/–0.472	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		1.08	+/–0.231	0.095	+/–0.231	0.200	pCi/g		CRB	09/05/02	2320	196810	2
Cobalt–60		–0.0145	+/–0.0674	0.112	+/–0.0674	0.200	pCi/g						
Potassium–40		3.47	+/–1.98	1.17	+/–1.98	1.00	pCi/g						
Radium–226		0.174	+/–0.256	0.200	+/–0.256	1.00	pCi/g						
Thorium–232		0.184	+/–0.180	0.123	+/–0.180		pCi/g						
Uranium–235		0.498	+/–0.346	0.504	+/–0.346	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	08/29/02	1605	197313
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/26/02	1005	196596

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	91	(25%–125%)

Notes:

The Qualifiers in this report are defined as follows :

* A quality control analyte recovery is outside of specified acceptance criteria
** Analyte is a surrogate compound
< Result is less than value reported

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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID: SD192100
Sample ID: 65903001

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

> Result is greater than value reported
A The TIC is a suspected aldol–condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy––Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/–RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD192200	Project:	HLAI00102
Sample ID:	65903002	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	19–AUG–02		
Receive Date:	22–AUG–02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		0.676	+/–0.268	0.232	+/–0.291	0.500	pCi/g		AB1	09/05/02	1626	198181	1
U235		0.0392	+/–0.0735	0.160	+/–0.0738	0.500	pCi/g						
U238		0.354	+/–0.189	0.136	+/–0.198	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		0.878	+/–0.193	0.127	+/–0.193	0.200	pCi/g		CRB	09/05/02	2321	196810	2
Cobalt–60		0.0204	+/–0.0803	0.137	+/–0.0803	0.200	pCi/g						
Potassium–40		4.43	+/–2.01	1.42	+/–2.01	1.00	pCi/g						
Radium–226		0.464	+/–0.325	0.247	+/–0.325	1.00	pCi/g						
Thorium–232		0.229	+/–0.194	0.158	+/–0.194		pCi/g						
Uranium–235		0.296	+/–0.911	0.607	+/–0.911	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	08/29/02	1605	197313
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/26/02	1006	196596

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	103	(25%–125%)

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported

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Company : MACTEC Engineering and Consulting
Address : 511 Congress Street
Portland, Maine 04112
Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID: SD192200
Sample ID: 65903002

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

A The TIC is a suspected aldol-condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD192300	Project:	HLAI00102
Sample ID:	65903003	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	19–AUG–02		
Receive Date:	22–AUG–02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		2.39	+/–0.490	0.194	+/–0.632	0.500	pCi/g		AB1	09/05/02	1626	198181	1
U235		0.291	+/–0.176	0.179	+/–0.183	0.500	pCi/g						
U238		1.26	+/–0.353	0.0772	+/–0.411	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		0.630	+/–0.242	0.132	+/–0.242	0.200	pCi/g		CRB	09/05/02	2322	196810	2
Cobalt–60		0.0742	+/–0.0563	0.164	+/–0.0563	0.200	pCi/g						
Potassium–40		5.30	+/–2.31	1.81	+/–2.31	1.00	pCi/g						
Radium–226		0.00	+/–0.387	0.256	+/–0.387	1.00	pCi/g						
Thorium–232		0.456	+/–0.203	0.186	+/–0.203		pCi/g						
Uranium–235		0.103	+/–0.651	0.527	+/–0.651	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	08/29/02	1605	197313
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/26/02	1006	196596

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	96	(25%–125%)

Notes:

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- > Result is greater than value reported

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Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID: SD192300
Sample ID: 65903003

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

A The TIC is a suspected aldol–condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy––Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/–RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Address : 511 Congress Street
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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD192400	Project:	HLAI00102
Sample ID:	65903004	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	19–AUG–02		
Receive Date:	22–AUG–02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		1.46	+/–0.369	0.166	+/–0.439	0.500	pCi/g		AB1	09/05/02	1626	198181	1
U235		0.0958	+/–0.0939	0.0719	+/–0.0952	0.500	pCi/g						
U238		0.401	+/–0.200	0.193	+/–0.211	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		1.38	+/–0.273	0.141	+/–0.273	0.200	pCi/g		CRB	09/05/02	2323	196810	2
Cobalt–60		0.0786	+/–0.0987	0.183	+/–0.0987	0.200	pCi/g						
Potassium–40		7.14	+/–2.92	1.28	+/–2.92	1.00	pCi/g						
Radium–226		0.436	+/–0.331	0.279	+/–0.331	1.00	pCi/g						
Thorium–232		0.332	+/–0.238	0.173	+/–0.238		pCi/g						
Uranium–235		0.340	+/–0.647	0.648	+/–0.647	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	08/29/02	1605	197313
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/26/02	1006	196596

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	101	(25%–125%)

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported

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Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID: SD192400
Sample ID: 65903004

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

A The TIC is a suspected aldol–condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy––Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/–RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Address : 511 Congress Street
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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD192500	Project:	HLAI00102
Sample ID:	65903005	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	19–AUG–02		
Receive Date:	22–AUG–02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		2.94	+/–0.559	0.207	+/–0.741	0.500	pCi/g		AB1	09/08/02	1228	198181	1
U235		0.0759	+/–0.0943	0.145	+/–0.0951	0.500	pCi/g						
U238		0.742	+/–0.286	0.207	+/–0.311	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		1.00	+/–0.268	0.127	+/–0.268	0.200	pCi/g		CRB	09/09/02	2348	196810	2
Cobalt–60		0.0505	+/–0.0929	0.169	+/–0.0929	0.200	pCi/g						
Potassium–40		6.08	+/–2.60	1.65	+/–2.60	1.00	pCi/g						
Radium–226		0.600	+/–0.437	0.246	+/–0.437	1.00	pCi/g						
Thorium–232		0.552	+/–0.198	0.154	+/–0.198		pCi/g						
Uranium–235		0.526	+/–0.616	0.529	+/–0.616	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	08/29/02	1605	197313
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/26/02	1006	196596

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	91	(25%–125%)

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported

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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID: SD192500
Sample ID: 65903005

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

A The TIC is a suspected aldol–condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy––Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/–RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD192900	Project:	HLAI00102
Sample ID:	65903008	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	19–AUG–02		
Receive Date:	22–AUG–02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		1.56	+/–0.425	0.222	+/–0.499	0.500	pCi/g		AB1	09/08/02	1231	198181	1
U235		0.0378	+/–0.0853	0.205	+/–0.0855	0.500	pCi/g						
U238		0.921	+/–0.327	0.204	+/–0.362	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		0.515	+/–0.204	0.120	+/–0.204	0.200	pCi/g		CRB	09/09/02	2349	196810	2
Cobalt–60		0.0267	+/–0.0811	0.144	+/–0.0811	0.200	pCi/g						
Potassium–40		10.4	+/–2.77	1.26	+/–2.77	1.00	pCi/g						
Radium–226		0.803	+/–0.351	0.220	+/–0.351	1.00	pCi/g						
Thorium–232		0.829	+/–0.239	0.150	+/–0.239		pCi/g						
Uranium–235		0.252	+/–0.335	0.509	+/–0.335	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	08/29/02	1605	197313
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/26/02	1006	196596

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	98	(25%–125%)

Notes:

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Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID: SD192900
Sample ID: 65903008

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst Date	Time	Batch	Mtd

A The TIC is a suspected aldol-condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD193000	Project:	HLAI00102
Sample ID:	65903009	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	19–AUG–02		
Receive Date:	22–AUG–02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		4.69	+/–0.659	0.216	+/–1.01	0.500	pCi/g		AB1	09/08/02	1231	198181	1
U235		0.581	+/–0.263	0.339	+/–0.280	0.500	pCi/g						
U238		1.51	+/–0.379	0.216	+/–0.452	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		0.996	+/–0.117	0.0505	+/–0.117	0.200	pCi/g		CRB	09/05/02	2325	196810	2
Cobalt–60		0.016	+/–0.0314	0.0563	+/–0.0314	0.200	pCi/g						
Potassium–40		13.8	+/–1.85	0.435	+/–1.85	1.00	pCi/g						
Radium–226		0.770	+/–0.144	0.0863	+/–0.144	1.00	pCi/g						
Thorium–232		0.879	+/–0.128	0.0674	+/–0.128		pCi/g						
Uranium–235		0.334	+/–0.228	0.279	+/–0.228	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	08/29/02	1605	197313
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/26/02	1006	196596

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	110	(25%–125%)

Notes:

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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID: SD193000
Sample ID: 65903009

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

A The TIC is a suspected aldol–condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy––Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/–RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD193100	Project:	HLAI00102
Sample ID:	65903010	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	19–AUG–02		
Receive Date:	22–AUG–02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		2.67	+/–0.538	0.271	+/–0.699	0.500	pCi/g		AB1	09/08/02	1231	198181	1
U235		0.0221	+/–0.0819	0.223	+/–0.0819	0.500	pCi/g						
U238		1.17	+/–0.359	0.236	+/–0.409	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		1.27	+/–0.152	0.0292	+/–0.152	0.200	pCi/g		CRB	09/05/02	2325	196810	2
Cobalt–60		0.000557	+/–0.0156	0.0276	+/–0.0156	0.200	pCi/g						
Potassium–40		12.6	+/–1.39	0.258	+/–1.39	1.00	pCi/g						
Radium–226		0.614	+/–0.0994	0.0486	+/–0.0994	1.00	pCi/g						
Thorium–232		0.868	+/–0.103	0.0382	+/–0.103		pCi/g						
Uranium–235		0.153	+/–0.130	0.156	+/–0.130	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	08/29/02	1605	197313
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/26/02	1006	196596

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	96	(25%–125%)

Notes:

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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID: SD193100
Sample ID: 65903010

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

A The TIC is a suspected aldol–condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy––Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/–RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD193200	Project:	HLAI00102
Sample ID:	65903011	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	19–AUG–02		
Receive Date:	22–AUG–02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		2.75	+/–0.531	0.256	+/–0.695	0.500	pCi/g		AB1	09/08/02	1231	198181	1
U235		0.00104	+/–0.0567	0.197	+/–0.0567	0.500	pCi/g						
U238		2.64	+/–0.515	0.162	+/–0.671	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		0.712	+/–0.107	0.0405	+/–0.107	0.200	pCi/g		CRB	09/05/02	2326	196810	2
Cobalt–60		0.00269	+/–0.0244	0.0432	+/–0.0244	0.200	pCi/g						
Potassium–40		5.38	+/–1.04	0.360	+/–1.04	1.00	pCi/g						
Radium–226		0.383	+/–0.106	0.0795	+/–0.106	1.00	pCi/g						
Thorium–232		0.511	+/–0.094	0.0498	+/–0.094		pCi/g						
Uranium–235		0.0117	+/–0.153	0.191	+/–0.153	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	08/29/02	1605	197313
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/26/02	1006	196596

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	101	(25%–125%)

Notes:

The Qualifiers in this report are defined as follows :

* A quality control analyte recovery is outside of specified acceptance criteria
** Analyte is a surrogate compound
< Result is less than value reported

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Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID: SD193200
Sample ID: 65903011

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

> Result is greater than value reported
A The TIC is a suspected aldol-condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD193300	Project:	HLAI00102
Sample ID:	65903012	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	19–AUG–02		
Receive Date:	22–AUG–02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		0.204	+/–0.137	0.168	+/–0.141	0.500	pCi/g		AB1	09/08/02	1231	198181	1
U235		0.0534	+/–0.0852	0.179	+/–0.0857	0.500	pCi/g						
U238		0.142	+/–0.126	0.205	+/–0.128	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		–0.0114	+/–0.0261	0.0393	+/–0.0261	0.200	pCi/g		CRB	09/06/02	0915	196810	2
Cobalt–60		0.00155	+/–0.0224	0.0433	+/–0.0224	0.200	pCi/g						
Potassium–40		11.0	+/–1.48	0.311	+/–1.48	1.00	pCi/g						
Radium–226		0.351	+/–0.098	0.0711	+/–0.098	1.00	pCi/g						
Thorium–232		0.404	+/–0.0737	0.0454	+/–0.0737		pCi/g						
Uranium–235		0.0749	+/–0.134	0.183	+/–0.134	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	08/29/02	1605	197313
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/26/02	1006	196596

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	115	(25%–125%)

Notes:

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< Result is less than value reported
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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID: SD193300
Sample ID: 65903012

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

A The TIC is a suspected aldol–condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy––Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/–RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD193400	Project:	HLAI00102
Sample ID:	65903013	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	19–AUG–02		
Receive Date:	22–AUG–02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		4.76	+/–0.699	0.201	+/–1.05	0.500	pCi/g		AB1	09/09/02	1213	198181	1
U235		0.180	+/–0.139	0.141	+/–0.142	0.500	pCi/g						
U238		3.06	+/–0.561	0.201	+/–0.756	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		2.29	+/–0.426	0.207	+/–0.426	0.200	pCi/g		CRB	09/09/02	2349	196810	2
Cobalt–60		–0.026	+/–0.139	0.224	+/–0.139	0.200	pCi/g						
Potassium–40		8.33	+/–3.64	2.15	+/–3.64	1.00	pCi/g						
Radium–226		0.715	+/–0.512	0.377	+/–0.512	1.00	pCi/g						
Thorium–232		0.434	+/–0.322	0.224	+/–0.322		pCi/g						
Uranium–235		0.00	+/–0.589	0.771	+/–0.589	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	08/29/02	1605	197313
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/26/02	1006	196596

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	106	(25%–125%)

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported

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Certificate of Analysis

Company : MACTEC Engineering and Consulting
Address : 511 Congress Street
Portland, Maine 04112
Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID: SD193400
Sample ID: 65903013

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

A The TIC is a suspected aldol–condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy––Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/–RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD193500	Project:	HLAI00102
Sample ID:	65904009	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	20–AUG–02		
Receive Date:	22–AUG–02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		5.14	+/–0.528	0.0878	+/–0.999	0.500	pCi/g		AAK	09/08/02	1224	198182	1
U235		0.407	+/–0.150	0.0747	+/–0.164	0.500	pCi/g						
U238		0.872	+/–0.220	0.114	+/–0.263	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		2.11	+/–0.373	0.129	+/–0.373	0.200	pCi/g		CRB	09/03/02	1508	196812	2
Cobalt–60		0.0484	+/–0.0994	0.186	+/–0.0994	0.200	pCi/g						
Potassium–40		9.72	+/–2.47	1.40	+/–2.47	1.00	pCi/g						
Radium–226		0.462	+/–0.294	0.265	+/–0.294	1.00	pCi/g						
Thorium–232		0.659	+/–0.223	0.192	+/–0.223		pCi/g						
Uranium–235		0.036	+/–0.457	0.664	+/–0.457	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	08/29/02	1605	197313
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/26/02	1006	196596

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	96	(25%–125%)

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
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- > Result is greater than value reported

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Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID: SD193500
Sample ID: 65904009

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

A The TIC is a suspected aldol–condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy––Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/–RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD193600	Project:	HLAI00102
Sample ID:	65904010	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	20–AUG–02		
Receive Date:	22–AUG–02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		3.02	+/–0.318	0.0657	+/–0.584	0.500	pCi/g		AAK	09/08/02	1224	198182	1
U235		0.194	+/–0.0822	0.0605	+/–0.0881	0.500	pCi/g						
U238		2.36	+/–0.282	0.0746	+/–0.476	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		1.03	+/–0.229	0.131	+/–0.229	0.200	pCi/g		CRB	09/03/02	1509	196812	2
Cobalt–60		0.151	+/–0.0902	0.157	+/–0.0902	0.200	pCi/g						
Potassium–40		4.34	+/–1.78	1.46	+/–1.78	1.00	pCi/g						
Radium–226		0.503	+/–0.369	0.238	+/–0.369	1.00	pCi/g						
Thorium–232		0.403	+/–0.186	0.142	+/–0.186		pCi/g						
Uranium–235		0.217	+/–0.578	0.533	+/–0.578	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	08/29/02	1605	197313
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/26/02	1006	196596

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	103	(25%–125%)

Notes:

The Qualifiers in this report are defined as follows :

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Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID: SD193600
Sample ID: 65904010

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

A The TIC is a suspected aldol–condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy––Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/–RL. Concentrations are <5X the RL
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Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD193700	Project:	HLAI00102
Sample ID:	65904011	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	20-AUG-02		
Receive Date:	22-AUG-02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		3.56	+/-0.328	0.0738	+/-0.660	0.500	pCi/g		AAK	09/08/02	1224	198182	1
U235		0.390	+/-0.109	0.0414	+/-0.126	0.500	pCi/g						
U238		2.39	+/-0.268	0.0235	+/-0.469	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium-137		0.599	+/-0.256	0.184	+/-0.256	0.200	pCi/g		CRB	09/03/02	1510	196812	2
Cobalt-60		-0.0382	+/-0.115	0.199	+/-0.115	0.200	pCi/g						
Potassium-40		4.00	+/-3.63	2.80	+/-3.63	1.00	pCi/g						
Radium-226		0.314	+/-0.530	0.333	+/-0.530	1.00	pCi/g						
Thorium-232		0.169	+/-0.210	0.275	+/-0.210		pCi/g						
Uranium-235		-0.0358	+/-0.479	0.720	+/-0.479	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL-RAD-A-021B	MLA	08/29/02	1605	197313
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	KM1	08/26/02	1006	196596

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, U-02-RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium-232	Alphaspec U, Solid	91	(25%-125%)

Notes:

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Report Date: February 8, 2007

Client Sample ID: SD193700
Sample ID: 65904011

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

> Result is greater than value reported
A The TIC is a suspected aldol–condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/–RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
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Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD193900	Project:	HLAI00102
Sample ID:	65957012	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	20–AUG–02		
Receive Date:	23–AUG–02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		0.566	+/–0.195	0.136	+/–0.216	0.500	pCi/g		RDD	09/10/02	1330	198875	1
U235		0.0168	+/–0.0329	0.0504	+/–0.0331	0.500	pCi/g						
U238		0.251	+/–0.127	0.0503	+/–0.134	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		0.511	+/–0.177	0.163	+/–0.177	0.200	pCi/g		CRB	09/05/02	2103	198106	2
Cobalt–60		0.0488	+/–0.0692	0.177	+/–0.0692	0.200	pCi/g						
Potassium–40		2.99	+/–3.01	2.03	+/–3.01	1.00	pCi/g						
Radium–226		0.280	+/–0.435	0.329	+/–0.435	1.00	pCi/g						
Thorium–232		0.0752	+/–0.279	0.213	+/–0.279		pCi/g						
Uranium–235		0.248	+/–0.517	0.792	+/–0.517	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	09/02/02	1429	197992
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/27/02	1536	197105

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	96	(25%–125%)

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported

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Report Date: February 8, 2007

Client Sample ID: SB193900
Sample ID: 65957012

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

A The TIC is a suspected aldol–condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy––Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/–RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD194000	Project:	HLAI00102
Sample ID:	65957013	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	20–AUG–02		
Receive Date:	23–AUG–02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		0.626	+/–0.281	0.308	+/–0.300	0.500	pCi/g		RDD	09/10/02	1330	198875	1
U235		0.00794	+/–0.0602	0.197	+/–0.0602	0.500	pCi/g						
U238		0.567	+/–0.255	0.214	+/–0.272	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		0.117	+/–0.0573	0.054	+/–0.0573	0.200	pCi/g		CRB	09/05/02	2103	198106	2
Cobalt–60		0.0344	+/–0.0336	0.0543	+/–0.0336	0.200	pCi/g						
Potassium–40		9.77	+/–1.67	0.543	+/–1.67	1.00	pCi/g						
Radium–226		0.368	+/–0.110	0.113	+/–0.110	1.00	pCi/g						
Thorium–232		0.565	+/–0.0996	0.0728	+/–0.0996		pCi/g						
Uranium–235		–5.500E–05	+/–0.154	0.268	+/–0.154	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	09/02/02	1429	197992
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/27/02	1536	197105

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	106	(25%–125%)

Notes:

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< Result is less than value reported

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Report Date: February 8, 2007

Client Sample ID: SB194000
Sample ID: 65957013

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

> Result is greater than value reported
A The TIC is a suspected aldol–condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy––Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/–RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD194100	Project:	HLAI00102
Sample ID:	65957014	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	20–AUG–02		
Receive Date:	23–AUG–02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		1.63	+/–0.404	0.193	+/–0.485	0.500	pCi/g		RDD	09/10/02	1330	198875	1
U235		0.0706	+/–0.0877	0.135	+/–0.0885	0.500	pCi/g						
U238		1.38	+/–0.372	0.193	+/–0.435	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		0.368	+/–0.105	0.0677	+/–0.105	0.200	pCi/g		CRB	09/05/02	2104	198106	2
Cobalt–60		0.0296	+/–0.0499	0.102	+/–0.0499	0.200	pCi/g						
Potassium–40		6.48	+/–1.70	1.12	+/–1.70	1.00	pCi/g						
Radium–226		0.326	+/–0.135	0.134	+/–0.135	1.00	pCi/g						
Thorium–232		0.302	+/–0.109	0.103	+/–0.109		pCi/g						
Uranium–235		0.164	+/–0.257	0.433	+/–0.257	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	09/02/02	1429	197992
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/27/02	1536	197105

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	109	(25%–125%)

Notes:

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- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported

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Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID: SB194100
Sample ID: 65957014

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

A The TIC is a suspected aldol-condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
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Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD194200	Project:	HLAI00102
Sample ID:	65957015	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	20–AUG–02		
Receive Date:	23–AUG–02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		1.08	+/–0.304	0.200	+/–0.351	0.500	pCi/g		RDD	09/10/02	1330	198875	1
U235		0.0748	+/–0.0845	0.132	+/–0.0854	0.500	pCi/g						
U238		0.996	+/–0.288	0.160	+/–0.331	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		0.241	+/–0.0829	0.0915	+/–0.0829	0.200	pCi/g		CRB	09/05/02	2104	198106	2
Cobalt–60		0.025	+/–0.0413	0.089	+/–0.0413	0.200	pCi/g						
Potassium–40		5.61	+/–1.55	0.910	+/–1.55	1.00	pCi/g						
Radium–226		0.191	+/–0.118	0.153	+/–0.118	1.00	pCi/g						
Thorium–232		0.334	+/–0.127	0.113	+/–0.127		pCi/g						
Uranium–235		0.162	+/–0.193	0.343	+/–0.193	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	09/02/02	1429	197992
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/27/02	1536	197105

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	112	(25%–125%)

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported

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Company : MACTEC Engineering and Consulting
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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID: SB194200
Sample ID: 65957015

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

A The TIC is a suspected aldol–condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy––Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/–RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD194300	Project:	HLAI00102
Sample ID:	65957016	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	20–AUG–02		
Receive Date:	23–AUG–02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		0.0228	+/–0.0183	0.0217	+/–0.0186	0.500	pCi/g		RDD	09/10/02	1330	198875	1
U235		–0.00168	+/–0.00233	0.0218	+/–0.00235	0.500	pCi/g						
U238		0.00	+/–0.00684	0.0105	+/–0.00684	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		0.690	+/–0.205	0.124	+/–0.205	0.200	pCi/g		CRB	09/05/02	2302	198106	2
Cobalt–60		0.137	+/–0.101	0.157	+/–0.101	0.200	pCi/g						
Potassium–40		2.56	+/–1.84	1.36	+/–1.84	1.00	pCi/g						
Radium–226		8.320E–05	+/–0.308	0.255	+/–0.308	1.00	pCi/g						
Thorium–232		0.00	+/–0.299	0.164	+/–0.299		pCi/g						
Uranium–235		0.0155	+/–0.370	0.551	+/–0.370	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	09/02/02	1429	197992
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/27/02	1536	197105

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	92	(25%–125%)

Notes:

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Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID: SB194300
Sample ID: 65957016

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

A The TIC is a suspected aldol-condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD194700	Project:	HLAI00102
Sample ID:	65904012	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	20-AUG-02		
Receive Date:	22-AUG-02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		1.16	+/-0.217	0.0724	+/-0.287	0.500	pCi/g		AAK	09/08/02	1224	198182	1
U235		0.0971	+/-0.0654	0.0727	+/-0.0673	0.500	pCi/g						
U238		0.662	+/-0.164	0.0649	+/-0.196	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium-137		0.415	+/-0.122	0.0947	+/-0.122	0.200	pCi/g		CRB	09/03/02	1511	196812	2
Cobalt-60		0.00	+/-0.140	0.111	+/-0.140	0.200	pCi/g						
Potassium-40		7.50	+/-2.68	1.10	+/-2.68	1.00	pCi/g						
Radium-226		0.553	+/-0.261	0.178	+/-0.261	1.00	pCi/g						
Thorium-232		0.608	+/-0.182	0.117	+/-0.182		pCi/g						
Uranium-235		0.050	+/-0.280	0.413	+/-0.280	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL-RAD-A-021B	MLA	08/29/02	1605	197313
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	KM1	08/26/02	1006	196596

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, U-02-RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium-232	Alphaspec U, Solid	102	(25%-125%)

Notes:

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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID: SD194700
Sample ID: 65904012

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

A The TIC is a suspected aldol–condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy––Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/–RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD194800	Project:	HLAI00102
Sample ID:	65957017	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	20–AUG–02		
Receive Date:	23–AUG–02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		0.658	+/–0.251	0.210	+/–0.274	0.500	pCi/g		RDD	09/10/02	1330	198875	1
U235		0.00839	+/–0.0871	0.246	+/–0.0871	0.500	pCi/g						
U238		0.304	+/–0.179	0.219	+/–0.186	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		0.196	+/–0.114	0.114	+/–0.114	0.200	pCi/g		CRB	09/05/02	2303	198106	2
Cobalt–60		–0.0157	+/–0.0779	0.129	+/–0.0779	0.200	pCi/g						
Potassium–40		3.68	+/–1.25	1.29	+/–1.25	1.00	pCi/g						
Radium–226		0.00	+/–0.267	0.204	+/–0.267	1.00	pCi/g						
Thorium–232		0.108	+/–0.197	0.147	+/–0.197		pCi/g						
Uranium–235		0.232	+/–0.570	0.534	+/–0.570	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	09/02/02	1429	197992
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/27/02	1536	197105

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	93	(25%–125%)

Notes:

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Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID: SB194800
Sample ID: 65957017

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst Date	Time	Batch	Mtd

A The TIC is a suspected aldol–condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy––Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/–RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD194900	Project:	HLAI00102
Sample ID:	65904013	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	20–AUG–02		
Receive Date:	22–AUG–02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		0.247	+/–0.158	0.167	+/–0.163	0.500	pCi/g		AAK	09/08/02	1226	198182	1
U235		0.00675	+/–0.0512	0.168	+/–0.0512	0.500	pCi/g						
U238		0.0847	+/–0.0956	0.150	+/–0.0966	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		0.0614	+/–0.0217	0.0383	+/–0.0217	0.200	pCi/g		CRB	09/03/02	1512	196812	2
Cobalt–60		–0.0216	+/–0.0287	0.0474	+/–0.0287	0.200	pCi/g						
Potassium–40		9.54	+/–1.42	0.432	+/–1.42	1.00	pCi/g						
Radium–226		0.252	+/–0.126	0.0864	+/–0.126	1.00	pCi/g						
Thorium–232		0.410	+/–0.0836	0.0553	+/–0.0836		pCi/g						
Uranium–235		0.0872	+/–0.104	0.201	+/–0.104	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	08/29/02	1605	197313
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/26/02	1006	196596

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	103	(25%–125%)

Notes:

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Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID: SD194900
Sample ID: 65904013

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

A The TIC is a suspected aldol–condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy––Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/–RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD194900DUP	Project:	HLAI00102
Sample ID:	65904017	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	20–AUG–02		
Receive Date:	22–AUG–02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		0.464	+/–0.199	0.176	+/–0.213	0.500	pCi/g		AAK	09/08/02	1227	198182	1
U235		0.0519	+/–0.0713	0.128	+/–0.0718	0.500	pCi/g						
U238		0.370	+/–0.171	0.0617	+/–0.181	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		0.040	+/–0.0343	0.0681	+/–0.0343	0.200	pCi/g		CRB	09/03/02	1517	196812	2
Cobalt–60		0.00601	+/–0.0397	0.0663	+/–0.0397	0.200	pCi/g						
Potassium–40		9.58	+/–1.62	0.388	+/–1.62	1.00	pCi/g						
Radium–226		0.247	+/–0.129	0.102	+/–0.129	1.00	pCi/g						
Thorium–232		0.371	+/–0.0911	0.0799	+/–0.0911		pCi/g						
Uranium–235		0.0761	+/–0.156	0.284	+/–0.156	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	08/29/02	1605	197313
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/26/02	1006	196596

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	101	(25%–125%)

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported

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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID: SD194900DUP
Sample ID: 65904017

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

A The TIC is a suspected aldol–condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy––Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/–RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD195000	Project:	HLAI00102
Sample ID:	65904014	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	20–AUG–02		
Receive Date:	22–AUG–02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		0.548	+/–0.238	0.179	+/–0.254	0.500	pCi/g		AAK	09/08/02	1226	198182	1
U235		0.0134	+/–0.0534	0.161	+/–0.0535	0.500	pCi/g						
U238		0.541	+/–0.231	0.0772	+/–0.248	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		0.0612	+/–0.0402	0.0408	+/–0.0402	0.200	pCi/g		CRB	09/03/02	1513	196812	2
Cobalt–60		–0.0214	+/–0.0296	0.0408	+/–0.0296	0.200	pCi/g						
Potassium–40		12.6	+/–1.61	0.468	+/–1.61	1.00	pCi/g						
Radium–226		0.597	+/–0.113	0.0647	+/–0.113	1.00	pCi/g						
Thorium–232		0.804	+/–0.114	0.0567	+/–0.114		pCi/g						
Uranium–235		0.119	+/–0.113	0.222	+/–0.113	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	08/29/02	1605	197313
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/26/02	1006	196596

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	105	(25%–125%)

Notes:

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- < Result is less than value reported
- > Result is greater than value reported

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2040 Savage Road Charleston SC 29407 – (843) 556–8171 – www.gel.com

Certificate of Analysis

Company : MACTEC Engineering and Consulting
Address : 511 Congress Street
Portland, Maine 04112
Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID: SD195000
Sample ID: 65904014

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

A The TIC is a suspected aldol–condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy––Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/–RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD195100	Project:	HLAI00102
Sample ID:	65904015	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	21–AUG–02		
Receive Date:	22–AUG–02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		0.272	+/–0.0832	0.0407	+/–0.0942	0.500	pCi/g		AAK	09/08/02	1226	198182	1
U235		0.0247	+/–0.0259	0.0346	+/–0.0262	0.500	pCi/g						
U238		0.111	+/–0.0529	0.0196	+/–0.0559	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		0.00	+/–0.183	0.146	+/–0.183	0.200	pCi/g		CRB	09/03/02	1515	196812	2
Cobalt–60		–0.0278	+/–0.0943	0.156	+/–0.0943	0.200	pCi/g						
Potassium–40		2.22	+/–2.51	1.49	+/–2.51	1.00	pCi/g						
Radium–226		0.390	+/–0.386	0.263	+/–0.386	1.00	pCi/g						
Thorium–232		0.00	+/–0.189	0.260	+/–0.189		pCi/g						
Uranium–235		0.209	+/–0.712	0.631	+/–0.712	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	08/29/02	1605	197313
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/26/02	1006	196596

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	98	(25%–125%)

Notes:

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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID: SD195100
Sample ID: 65904015

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

A The TIC is a suspected aldol–condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy––Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/–RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD195200	Project:	HLAI00102
Sample ID:	65957018	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	21–AUG–02		
Receive Date:	23–AUG–02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		1.66	+/–0.433	0.316	+/–0.513	0.500	pCi/g		RDD	09/10/02	1330	198875	1
U235		0.0638	+/–0.113	0.248	+/–0.114	0.500	pCi/g						
U238		0.837	+/–0.300	0.171	+/–0.330	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		2.70	+/–0.502	0.135	+/–0.502	0.200	pCi/g		CRB	09/09/02	2359	198106	2
Cobalt–60		–0.0782	+/–0.0915	0.142	+/–0.0915	0.200	pCi/g						
Potassium–40		8.67	+/–2.65	1.63	+/–2.65	1.00	pCi/g						
Radium–226		0.256	+/–0.365	0.278	+/–0.365	1.00	pCi/g						
Thorium–232		0.696	+/–0.254	0.168	+/–0.254		pCi/g						
Uranium–235		0.441	+/–0.470	0.676	+/–0.470	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	09/02/02	1429	197992
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/27/02	1536	197105

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	99	(25%–125%)

Notes:

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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID: SB195200
Sample ID: 65957018

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	^	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

A The TIC is a suspected aldol–condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND Analyte concentration is not detected above the detection limit
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Y QC Samples were not spiked with this compound
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Contact: Ms. Jayme Connolly
Project: CE Windsor RAD Characterization

Report Date: February 8, 2007

Client Sample ID:	SD195300	Project:	HLAI00102
Sample ID:	65904016	Client ID:	HLAI004
Matrix:	Soil		
Collect Date:	21–AUG–02		
Receive Date:	22–AUG–02		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
U234		2.26	+/–0.399	0.138	+/–0.540	0.500	pCi/g		AAK	09/08/02	1226	198182	1
U235		0.233	+/–0.129	0.0964	+/–0.135	0.500	pCi/g						
U238		1.18	+/–0.291	0.147	+/–0.347	0.500	pCi/g						
Rad Gamma Spec Analysis													
Gammaspec, Gamma, Solid (Standard List)													
Cesium–137		2.40	+/–0.385	0.115	+/–0.385	0.200	pCi/g		CRB	09/03/02	1516	196812	2
Cobalt–60		–0.0173	+/–0.085	0.144	+/–0.085	0.200	pCi/g						
Potassium–40		8.09	+/–2.56	1.32	+/–2.56	1.00	pCi/g						
Radium–226		0.00	+/–0.475	0.217	+/–0.475	1.00	pCi/g						
Thorium–232		1.24	+/–0.323	0.142	+/–0.323		pCi/g						
Uranium–235		0.138	+/–0.340	0.508	+/–0.340	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MLA	08/29/02	1605	197313
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	KM1	08/26/02	1006	196596

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL–300, U–02–RC Modified
2	EML HASL 300, 4.5.2.3

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium–232	Alphaspec U, Solid	104	(25%–125%)

Notes:

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Report Date: February 8, 2007

Client Sample ID: SD195300
Sample ID: 65904016

Project: HLAI00102
Client ID: HLAI004

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd

A The TIC is a suspected aldol–condensation product
B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
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